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INTEGRATED  SYSTEMS™

# **AXXESS**

INSTALLATION AND  
FIELD MAINTENANCE  
MANUAL

Issue 3, August 1995

## AXXESS ISSUE 3 — INDEX OF NEW FEATURES

For those individuals who are already familiar with the Issue 2 *AXXESS Installation & Field Maintenance Manual*, the following new items are documented in Issue 3. For complete information on each item, refer to the page numbers following the brief explanation. Also, throughout the manual, “change bars” like the one at the right have been placed in the margins to indicate any new or revised information since Issue 2.

### AXXESS SYSTEM ENHANCEMENTS

#### New Hardware

**Central Processing Unit 020 (CPU020)/Pulse Code Modulation Dual (PCM-D) Card:** The new CPU020/PCM-D Card is faster and more powerful than the original CPU/MEM Card. Inter-Tel recommends using the new CPU020/PCM-D Card under any of the following conditions: systems using more than 112 ports, systems using any type of OAI, and systems with unusually high call volume or extensive use of multiple ring-ins and/or all-rings (e.g., more than 100 ringing stations per minute). The CPU020/PCM-D Card contains the circuitry located on the T1 Network Clock Card (NCC) and, therefore, removes the need for the NCC. The CPU020/PCM-D Card uses flash memory that allows system software to be loaded from floppy disk instead of requiring ROM replacement. See pages 2-11, 3-45, 6-232, 6-233, 6-236, 6-235, 6-236, 6-245, 7-2, 7-3, 7-6, 7-7, and 8-2.

**16-Port Digital Keypad Card (DKSC-16):** The new DKSC-16 has 16 keypad circuits. It also contains a DSP that will provide switched speakerphone resources for up to 10 keysets at a time. See pages 2-13, 3-49, 4-38, 6-233, 6-237, 6-235, 6-237, 7-3, and 8-2.

**Power Supply Unit:** The new 9amp power supply can support the increased current requirements of the new DKSC-16. See pages 2-7, 2-8, 6-233, and 8-2.

**Basic Digital Keypad:** The Basic Digital Keypad (also referred to as Basic Digital Terminal) is now available in a non-display model only. Because its key layout is slightly different than the Standard and Executive keypad, the Basic keypad uses keymap #15 at default. See pages 2-37, 4-38, 6-53, and 8-1.

**T1 Card Upgrade Kit:** New T1Cs come equipped with two special software components that allow the cards to work with the new version 3 software (as well as all older versions of system software). Older T1Cs must be equipped with an upgrade kit before using them with the new version 3 system software. See pages 2-16, 3-55, and 8-2.

**OHVA Module:** For off-hook voice announce receive capability only, any Standard or Executive keypad may now be equipped with an optional OHVA Module. (The OHVA Module is essentially a PCDPM without RS-232 capability.) OHVA Modules do *not* require AC transformers. See pages 2-21, 3-65, and 8-3.

**Optional Modem Kit:** Inter-Tel now sells an optional modem kit (part no. 550.3026) that allows the installer to easily connect a modem to one of the RS-232-C ports on the CPU/MEM Card, CPU020/PCM-D Card, or Options Card(s). See pages 2-31 and 8-4.

#### Capacity Changes

**Account Codes:** There are now 256 Standard and 256 Forced account codes. See pages 6-27, 6-60, and 6-61.

**Call Routing Tables:** The system can have up to 15 call routing tables. The call routing tables share a total data space of 45K of memory. This allows at least 900 patterns per system. See pages 4-27 and 6-118.

**Extension Lists:** The number of extension lists allowed on the the system is determined by the number of entries in the lists. There can be a combined total of up to 2500 entries (station or trunk extensions) in all of the extension lists. See pages 4-11 and 6-72.

**Hunt Groups:** There can be up to 75 hunt groups. See pages 4-12 and 6-82.

**Keypad Keymaps:** There are now 15 keypad maps. Keymap #1 supports Executive and Standard keysets at default. Keymap #15 is programmed to support Basic Keysets. See pages 4-42, 6-35, and 6-47.

**System Forwarding Paths:** There can be up to 100 system forwarding paths. See pages 4-82, 6-39, 6-41, and 6-95.

**System Speed-Dial Numbers:** There are now 1000 system speed-dial numbers, using location codes 000-999. See pages 4-88, 4-106, 6-36, 6-50, 6-54, and 6-97.

## INDEX OF NEW FEATURES (continued)

### External Paging Port

Optional paging external equipment (amplifiers and paging speakers) may be installed three ways: using the external paging port on the CPU020/PCM-D Card, using internal speaker leads in the keyset, or using analog loop start trunk circuits. The external paging port can be assigned to any, all, or none of the paging zones, as desired. Because the external paging port has an intercom number (91000), stations can place an intercom call to the external paging port, instead of using the Page feature, to make a page over the external paging speakers. See pages 2-12, 3-89, 4-96, 6-75, 6-93, and 6-94.

### System OAI Third Party Call Control TSAPI Protocol (Level 2 OAI Feature)

There is a new premium feature called "System Open Architecture Interface (OAI) Third Party Call Control. This OAI is a system-level communications TSAPI protocol that allows command oriented tools to be developed for the AXXESS System, in addition to the call management tools allowed in System OAI Events (Level 1 OAI). See pages 4-50, 6-4 and 6-248.

### User Password

The new User Password allows access to the AXXESSORY Talk programming screens, System Speed Dial, and the "Save" function of Database Save/Restore. In local mode, it also allows access to the "Restore" function. In remote sessions, it allows access to the "Freeze/Unfreeze" and "Get CP Error" functions. See page 6-218.

### Dial Tone Start Type For E&M Trunks

If programmed for "Dial Tone" start type, the calling system will wait until it detects dial tone from the other system before sending any digits. See pages 4-23, 6-125, and 6-129.

### Hunt Group Enhancements

**Smart ACD/UCD Announcements:** An AXXESSORY Talk application announcement or overflow station message can be programmed to include the caller's queue position and/or estimated wait time. The estimated wait time is based on the "average connect time per call" multiplied by the number of calls ahead of the caller in the queue, divided by the number of available hunt group members (*avg. connect time per call x no. of waiting calls ÷ available members*). See pages 4-13, 4-15, 6-81, 6-86, and 6-158.

**Caller Departure from Hunt Group Announcement/Overflow Messages:** When an AXXESSORY Talk application is used as an announcement or overflow station, calls to the application automatically stop circulating through the hunt group if the caller selects a valid digit translation option (such as pressing a digit to select an extension from a Call Routing Announcement menu). See page 4-15.

### Secondary Extension Appearance Keys

This type of key allows a station user to have one-key access to calls ringing or holding at another station. If desired, a station can have several secondary extension keys, each associated with a different station. See pages 4-42, 4-46, 4-54, 6-36, 6-50, 6-54, and 6-101.

### Transient Call Indication On Call Answer

This station flag determines whether the station user will see a call indication display when answering a call by pressing a secondary extension key or by reverse transferring. If enabled, the display will tell if the call was ringing, recalling, transferred, or holding at the other station. In the default state, it is *enabled*. See pages 4-41, 4-78, and 6-32.

### Alternate Hold Timer

For users' convenience, the system has two Hold timers: *Hold* and *Hold - Alternate*. In the default state, the Alternate timer is set for a longer time period than the Hold timer. However, both timers are programmable. The "Alternate Hold Timer" station flag determines which timer each station will use. If the flag is disabled, the station uses the Hold timer. If it is enabled, the station uses the Alternate timer. In the default state, the flag is *disabled*. See pages 4-72, 6-30, and 6-103.

## INDEX OF NEW FEATURES (continued)

### Message Indications From Multiple Mailboxes

To signal that a message is waiting, a called keyset's MSG key flashes and the display shows the number of waiting messages. For messages from AXCESSORY Talk mailboxes, the display shows XX MESSAGES FROM MBOX XXXX to indicate the number of waiting messages in each mailbox that left a message. (This is especially helpful at stations with multiple mailboxes.) See page 4-62.

### AXCESSORY TALK ENHANCEMENTS

#### New IBM OS/2 Warp Operating System Software

The AXCESSORY Talk now runs under OS/2 instead of DOS. See pages 2-26 and 3-86.

#### Increase In Voice Ports

The AXCESSORY Talk now supports 32 ports. See pages 2-26, 6-164, and 6-244.

#### AXCESSORY Talk Applications

Up to 150 AXCESSORY Talk applications can be programmed. In the default database, extension numbers 2500-2649 are reserved for applications. See pages 5-2, 6-153, and 6-156.

#### Call Routing Announcement Digit Translation Nodes

The Call Routing Announcement application can use Digit Translation which allows the caller to press a single digit for access to a mailbox, a Fax Back function, or to a station or hunt group that has an associated mailbox or extension ID. Digit translation can be programmed for each digit 0-9, #, and \*, plus a Timeout that is used when the caller does not enter a digit. Each digit can lead to a "node" that has its own digit translation values. Unlike extension and mailbox destinations, a node does not move the call to a specific location. Instead, it offers additional digit translation options. A node can use any of the digit translation Actions, including transfers to other nodes. See pages 5-2, 5-6, 5-7, 6-152, 6-153, 6-157, 6-159, 6-162, 6-160, and 6-169 to 6-174.

#### Optional Fax Card For AXCESSORY Talk Fax On Demand Feature

The Fax On Demand feature provides fax services to callers. It is a specially programmed Call Routing Announcement application that uses digit translation to allow callers to select the documents they wish to have faxed to them. With Fax On Demand, callers can use a DTMF telephone to request one or more documents from the company's fax library. When the request is completed, the AXCESSORY Talk places a call to the caller's fax machine to deliver the requested documents. Documents are imported to the AXCESSORY Talk using the System Administrator's mailbox. See pages 2-26, 3-76, 3-84, 5-6, 5-9, 5-26, 6-160, and 8-3.

#### Fax Delivery Reports

The Fax Delivery Report includes information for up to 200 fax delivery attempts. Each entry contains the date and time of the delivery attempt, the date and time the fax was requested, the delivery status (Successful, Busy, Call Failed, or Transmission Error), the fax telephone number, and the list of requested documents. See pages 6-204 and 6-209.

#### Fax Document Usage Reports

This report lists all documents in the fax library by document number. Each entry shows the document number, description, how many times it was delivered to callers, the last request date, and the last revision date and time. (If the document has not been revised, it shows the import date and time.) See pages 6-204 and 6-209.

#### More Custom Audiotex Recordings

There can now be up to 500 custom recordings (now called audiotex recordings) for the AXCESSORY Talk applications. See pages 5-24, 6-195, and 6-197.

#### Custom Audiotex Recording Prompts Changed

The prompt now asks if you wish to *make* a custom recording or *select* a custom recording. See pages 5-24 and 5-25.

## INDEX OF NEW FEATURES (continued)

### **Custom Audiotex Recordings Can Include Special Characters**

When programming day and night greetings, the custom audiotex recordings can be linked together and/or the greeting can include S for a short pause, I for an intermediate pause, L for a long pause, Q for queue position, or T for time to wait. See page 6-158.

### **Automated Attendant Transfer Prompt**

When programming a mailbox or extension ID, you can determine whether the transfer prompt ("Please hold while your call is being transferred to...") plays after a caller has entered the extension number of the station associated with this extension ID. A system-wide flag controls whether the system automated attendant transfer prompt will play when calls are transferred to stations without mailboxes or extension IDs. See pages 6-167, 6-187, 6-193, 6-195, and 6-196.

### **Remote Messaging With Cascading Notification Tables**

Each mailbox can have up to 9 notification Cascade Tables that determine the numbers that will be called when a message is received. See pages 5-14, 5-21, 6-190, and 6-191.

### **Call For Each New Message Option**

This option determines whether the AXCESSORY Talk should attempt message notification *every* time a new message is received, or only when a message is received and no other messages are waiting to be picked up. See page 6-190.

### **Maximum Outgoing Calls Limit**

This is the number of outgoing message notification and fax delivery calls that can be made at one time by the Message Notification/Retrieval application. See page 6-201.

### **Recording Silence Detection Timer**

This timer determines how much silence is required to terminate a recording. If silence in the recording exceeds this timer, the recording will automatically end. See page 6-202.

### **User Interface Consistency**

The Subscriber and Non-Subscriber procedures for sending a message are now the same, to allow consistent user interface for both types of users. See pages 5-19 and 5-22.

Also, both intercom and outside callers will hear the recorded company greeting when calling the Voice Mail or Automated Attendant application's extension. (Previously, intercom callers did not hear that recording.) See pages 5-2, 5-4, 5-11, and 5-28.

### **Skip Through Subscriber Introductory Prompt And Error Messages**

Mailbox users can now skip error messages and the introductory prompt that plays when they first initialize their mailboxes by pressing pound (#). See page 5-17.

### **Each Mailbox Has An Operator Destination**

Each Subscriber mailbox can have its own designated dial-0 operator destination. When a caller presses 0 while listening to the mailbox personal greeting or recording instructions, or while recording a non-subscriber message, the mailbox's operator will be called. See pages 5-12, 5-22, 6-185, and 6-188.

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## FCC REGULATIONS

### IMPORTANT:

1. This equipment complies with Part 68 of FCC rules. On the side of the KSU is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. Customers connecting this equipment to the telephone network shall, before such connection is made, give notice to the telephone company of the particular line(s) to which such connection is to be made, and shall provide the telephone company with the following information:

- Complies with Part 68 of FCC rules
- FCC registration number: BE2USA-74572-MF-E (for MF-rated systems) or BE2USA-74573-KF-E (for KF-rated systems)
- USOC numbers of required interface jacks (see chart on next page)
- Service order code (SOC), as applicable (see chart on next page)
- Facility interface code (FIC) (see chart on next page)
- Ringer equivalence number (REN), as applicable (see chart on next page)

**NOTE:** The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

The telephone company should also be given notice upon final disconnection of this equipment from the particular line(s).

It is also the responsibility of the customer to provide the telephone company with registration numbers of any other devices which are configured for connection to the telephone network.

2. This equipment cannot be used on public coin service provided by the telephone company. Connection to party line service is subject to state tariffs. (Contact the state public utility commission, public

service commission, or corporation commission for information.)

3. If this equipment causes harm to the telephone network, the telephone company will notify the customer in advance that service may be temporarily discontinued. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, the customer will be advised of the right to file a complaint with the FCC, if necessary.
4. The telephone company may make changes in its facilities, equipment, operations, or procedures which may affect the operation of this equipment. If so, the customer shall be given advance notice so that any necessary modifications can be made in order to maintain uninterrupted service.
5. If trouble is experienced with this equipment, contact a local authorized factory service representative for repairs and/or warranty information. The customer, users, and unauthorized technicians should not repair, make adjustments to, or attempt to service this equipment in any way.

In the event of trouble with the telephone line(s), this equipment must be disconnected from the telephone line(s). If trouble ceases, the equipment must be repaired by an authorized factory service representative. If the trouble continues to occur with the equipment disconnected, the telephone company should be notified that they have a problem. If this is the case, repairs or adjustments made by the telephone company will be made at their expense.

6. Allowing this equipment to be operated in such a manner as to not provide proper answer supervision signaling is in violation of Part 68 of FCC rules. This equipment returns answer supervision signals to the public telephone network when: answered by the called station, answered by the attendant, routed to a recorded announcement that can be administered by the equipment user, and routed to a dial prompt. This equipment also returns answer supervision on all DID calls forwarded back to the public telephone network. Permissible exceptions are: a call is unanswered, busy tone is received, and reorder tone is received.
7. This equipment is capable of providing users access to interstate providers of operator services through the use of equal access codes. Failure to provide equal access capabilities is a violation of the Telephone Operator Consumer Services Improvement Act of 1990 and Part 68 of the FCC Rules.

| TYPE OF PORT INTERFACE    | FACILITY INTERFACE CODE (FIC) | RINGER EQUIVALENCE NO. (REN) | SERVICE ORDER CODE (SOC) | USOC JACK CONNECTOR |
|---------------------------|-------------------------------|------------------------------|--------------------------|---------------------|
| 2-Wire Loop               | 02LS2                         | 0.6B                         | —                        | RJ21X               |
| OPX Class C*              | 0L13C                         | —                            | 9.0F                     | RJ11C, RJ21X        |
| 2-Wire DID**              | 02RV2-T                       | 0.0B                         | AS.2                     | RJ11C, RJ21X        |
| D4 Superframe             | 04DU9-BN                      | —                            | 6.0Y                     | RJ48C               |
| D4 Superframe with B8ZS   | 04DU9-DN                      | —                            | 6.0Y                     | RJ48C               |
| Extended Superframe (ESF) | 04DU9-1KN                     | —                            | 6.0Y                     | RJ48C               |
| ESF with B8ZS             | 04DU9-1SN                     | —                            | 6.0Y                     | RJ48C               |

\* Also interfaces with Class A and B.

\*\* When using T1 facilities to provide DID service, do not use the DID facility interface code (FIC); instead, provide the telephone company with DID answer supervision code "AS.2" and the FIC for the requested T1 service.

**NOTICE:** *THE TELEPHONE INSTRUMENTS SPECIFICALLY DESIGNED FOR THIS SYSTEM HAVE HEARING-AID COMPATIBLE HANDSETS THAT ARE IN COMPLIANCE WITH SECTION 68.316 OF THE FCC RULES.*

**WARNING:** This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rule. Operation of this equipment in a residential area may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps are necessary to correct the interference. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off

and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate the KSU with respect to the receiver
- Check that the KSU and receiver are not on the same circuit; the KSU must be powered from an isolated, dedicated AC outlet

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the FCC helpful: "How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 004-000-00398-5.

If RFI problems persist, contact Inter-Tel Customer Support.

## SAFETY REGULATIONS

The Inter-Tel AXXESS System is Listed by Communication Certification Laboratory (CCL) as meeting the Product Safety Requirements of UL 1459, Standard for Telephone Equipment. CCL is approved by the Occupational Health and Safety Administration (OSHA) as a Nationally Recognized Testing Laboratory (NRTL). *Before installation, also check the local electrical codes for important information concerning the installation of telephone and electronic equipment.*

### IMPORTANT SAFETY INSTRUCTIONS

The following safety information is reprinted from UL 1459. When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

1. Read and understand all instructions.
2. Follow all warnings and instructions marked on the product.
3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this product near water (for example, in a wet basement).
5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
6. Slots and openings in the cabinet and the back or bottom are provided for ventilation, to protect it from overheating; these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should be operated only from the type of power source indicated in the manual. If you are not sure of the type of power source to your building, consult your dealer or local power company.
8. This product is equipped with a three-wire grounding type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding type plug.
9. Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
10. Do not use an extension cord with this product's AC power cord. The AC outlet for this product should not be used for any other electrical equipment.
11. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
12. To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified serviceman when some service or repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electric shock when the product is subsequently used.
13. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  - A. When the power supply cord or plug is damaged or frayed.
  - B. If liquid has been spilled into the product.
  - C. If the product has been exposed to rain or water.
  - D. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions because improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  - E. If the product has been dropped or the cabinet has been damaged.
  - F. If the product exhibits a distinct change in performance.
14. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
15. Do not use the telephone to report a gas leak in the vicinity of the leak.

### SAVE THESE INSTRUCTIONS



This exclamation point within an equilateral triangle (which, for example, is silk-screened on the front of the AXXESS KSU) is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product. *Be sure to read and follow all of the instructions included in this manual.*

## LIMITED WARRANTY

For a period of two (2) years from the date of shipment to Buyer, INTER-TEL warrants the Equipment (except for fuses and lamps) to be free from defects in material, workmanship, or both, and to comply with specifications for the Equipment, as set forth in the *Installation and Field Maintenance Manual*. Buyer's sole and exclusive remedy for breach of this Limited Warranty shall be to have the defective Equipment (or parts) repaired or replaced at INTER-TEL's option. Shipping costs incurred returning warranty work to INTER-TEL shall be paid for by the Buyer. ***This Limited Warranty extends only to the Buyer, not to any customer, user, or third party.*** This Limited Warranty does not apply to Equipment (or parts) damaged by improper handling, normal wear and tear, accidents, lightning damage, negligence, or improper use or maintenance, and does not apply to Equipment altered without authorization by INTER-TEL. This Limited Warranty does not extend to any claims, suits, damages, liabilities, costs, and expenses arising from any act, action, or inaction of Buyer. Although the Moss-Magnuson Act should not apply, in the event that it is held to apply by a court of competent jurisdiction, the implied warranty of fitness for a particular purpose shall extend for the two-year (2-year) period from the date that the Equipment was shipped to the Buyer.

***THIS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THIS LIMITED WARRANTY. IN NO EVENT SHALL INTER-TEL BE LIABLE FOR LOSS OF ANTICIPATED PROFITS, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF TIME OR OTHER LOSSES INCURRED BY BUYER IN CONNECTION WITH THE PURPOSE, POSSESSION, OPERATION, OR USE OF THE EQUIPMENT, SUCH CLAIMS BEING EXPRESSLY WAIVED BY THE INSTALLING COMPANY.***

For complete information on returning equipment, refer to the ***current*** Inter-Tel Customer Service Policy (document part no. 835.1065). This document includes specific information on the following subjects: warranty, procedures to follow when returning equipment, equipment damaged in shipment, insurance, repair policy, and advance replacement policy.

# OVERVIEW

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## 1. INTRODUCTION

**1.1** The Inter-Tel AXCESS System is a state-of-the-art, digital, voice/data, hybrid telephone system. As a hybrid system, it incorporates many of the user-friendly features of key systems with many of the expanded features and flexibility of private branch exchange (PBX) systems.

**1.2** The Inter-Tel AXCESS System is designed to meet the needs of growing businesses. In fact, the system's unique digital signal processing (DSP) structure allows it to be easily adapted and expanded as business communication needs change, especially with the new Caller ID, Automatic Number Identification (ANI), Dialed Number Identification Service (DNIS), and Integrated Services Digital Network (ISDN) features. The modular design makes the system easy to install and service. And, the programmable features provide an abundance of user-friendly applications to meet each customer's needs. Highlights of the system's design include:

- Advanced microprocessor technology.
- Modular, easily replaceable hardware with add-on capabilities for optional features.
- Flexible programming to customize many system and station features.

## 2. SYSTEM CAPACITIES

**2.1** The basic Key Service Unit (KSU) has eight circuit card slots, seven of which can be used for station, trunk, and optional resource cards. The expanded KSU (actually two basic KSUs connected together) has 16 circuit card slots, 14 of which can be used for station, trunk, and optional resource cards.

**2.2** *The actual number of stations and trunks available depends on the number and type of cards and station instruments installed.* For example, if all 14 cards in an expanded system are the new 16-Port Digital Keypad Cards (DKSC-16s), there can be a maximum of 224 keysets installed. Or, if only one of the cards is a DKSC-16 (at least one keypad-type card is required) and the other 13 are Loop Start Cards (LSCs) with attached Daughter Cards (LSC-Ds), the system maximum is 16 keysets and 104 trunks. The T1 Card provides even greater trunk capacity (limited only by the number of available voice channels in the system). In most circumstances, the

maximums listed below will never be reached due to the variety of cards and station instruments installed.

**2.3** A fully expanded Inter-Tel AXCESS System has the capacity for up to 256 non-blocking ports (also called voice channels or time slots). Of the 256 ports, up to 224 are available as non-blocking station/trunk ports. (See page 2-5 for more information.)

**2.4** In addition to certain resources provided by the system's main processing cards, the 256 ports can be used to equip a variety of trunks and station instruments, including:

- **Central Office (CO) Trunks** (Loop start trunks installed in increments of up to four or eight, depending on the number of Loop Start Cards [LSCs] and attached LSC Daughter Cards [LSC-Ds] installed in the KSU.)
- **T1 Trunks** (Loop start, ground start, DID, E&M, and/or OPX trunks installed in increments of up to 24, depending on the number of T1 Cards [T1Cs] installed in the KSU.)
- **Digital Keypads** (Basic, Standard, and Executive Digital Keypads [also called Digital Terminals] in increments of up to eight or 16, depending on the number of Digital Keypad Cards [DKSCs] and 16-Port Digital Keypad Cards [DKSC-16s] installed in the KSU.)

**NOTE:** At least one DKSC or DKSC-16 circuit must be installed with a display keypad to provide an attendant/administrator to program selected system data, act as the attendant for unsupervised CO recalls, receive system alarm messages, etc.

- **Single-Line Sets** (Various types of single-line sets in increments of up to eight, depending on the number of Single-Line Cards [SLCs] installed in the KSU. If desired, single-line sets can also be attached to keypad circuits that are equipped with Single-Line Adapters [SLAs].)
- **Direct Station Selection/Busy Lamp Field (DSS/BLF) Units** (Up to five keypads may be equipped with tandem DSS/BLF Units or up to ten keypads may be equipped with single DSS/BLF Units, or any combination of these up to ten total units. Since each unit is powered by its own AC transformer, the units do not require a DKSC or DKSC-16 circuit that is separate from the keypad.)

### 3. SOFTWARE CONFIGURATIONS

3.1 The Inter-Tel AXCESS System is available in a variety of software configurations. Both KF-rated and MF-rated systems are available. The KF-rated systems permit only one trunk to be accessed per trunk key, and users can access only one trunk in each of the trunk groups. (Note that KF-rated systems cannot use the automatic route selection feature.) The MF-rated systems permit one-key access to multiple outgoing trunks.

3.2 The part numbers for the available software configurations are as follows:

| SOFTWARE                                                 | PART NO. |
|----------------------------------------------------------|----------|
| Premium Software for CPU/MEM Card (13 ROMs and one PAL)  | 827.8346 |
| Premium Software for CPU020/PCM-D Card (one floppy disk) | 827.8347 |
| MF-Rated 15-Unit PAL                                     | 827.8350 |
| MF-Rated 25-Unit PAL                                     | 827.8351 |
| MF-Rated 50-Unit PAL                                     | 827.8352 |
| MF-Rated 75-Unit PAL                                     | 827.8353 |
| MF-Rated 100-Unit PAL                                    | 827.8354 |
| KF-Rated 15-Unit PAL                                     | 827.8356 |
| KF-Rated 25-Unit PAL                                     | 827.8357 |
| KF-Rated 50-Unit PAL                                     | 827.8358 |
| KF-Rated 75-Unit PAL                                     | 827.8359 |
| KF-Rated 100-Unit PAL                                    | 827.8360 |

3.3 The Premium system features have been assigned the values listed in the following table. If a customer purchases a 15-, 25-, 50-, or 75-unit PAL configuration,

the programmer can enable any of the desired Premium features until the units are used up. If a 100-unit PAL configuration is purchased, all the features listed in the following table are available. (Refer to page 6-4 for additional information.)

| FEATURE                                                   | UNIT VALUE |
|-----------------------------------------------------------|------------|
| Directories                                               | 2          |
| Automatic Route Selection (ARS)                           | 3          |
| System Forwarding                                         | 3          |
| Analog Voice Mail Hunt Groups                             | 5          |
| Uniform Call Dist. (UCD) Hunt Groups                      | 5          |
| Auto. Call Dist. (ACD) Hunt Groups                        | 5          |
| Advanced CO Interfaces                                    | 7          |
| Desktop Interface                                         | 10         |
| System Open Architecture Interface (OAI) Events – Level 1 | 30         |
| System OAI Third Party Call Control – Level 2 (TSAPI)     | 30         |

3.4 Customers can change from KF to MF (or vice versa), or upgrade from one unit level to another, simply by purchasing and installing the appropriate PAL.

**NOTE:** According to FCC regulations, if a customer wishes to change from an existing KF-rated system to an MF-rated system (or vice versa), the installing company must advise the customer "to notify the telephone company of the change if they want the [KF or MF] rate and that they may have to certify in writing to the telephone company that the equipment is configured as a key system and pay appropriate service order charges."

## 4. HARDWARE SUMMARY

4.1 The SPECIFICATIONS section of this manual explains environmental requirements of the system, describes the hardware, and gives pre-installation information. The hardware descriptions include: KSU, power supply unit, circuit cards, station instruments, and additional equipment needed for the optional features.

## 5. INSTALLATION, PROGRAMMING, AND MAINTENANCE SUMMARY

5.1 The modular design and self-diagnostic capabilities of the system facilitate installation and repair with minimal down-time. Strict quality control standards for manufacturing and thorough field testing provide the system with the reliability demanded by today's high-technology market.

5.2 The INSTALLATION section contains instructions for assembling the main distribution frame (MDF) and for installing the KSU, power supply, circuit cards, station instruments, and other optional hardware.

5.3 The PROGRAMMING section describes the procedures for programming the system features. After the system is installed, the flexible software allows the database to be customized to meet the customer's needs. An external, customer-provided, personal computer (PC) is used to perform this task.

5.4 The TROUBLESHOOTING section gives instructions for correcting system problems and replacing defective parts. Part numbers and a recommended inventory of spare parts are listed in the REPLACE-  
MENT PARTS section.

## 6. FEATURES SUMMARY

6.1 System, keyset, single-line set, DSS/BLF Unit, and administrator features are listed on the following pages. *Those features marked with an asterisk (\*) require additional equipment.* For complete descriptions and operating instructions, refer to the SPECIFICATIONS and FEATURES sections of this manual. (See also the index of new features starting on page v.)

### A. SYSTEM FEATURES

#### Hardware and General System Features

- Wide variety of software configurations
- System open architecture interface (OAI) for communication with an external computer (e.g., for specialized ACD applications)
- Telephony Services Application Programming Interface (TSAPI) for third-party call control
- Desktop interface for connecting an AXCESSORY Connect
- Flexible station instrument configuration and numbering plan
- RS-232-C connectors on the Central Processing Unit (CPU) Card, the CPU Memory (MEM) Card, the Central Processing Unit 020 (CPU020) Card, and the Options Card (OPC) for connecting optional SMDR/error message output devices, an AXCESSORY Talk PC, or an external PC for programming

**NOTE:** The system can have a maximum of eight RS-232-C ports used for system services. This includes the RS-232-C ports on the CPU/MEM Card, CPU020/PCM-D Card, Options Card(s), and PC Data Port Modules. If an AXCESSORY Talk PC is installed, at least one of the eight RS-232-C ports must be dedicated to the PC.

- Database battery back-up with voltage test points
- Adjustable baud rates for on-site programming and the optional SMDR/error message output devices (300, 1200, 2400, 4800, 9600, 19200, and 38400 baud, depending on the selected port)

**NOTE:** For software downloads only, the CPU020/PCM-D Card is also capable of using 57600 baud. See page 3-60 for more information.

- Variable system timers
- \* Optional multi-port AXCESSORY Talk PC and applications software for integrated voice processing (voice mail, automated attendant, hunt group announcement and overflow, optional Fax-On-Demand, SMDR storage, etc.)

- \* Optional modem kit
- \* Optional PC wall-mount shelf (accommodates most PC models)
- \* Optional station message detail recording (SMDR) and/or error message recording output device(s)
- \* Power failure transfer relay on the CPU/MEM Card or the CPU020/PCM-D Card
- \* Night transfer relay on the Options Card
- \* Music port on the CPU/MEM Card or the CPU020/PCM-D Card for connecting an optional external music source
- \* Industry-standard message waiting capability on SLCs (requires optional Lamp Option Card [LOC])
- \* Optional off-premises extensions (OPXs) with variable ring cadence
- \* Optional OPX repeaters
- \* Optional facsimile machine
- \* Optional battery back-up
- \* Optional external paging equipment
- \* Optional playback devices for use with the automated attendant and hunt group features

#### System Organization and Record Keeping Features

- Eleven paging zones (including the external paging port on the new CPU020/PCM-D Card)
- \* Station message detail recording (SMDR)
- \* Error message recording
- \* Programmable reports for toll restriction, automatic route selection (ARS), station data, etc.
- Call cost accounting (estimated)
- Forced, standard, and optional account codes
- Flexible attendant arrangements
- Hunt groups with individually-programmed timers
- \* Uniform call distribution (UCD) (may have optional overflow, announcement, and recall destination stations with playback devices and/or supervisor with call monitoring ability)
- \* Automatic call distribution (ACD)
- \* Analog voice mail hunt groups
- System alarm display and reporting

#### Trunk Features

- \* Caller ID
- \* Automatic Number Identification (ANI)
- \* Dialed Number Identification Service (DNIS)

- Trunk groups (restricted to accessing a single trunk on KF-rated systems)
- Automatic incoming trunk answering
- One-key outgoing call access
- Dual-tone multi-frequency (DTMF) or dial-pulse signaling
- Loop start compatibility using Loop Start Cards
- Ground start compatibility using T1 Cards
- Hybrid balancing (normal or short) for optimal CO trunk performance
- Outgoing-access, allowed-answer, and ring-in assignments on a station-by-station basis (day lists and night lists)
- Day and night modes of operation
- Day and night toll restriction on a station-by-station and trunk group-by-trunk group basis (including provisions for three area/office code restriction user groups)
- Absorbed-digit dialing
- Automatic route selection (ARS) — not available in KF-rated software configurations
- Direct inward system access (DISA)
- \* Automated attendant (through the AXXESSORY Talk PC)
- Basic T1 trunk emulation
- Basic E&M networking (tie trunks)
- \* Direct inward dialing (DID) trunks
- Flexible DID ring-in assignments
- Programmable wink, immediate, or delay start options for DID and E&M trunks

#### General Station Features

- Programmable feature codes for easy station operation
- Call privacy
- Station-to-station intercom calls
- \* Off-hook voice announce (OHVA) calls (the ability to place or receive OHVA calls depends on the type of station instrument used, and may be enabled/disabled on a station-by-station basis)
- Inter-station messages and message cancel
- Silent messaging (leaves a message at a station without placing an actual call)
- Ring intercom always

- Automatic camp on to busy stations, trunks, and ARS (ability to camp on to ARS may be disabled on a station-by-station basis)
- Busy trunk/station callback (queue)
- Individual hold
- Hold recall
- Call waiting
- Call transfer to extension numbers and outside telephone numbers
- Transfer to hold
- Transfer recall
- Reverse transfer and group call pick-up
- Conference calls — 12 conference circuits (unamplified) with up to four parties per conference (if desired, more conference circuits may be enabled using an Options Card)
- System forwarding (routes calls based on the type of call and the status of the intended station)
- Call forward to extension numbers and hunt group pilot numbers
- Call forward to outside telephone numbers
- System speed dialing (including non-display numbers) — can be programmed to override toll restriction
- Station speed dialing
- Redial (last number dialed or last number saved)
- Do-not-disturb with customized messages (the ability to place a station in do-not-disturb may be enabled/disabled on a station-by-station basis)
- Cancel miscellaneous operations
- Hookflash
- Hunt group remove/replace
- House phone

#### B. KEYSSET FEATURES

**NOTE:** For a complete listing of all the optional equipment that may be installed on each keyset, refer to pages 2-20 and 2-21 in SPECIFICATIONS.

- Basic Digital Keysets (non-display only), Standard Digital Keysets (display and non-display), and Executive Digital Keysets (display only) all allow the user to individually control voice and tone volume levels for intercom calls, outside calls, background music, etc.
- \* Liquid crystal display (LCD) (optional on Standard keysets) for viewing: numbers dialed; speed-dial numbers; inter-station, do-not-disturb, and reminder

messages; date/time; keyset identification; station programming; user prompts; etc.

- \* Optional Off-Hook Voice Announce (OHVA) Module on Standard and Executive keysets for off-hook voice announce receive capability
- \* Optional Personal Computer Data Port Module (PCDPM) on Standard and Executive keysets for off-hook voice announce receive capability and to allow a DSS/BLF Unit and/or an optional Modem Data Port Module to be installed (may also be used to connect an output device or a programming PC)
- \* Optional Modem Data Port Module (MDPM) on Standard and Executive keysets for installing a modem-equipped data device (for simultaneous voice/data communication) or a single-line set — requires a PCDPM
  - 12-key pushbutton keypad
  - “Hot” keypad — allows dialing of feature codes, extension numbers, and trunk access codes without pressing the SPCL key or lifting the handset
  - Up to 15 key maps for determining the exact layout and function of the keys
  - Feature keys for one-key access to feature codes (some of the keys may be designated as user programmable)
  - Speed-dial (SD) keys with light-emitting diode (LED) indicators
  - Call appearance keys with LED indicators (for incoming call indication/access)
  - Secondary extension appearance keys with LED indicators (show call status indications for the designated “primary” station)
  - Individual trunk keys with LED indicators (for incoming and outgoing call indication/access)
  - Trunk group keys with LED indicators (for outgoing call access and trunk group status)
  - Speakerphone (allows handsfree operation on outside calls and intercom calls)
  - Speakerphone on/off
  - Slide-out directory card
  - User-programmable ring tone
  - Self-test function
  - Hearing aid-compatible (HAC) handset
  - Reversible baseplate for wall mounting
  - \* Optional headset
  - \* Background music
  - Microphone mute
  - Handsfree answer enable/disable

- On-hook dialing/monitoring
- System hold
- Station call monitoring (hunt group supervisors only)
- Do-not-disturb override (the ability to override do-not-disturb may be enabled/disabled on a station-by-station basis)
- Page remove/replace
- Intercom (extension number) and outside (system speed-dial number) directories
- Feature directory to locate and/or dial feature codes
- Automatic intercom and/or outside call access

#### C. SINGLE-LINE FEATURES

- Audio message waiting indication capability
- Programmable hookflash recognition
- Programmable ring cadence and gain levels for OPX applications

#### D. DIRECT STATION SELECTION/BUSY LAMP FIELD (DSS/BLF) UNIT FEATURES

- \* Up to ten total units per system (e.g., five keysets equipped with tandem units)
- Each single unit has 60 keys with LED indicators for one-key access to up to 60 extension numbers/features (the LEDs show the status of the assigned stations, hunt groups, or other resources)
- Up to three key maps for determining the layout and numbers accessed by the keys

#### E. ATTENDANT FEATURES

- Accessed by dialing 0 at the stations they serve
- Central operator for incoming calls
- Message center
- Recall destination for unanswered calls
- \* Immediate off-hook voice announce (OHVA) calls (requires special programming and a DSS/BLF Unit or a keyset with assigned DSS/BLF keys)

#### F. ADMINISTRATOR FEATURES

- System speed-dial number/name programming
- System alarm reporting/clearing
- Enable/disable system night mode
- Set date and time of day
- Station feature programming (user name and attendant)
- Freeze and unfreeze system database history

G. MAXIMUM CAPACITIES

6.2 Some of the features have maximum capacities that are dependent on the availability of system channels and/or circuits. The features with such capacities are listed in the following table. The numbers listed under the heading labeled "basic" are for basic (8-slot) systems, while the numbers listed under the heading labeled "exp." are for expanded (16-slot) systems. For a list of AXCESSORY Talk maximum capacities, see page 2-27.

| FEATURE                                          | CAPACITY         |                  |
|--------------------------------------------------|------------------|------------------|
|                                                  | BASIC            | EXP.             |
| <b>Non-blocking ports (voice channels)</b>       | 128              | 256              |
| Station/Trunk                                    | 112              | 224              |
| AXCESSORY Talk PC                                |                  |                  |
| - via CPU-type Card                              | 8                | 8                |
| - via Options Card                               | 24               | 24               |
| <b>Station instruments</b>                       | 128 <sup>a</sup> | 256 <sup>a</sup> |
| Keysets                                          | 112              | 224              |
| Single-Line Sets                                 | 48               | 104              |
| <b>DSS/BLF Units</b>                             |                  |                  |
| DSS/BLF units per system                         | 10               | 10               |
| Units per keyset                                 | 2                | 2                |
| Extension numbers per unit                       | 60               | 60               |
| <b>Trunks</b>                                    | 120 <sup>a</sup> | 248 <sup>a</sup> |
| Trunk groups                                     | 48               | 104              |
| Trunks per group                                 | 120              | 248              |
| <b>System RS-232-C ports</b>                     | 8                | 8                |
| <b>Paging zones</b>                              | 11               | 11               |
| <b>Conference circuits available via the CPU</b> | 12 <sup>b</sup>  | 12 <sup>b</sup>  |
| Parties per conference                           | 4                | 4                |
| Simultaneous 4-party conferences                 | 3 <sup>b</sup>   | 3 <sup>b</sup>   |
| <b>System speed dialing</b>                      |                  |                  |
| Numbers per system                               | 1000             | 1000             |
| Digits per number                                | 32               | 32               |
| <b>Station speed dialing</b>                     |                  |                  |
| Numbers per station (CO &/or IC)                 | 10               | 10               |
| Digits per entry (CO &/or IC)                    | 16               | 16               |
| <b>Redial numbers per station</b>                | 1                | 1                |
| Digits per number                                | 32               | 32               |
| <b>ARS</b>                                       |                  |                  |
| Route groups                                     | 16               | 16               |
| Trunk groups per route group                     | 48               | 104              |
| Dial rules (16 digits each)                      |                  |                  |
| - total                                          | 16               | 16               |
| - programmable                                   | 12               | 12               |
| Callback requests per system                     | 128 <sup>c</sup> | 256 <sup>c</sup> |
| Camp on requests per system                      | 128 <sup>c</sup> | 256 <sup>c</sup> |
| <b>Callback (queue) requests per station</b>     | 1                | 1                |
| <b>Camp on by a station</b>                      | 1                | 1                |
| <b>Stations camped on to a station</b>           | 127 <sup>c</sup> | 255 <sup>c</sup> |

| FEATURE                                      | CAPACITY          |                   |
|----------------------------------------------|-------------------|-------------------|
|                                              | BASIC             | EXP.              |
| <b>Stations camped on to a trunk group</b>   | 128 <sup>c</sup>  | 256 <sup>c</sup>  |
| <b>Inter-station messages per system</b>     | 128               | 256               |
| <b>Programmable reminder messages</b>        | 20                | 20                |
| Message requests per system                  | 128               | 256               |
| <b>Do-not-disturb messages</b>               | 20                | 20                |
| Messages per system                          | 128               | 256               |
| <b>System forwarding paths</b>               | 100               | 100               |
| Paths per station                            | 3                 | 3                 |
| Points per path                              | 4                 | 4                 |
| <b>Toll restriction user groups</b>          | 3                 | 3                 |
| Area code tables per user group              | 1                 | 1                 |
| Area codes per table                         | 800               | 800               |
| Extended area codes per user group           | 4                 | 4                 |
| Office code tables per extended area code    | 1                 | 1                 |
| Office codes per table                       | 800               | 800               |
| <b>Station class of service designations</b> | 16                | 16                |
| <b>Absorbed digit patterns per system</b>    | 50                | 50                |
| Digits per pattern                           | 32                | 32                |
| <b>Account codes</b>                         |                   |                   |
| Forced                                       | 256               | 256               |
| Standard                                     | 256               | 256               |
| Digits per code                              | 3-12              | 3-12              |
| <b>Hunt groups</b>                           |                   |                   |
| Per system                                   | 75                | 75                |
| Stations per hunt group                      | 1250 <sup>d</sup> | 2500 <sup>d</sup> |
| Announce. stations per hunt group            | 1                 | 1                 |
| Overflow stations per hunt group             | 1                 | 1                 |
| Recall destinations per hunt group           | 1                 | 1                 |
| <b>Map group assignments</b>                 |                   |                   |
| Keypad                                       | 15                | 15                |
| DSS/BLF                                      | 3                 | 3                 |
| <b>Extension lists per system</b>            | 50                | 50                |
| Station or trunk numbers per list            | 1250 <sup>d</sup> | 2500 <sup>d</sup> |

- <sup>a</sup> The maximum number of stations and trunks that can be installed is limited by the number of voice channels and/or system memory resources available. For systems using more than 112 ports, Inter-Tel recommends using the faster CPU020/PCM-D Card.
- <sup>b</sup> Additional conferencing circuits can be added by installing one or more Options Cards. Each Options Card can have up to 4 DSPs, and each DSP can be programmed to provide up to 12 or 16 additional conference circuits. Conferencing is not amplified.
- <sup>c</sup> Each station can have only one camp on and one queue request registered at a time.
- <sup>d</sup> Limited only by the combined total of the extension number lists, which are used to assign to hunt groups, UCD groups, page zones, outgoing access, allowed answer, ring-in, and trunk groups. The combined maximum of all these lists is 1250 entries for basic (8-slot) systems and 2500 entries for expanded (16-slot) systems.

## SPECIFICATIONS

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## 1. INTRODUCTION

1.1 This section of the manual describes the following Inter-Tel AXCESS System hardware:

- Cabling and Main Distribution Frame (MDF)
- Key Service Unit (KSU)
- Power Supply Unit
- Circuit Cards
- Station Instruments
- Additional System Equipment

1.2 The trunks and stations are controlled by the circuit cards in the KSU. The basic KSU has seven slots available for station, trunk, and optional resource cards, while the expanded KSU has 14 slots.

1.3 *The maximum number of stations and trunks that can be installed depends on the number and type of cards and station instruments used.* For example, there could be as many as 224 keysets installed (using 14 of the new 16-Port Digital Keypad Cards). Or, there could be as many as 104 single-line sets (using 13 Single-Line Cards.) Or, there could be as many as 104 trunks installed (using 13 Loop Start Cards with attached Daughter Cards). Of course, the T1 Card provides even greater trunk capacity (limited only by the number of available voice channels in the system).

1.4 A variety of station instruments can be used on the Inter-Tel AXCESS System, including:

- Basic Digital Keysets (also referred to as Basic Digital Terminals) — non-display only
- Standard Digital Keysets (also referred to as Standard Digital Terminals) — display and non-display
- Executive Digital Keysets (also referred to as Executive Digital Terminals) — display only
- Digital Direct Station Selection/Busy Lamp Field (DSS/BLF) Units — single or tandem
- Industry-standard single-line, dual-tone multi-frequency (DTMF) sets

1.5 A wide variety of optional system equipment can also be installed, including:

- Multi-port AXCESSORY Talk PC and applications software for integrated voice processing (voice mail, automated attendant, hunt group announcement and overflow, optional Fax On Demand, SMDR storage, etc.); refer to page 2-32.
- Inside Track's station message detail accounting (SMDA) software and, if the AXCESSORY Talk PC is not used, optional PollCat (Pollable Call Accounting Terminal) call record buffer box; refer to the manual included with the Inside Track software.
- External paging speaker equipment; refer to pages 2-5 and 3-89.
- External music source; refer to pages 2-10 and 3-88.
- Power failure transfer equipment; refer to pages 2-10 and 2-31.
- Night transfer equipment; refer to pages 2-19 and 2-32.
- Off-premises extensions (OPXs) and OPX repeaters; refer to pages 2-24 and 3-27.
- Playback devices (if the AXCESSORY Talk PC is not used); see pages 2-25 and 3-73.
- Output device(s) for the station message detail recording (SMDR) and error message recording features; refer to pages 2-28 and 3-88.
- System battery back-up (uninterruptable power supply or standby power supply); refer to page 2-32.
- Modem kit; refer to page 2-31.
- Facsimile machine; refer to page 2-32.
- PC wall-mount shelf (accommodates most PC models); refer to page 8-3 in REPLACEMENT PARTS.

## 2. CABLING AND THE MAIN DISTRIBUTION FRAME (MDF)

2.1 Connections between the trunks, station instruments, external equipment, and the station and trunk circuit cards are made at the MDF. The MDF is made up of industry-standard, 66M1-50-type terminal blocks and, if using T1 Cards, eight-conductor (RJ48C) modular jack assemblies. Bridging clips are used on all terminal blocks to complete the connections. As many as 14 blocks may be needed, including any combination of the following:

- 1-13 blocks for CO trunk terminations and Loop Start Card (LSC) terminations.
- 1-14 blocks for station cabling terminations and Digital Keypad Card (DKSC), 16-Port Digital Keypad Card (DKSC-16), or Single-Line Card (SLC) terminations.

2.2 The MDF requires at least a 4 × 6-foot (1.2 × 1.8-meter), 3/4-inch plywood backboard. (Depending on the number of stations and trunks installed, a larger backboard may be necessary.) This will allow room to mount the terminal blocks, Single-Line Adapters (SLAs), modular jack assemblies, AC transformers, and any optional peripheral equipment.

### A. STATION CONNECTIONS

2.3 For each keyset, single-line set, and playback device, twisted single-pair (24 AWG, level-1) cable is run from the station location to the MDF. (For a complete list of station cabling requirements, refer to page 3-7.) All station cables are terminated on blocks at the MDF and on four-conductor modular jack assemblies at the station locations.

**NOTE:** If desired, two- or three-pair twisted cable and four- or six-conductor modular jacks may be used for all station connections. This allows the various types of station instruments to be easily interchanged, if necessary. (If three-pair cable is used, extra terminal blocks and the use of cross-connect wiring techniques are required.)

2.4 Industry-standard, 25-pair telephone cable is used to connect the station blocks to their corresponding station cards. Female 50-pin amphenol-type connectors on the cables attach to the male connectors on the station cards in the KSU.

2.5 To help reduce electromagnetic interference (EMI) and radio frequency interference (RFI), it may be necessary to equip the station cables with ferrite beads. (See INSTALLATION, page 3-12.) Two ferrite "split" beads (two half beads) are installed on each 25-pair

cable just below the amphenol-type connector. The part number for a single split bead is 808.1195.

### B. TRUNK CONNECTIONS

2.6 The CO trunks are terminated on telephone company RJ-type blocks, as required by FCC regulations. Cross-connect cable is used to connect the RJ-type blocks to the CO terminal blocks on the MDF. The trunks are then connected to the Loop Start Cards (LSCs) using industry-standard, 25-pair cable. Female 50-pin amphenol-type connectors on the cables attach to the male connectors on the cards.

2.7 The DID trunks are terminated on telephone company RJ-type modular jacks (or on RJ-type blocks that are then cross-connected to modular jack assemblies), as required by FCC regulations. Two-pair, non-reversing, mod-to-mod line cord is used to connect each DID trunk to the appropriate jack on the corresponding SLA.

2.8 To help reduce electromagnetic interference (EMI) and radio frequency interference (RFI), it may be necessary to equip the trunk cables with ferrite beads. (See INSTALLATION, page 3-12.) Two ferrite "split" beads (two half beads) are installed on each 25-pair cable just below the amphenol-type connector.

2.9 T1 spans are terminated on telephone company RJ48C modular jacks (or on RJ-type blocks that are then cross-connected to modular jack assemblies), as required by FCC regulations. Four-pair, non-reversing, mod-to-mod line cord is used to connect each T1 span directly to the T1 jack on the corresponding T1 Card. (Or, to use the DB15 connector instead, see page 3-19.)

2.10 It is recommended that gas discharge tubes with silicon avalanche suppressors be installed on all non-T1 trunks for lightning protection. (For T1 spans, the CSU itself provides the lightning protection.) Also, in areas with frequent occurrences of lightning, it is recommended that the cable between the telephone company termination and the gas discharge tubes be at least 75 feet long (the cable may be coiled up if desired).

2.11 The Inter-Tel AXCESS System has the following trunk characteristics:

#### CHARACTERISTICS

|                       |                    |
|-----------------------|--------------------|
| Loss from:            |                    |
| CO to keyset          | 0dB (@1kHz, 0 ft.) |
| CO to single-line set | 0dB (@1kHz, 0 ft.) |
| CO to CO              | 0dB (@1kHz, 0 ft.) |
| Ringer equivalence    | 0.6B               |
| Ring voltage          | 40VRMS minimum     |
| Ring frequency        | 17-63Hz            |
| Loop current          | 18mA minimum       |

#### PROTECTION

|             |                |
|-------------|----------------|
| Tip-to-ring | 400V transient |
|-------------|----------------|

### 3. KEY SERVICE UNIT (KSU)

#### A. KSU DESCRIPTION

**3.1** The basic Inter-Tel AXXESS KSU houses the system power supply unit, an eight-slot circuit cardfile assembly, and the circuit cards, including: Central Processing Unit (CPU) Card with attached Memory (MEM) Card *or* Central Processing Unit 020 (CPU020) Card with attached Pulse Code Modulation Dual (PCM-D) Card, Loop Start Cards (LSCs), LSC Daughter Cards (LSC-Ds), T1 Cards (T1Cs), Digital Keypad Cards (DKSCs), 16-Port Digital Keypad Cards (DKSC-16s), Single-Line Cards (SLCs), and Options Cards (OPCs).

**3.2** For increased port capacity, two basic KSUs may be connected together to form one expanded KSU. The second KSU has its own power supply unit and eight-slot circuit cardfile assembly, but does not require its own CPU/MEM or CPU020/PCM-D Card. The two KSUs are connected by a single ribbon cable.

#### KSU Redesigned

**3.3** The original KSU, backplane, and power supply unit have been redesigned. The new-style KSU has an extra cardfile slot that allows one of the new-style power supply units to be attached directly to the backplane. (With the original KSU, the power supply unit was installed on top and was connected to the backplane through an interface cable.) As a result of the redesign, the new-style KSU is shorter and wider than the original KSU.

**3.4** The original power supply unit (part no. 550.0102) and the new-style power supply units (part nos. 550.0104 and 550.0110) are not interchangeable; the appropriate unit must be used with appropriate KSU. (Refer to page 2-7 for more information on the new power supply design.)

#### Original KSU

**3.5** For an illustration of the original KSU, see Figure 2-2 on page 2-33. For installation instructions, see page 3-29.

**3.6** The *approximate* dimensions of a basic KSU are:

|          |                      |
|----------|----------------------|
| Height   | 15.0 in. (38.1 cm.)  |
| Width    | 13.0 in. (33.0 cm.)  |
| Depth    | 12.5 in. (31.8 cm.)  |
| Weight   |                      |
| - Empty  | 21.0 lbs. (9.45 kg.) |
| - Loaded | 30.0 lbs. (13.5 kg.) |

**3.7** The *approximate* dimensions of a fully-expanded KSU are:

|          |                      |
|----------|----------------------|
| Height   | 15.0 in. (38.1 cm.)  |
| Width    | 26.0 in. (66.0 cm.)  |
| Depth    | 12.5 in. (31.8 cm.)  |
| Weight   |                      |
| - Empty  | 42.0 lbs. (18.9 kg.) |
| - Loaded | 58.5 lbs. (26.3 kg.) |

#### New-Style KSU

**3.8** For an illustration of the new-style KSU, see Figure 2-3 on page 2-34. For installation instructions, see page 3-36.

**3.9** The *approximate* dimensions of a basic KSU are:

|          |                      |
|----------|----------------------|
| Height   | 10.5 in. (26.7 cm.)  |
| Width    | 16.5 in. (41.9 cm.)  |
| Depth    | 11.5 in. (29.2 cm.)  |
| Weight   |                      |
| - Empty  | 16.0 lbs. (7.3 kg.)  |
| - Loaded | 30.0 lbs. (13.5 kg.) |

**3.10** The *approximate* dimensions of a fully-expanded KSU are:

|          |                      |
|----------|----------------------|
| Height   | 15.0 in. (38.1 cm.)  |
| Width    | 26.0 in. (66.0 cm.)  |
| Depth    | 12.5 in. (31.8 cm.)  |
| Weight   |                      |
| - Empty  | 32.0 lbs. (14.5 kg.) |
| - Loaded | 58.5 lbs. (26.3 kg.) |

**B. FUNCTIONAL DESCRIPTION**

**3.11** Together, the circuit cards in the KSU perform the switching activities for the system; detect incoming calls; process data-controlled features; control the interaction of station instruments, trunks, intercom calls, and AXXESSORY Talk applications; etc.

**3.12** The system is a microprocessor-controlled, pulse code modulation (PCM), time-division multiplex (TDM) system. If using the original CPU/MEM Card, memory includes 3 megabytes (MB) read-only memory (ROM) and 3MB random access memory (RAM). If using the new CPU020/PCM-D Card, memory includes 4MB flash memory and 6MB RAM. In addition, each keyset contains a microprocessor that communicates via the Digital Keyset Card with the microprocessor on the CPU/MEM or CPU020/PCM-D Card.

**Voice Channel Allocations**

**3.13** The circuitry and software in the basic KSU combine to produce an "integrated switching matrix" of 128 time slots (4 PCM highways [buses] × 32 time slots per highway). The expanded KSU has 256 time slots (8 PCM highways [buses] × 32 time slots per highway). In general, the circuit cards in slots one and two are assigned to highway one, the cards in slots three and four are assigned to highway two, and so on. Therefore, there are at least 16 time slots available for each card installed in the KSU.

**3.14** For the most part, having 16 time slots available per card presents no problem. For example, each Digital Keyset Card (DKSC), whether equipped with any Single-Line Adapters or not, requires 16 time slots. Each Loop Start Card (LSC) requires four time slots. (If equipped with Daughter Cards, LSCs require eight time slots.) And, each single-Line Card (SLC) requires eight time slots.

**3.15** Some cards could require more than 16 time slots. For example, each Options Card (OPC) could possibly need more than 16 time slots, depending on the number of Digital Signal Processors (DSPs) installed on the card. And, each T1 Card (T1C) could require up to 24 time slots and each 16-Port Digital Keyset Card (DKSC-16) could require up to 32 time slots.

**3.16** To reduce the chance of T1C, OPC, and DKSC-16 circuit blocking, the time slots for these two types of cards are allocated "dynamically" (i.e., they are allocated as needed). In addition, since T1Cs, OPCs, and DKSC-16s can use unused time slots from any highway in its respective KSU, the chance of any optional DSP resource or T1/DKSC-16 circuit blocking is extremely remote and can be prevented (see the following

note). Therefore, the Inter-Tel AXXESS is considered to be a virtually non-blocking system.

**NOTE:** If multiple OPCs, T1Cs, and/or DKSC-16s are installed in an expanded KSU, resource blocking can be prevented by splitting the OPCs/T1Cs/DKSC-16s between the two cardfiles and/or installing them in the same cardfile as the LSCs.

**3.17** The following chart shows the number of voice channels that are used by the various cards. Note that dynamically allocated voice channels are not used until they are needed.

| CARD      | MAX. VOICE CHANNELS USED                                    |
|-----------|-------------------------------------------------------------|
| T1C       | 24 — Dynamically Allocated                                  |
| DKSC-16   | 32 — Dynamically Allocated                                  |
| DKSC      | 16 — Permanently Allocated                                  |
| SLC       | 8 — Permanently Allocated                                   |
| LSC       | 4 — Permanently Allocated                                   |
| LSC+LSC-D | 8 — Permanently Allocated                                   |
| OPC       | Determined by Card Configuration<br>— Dynamically Allocated |

**3.18** With the exception of shared speakerphone devices, each DSP resource (e.g., conference circuit, DTMF receiver, etc.) requires one time slot per resource. Each shared speakerphone device (for Basic and Standard keysets) requires two time slots. To aid in calculating the number of time slots required/available, the System Configuration programming window displays time slot allocation information (see page 6-233).

**DTMF Receiver Allocations**

**3.19** It is possible to have more call traffic than the two standard system DTMF receivers can process efficiently. If DTMF receiver circuits are often busy (e.g., single-line set users are experiencing a delay in receiving dial tone), it may be necessary to install an Options Card and equip it with optional DSPs programmed as DTMF receivers. (See page 2-19 for more information on optional DSPs.)

**NOTE:** DTMF receivers are used when single-line sets are dialing and when features such as E&M, DISA, automated attendant, CO call continuation, etc. are used. They are in use only while the dialed number is being processed, not for the duration of the call.

**External Paging Ports**

**3.20** As many external paging ports as desired can be used for connecting external paging speaker equipment. Each external paging port can be connected to an avail-

able LSC circuit or to the speaker wires on a keyset. In addition, the new CPU020/PCM-D Card has its own dedicated external paging port (see page 2-12 for more information).

**NOTE:** When connecting external paging equipment to an LSC circuit, use a paging amplifier that provides talk battery. When connecting external paging equipment to a keyset or to the CPU020/PCM-D Card, use a paging amplifier that *DOES NOT* provide talk battery.

**CAUTION**

Using a paging amplifier with talk battery on a keyset may damage the keyset or the Digital Keyset Card.

**Music Source**

**3.21** A music source can be connected to the CPU/MEM or CPU020/PCM-D Card to provide keyset background music and outside caller music-on-hold. Internal users also hear music when placed on hold or when camped on.

**Card Slot Arrangement**

**3.22** The circuit card slot on the far right (8th slot) of the basic KSU is reserved for the CPU/MEM Card or the CPU020/PCM-D Card. Other than that, any station, trunk, or optional resource card may be placed in any of the remaining seven slots. If a second KSU is attached, the CPU/MEM or CPU020/PCM-D Card in the first KSU also controls the second KSU (i.e., slot number 16 remains empty).

**NOTE:** Information on the type of card installed in each card slot must be entered through database programming. See page 6-232 in PROGRAMMING.

**C. ENVIRONMENTAL REQUIREMENTS**

**3.23** The KSU and the station instruments require the following environmental conditions:

| <u>REQUIREMENTS</u>                | <u>IN OPERATION</u>            | <u>IN STORAGE</u>               |
|------------------------------------|--------------------------------|---------------------------------|
| Temperature (KSU)                  | 32° to 104° F<br>0° to 40° C   | -40° to 185° F<br>-40° to 85° C |
| Temperature (Station Instruments)  | 32° to 113° F<br>0° to 45° C   | -40° to 185° F<br>-40° to 85° C |
| Relative Humidity (Non-Condensing) | 5% to 95%                      | 5% to 95%                       |
| Altitude                           | Up to 10,000 ft.<br>(3,048 m.) | Up to 40,000 ft.<br>(12,192 m.) |

**NOTE:** It is recommended that the maximum operating temperature (as listed above) *never* be exceeded. Therefore, when installing the KSU and station instruments, allow a sufficient margin for error in case of air conditioning failure, routine mechanical maintenance, plant shutdown, etc. As a general guideline, if the conditions are suitable for office personnel, they are also suitable for all equipment and station instrument operation. A properly controlled environment will help to extend the operating life of the equipment.

**3.24 6A Power Supply:** While in operation, a fully-loaded basic KSU generates approximately 450 British Thermal Units (BTUs) of heat per hour. A fully-loaded expanded KSU generates approximately 900 BTUs of heat per hour. **9A Power Supply:** A fully-loaded basic KSU generates approximately 900 BTUs of heat per hour. A fully-loaded expanded KSU generates approximately 1800 BTUs of heat per hour.

**3.25** The maximum amount of heat generated per individual station instrument is 6.8 BTUs per hour.

**NOTE:** This information is provided so that any cooling needed to meet the proper environmental conditions (as listed in the preceding chart) can be calculated.

**D. SYSTEM POWER SUPPLY UNIT**

**3.23** The power supply unit provides power to all of the circuit cards and stations. It *must* have an isolated, dedicated, 105–125VAC, 15A, 57–63Hz, single-phase commercial power source (for details, refer to the first NOTE on page 3–4 in INSTALLATION). If an expanded KSU is installed, the two power supplies should be plugged into a single power strip that is connected to the isolated, dedicated outlet.

**Power Supply Redesigned**

**3.24** The original KSU, backplane, and power supply unit have been redesigned. The new-style KSU has an extra cardfile slot that allows one of the two new-style power supply units to be attached directly to the backplane.

**3.25** The original power supply unit and the new-style power supply units are not interchangeable; the appropriate unit must be used with the appropriate KSU. (Refer to page 2–4 for more information on the new KSU design.)

**Original Power Supply Unit**

**3.26** The original system power supply unit (part no. 550.0102) is installed in the top of the original KSU. The unit itself is comprised of a metal chassis with two +24V modules and one +/-5V module. One of the 24V modules supplies power to card slots 1–4 and the other 24V module supplies power to card slots 5–8. If any of the modules become defective, the entire power supply unit must be replaced.

**3.27** Located on the front side of the power supply unit are the AC power cable connector, the ON/OFF power switch, four LED voltage indicators, and a grounding lug to connect the KSU to an earth ground. During normal system operation, all four LEDs (+5V, -5V, +24V1, and +24V2) should be lit. If any of the LEDs are blinking or are unlit, the power supply is defective and the entire unit must be replaced.

**3.28** Each power supply unit has two, 250V, 2 amp fuses. (These fuses may *not* be replaced in the field. If a fuse is blown, return the entire power supply unit for repair.) Each unit's maximum power outputs are:

- +24VDC (1), 3A      +5VDC, 3A
- +24VDC (2), 3A      -5VDC, 1.5A

**NOTE:** Due to a limitation in the original power supply unit, the original KSU cannot be equipped with any of the new 16-Port Digital Keypad Cards (DKSC-16s). In addition, the first four slots in the original KSU (and slots 9–12 in expanded original KSUs) cannot be popu-

lated with *all* Digital Keypad Cards (DKSCs). At least one of the first four slots must be equipped with anything other than a DKSC (or simply left empty). If necessary, refer to Inter-Tel AXXESS Tech Tip 0001 for more information.

**New-Style Power Supply Unit — 6 Amp**

**3.29** The 6 amp, new-style, system power supply unit (part no. 550.0104) is installed in the far left slot in the new-style KSU. (See page 2–4 for information on the new KSU design.)

**3.30** Located on the front side of the power supply unit are the AC power cable connector, the ON/OFF power switch, three LED voltage indicators, and four voltage test points. During normal system operation, all three LEDs (+5V, -5V, and +24V) should be lit. If any of the LEDs are blinking or are unlit, the power supply is defective and the entire unit must be replaced.

**NOTE:** With the new-style KSU, the grounding lug is no longer located on the front of the power supply unit. It is now located on the left, inside wall of the KSU chassis.

**3.31** Each power supply unit has one, 250V, 4 amp fuse. (This fuse may *not* be replaced in the field. If the fuse is blown, return the entire power supply unit for repair.) Each unit's maximum power outputs are:

- +24VDC, 6A      +5VDC, 3A      -5VDC, 1.5A

**3.32** With some limitation, the new 16-Port Digital Keypad Cards (DKSC-16s) can be installed in KSUs equipped with this 6 amp power supply. Depending on the number and variety of other circuit cards to be installed, up to two of the cards can be DKSC-16s (or up to four in expanded KSUs). If necessary, use the following chart to determine how many DKSC-16s can be installed using the 6 amp power supply.

| CARD TYPE | AMPS REQUIRED |
|-----------|---------------|
| DKSC-16   | 1.28          |
| SLC       | .75           |
| DKSC      | .64           |
| T1C       | .40           |
| LSC       | .35           |
| LSC-D     | .35           |
| OPC       | .30           |

**NOTE:** To aid in calculating the number of DKSC-16s that can be installed, the System Configuration programming window displays power supply allocation information (see page 6–233 for more information).

### New-Style Power Supply Unit — 9 Amp

3.33 The 9 amp, new-style, system power supply unit (part no. 550.0110) is installed in the far left slot in the new-style KSU. (See page 2-4 for information on the new KSU design.)

3.34 Located on the front side of the power supply unit are the AC power cable connector, the ON/OFF power switch, three LED voltage indicators, and four voltage test points. During normal system operation, all three LEDs (+5V, -5V, and +24V) should be lit. If any of the LEDs are blinking or are unlit, the power supply is defective and the entire unit must be replaced.

**NOTE:** With the new-style KSU, the grounding lug is no longer located on the front of the power supply unit. It is now located on the left, inside wall of the KSU chassis.

3.35 Each power supply unit has one, 250V, 8 amp fuse. (This fuse may *not* be replaced in the field. If the fuse is blown, return the entire power supply unit for repair.) Each unit's maximum power outputs are:

+24VDC, 9A    +5VDC, 7A    -5VDC, 1.5A

3.36 With this new 9 amp power supply unit, there is no power limit as to how many of the new DKSC-16s can be installed in the KSU.

### Voltage Surge and Spike Protection

3.37 To reduce the effects of AC voltage surges and spikes that may cause system malfunctions, false logic, and/or damage to the electronic components, a surge/spike protector with the following specifications is recommended:

- Clamp voltage transients at 300VDC within 5 nanoseconds when exposed to waveforms as described in the ANSI/IEEE Standard C62.41-1980 (IEEE 587).
- Reduces RFI/EMI noise by at least 20dB at frequencies between 5kHz and 30MHz.

3.38 Inter-Tel's Factored Products division sells surge/spike protectors that have these specifications.

### Battery Back-Up

3.39 To provide back-up power in the event of a power failure or brownout condition, the power supply can have optional battery back-up using a customer-provided uninterruptable power supply (UPS) unit or a standby power supply (SPS) unit. (Refer to page 2-32 for more information.)

## E. CIRCUIT CARDS

**3.40** In addition to the power supply unit, the KSU houses the circuit cards that control and coordinate the functions of the system. Up to eight cards may be installed in a basic KSU, including:

- 1 Central Processing Unit (CPU) Card with attached Memory (MEM) Card *or* Central Processing Unit 020 (CPU020) Card with attached Pulse Code Modulation Dual (PCM-D) Card — required
- 1-7\* Digital Keypad Card (DKSC) and/or 16-Port Digital Keypad Card (DKSC-16) — at least one is required
- 1-6\* Single-Line Card (SLC)
- 1-6 Loop Start Card (LSC) with optional attached LSC Daughter Card (LSC-D)
- 1-6 T1 Card (T1C)
- 1-6 Options Card (OPC)

\* Refer to page 2-20 for station capacities.

**3.41** Up to 15 cards may be installed in an expanded KSU, including:

- 1 Central Processing Unit (CPU) Card with attached Memory (MEM) Card *or* Central Processing Unit 020 (CPU020) Card with attached Pulse Code Modulation Dual (PCM-D) Card — required
- 1-14\* Digital Keypad Card (DKSC) and/or 16-Port Digital Keypad Card (DKSC-16) — at least one is required
- 1-13\* Single-Line Card (SLC)
- 1-13 Loop Start Card (LSC) with optional attached LSC Daughter Card (LSC-D)
- 1-13 T1 Card (T1C)
- 1-13 Options Card (OPC)

\* Refer to page 2-20 for station capacities.

**3.42** Descriptions of the cards are given in the following paragraphs. Drawings of the cards are located in the INSTALLATION section.

**NOTE:** Except for the CPU/MEM Card or the CPU020/PCM-D Card, all of the circuit cards listed above may be inserted or removed while the system power is on.

### Central Processing Unit (CPU) Card and Attached Memory (MEM) Card

**3.43** The CPU Card contains the main controlling microprocessor and associated control logic and memory circuits. It is under the control of a program stored in the ROM, which is activated when the system is powered up. ROMs containing the system software are installed on the CPU Card before it is installed in the KSU.

**3.44** The CPU Card contains the following system resources (see Figure 3-26 on page 3-44):

- **DB15 PCM connector** (15-pin D-subminiature female connector) for connecting the first eight ports to the Audio Interface Card (AIC) in the optional AXCESSORY Talk PC.

- **RS-232-C jack** (8-pin, 8-conductor modular jack) for connecting to the AXCESSORY Talk PC's RS-232-C port, or for connecting an SMDR/error message output device, a personal computer for programming the system database, or a modem for remote programming/maintenance (see pages 2-28 to 2-31 for requirements).

**NOTE:** The system can have a maximum of eight RS-232-C ports for system services. This includes the RS-232-C ports on the CPU/MEM or CPU020/PCM-D Card, Options Card(s), and PC Data Port Modules. If an Inter-Tel AXCESSORY Talk PC is installed, at least one of the eight system RS-232-C ports must be dedicated to the PC.

- **LED indicators** show main processor operation (CPU ACTIVE – green), database in default state due to error (DATABASE ERROR – red), minor system alarms (MINOR ALARM – yellow), external clock activity (EXTERNAL CLOCK ACTIVE – green), and database back-up battery connection (BATTERY OFF – red). Refer to page 7-3 for detailed LED information.

- **Reset switch** is used to manually reset the system during troubleshooting. This is a software-controlled system reconfiguration. Pushing this switch does the following:

- Preserves the battery-backed database information, all calls in progress, outside calls being dialed, pages in progress, camped-on calls, queue requests, system and user programming, inter-station messages, calls on system and individual hold, do-not-disturb messages, and reminder messages.

- Restores DTMF receivers, modem access, and speech channels, and resets the station clocks to match the system clock. Updates trunk key, DSS/BLF key, speed-dial key, and feature key lamp status.

- Disconnects calls ringing in.

- **Database back-up battery** (3.6V, 1/2AA lithium battery) that can support the database for at least two months of accumulated system down time.
- **Battery voltage test points and check button** for checking the database back-up battery charge. If the battery voltage is not greater than 3.3VDC, replace the battery.
- **Battery back-up jumper strap** for activating the database back-up battery. The jumper strap should be placed in the ON position (over the right two pins) before the CPU Card is installed. When the card is taken out of service for repair or storage, the jumper

strap should be placed in the OFF position (left two pins) to preserve the battery charge.

**NOTE:** Placing the BATTERY jumper strap in the OFF position erases the database when the card is unplugged or loses power.

- **Music jack** for connecting an external music source (such as a radio, tape player, etc.) that can be heard by callers when they are placed on hold or camped on. It may also be used for keyset background music. For installation instructions, see page 3-88. In database programming, music can be enabled or disabled, and each trunk group (as well as transfer audio) can be assigned music, silence, or tick-tones. See page 6-136.

**NOTE:** The following four system resources are provided by the single Digital Signal Processor (DSP) on the CPU Card. For additional and/or other system resources, one or more Options Cards (with up to four DSPs each) may be installed in the KSU.

- **Conferencing resources** for connecting up to 12 parties in multiple conferences. There can be up to three simultaneous four-party conferences or up to four simultaneous three-party conferences. Conferencing is not amplified.
- **DTMF receiver circuits** (two) are used when single-line sets connected to MDPMs are dialing and when features such as DISA and analog voice mail are used. These two receivers convert DTMF signals to the digital codes used by the system. They are in use only while the dialed number is being processed, not for the duration of the call. If both DTMF receivers are busy, the user may try again (DISA users are redirected to the primary attendant).
- **DTMF transmitter circuits** (two) generate DTMF tones whenever needed by the system. For example, when a Basic or Standard keyset user manually dials a number while on a call or when a station user uses one of the system auto-dial features (ARS, call forward to the public network, station or system speed dialing, etc.). Executive keysets can generate their own DTMF tones.
- **Tone generating circuit** produces all of the system tones (busy, reorder, do-not-disturb, etc.) heard by keyset, single-line set, DISA, and automated attendant users.

**3.45** A Memory (MEM) Card must be attached to the CPU Card to provide additional system memory, as well as the following additional system resources (see Figure 3-26 on page 3-44):

- **Relay jack** (6-pin, 6-conductor modular jack) currently used for power failure transfer equipment only. The jack can be used for connecting one or more single-line sets to predetermined CO trunks in the event of processor card failure or a power failure. The output is two normally-open (deactivated) single-pull double-throw (SPDT) relays that are held closed (activated) during system operation. Additional equipment needed includes a customer-provided PFT relay card and card mounting case. The CPU Card relay contact ratings are listed below. (See page 2-31 for additional requirements.)

**MEM CARD RELAY CONTACT RATINGS**

0.6A at 125VAC  
0.6A at 110VDC  
2.0A at 30VDC

- **RS-232-C jacks** (two 8-pin, 8-conductor modular jacks) for connecting to the AXCESSORY Talk PC's RS-232-C port, or for connecting SMDR/error message output devices, a personal computer for programming the system database, and/or a modem for remote programming/maintenance (see pages 2-28 to 2-31 for requirements).

**NOTE:** The system can have a maximum of eight RS-232-C ports for system services. This includes the RS-232-C ports on the CPU/MEM or CPU020/PCM-D Card, Options Card(s), and PC Data Port Modules. If an Inter-Tel AXCESSORY Talk PC is installed, at least one of the eight RS-232-C ports must be dedicated to the PC.

- **Real-time clock** for more accurate date and time function. (Without the attached MEM Card, the CPU Card uses a software clock.)

**3.46** The MEM Card must be equipped with three special software components (kit no. 828.1278) that allow the card to work with version 2 or greater system software. The PAL in the kit must then be replaced with the new version 3 PAL (827.8387). If an earlier version of system software is ever re-installed, the three new components must be removed and the old component(s) must be re-installed.

### Central Processing Unit 020 (CPU020) Card and Pulse Code Modulation Dual (PCM-D) Card

3.47 The new CPU020/PCM-D Card is faster and more powerful than the original CPU/MEM Card. Inter-Tel recommends using the new CPU020/PCM-D Card under any of the following conditions:

- systems using more than 112 ports
- systems using OAI
- systems using TSAPI
- systems with unusually high call volume or extensive use of multiple ring-ins and/or all-rings (e.g., more than 100 ringing stations per minute)

**NOTE:** Once a CPU020/PCM-D Card is installed and equipped in the database, it cannot be replaced with a CPU/MEM Card without first defaulting the database.

3.48 The CPU020/PCM-D Card contains the main controlling microprocessor and associated control logic and memory circuits. It is under the control of a program stored in flash memory, which is activated when the system is powered up.

3.49 Instead of the pre-programmed ROMs used on the CPU/MEM Card, the CPU020/PCM-D Card employs flash memory circuitry. This technology allows the technician to install and upgrade system software through the programming PC, rather than having to replace the ROMs on the card.

3.50 The CPU020/PCM-D Card contains the following system resources (see Figure 3-27 on page 3-47):

- **DB15 PCM connector** (15-pin D-subminiature female connector) for connecting the first eight ports to the Audio Interface Card (AIC) in the optional AXCESSORY Talk PC.
- **RS-232-C jacks** (three 8-pin, 8-conductor modular jacks) for connecting to the AXCESSORY Talk PC's RS-232-C port, or for connecting SMDR/error message output devices, a personal computer for programming the system database, and/or a modem for remote programming/maintenance (see pages 2-28 to 2-31 for requirements).

**NOTE:** The system can have a maximum of eight RS-232-C ports for system services. This includes the RS-232-C ports on the CPU/MEM or CPU020/PCM-D Card, Options Card(s), and PC Data Port Modules. If an Inter-Tel AXCESSORY Talk PC is installed, at least one of the eight system RS-232-C ports must be dedicated to the PC.

- **LED indicators** show main processor operation (CPU ACTIVE – green), database in default state

due to error (DATABASE ERROR – red), minor system alarms (MINOR ALARM – yellow), external clock activity (EXTERNAL CLOCK ACTIVE – green), and database back-up battery connection (BATTERY OFF – red). Refer to page 7-3 for detailed LED information.

- **Reset switch** is used to manually reset the system during troubleshooting. This is a software-controlled system reconfiguration. Pushing this switch does the following:
  - Preserves the battery-backed database information, all calls in progress, outside calls being dialed, pages in progress, camped-on calls, queue requests, system and user programming, inter-station messages, calls on system and individual hold, do-not-disturb messages, and reminder messages.
  - Restores DTMF receivers, modem access, and speech channels, and resets the station clocks to match the system clock. Updates trunk key, DSS/BLF key, speed-dial key, and feature key lamp status.
  - Disconnects calls ringing in.

**NOTE:** If necessary, the reset switch can also be used to place the CPU020/PCM-D Card into "receive software upload" mode, as described on page 3-60.

- **Database back-up battery** (3.6V, 1/2AA lithium battery) that can support the database for at least two months of accumulated system down time.
- **Battery voltage test points and check button** for checking the database back-up battery charge. If the battery voltage is not greater than 3.3VDC, replace the battery.
- **Battery back-up jumper strap** for activating the database back-up battery. The jumper strap should be placed in the ON position (over the bottom two pins) before the CPU020/PCM-D Card is installed. When the card is taken out of service for repair or storage, the jumper strap should be placed in the OFF position (top two pins) to preserve the battery charge.

**NOTE:** Placing the BATTERY jumper strap in the OFF position erases the database when the card is unplugged or loses power.

- **Music jack** for connecting an external music source (such as a radio, tape player, etc.) that can be heard by callers when they are placed on hold or camped on. It may also be used for keyset background music. For installation instructions, see page 3-88. In data-

base programming, music can be enabled or disabled, and each trunk group (as well as transfer audio) can be assigned music, silence, or tick-tones. See page 6-136.

- **Relay jack** (6-pin, 6-conductor modular jack) currently used for power failure transfer equipment only. The jack can be used for connecting one or more single-line sets to predetermined CO trunks in the event of processor card failure or a power failure. The output is two normally-open (deactivated) single-pull double-throw (SPDT) relays that are held closed (activated) during system operation. Additional equipment needed includes a customer-provided PFT relay card and card mounting case. The relay contact ratings are listed below. (See page 2-31 for additional requirements.)

**CPU020/PCM-D CARD RELAY CONTACT RATINGS**

0.6A at 125VAC  
0.6A at 110VDC  
2.0A at 30VDC

- **External paging jack** (RCA-type phono jack with an output impedance of 600 ohms) for connecting external paging speaker equipment to allow paging to large areas, such as warehouses or loading docks. For installation instructions, see page 3-89.
- **Real-time clock** for more accurate date and time function.
- **Network clock circuitry** for providing the smooth, error-free clock transitions required for T1 applications. If any T1 Cards are installed in the KSU, the network clock circuitry provides the clock function for the entire system.

**NOTE:** The following four system resources are provided by the single Digital Signal Processor (DSP) on the CPU020/PCM-D Card. For additional and/or other system resources, one or more Options Cards (with up to four DSPs each) may be installed in the KSU.

- **Conferencing resources** for connecting up to 12 parties in multiple conferences. There can be up to three simultaneous four-party conferences or up to four simultaneous three-party conferences. Conferencing is not amplified.
- **DTMF receiver circuits** (two) are used when single-line sets connected to MDPMs are dialing and when features such as DISA and analog voice mail are used. These two receivers convert DTMF signals to the digital codes used by the system. They are in use only while the dialed number is being processed, not for the duration of the call. If both DTMF receivers are busy, the user may try again (DISA users are redirected to the primary attendant).
- **DTMF transmitter circuits** (two) generate DTMF tones whenever needed by the system. For example, when a Basic or Standard keyset user manually dials a number while on a call or when a station user uses one of the system auto-dial features (ARS, call forward to the public network, station or system speed dialing, etc.). Executive keysets can generate their own DTMF tones.
- **Tone generating circuit** produces all of the system tones (busy, reorder, do-not-disturb, etc.) heard by keyset, single-line set, DISA, and automated attendant users.

**Digital Keypad Cards (DKSCs), 16-Port Digital Keypad Cards (DKSC-16s), Single-Line Adapters (SLAs), and Single-Line Cards (SLCs)**

**3.51** Station instruments are connected to station circuit cards in the KSU. Keypads are connected directly to Digital Keypad Cards (DKSCs) and/or 16-Port Digital Keypad Cards (DKSC-16s). Industry-standard single-line DTMF sets and playback devices (AC-ringing instruments only) are connected directly to Single-Line Cards (SLCs) or indirectly to DKSCs/DKSC-16s through Single-Line Adapters (SLAs).

**NOTE:** At least one DKSC or DKSC-16 *must* be installed to provide an administrator (equipped with a display keypad) that can receive system alarm messages, program system data, etc.

**3.52 Digital Keypad Card (DKSC):** Each DKSC provides up to eight circuits for connecting digital keysets or Single-Line Adapters (SLAs) to the system. DKSCs have eight self-correcting thermistors (one for each circuit) to protect the system from damage due to a short circuit in the station cabling. If a short circuit causes a thermistor to open, it will automatically close when the short is removed.

**3.53** Up to ten keysets may be equipped with single DSS/BLF Units or up to five keysets may be equipped with tandem units (or any combination of the two up to ten total units; tandem units count as two units). Each unit is connected to the optional PC Data Port Module (PCDPM) on the back of the corresponding keypad. Unlike many other systems, the DSS/BLF Units do *not* require KSU cabling separate from the keypad's cabling; instead, they are powered by their own AC transformer.

**3.54** Each DKSC has a green LED (CARD ON-LINE) to indicate the card's functional readiness and a yellow LED (CIRCUIT BUSY) to indicate whether any circuit on the card is busy (see Figure 3-28 on page 3-50). Also, each card has a metal EMI shield attached to the front edge of the card to help prevent electromagnetic interference.

**3.55 16-Port Digital Keypad Card (DKSC-16):** Each DKSC-16 provides up to 16 circuits for connecting digital keysets or Single-Line Adapters (SLAs) to the system. DKSC-16s have 16 self-correcting thermistors (one for each circuit) to protect the system from damage due to a short circuit in the station cabling. If a short circuit causes a thermistor to open, it will automatically close when the short is removed.

**3.56** Each DKSC-16 is equipped with a single Digital Signal Processor (DSP) to provide the following card and/or system resources:

- **Shared speakerphones** (up to ten) for any Basic and Standard Digital Keypads attached to the card. For information on shared speakerphones, see page 4-38.
- **Tone generating circuit** for providing system tones (busy, reorder, do-not-disturb, etc.) to the keysets connected to the card, if necessary. It is available in case there are no voice channels available in the system to issue tones from the CPU when needed.
- **Switching matrix** to allow access to any available time slot on the card's PCM highway (bus). This is provided since the card may need up to 32 simultaneous voice channel connections.

**3.57** Up to ten keysets may be equipped with single DSS/BLF Units or up to five keysets may be equipped with tandem units (or any combination of the two up to ten total units; tandem units count as two units). Each unit is connected to the PC Data Port Module (PCDPM) on the back of the corresponding keypad. Unlike many other systems, the DSS/BLF Units do *not* require KSU cabling separate from the keypad's cabling; instead, they are powered by their own AC transformer.

**3.58** Each DKSC-16 has a green LED (CARD ON-LINE) to indicate the card's functional readiness and a yellow LED (CIRCUIT BUSY) to indicate whether any circuit on the card is busy (see Figure 3-28 on page 3-50). Also, each card has a metal EMI shield attached to the front edge of the card to help prevent electromagnetic interference.

**3.59 Single-Line Adapter (SLA):** An SLA, which can be installed on an available DKSC or DKSC-16 circuit, is used for connecting up to two AC-ringing single-line DTMF sets, playback devices, and/or off-premises extensions. As many SLAs as desired can be installed as long as the system maximum for station instruments is not exceeded (112 for basic systems, 224 for expanded systems).

**3.60** With version 2.0 or higher system software, an SLA can also be used for connecting up to two direct inward dialing (DID) trunks. (Or one single-line set and one DID trunk.) Refer to FEATURES, page 4-24, for more information on using DID trunks.

**3.61** AC-ringing off-premises stations can be connected directly to the SLA circuit (*external* HVRA Units, power supplies, and ring generators are not needed).

**NOTE:** SLAs do not support *visual* message waiting applications. If single-line sets with message waiting lamps are installed on SLAs, the lamps will not function. However, single-line sets can be configured in

database programming to receive *audible* message waiting indication tones.

**3.62** Each SLA, whether used for single-line sets or DID trunks or both, is powered by its own AC transformer. Also, SLAs have two self-correcting thermistors. If a short circuit causes a thermistor to open, it will automatically close when the short is removed.

**NOTE:** For optimal system performance, the AXCESSORY Talk PC and applications software should be used for voice mail and automated attendant functions, rather than using SLA circuits.

**3.63 Single-Line Card (SLC):** Each SLC provides up to eight circuits for connecting on-premises AC-ringing single-line DTMF sets and playback devices. The card has an onboard, square-wave AC ring generator with a total ringer equivalence number (REN) of 8.0. (although no circuit on the board can have a REN above 3.0.) The REN provided by the onboard ring generator should be adequate for most installations. However, if additional REN is required, an external customer-provided ring generator can be used instead.

**NOTE:** Off-premises stations cannot be legally connected to SLCs; use SLAs instead. Also, for optimal system performance, the AXCESSORY Talk PC and applications software should be used for voice mail and automated attendant functions, rather than using SLC or SLA circuits.

**3.64** Each SLC can be equipped with an optional Lamp Option Card (LOC) to provide visual message waiting capabilities for single-line sets equipped with message lamps. Single-line sets are then configured in database programming to receive *visual* and/or *audible* message waiting indication tones.

**3.65** SLCs have self-correcting thermistors to protect the -48V output. If a short circuit causes a thermistor to open, it will automatically close when the short is removed.

**3.66** Each SLC has a green LED (CARD ON-LINE) to indicate the card's functional readiness and a yellow LED (CIRCUIT BUSY) to indicate whether any circuit

on the card is busy (see Figure 3-29 on page 3-52). Also, each card has a metal EMI shield attached to the front edge of the card to help prevent electromagnetic interference.

**3.67 Station circuit and extension numbers:** Each station card circuit is assigned a six-digit hardware address number (XX.YY.ZZ) according to the card's slot in the KSU (XX = 01-07 or 09-15), the location of the circuit on the card (YY = 01-08), and whether the circuit has more than one purpose (ZZ = 01-03). For example, circuit 01.02.01 is the second circuit on the first card installed in the KSU.

**3.68** In some circumstances, a station circuit can have more than one purpose. For example, two single-line devices can be installed on a single DKSC or DKSC-16 circuit. The first device is assigned circuit number XX.YY.01 and the second device is assigned circuit number XX.YY.02. Similarly, a keyset's PC Data Port Module and Modem Data Port Module can be assigned their own circuit numbers. In this case, the keyset is assigned circuit number XX.YY.01, the first data port is assigned number XX.YY.02, and the second data port is assigned number XX.YY.03. For more information, refer to page 6-237.

**3.69** When the system is first powered up, the default configuration is used to assign extension numbers to the station circuits. Card slots 1-5 (and 9-13 in expanded systems) are considered DKSCs and slots 6-7 (and 14-15 in expanded systems) are LSCs with attached Daughter Cards (LSC-Ds). Changes to the default configuration can be made through database programming. Refer to PROGRAMMING, page 6-232, for more information.

**3.70** The default system assigns extension number 1000 to station circuit 01.01.01, extension number 1001 to station circuit 01.02.01, and so on to match the initial configuration. Circuit 01.01.01 is equipped as an administrator and as the primary attendant's keyset when the system is in the default configuration. If desired, the circuits can be assigned 1-5 digit extension numbers through database programming. Refer to PROGRAMMING, page 6-75, for more information.

### Loop Start Cards (LSCs) and LSC Daughter Cards (LSC-Ds)

**3.71** Each LSC has circuitry for up to four loop start trunks; ground start trunks cannot be used. For increased capacity, an LSC-D can be attached to each LSC to provide four additional circuits.

**3.72** For optimal CO trunk transmission performance, each LSC circuit should be "hybrid balanced" in database programming. Hybrid balancing refers to selecting the balance network — normal or short — that best matches the trunk's impedance. See page 6-125 for details.

**3.73** Each LSC and LSC-D has four specially-designed fuses soldered to the card to protect it from large voltage surges due to lightning. If a fuse is open (blown), it may mean that other parts of the card have also been damaged. For this reason, open fuses must not be replaced in the field. Instead, the entire card *must* be returned for testing and possible repair. Failure to follow this policy will void the warranty on the card.

**3.74** Each LSC has a green LED (CARD ON-LINE) to indicate the card's functional readiness and a yellow LED (CIRCUIT BUSY) to indicate whether any circuit on the card is busy (see Figure 3-30 on page 3-54). Also, each card has a metal EMI shield attached to the front edge to help prevent electromagnetic interference.

**3.75** When the system is in the default configuration, all trunks are configured for DTMF signaling. If neces-

sary, some or all of the trunks can be reprogrammed for dial-pulse signaling through database programming.

**NOTE:** Single-line sets generate their own DTMF tones when dialing. If used on dial-pulse trunks, both the DTMF tones generated by the phone and the dial-pulse signals generated by the system are sent to the central office, which may be a problem if the central office recognizes both. To avoid this problem, single-line sets should be restricted to ARS-only when using dial-pulse trunks. Then, only the ARS-generated dial-pulse signals will be sent to the central office.

**3.76** The CO circuits are assigned hardware address numbers according to the card's slot in the KSU and the location of the circuit on the card. For example, when using the initial configuration (see paragraph 3.69), CO circuit 07.04.01 is the fourth circuit on the LSC installed in slot 7. Each trunk card circuit is assigned a six-digit circuit number XX.YY.ZZ, where XX = the card slot location (01-07 or 09-15), YY = the circuit number on the card (01-08), and ZZ = whether the circuit has more than one purpose (currently 01 only). Refer to page 6-237 for additional information.

**3.77** When the system is in the default configuration, the first four keys on each keyset are assigned as Call keys for incoming call indication/access. (The ANSWER key may also be used to access incoming calls.) No individual trunk keys or trunk group keys are assigned. Key assignments can be designated in database programming. Refer to PROGRAMMING, page 6-52, for more information.

## T1 Cards (T1Cs)

**NOTE:** New T1Cs come equipped with two special software components — part nos. 827.8376 (U4) and 827.8375 (U5) — that allow the cards to work with the new version 3 system software (as well as all older versions of system software). Older T1Cs (those with U4 labeled 8317 and U5 labeled 8318) must first be equipped with an upgrade kit (part no. 828.1333) before using them with the new version 3 system software.

**3.78** The acronym for the T1 Card — T1C — should not be confused with the special T1C digital carrier system (which operates at twice the data rate of the standard T1 carrier system). The AXXESS T1 Card does not support T1C.

**3.79** The term “T1” refers to a specific digital method of transmitting voice and data; it is the basic 24-channel time-division multiplex (TDM), 1.544 Mb/s pulse code modulation (PCM) system as used in the United States.

**3.80** The T1 standard, which was developed as a method of reducing cabling and increasing transmission quality between distant central offices, is actually a subset of a multi-level Digital Signal (DS) scheme. In popular usage, T1 refers to the DS1 rate as transmitted via any type of media (e.g., copper wire, fiber optics, or microwave).

**3.81** Since each T1 span actually consists of 24 individual circuits (or channels) multiplexed together, it is often less expensive to purchase a single T1 span than it is to purchase multiple individual trunks. Each of the 24 T1 circuits can be programmed as a loop start, ground start, DID, E&M, or OPX trunk (or as unequipped). Any combination is possible.

**3.82** “Fractional” T1, often called FT1, is a special T1 service where only a portion of the 24 channels are used and paid for. To implement fractional T1 (if available), equip only those circuits that are provided.

**NOTE:** Currently, the T1 Card is used to transmit voice signals only, not data. In the future, data transmissions over T1 circuits may also be supported.

**3.83** To interface with the public network, each T1 Card is equipped with an on-board Channel Service Unit (CSU). Since the CSU is on-board, the programmer must select the line build-out (LBO) attenuation, which is available from the T1 provider.

**NOTE:** To use an external CSU instead, the T1 Card can be set to DSX mode. However, the card and the external CSU must be located in the same building, and the cabling between them must be no longer than 133 feet.

**3.84** Although most T1 interfaces will be with the public network, it is possible to use T1 Cards to connect two telephone systems together (e.g., two AXXESS Systems). The two systems may be located in separate buildings and the cabling between them may be as long as 6000 feet. (See page 3–28 for more information on connecting two AXXESS T1 Cards together.)

**NOTE:** For information on programming various types of T1 installations, refer to pages 6–131 to 6–135.

**3.85** In the future, a T1 span could possibly be used to connect the AXXESS System to a host computer via a digital multiplexed interface (DMI). Also, the T1 Card has been designed to interface with the coming Integrated Services Digital Network (ISDN) features, when available.

**3.86** When a T1 span is used to connect an AXXESS System to the public network or to another telephone system, it is important that the two endpoints communicate at the same frequency. Since it is practically impossible for both endpoints to have clocks running at identical frequencies, one endpoint is given “master” clock status and the other endpoint is given “slave” clock status. The slave clock can then extract and lock onto the master clock frequency from the incoming T1 information. This master/slave synchronization is programmed in the database. When connected to the public network, the AXXESS T1 Cards should be designated as public network slaves.

**3.87** When information (currently, voice only) is transmitted over a T1 span, a “framing” bit is added so that the receiving end can recognize where the information begins and ends (as long as the clock circuitry of the two endpoints is synchronized). Currently, the AXXESS System supports the two major types of framing schemes in use today: D4 Superframe, which is the most common, and Extended Superframe (ESF), which is required to support future ISDN and DMI features. For voice transmissions, D4 Superframe is quite adequate. However, for data transmissions (not currently supported), ESF is much more reliable and efficient.

**3.88** Digital information is transmitted over the T1 span as a series of 1s and 0s (e.g., ...1000 0000 0000 0001...). If there are too many consecutive zeroes, the T1 clock extraction circuitry will not operate correctly. To prevent this, T1 carrier equipment limits the number of consecutive zeroes. The AXXESS System supports the two major types of zero code suppression schemes in use today: Alternate Mark Inversion (AMI), also called bit-7 stuffing, and Bipolar Eight Zero Substitution (B8ZS). Again, for voice transmissions, AMI is quite adequate. However, for 64 kb/s clear channel data transmissions (not currently supported), B8ZS is required.

**3.89** Like the line build-out attenuation, the framing scheme type and zero code suppression scheme type are

also available from the T1 provider. In fact, when ordering a T1 span, always request the following information from the T1 provider:

- **Framing scheme:** D4 Superframe or ESF
- **Zero code suppression scheme:** AMI or B8ZS
- **Recommended line build-out attenuation:** 0dB, 7.5dB, 15dB, or 22.5dB

**3.90** Each T1C has circuitry for up to 24 trunk channels. The 24 channels (or circuits) can be any combination of loop start trunks, ground start trunks, DID trunks, E&M trunks, or OPX trunks.

**3.91** The T1 Card itself is equipped with the following resources:

- **LED indicators** are provided to show the status of the card and circuits and to show T1 trunk alarms and board-level error occurrences. Refer to the TROUBLESHOOTING section of this manual for additional LED information.
- **Serial port jack** (RS-232-C, 8-pin, 8-conductor modular jack) for connecting a diagnostics monitor.
- **T1 span jack** (RJ48C, 8-pin, 8-conductor modular jack) for connecting a single, 24-channel T1 span to the T1 Card. (If this jack is used, do not use the DB15 connector also provided on the card.)

**NOTE:** All T1 spans should be disconnected from their cards before turning the system power on or off.

- **Dual bantam jack** (with transmit and receive audio ports) for connecting T1 test equipment to the T1 Card and monitoring the transmit and receive signals.

**CAUTION**

When a live T1 span is installed on the T1 Card, test equipment should be used for monitoring purposes only. Do not attempt to send signals over either the transmit or receive audio ports on the T1 Card if a T1 span is installed. Also, be sure the test equipment is set in the "bridge" mode.

- **Alternate T1 span DB15 connector** (15-pin D-sub-miniature female connector) for connecting a single, 24-channel T1 span to the T1 Card.

**NOTE:** In certain situations, it may be more convenient to use the DB15 connector instead of the standard RJ48C jack also provided on the card.

- **Make-busy switch and LED** for removing all circuits on the card from service and placing them back

in again. Pressing the switch will light the yellow make-busy LED and begin the process of "busying out" each circuit not in use. The circuits that are in use are then busied out as soon as the users hang up. When all circuits are busied out, the make-busy LED flashes slowly, the circuit-busy LED is unlit, and the card can be removed from its slot in the cabinet. If the card is not busied out and removed within a certain amount of time, a programmable timer expires and the card returns to normal operation; however, the make-busy LED will then flash rapidly until the make-busy switch is released.

**3.92** Compared to the other trunk cards in the system, the T1 Card is very sophisticated and offers some unique programming options. The information that is programmed *specific to each T1 Card* installed in the system includes:

- **Framing type:** The programmer must select the type of framing scheme, D4 Superframe or Extended Superframe (ESF), used by the T1 span connected to each card.
- **Zero code suppression scheme:** The programmer must select the type zero suppression scheme, AMI (bit-7 stuffing) or Bipolar Eight Zero Substitution (B8ZS), used by the T1 span connected to each card.
- **Line build-out (LBO):** The programmer must designate the LBO attenuation of the T1 span connected to the card. This value can be determined automatically by the system, or it can be set according to the T1 provider's recommendation.
- **Reference clock programming:** It is crucial that all T1 Cards and the CPU/MEM or CPU020/PCM-D Card share the same clock signal so that they can remain synchronized with each other and the T1 span. This is accomplished by allowing one of the T1 Cards to act as the system reference clock. The programmer must designate whether the T1 Card is a private network master, private network slave, or a public network slave (the public network always acts as the master clock).

If more than one T1 Card is installed in the system, the software uses an ordered list to determine a "back up" to the system reference clock. Then, if the T1 Card acting as the system reference clock fails or is taken out of service, the next T1 Card on the back-up priority list takes over.

- **Error diagnostics:** If desired, the programmer can generate the current T1 error counts (by hour and by day) for the selected card. The error counts are displayed in tabular format.
- **Error thresholds:** The programmer can set numerical thresholds (number per hour and number per

day) for certain T1 Card errors. If a threshold is exceeded, an error is printed on the SMDR report.

**3.93** The information that is programmed *specific to each circuit* (i.e., each of the 24 channels) on the T1 Card includes:

- **Circuit type:** Each individual circuit can be programmed as a loop start, ground start, DID, E&M, or OPX trunk. See PROGRAMMING, page 6-242.
- **DTMF or dial-pulse signaling:** When the system is in the default configuration, all trunk circuits are configured for DTMF signaling. If necessary, some or all of the circuits can be reprogrammed for dial-pulse signaling.

**3.94** The T1 circuits are assigned hardware address numbers according to the card's slot in the equipment cabinet and the location of the circuit on the card. For example, T1 circuit 6.1.21 is the 21st circuit on the 6th card, a T1C, installed in the equipment cabinet.

**3.95 Special T1 cabling requirements:** It is recommended that special high-speed data cable with the following characteristics be used for all T1 installations:

- 22 AWG

- Individually shielded two-pair (or with the transmit and receive pairs run in separate cables or binder groups)
- ABAM or PIC (a level-3 cable designed specifically for the T-carrier transmission rate)
- Maximum capacitance of 15pF/ft.
- Maximum attenuation of 5dB/1000 ft. at 772kHz and 70° F

**NOTE:** The programming prompts for LBO attenuation (and DSX mode, if used) assume that proper T1 cable (with the above characteristics) is being used. When transmitting over shorter distances, it may be possible to use standard two-pair voice frequency cable instead; however, the programmer may have to compensate by selecting a smaller LBO setting. Also, no matter which type of cable is used, the transmit and receive pairs must be shielded from each other (or run in separate cables or binder groups).

**3.96** If DB15 connector on the T1 Card is used in place of the standard RJ48C jack, a flat, 28AWG, twisted-pair ribbon cable with a maximum capacitance of 16pF/ft. may be used for distances of up to 50 feet (see page 3-19 for more information). For distances longer than 50 feet, use the special high-speed data cable described in paragraph 3.95.

### T1 Network Clock Card (NCC)

3.97 If any T1 Cards are to be installed in a KSU using the original CPU/MEM Card configuration, a single T1 Network Clock Card must also be installed. Then, instead of using the clock circuitry on the CPU Card, the NCC becomes the clock for the entire system. The NCC provides the smooth, error-free clock transitions required for T1 applications.

**NOTE:** Do not install an NCC in KSUs equipped with the new CPU020/PCM-D Card; it could cause T1 timing problems. If one is accidentally installed, the programming PC displays a warning.

3.98 The NCC is installed in the expanded KSU connector slot (J10) on the far right side of the KSU backplane. When two basic KSUs are attached together to form an expanded KSU, the NCC is installed only in the second (right-hand) KSU.

**NOTE:** Be sure the system power is turned off before inserting or removing the T1 Network Clock Card.

### Options Cards (OPCs)

3.99 One or more optional OPCs may be installed to provide the system with additional Digital Signal Processor (DSP) resources. Each OPC comes equipped with one DSP and may be equipped with an additional three DSPs.

3.100 Each OPC contains the following system resources (see Figure 3-32 on page 3-58):

- **DSPs** (one standard, up to three more optional) for allocating Caller ID receivers (up to eight per DSP), shared speakerphones for Basic and Standard keysets (up to eight per DSP), additional conferencing circuits (up to 16 more per DSP), and additional DTMF receivers (up to six more per DSP).

**NOTE:** For information on Caller ID features, refer to page 4-25. For information on shared speakerphones for Basic and Standard keysets, see page 4-38.

- **LED indicators** to indicate the card's functional readiness (CARD ON-LINE – green) and to indicate whether any resource on the card is busy (CIRCUIT BUSY – yellow). Refer to TROUBLESHOOTING for detailed LED information.
- **DB15 PCM connector** (15-pin D-subminiature female connector) for connecting an additional 4–24 ports to the Audio Interface Card (AIC) in the optional AXCESSORY Talk PC.
- **RS-232-C jack** (8-pin, 8-conductor modular jack) for connecting an SMDR/error message output device, a PC for programming the system database, or a modem for remote programming/maintenance (see pages 2-28 to 2-31 for requirements). Do *not* use this port to connect to the AXCESSORY Talk PC.
- **Relay jack** (6-pin, 6-conductor modular jack) currently used for night transfer only (e.g., to turn on or off lights, an alarm system, or other devices). The relay, which is activated when an attendant places the system in night mode, causes the swing connection to move from the “normally open” to the “normally closed” position. The OPC relay contact ratings are listed below. (See page 2-32 for additional requirements.)

#### OPTIONS CARD RELAY CONTACT RATINGS

0.6A at 125VAC  
0.6A at 110VDC  
2.0A at 30VDC

- **Music jack** for connecting a second external music source (currently reserved for future use).
- **Logic inputs connector** (currently reserved for future use).

3.101 Each OPC must be equipped with two special software components (kit no. 828.1279) that allow the card to work with version 2.0 or higher system software. If an earlier version of system software is ever re-installed, the two new components must be removed and the old components must be re-installed.

## 4. STATION INSTRUMENTS

4.1 A variety of station instruments can be used on the Inter-Tel AXCESS System. The combination of station instruments depends on the number and type of station cards installed. The system capacity for stations on an expanded KSU is as follows:

|                           |        |
|---------------------------|--------|
| Total Station Instruments | 256    |
| Keysets                   | 1*-224 |
| Single-Line Sets          | 0-104  |
| DSS/BLF Units             | 0-10** |

\* At least one display keyset must be installed to provide an administrator to receive system alarm messages, program system data, and receive unsupervised CO recalls. When the system is in the default configuration, circuit 01.01.01 is designated as a keyset, an administrator, and the primary attendant.

\*\* Keysets and DSS/BLF Units do *not* use separate DKSC or DKSC-16 circuits. However, the software limits the total number of DSS/BLF Units to ten (tandem units count as two).

**NOTE:** Since most systems will be installed with a variety of station and trunk cards and a variety of station instruments, the maximum station and trunk capacities listed in this manual will rarely be reached.

### A. KEYSETS

4.2 A maximum of 112 keysets may be connected to a basic KSU. Expanded KSUs may have as many as 224 keysets. (Refer to page 3-61 for installation instructions.) The following keyset models can be installed on the Inter-Tel AXCESS System:

- Basic Digital Keysets (also referred to as Basic Digital Terminals) — non-display only
- Standard Digital Keysets (also referred to as Standard Digital Terminals) — display and non-display
- Executive Digital Keysets (also referred to as Executive Digital Terminals) — display only

4.3 For illustrations of the keysets, refer to the drawings beginning on page 2-35. The feature keys, speed-dial keys, call keys, and station programmable keys shown in the drawings are as they appear when the system is in the default configuration.

4.4 The *approximate* dimensions of the Basic, Standard, and Executive keysets are:

|        |                    |
|--------|--------------------|
| Height | 3.0 in. (7.6 cm.)  |
| Width  | 7.5 in. (19.1 cm.) |
| Length | 9.0 in. (22.9 cm.) |
| Weight | 2.3 lb. (1.0 kg.)  |

4.5 All keysets have the following design features in their default configuration:

- 12-key pushbutton keypad
- A variety of feature keys (some of which may be designated as user programmable)
- Four call keys with LED indicators for incoming call access and indication
- Integrated speakerphone capability (optional on Basic and Standard keysets)
- Ring and voice volume controls (using the  VOL and  keys)
- Slide-out directory card
- Self-test feature (for testing keyset functions)
- Hearing aid-compatible (HAC) electret handset
- Reversible baseplate for wall mounting

### Integrated Speakerphone

4.6 All Executive keysets have a built-in, integrated, speakerphone, which can be used in either standard or enhanced mode. (See page 4-38 for more information.)

4.7 All Basic and Standard keysets have a speaker and a microphone for handsfree intercom reply, but they do not have a true integrated speakerphone. However, the DSPs on the Options Card can be configured to provide shared speakerphone circuitry (in either standard or enhanced mode) for Basic and Standard keysets. In addition, each DKSC-16 has a DSP for providing up to 10 speakerphones for the Basic and Standard keysets attached to that card. (See pages 4-38 and 4-39 for more information.)

**NOTE:** If desired, speakerphone capability can be disabled on a station-by-station basis through database programming. (See page 6-34.)

4.8 The integrated speakerphone allows users to place and receive outside calls and intercom calls without lifting the handset. Once a call is connected, the keyset user may speak handsfree over the speakerphone or lift the handset to speak privately. When using the handset, the user may switch to the speakerphone by pressing the SPKR key and replacing the handset. If enabled, pages and/or background music may be broadcast over the speaker when the phone is not being used.

### Liquid Crystal Display (LCD)

4.9 All Executive keysets and all "display" Standard keysets have an LCD with two 16-character lines at the top. The display helps the user to process calls more efficiently and reliably. There are display messages for date and time, numbers dialed, call cost data, reminders, do-not-disturb, forwarding, voice mail processing, incom-

ing calls, station and system status, system alarms, user prompting, and programming. These display messages are indicated throughout the FEATURES section of the manual.

**4.10** Executive keysets have four additional 16-character display lines that are associated with the eight menu selection keys that border them. The menu display changes to reflect the functions of the menu keys. Pressing the key next to the displayed option selects that option. (When there is only one option on a line, pressing the key on either end of the line will select that option.)

**4.11** All "non-display" Standard keysets can be converted to display sets by installing an LCD Unit (part no. 828.1211). Basic keysets cannot be equipped with LCDs.

#### Electret Circuitry

**4.12** The AXXESS keysets and handsets have been designed using "electret" microphone circuitry, rather than the "dynamic" microphone circuitry used on many previous Inter-Tel keyset models. Electret keysets and handsets are not electrically compatible with dynamic keysets and handsets.

**4.13** If a dynamic handset is attached to an electret keyset, the handset transmit levels will be noticeably lower. If an electret handset is attached to a dynamic keyset, the handset will not transmit. (In both cases, neither the keyset nor the handset will be damaged.)

**4.14** Electret keysets can be identified by the manufacturer's label on the bottom of the keyset. Electret handsets can be identified by the "E1" embossed in the recess for the wall-mount hook (near the receiver).

#### Optional Headsets

**4.15** A headset may be attached to any keyset by unplugging the handset from the handset jack on the base of the keyset, plugging the headset into the handset jack, and entering a feature code to enable the headset. The SPKR key, which is used to turn the headset on and off, is lit when placing and receiving calls and unlit when the headset is not in use. The keysets are compatible with industry-standard, four-conductor, modular headsets that have electret microphones. Refer to page 3-65 for installation instructions.

#### Optional Off-Hook Voice Announce (OHVA) Module

**4.16** For off-hook voice announce receive capability, any Standard or Executive keyset may be equipped with an optional OHVA Module (part no. 550.3114). Refer to

page 3-65 for instructions on installing the optional OHVA Module.

**NOTE:** The OHVA Module is essentially a PCDDPM without RS-232 capability. OHVA Modules do *not* require AC transformers.

#### Optional Personal Computer Data Port Module (PCDDPM)

**4.17** For off-hook voice announce receive capability, and to allow an optional DSS/BLF Unit and/or an optional Modem Data Port Module to be installed, any Standard or Executive keyset may be equipped with an optional PC Data Port Module (part no. 550.3014). If a DSS/BLF Unit is not installed on the module's RS-232-C port, the port can be used to connect an SMDR/error message output device or a personal computer for programming the system database (maximum 4800-baud). Refer to pages 2-30 and 2-31 for RS-232-C connection requirements. Refer to page 3-67 for instructions on installing the optional PC Data Port Module.

**NOTE:** PCDDPMs require AC transformers when they are connected to DSS/BLF Units only or PC/output devices only. PCDDPMs do *not* require AC transformers when they are used for off-hook voice announce only or have attached MDPMs. For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-22.

#### Optional Modem Data Port Module (MDPM)

**4.18** Keysets equipped with PC Data Port Modules may also be equipped with optional Modem Data Port Modules (part no. 550.3015). The MDPM contains a jack that can be used to connect a data device (such as a personal computer equipped with a modem) to the keyset. Each MDPM is powered by its own AC transformer.

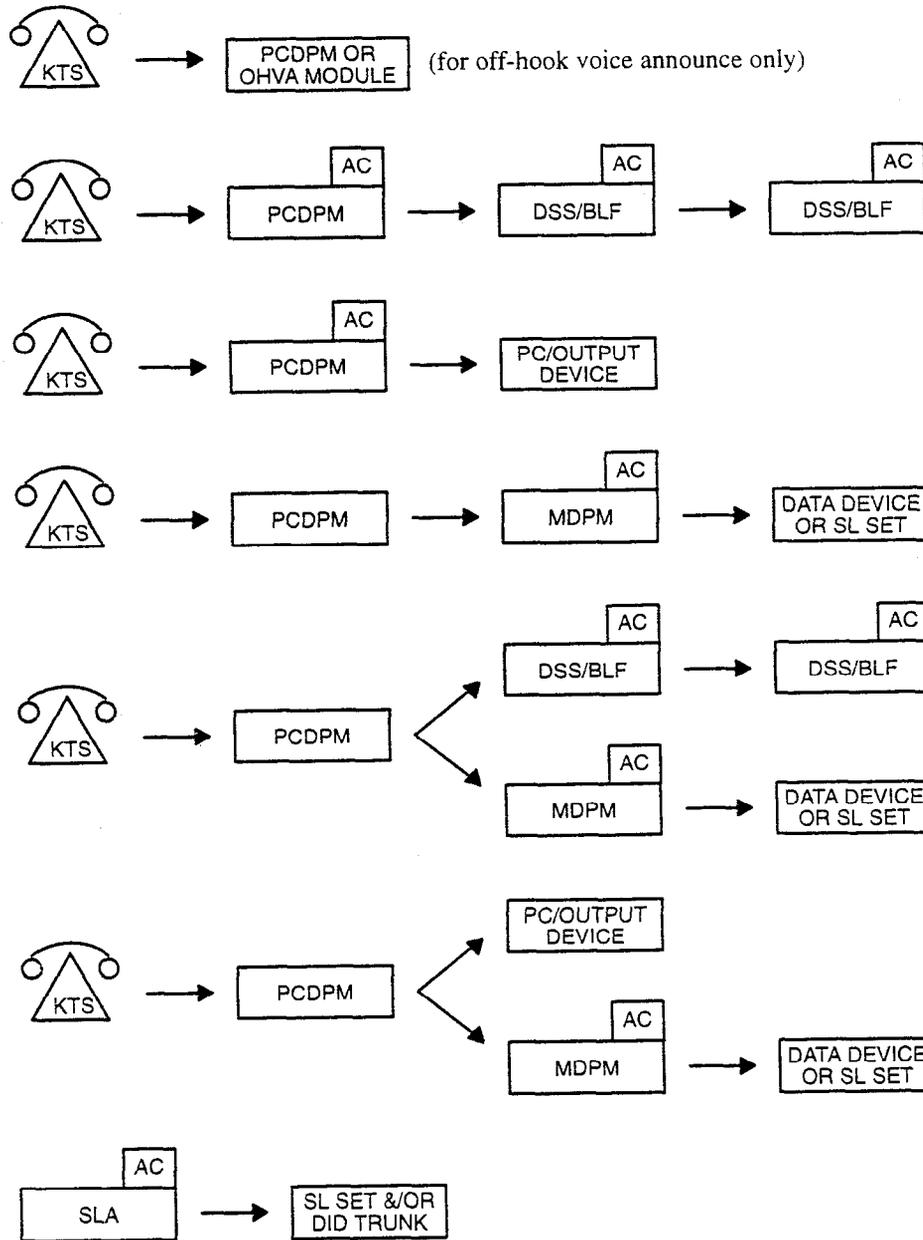
**NOTE:** MDPMs always require their own separate AC transformers. (For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-22.)

**4.19** The data device attached to the MDPM must have a direct-connection modem. The modem must be externally powered (or capable of operating on 20mA of loop current) and have an RJ11 CO interface. The data device can be used by the associated keyset(s) to communicate with remote data equipment over voice channels being used for CO or intercom calls. Refer to pages 3-70 and 4-101 for installation and operation instructions.

**NOTE:** Each "equipped" MDPM installed counts as one single-line device.

FIGURE 2-1. AC TRANSFORMER REQUIREMENTS

AC = AC transformer required



**NOTE:** DSS/BLF Units, MDPMs, and SLAs always require their own separate AC transformers. PCDPMs require AC transformers when they are connected to DSS/BLF Units only or PC/output devices only. PCDPMs do *not* require AC transformers when they are used for off-hook voice announce only or have attached MDPMs.

**B. DIRECT STATION SELECTION/BUSY  
LAMP FIELD (DSS/BLF) UNITS**

**4.20** There may be a maximum of ten Digital DSS/BLF Units installed on the system. The units can be single or tandem; tandem units count as two units.

**4.21** A DSS/BLF Unit consists of either a single unit or two units connected together to form a tandem unit. Each single unit provides one-key access to 60 extension numbers and/or other features/resources, while tandem units provide access to 120 extension numbers and/or other features/resources. (Refer to page 3-71 for DSS/BLF Unit installation instructions.)

**4.22** DSS/BLF Units are physically attached to the RS-232-C ports on keysets equipped with PC Data Port Modules (PCDPMs). The units are powered by their own AC transformers and do not require a DKSC or DKSC-16 circuit that is separate from the keyset's circuit. If desired, all ten units can be connected to keysets installed on the same Digital Keyset Card.

**NOTE:** DSS/BLF Units always require their own separate AC transformers. For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-22.

**4.23** For an illustration of the DSS/BLF Unit (and other station instruments), refer to the drawings beginning on page 2-35. DSS/BLF Unit dimensions are:

|        |                    |
|--------|--------------------|
| Height | 3.0 in. (7.6 cm.)  |
| Width  | 7.5 in. (19.1 cm.) |
| Length | 9.0 in. (22.9 cm.) |
| Weight | 1.7 lb. (0.8 kg.)  |

**4.24** As stated earlier, each single DSS/BLF Unit provides one-key access to up to 60 extension numbers and/or other features/resources. These numbers can be station extension numbers, hunt group pilot numbers, or other resources/features. The layout of the keys and the numbers they access are assigned using one of up to three key maps in database programming. The intercom number/key assignments of each key map are programmed in two lists, page 1 and page 2. Single DSS/BLF Units are assigned page 1 of the desired key map. Tandem units are assigned both pages of the desired key map (page 1 for the first unit and page 2 for the second unit).

**4.25** Together, the lamps in the keys create a busy lamp field that indicates the status of each station, hunt group, or other feature/resource assigned to the keys. If assigned to a station, the LED indicator in the key is solidly lit when the associated station is busy or unplugged, flashes slowly when the station is in do-not-disturb, flashes fast when the station has a call ringing in, or flutters continuously if the station is causing a STATION OFF-HOOK system alarm. If assigned to a hunt group, the LED indicator is solidly lit when all stations in the hunt group are unavailable (busy, in do-not-disturb, or removed from the hunt group) and it flashes fast when a call is camped on to a hunt group. If assigned to a feature or resource, the LED indicator is lit to show busy status and unlit to show idle status.

### C. SINGLE-LINE SETS

4.26 Up to 48 (basic KSUs) or 104 (expanded KSUs) industry-standard, AC-ringing, single-line DTMF sets may be installed on the AXCESS System. The single-line sets are connected to Single-Line Cards (up to eight per card) or to Single-Line Adapters (up to two per adapter) that are connected to available DKSC or DKSC-16 circuits.

**NOTE:** DC-ringing single-line devices may not be connected to SLCs or SLAs.

4.27 Single-line set users access some station features simply by lifting the handset and entering a feature code. Other features are accessed using a combination of a hookflash and a feature code. Refer to the FEATURES section of this manual for details.

4.28 Each SLC can be equipped with an optional Lamp Option Card (LOC) to provide visual message waiting capabilities for single-line sets equipped with message lamps. SLAs do not support *visual* message waiting applications. Single-line sets, whether connected to SLCs or SLAs, are then configured in database programming to receive *visual* and/or *audible* message waiting indication tones.

#### Optional Handset Amplifiers

4.29 The typical handset amplifier is an external device that plugs into the single-line set (where the handset is normally connected); the handset is then plugged into the amplifier. Receiver voice volume is controlled by turning a thumbwheel (or similar control) located on the amplifier. Such amplifiers are generally equipped with a transformer that requires a 110VAC outlet. Refer to page 3-73 for installation instructions.

### D. OFF-PREMISES EXTENSIONS (OPXs)

4.30 An OPX is an AC ringer-equipped single-line DTMF set that is placed in a remote location and connected to the system through a telephone company OPX circuit or a customer-provided circuit.

4.31 Off-premises stations are connected directly to SLAs — up to two per SLA (*external* HVRA Units, power supplies, and ring generators are not needed). Or, they can be connected to T1 Cards (up to 24 circuits on a card).

4.32 The OPX circuits provided by the telephone company are identified with Facility Interface Codes (FIC): Class A, OL13A; Class B, OL13B; or Class C, OL13C. The service order code is 9.0F (fully protected private circuit). If the impedance does not exceed a loop measurement of 800 ohms (loop of 15,600 feet using 24AWG wire), a customer-provided circuit between the remote location and the system may be used.

4.33 The 800-ohm loop limitation is usually suitable for accessing on-premises stations from off-premises stations. However, for applications where one off-premises station will be calling another through the station card, the impedance between the two off-premises stations (both circuits added together) must be less than 800 ohms (loop measurement). In this situation, a Class A or B FIC circuit is preferable.

4.34 When an SLA circuit is designated for OPX use in database programming (see page 6-58), its voice volume levels are increased approximately 3dB over normal single-line set voice volume levels. This is an attempt to compensate for any loss in the external OPX circuit. However, in certain off-premises applications, the voice volume levels may still be unacceptable. This degradation in voice volume is due to the natural voice frequency range limitations of the telephone company or customer-provided circuit. To increase the frequency range, installation of a two-wire, negative impedance repeater unit is recommended. Such units typically provide from 0-15 decibels of voice volume gain and allow regulation of the gain in each direction when simultaneous voice transmission occurs. The switching sensitivity on the unit should also be adjustable.

4.35 The repeater unit is installed at the MDF between the station block and the cabling to the off-premises station. (Refer to page 3-27 for OPX installation instructions.) When ordering a repeater unit, consult with the supplier for ordering the proper mounting shelf and power supply for the unit. Additional information on operating and adjusting the repeater unit is generally included with the product.

**NOTE:** Each OPX circuit can have extended ring cadence enabled or disabled (see page 6-31). The extended setting lengthens the duration of the ring signal to meet the requirements of many OPX and/or repeater applications. The default setting is *disabled*.

## E. PLAYBACK DEVICES

**NOTE:** For automated attendant features and for optimal playback device performance and functionality, use the Inter-Tel AXCESSORY Talk PC and applications software instead of SLA circuits.

**4.36** AC-ringing playback devices may be connected to SLCs (up to eight per card) or to SLAs (up to two per adapter). (Refer to page 3-73 for playback device installation instructions.) A playback device is an answering machine that answers the call, plays a message, and then disconnects from the call. Playback devices are installed like single-line sets, using one-pair twisted cable and four-conductor modular jacks. The device must be capable of the following functions: detect ring-

ing, provide ring trip, and automatically disconnect when the announcement is completed.

**4.37** Playback devices may be used with hunt groups to speed call processing. Hunt groups can have three types of special stations: announcement stations, overflow stations, and recall destination stations. These types of stations may be equipped with a playback device that answers the call, then disconnects to transfer it back to the hunt group. (Refer to FEATURES, page 4-15, for more information.)

**4.38** The playback device is programmed as a regular single-line station and is assigned an extension number. If the device is sensitive to camp-on tones and disconnects calls, the programmer can disable the camp-on indications for that station circuit (refer to PROGRAMMING, page 6-30).

## 5. AXCESSORY TALK PC

5.1 The Inter-Tel AXCESSORY Talk PC is an IBM-compatible personal computer (PC) that is connected to the AXCESS System to provide integrated voice processing (voice mail, automated attendant, hunt group announcement and overflow, buffered SMDR, optional Fax On Demand, etc.). For installation instructions, see page 3-74.

5.2 The AXCESSORY Talk PC is equipped with the following items:

- IBM OS/2 Warp (3.0) operating system software
- 80386 (or higher) microprocessor (with at least 8MB RAM and turbo mode always enabled)  
**NOTE:** An 80486 (or higher) microprocessor is required for systems with more than eight ports. Also, for systems with more than 20 ports, the PC Motherboard should be equipped with 16MB RAM.
- Minimum 405MB hard disk drive
- 3½-inch (1.44MB) double-sided/high-density floppy disk drive
- Monitor Card (VGA)
- Disk Controller Card
- Two serial ports and one parallel port
- Specially-designed Audio Interface Card (AIC), Voice Processing Cards (VPCs), cables, and applications software
- Capacity to house at least five full-size (16-bit) circuit cards (one for the Disk Controller Card, one for the optional Fax Card, and one for each of the up to three VPCs)

5.3 Optional equipment that can be used with the AXCESSORY Talk PC includes the following:

- Monitor and keyboard (for diagnostics and, if necessary, for loading software)
- Fax Card (for the optional Fax On Demand feature)
- SMDR retrieval cable kit (part no. 828.1282)
- Parallel printer for producing various reports

### AXCESSORY Talk Applications Software

5.4 Each new AXCESSORY Talk PC is shipped with the AXCESSORY Talk applications software already installed on the hard disk drive. As a backup, 3½-inch floppy disks containing the applications software are also included.

### Diagnostics

5.5 For advanced troubleshooting purposes, the AXCESSORY Talk applications software includes special diagnostics software. If an AXCESSORY Talk applications problem cannot be resolved, Customer Support may instruct the technician to connect a monitor and keyboard and perform certain diagnostic procedures.

### Audio Interface Card

5.6 The AXCESSORY Talk PC's Audio Interface Card (AIC) is a specially-designed Input/Output (I/O) circuit card that connects to the DB15 PCM connector on the AXCESS CPU/MEM Card, CPU020/PCM-D Card, or Options Card. The initial connection to the CPU, provides up to eight audio interface ports (i.e., dedicates eight system voice channels) for communication between the telephone system and the AXCESSORY Talk PC. For an additional 4-24 ports, the AIC may be connected to the DB15 PCM connector on the Options Card.

### Voice Processing Cards

5.7 To control the audio interface ports provided by the AIC, as many as three Voice Processing Cards (VPCs) can be installed in the AXCESSORY Talk PC (at least one is required). The VPCs are connected to the AIC using a special interface cable.

5.8 There are three different models of Voice Processing Cards (VPCs) available: 4-Port, 8-Port, and 16-Port. As many as three VPCs (in any combination) can be installed up to the system maximum of 32 audio ports.

### Monitor Card

5.9 The AXCESSORY Talk PC is equipped with a Monitor Card (currently VGA) so that a monitor and keyboard (IBM AT-compatible) can be connected for performing diagnostics or for loading software and/or voice prompts, if necessary.

### Optional Fax Card

5.10 The AXCESSORY Talk PC can be equipped with a special Fax Card to provide Fax On Demand services to callers. See page 5-9 for more information.

### Message Storage Capacity

5.11 The amount of voice mail message storage space available depends on the size of the hard disk drive installed in the AXCESSORY Talk PC. Approximately 10MB of disk space is required for each hour of message storage. A 405MB hard disk drive, for example, can store approximately 30 hours of messages in addition to

the operating system software. A 540MB hard disk drive can store approximately 45 hours of messages.

**NOTE:** The 10MB/hour capacity does not include SMDR or Fax On Demand storage allocations. If these features are used, there will be a corresponding reduction in available message storage space.

**Maximum Capacities**

5.12 Listed below are some of the AXCESSORY Talk features with maximum capacities that are dependent on system resources.

| FEATURE                                                | CAPACITY |
|--------------------------------------------------------|----------|
| System Audio Interface Ports                           | 32       |
| Applications per System                                | 150      |
| Mailboxes and/or Extension IDs                         | 500      |
| Voice Mail Group Lists                                 | 100      |
| Members per group list                                 | 100      |
| Remote Message Notification                            |          |
| Numbers per mailbox                                    | 18       |
| Audiotex Recordings per System                         | 500      |
| Message Notification/Retrieval Applications per System | 1        |
| System Passwords                                       | 4        |
| Time Slot Groups                                       | 10       |

**SMDR Retrieval Connection Requirements**

5.13 If necessary, the DB25 (COM2) serial port on the back of the AXCESSORY Talk PC can be used to connect another PC for SMDR data retrieval using Inter-Tel's Inside Track call accounting software.

5.14 To do this, use the modular adapters and line cord included in the optional SMDR retrieval cable kit (part no. 828.1282), as listed below and described in the *Inside Track User Guide*.

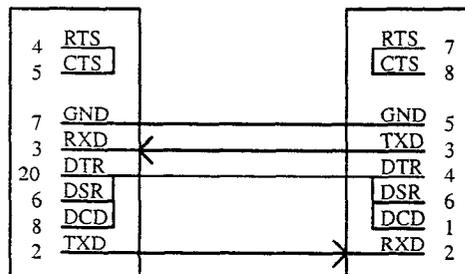
- DB25 Modular Adapter (female, reversing, four-wire) — part no. 804.2425 (MOD-TAP® part no. 06-986-G99-33)
- DB9 Modular Adapter (female, non-reversing, four-wire) — part no. 804.2420 (MOD-TAP® part no. 08-988-610-00)
- Line Cord (two-pair, reversing) — part no. 813.1592

5.15 If the SMDR retrieval cable kit is not available, it is possible to use a standard straight-through cable along

with a null-modem adapter and, if necessary, a gender changer. These items are readily available at most electronic/computer equipment stores.

5.16 Another option is to use the following wiring diagram to build the necessary cable/connectors.

**AXX. TALK PC DB25**                      **INSIDE TRACK PC DB9**



DB25 internal jumpers: 4-5 and 20-6-8.  
DB9 internal jumpers: 7-8 and 4-6-1

**NOTE:** When building cable/connectors from this diagram, note that the connections between the AXCESSORY Talk DB25 port and the other device include the modular adapters and a line cord. The connection must be made as indicated in the diagram (correct pins connected) regardless of whether a reversing or non-reversing line cord is used.

**Parallel Printer Connection Requirements**

5.17 If desired, the DB25 parallel port on the back of the AXCESSORY Talk PC can be used to connect a parallel printer for producing various reports. The pin functions of the parallel port are listed in the following chart.

| SIGNAL NAME   | FUNCTION | PIN   |
|---------------|----------|-------|
| -STROBE       | OUT      | 1     |
| DATA BIT 0    | OUT      | 2     |
| DATA BIT 1    | OUT      | 3     |
| DATA BIT 2    | OUT      | 4     |
| DATA BIT 3    | OUT      | 5     |
| DATA BIT 4    | OUT      | 6     |
| DATA BIT 5    | OUT      | 7     |
| DATA BIT 6    | OUT      | 8     |
| DATA BIT 7    | OUT      | 9     |
| -ACK          | IN       | 10    |
| BUSY          | IN       | 11    |
| PE            | IN       | 12    |
| SLCT          | IN       | 13    |
| -AUTO FEED XT | OUT      | 14    |
| -ERROR        | IN       | 15    |
| -INIT         | IN       | 16    |
| -SLCT IN      | OUT      | 17    |
| GND           | -        | 18-25 |

## 6. ADDITIONAL SYSTEM EQUIPMENT

### A. PERSONAL COMPUTER (PC) FOR ON-SITE OR STAND-ALONE/REMOTE PROGRAMMING

6.1 The device used for on-site or stand-alone/remote programming must be an IBM-compatible PC with a minimum:

- 80286 or higher microprocessor (80386 recommended)
- 13 megabytes (MB) available memory on the hard disk drive (17 MB recommended)
- 5¼-inch (1.2MB) or 3½-inch (1.44MB) double-sided/high-density floppy disk drive
- Windows 3.1
- MS-DOS 3.3 or higher (MS-DOS 5.0 or 6.2 recommended)
- 2 MB available RAM
- EGA or better graphics monitor (VGA recommended)
- COM port (RS-232-C communications port) configured as Data Terminal Equipment (DTE)
- A programming mouse is optional but recommended (if a serial mouse is used, install on an unassigned COM port)

6.2 For remote maintenance, a modem is also needed. (See PROGRAMMING, page 6-14, for additional information on remote system maintenance.) To connect the PC to the AXCESS System for on-site programming, refer to the following information.

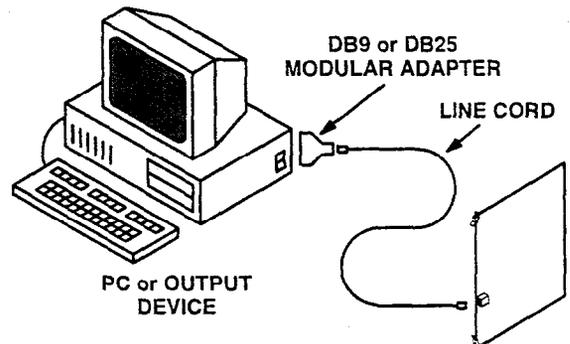
### B. PROGRAMMING PC AND SMDR/ERROR MESSAGE OUTPUT DEVICE CONNECTION REQUIREMENTS

6.3 The on-site programming PC and the optional output device(s) for the SMDR and Error Message Recording features must be equipped with RS-232-C communications ports and they must be configured as Data Terminal Equipment (DTE). The AXCESS RS-232-C ports are always configured as Data Carrier Equipment (DCE).

**NOTE:** Most PCs/output devices are already configured as DTE. An output device may be a printer, a terminal, or a PC equipped with terminal emulation software.

### CPU/MEM, CPU020/PCM-D, and Options Card RS-232-C Connection

6.4 There are several ways to connect a PC or an output device to one of the RS-232-C ports on the CPU/MEM Card, CPU020/PCM-D Card, or Options Card(s). The easiest and most widely accepted method is to use a four-wire MOD-TAP® modular adapter and a standard four-, six-, or eight-wire reversing (inverting) line cord, as shown in the following diagram.



CPU/MEM, CPU020/PCM-D, or OPC

6.5 The modular adapter can be either male or female and either DB9 or DB25, as required by the PC or output device. The chart at the top of the following page lists the part numbers for various four-wire and eight-wire MOD-TAP® modular adapters. They can be purchased from most telephone equipment supply houses.

6.6 If necessary, an eight-wire MOD-TAP® modular adapter and an eight-wire reversing (inverting) line cord can be used for special applications requiring hardware handshaking. The pin functions of the AXCESS CPU/MEM Card, CPU020/PCM-D Card, and Options Card RS-232-C ports are listed in the following chart.

| SIGNAL NAME             | FUNCTION                            | AXX. |         |          |
|-------------------------|-------------------------------------|------|---------|----------|
|                         |                                     | PIN  | DB9 PIN | DB25 PIN |
| Request To Send (RTS)   | <i>Not Used</i>                     | 1    |         |          |
| No Connection           |                                     | 2    |         |          |
| Signal Ground           | Reference Ground                    | 3    | 5       | 7        |
| Transmit Data (TXD)     | Data to Axxess                      | 4    | 3       | 2        |
| Data Term. Ready (DTR)* | Signal to Axxess*                   | 5    | 4       | 20       |
| Receive Data (RXD)      | Data from Axxess                    | 6    | 2       | 3        |
| Data Set Ready (DSR)    | Signal from Axxess<br>(always true) | 7    | 6       | 6        |
| Clear To Send (CTS)     | Signal from Axxess                  | 8    | 8       | 5        |

\* The CPU/MEM and CPU020/PCM-D Card RS-232-C ports do not support DTR.

RECOMMENDED RS-232-C MOD-TAP® PART NUMBERS

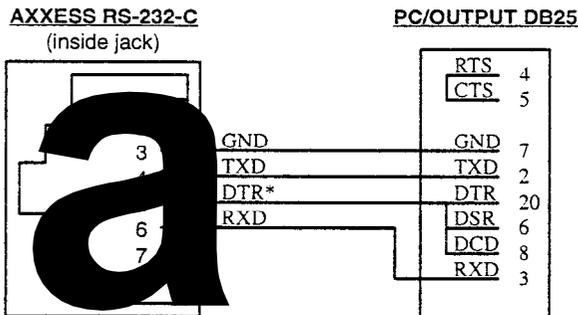
| MODULAR ADAPTER TYPE | SEX | D-TYPE CONNECTOR PART NUMBERS |               | HARDWARE HANDSHAKE PINS JUMPERED TOGETHER WITHIN MOD-TAP® |
|----------------------|-----|-------------------------------|---------------|-----------------------------------------------------------|
|                      |     | 9-PIN                         | 25-PIN        |                                                           |
| 4-WIRE*              | M   | 08-888-610-00                 | 06-888-054-20 | DTR-DSR-DCD<br>RTS-CTS                                    |
|                      | F   | 08-988-610-00**               | 06-988-054-20 |                                                           |
| 8-WIRE*              | M   | 08-888-D12-00                 | 06-888-262-20 | DSR-DCD                                                   |
|                      | F   | 08-988-D12-00                 | 06-988-262-20 |                                                           |

\* All of the modular adapters listed above are equipped with WE8W modular jacks. The 4-wire types can be used with 4-, 6-, or 8-wire reversing line cords (only the center four wires are used). The 8-wire types must be used with 8-wire reversing line cords. Modular adapters can be purchased from most telephone equipment supply houses.

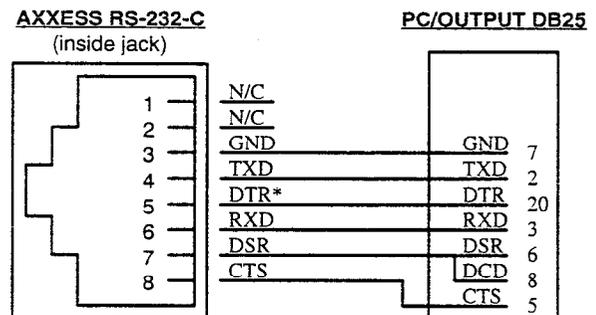
\*\* Same as the 804.2420 modular adapter included in the AXCESSORY Talk PC's optional SMDR retrieval kit.

**6.7 Software handshaking adapters:** For standard applications using software handshaking, Inter-Tel recommends using four-wire MOD-TAP® modular adapters and four-, six-, or eight-wire reversing line cords (as described on the preceding page). However, if they are not available, the following wiring diagrams can be used to build adapters that will, with a line cord, connect one of the RS-232-C ports on the CPU/MEM, CPU020/PCM-D, or Options Card(s) to the DB9 or DB25 ports found on most PCs and output devices.

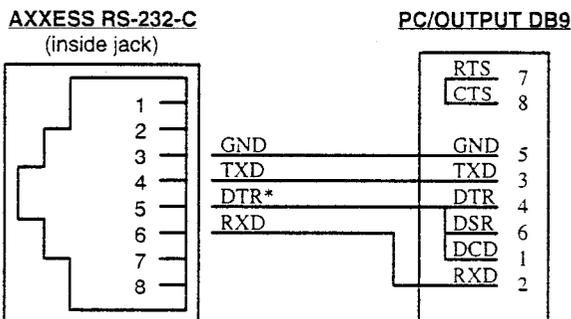
**6.8 Hardware handshaking adapters:** For special applications requiring hardware handshaking, Inter-Tel recommends using eight-wire MOD-TAP® modular adapters and eight-wire reversing line cords (as described on the preceding page). However, if the MOD-TAPs are not available, the following wiring diagrams can be used to build adapters that will, with a line cord, connect one of the RS-232-C ports on the CPU/MEM, CPU020/PCM-D, or Options Card(s) to the DB9 or DB25 ports found on most PCs and output devices.



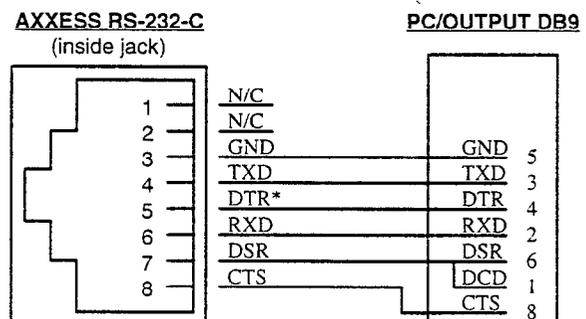
\* The CPU/MEM and CPU020/PCM-D RS-232-C ports do support DTR. DB25 internal jumpers: 4-5 and 20-6-8.



\* The CPU/MEM and CPU020/PCM-D RS-232-C ports do not support DTR. DB25 internal jumpers: 6-8.



\* The CPU/MEM and CPU020/PCM-D RS-232-C ports do not support DTR. DB9 internal jumpers: 7-8 and 4-6-1.



\* The CPU/MEM and CPU020/PCM-D RS-232-C ports do not support DTR. DB9 internal jumpers: 6-1.

**NOTE:** When building adapters from these diagrams, keep in mind that the connections between the AXCESS RS-232-C port and the DB9 or DB25 port include the modular adapter and a line cord. The connection must be made as indicated in the diagram (correct pins connected) regardless of whether a reversing or non-reversing line cord is used.

**PC Data Port Module RS-232-C Connection**

**6.9** To connect a PC or an output device to one of the RS-232-C ports on a PCDPM, use the PCDPM-to-RS232C interface cable (part no. 813.1565) supplied with the PCDPM. One end of the cable connects to the RS-232-C port on the PCDPM. The DB9 end of the cable connects to the PC or output device.

**6.10** The PC or output device must be configured to support hardware handshaking using the DTR and CTS lines. The pin functions of the PCDPM RS-232-C port are listed in the following chart.

| <b>SIGNAL NAME</b>        | <b>FUNCTION</b>                     | <b>DB9 PIN</b> |
|---------------------------|-------------------------------------|----------------|
| Data Carrier Detect (DCD) | Signal from Axxess<br>(always true) | 1              |
| Receive Data (RXD)        | Data from Axxess                    | 2              |
| Transmit Data (TXD)       | Data to Axxess                      | 3              |
| Data Terminal Ready (DTR) | Signal to Axxess                    | 4              |
| Signal Ground             | Reference Ground                    | 5              |
| Data Set Ready (DSR)      | Signal from Axxess<br>(always true) | 6              |
| Request To Send (RTS)     | <i>Not Used</i>                     | 7              |
| Clear To Send (CTS)       | Signal from Axxess                  | 8              |
| Ring Indicator (RI)       | <i>Not Used</i>                     | 9              |

**Handshaking**

**6.11** When the system is in the default configuration, the Inter-Tel AXXESS RS-232-C ports are enabled for "software" handshaking. Most output devices are designed for software handshaking, which is the use of "X-ON" and "X-OFF" characters to indicate readiness to send or receive data. Refer to the device's operating manual to determine if it uses X-ON/X-OFF characters.

**6.12** If the device does not support X-ON/X-OFF characters, hardware handshaking may be enabled (see PROGRAMMING, page 6-245). When enabled for hardware handshaking, signals are sent over the cable to indicate readiness to send or receive data. The Inter-Tel AXXESS RS-232-C port will send a logic true on DSR (Data Set Ready) and CTS (Clear To Send) when it is ready to receive data. In addition, the AXXESS RS-232-C port will monitor DTR (Data Terminal Ready) and will only send data if it receives a logic true. If the AXXESS RS-232-C port receives a logic false to indicate that the device is not ready or that the buffer on the attached device is full, it will not send data.

**6.13** When using the modular adapters described on the preceding pages, the RS-232-C ports on the CPU/MEM Card, CPU020/PCM-D Card, Options Card, and PCDPMs support the following types of hardware handshaking.

| <b>MODULAR ADAPTER TYPE</b> | <b>HARDWARE HANDSHAKING SUPPORTED</b>                                    |
|-----------------------------|--------------------------------------------------------------------------|
| 4-WIRE                      | DTR* input to AXXESS                                                     |
| 8-WIRE                      | DSR output from AXXESS<br>CTS output from AXXESS<br>DTR* input to AXXESS |

\* The CPU/MEM and CPU020/PCM-D Card RS-232-C ports do not support DTR.

**Communication Parameters**

**6.14** The on-site programming PC and SMDR/error message output devices must communicate at 300, 1200, 2400, 4800, 9600, 19200, or 38400 baud, depending on the selected port. System baud rates are set independently in database programming. Other specifications include:

- The data format must be 8 bit standard ASCII
- Parity is off (ignored)
- Communication is full duplex
- There is one start bit and one stop bit

**NOTE:** For software uploads only, the CPU020/PCM-D Card is also capable of using 57600 baud. See page 3-60 for more information.

**6.15** The output devices, whether used for SMDR or error messages, must be able to print reports with a width of 80 characters. The devices must not have cables longer than 50 feet (15 meters).

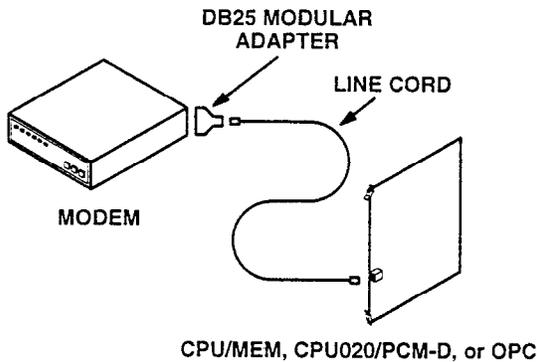
**Ferrite Beads**

**6.16** To help reduce electromagnetic interference (EMI) and radio frequency interference (RFI), it may be necessary to equip the RS-232-C cables with ferrite beads. (See INSTALLATION, page 3-12.) Two ferrite "split" beads (two half beads) are installed on each cable. The part number for a single split bead is 808.1195.

C. MODEM CONNECTION REQUIREMENTS

6.17 If desired, a modem for remote programming/maintenance can be connected to one of the RS-232-C ports on the CPU/MEM Card, CPU020/PCM-D Card, or Options Card(s). Although PCDPM RS-232-C ports can also be used if necessary, they do not always provide reliable *modem* communication.

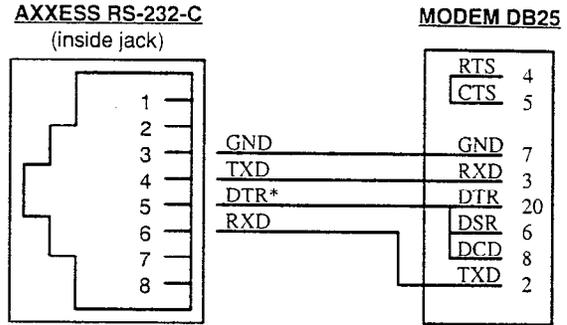
6.18 Inter-Tel sells an optional modem kit (part no. 550.3026) that allows the installer to easily connect a modem to one of the RS-232-C ports on the CPU/MEM Card, CPU020/PCM-D Card, or Options Card(s). If the optional modem kit is not available, Inter-Tel recommends using a four-wire MOD-TAP® modular adapter (part no. 06-888-435-30) and a standard four-, six-, or eight-wire reversing (inverting) line cord, as shown below.



**NOTE:** All status responses must be *disabled* on the modem connected to the AXXESS RS-232-C port. *English* status responses must be *enabled* on the modem connected to the remote programming PC.

6.19 If the recommended modem kit or MOD-TAP is not available, the following wiring diagram can be used to build an adapter that will, with a line cord, connect one of the RS-232-C ports on the CPU/MEM, CPU020/PCM-D, or Options Card(s) to the DB25 port found on most modems.

**NOTE:** When building an adapter from this diagram, keep in mind that *the connections between the AXXESS RS-232-C port and the DB25 port include the modular adapter and a line cord.* The connection must be made as indicated in the diagram (correct pins connected) regardless of whether a reversing or non-reversing line cord is used.

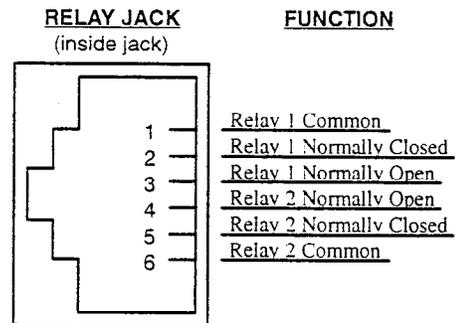


\* The CPU/MEM and CPU020/PCM-D Card RS-232-C ports do not support DTR. DB25 internal jumpers: 4-5 and 20-6-8.

**NOTE:** Instead of the male DB25 adapters described above, it is also possible to use the female DB25 modular adapter (part no. 804.2425, MOD-TAP® part no. 06-986-G99-33) included with the AXXESSORY Talk PC's optional SMDR retrieval cable kit in conjunction with a male/male RS-232-C gender changer and a non-reversing (straight-through) line cord.

D. POWER FAILURE TRANSFER CONNECTION REQUIREMENTS

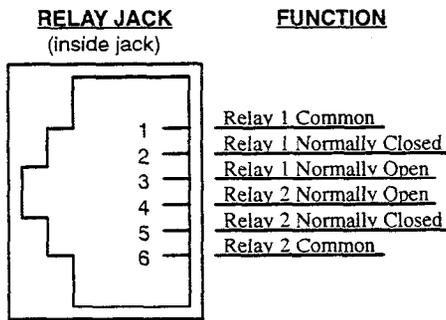
6.20 To connect PFT relay equipment to the relay jack (six-conductor modular jack) on the CPU/MEM or CPU020/PCM-D Card (see page 2-10 or 2-12), one end of the cable between the two must have a 6-pin modular plug connector. The other end of the cable must be compatible with the PFT equipment. Consult the owner's guide for the equipment to verify that the pin functions are the same as those shown in the following chart. If necessary, rewire the connector on the device to match the requirements.



**NOTE:** During normal system operation, both relays are energized. When power is removed, connection is made between the common and normally closed contacts.

**E. NIGHT TRANSFER CONNECTION REQUIREMENTS**

**6.21** To connect night transfer relay equipment to the relay jack (six-conductor modular jack) on the Options Card (see page 2-19), one end of the cable between the two must have a 6-pin modular plug connector. The other end of the cable must be compatible with the night transfer equipment. Consult the owner's guide for the equipment to verify that the pin functions are the same as those shown in the following chart. If necessary, re-wire the connector on the device to match the requirements.



**F. SYSTEM BATTERY BACK-UP REQUIREMENTS**

**6.22** To provide back-up power in the event of an AC power failure or brownout condition, the system power supply and the AXCESSORY Talk PC power supply can have optional battery back-up using a customer-provided uninterruptible power supply (UPS) unit or standby power supply (SPS) unit. Contact Inter-Tel's Factored Product division for a list of available models.

**6.23** It is recommended that a power supply unit with the following characteristics be installed:

- Sine wave output
- Transfer time of less than 20 milliseconds
- **6 Amp Power Supply:** Output rating of approximately 250 Watts for a fully-populated basic KSU.

approximately 500 Watts for a fully-populated expanded KSU, and approximately 110 Watts for a fully-populated AXCESSORY Talk PC

**9 Amp Power Supply:** Output rating of approximately 500 Watts for a fully-populated basic KSU, approximately 1000 Watts for a fully-populated expanded KSU, and approximately 110 Watts for a fully-populated AXCESSORY Talk PC

- Low AC line transfer voltage (or cutoff circuit) of 100VAC (minimum)

**NOTE:** The system back-up time is determined by the battery ampere-hour ratings. The unit's batteries can be either external or internal. Also, even if the power supply unit has the specifications listed above, it cannot be guaranteed that it will work properly with the AXCESS System. Contact Inter-Tel's Factored Product division and/or Customer Support for a listing of approved UPS/SPS units and installation instructions.

**G. ADDITIONAL INFORMATION**

**6.24** If necessary, contact Inter-Tel's Customer Support department and/or Factored Products division for additional information on the optional equipment listed below:

- Standby Power (system battery back-up)
- Lightning and AC Surge Protection
- Headsets
- Paging Equipment
- Single-Line Telephones
- Cordless Telephones
- Music/Message-On-Hold
- OPX Repeaters
- Inside Track SMDA Software and Buffer Box
- Facsimile Machine
- Playback Devices
- Power Failure Transfer

FIGURE 2-2. ORIGINAL BASIC KEY SERVICE UNIT (KSU)

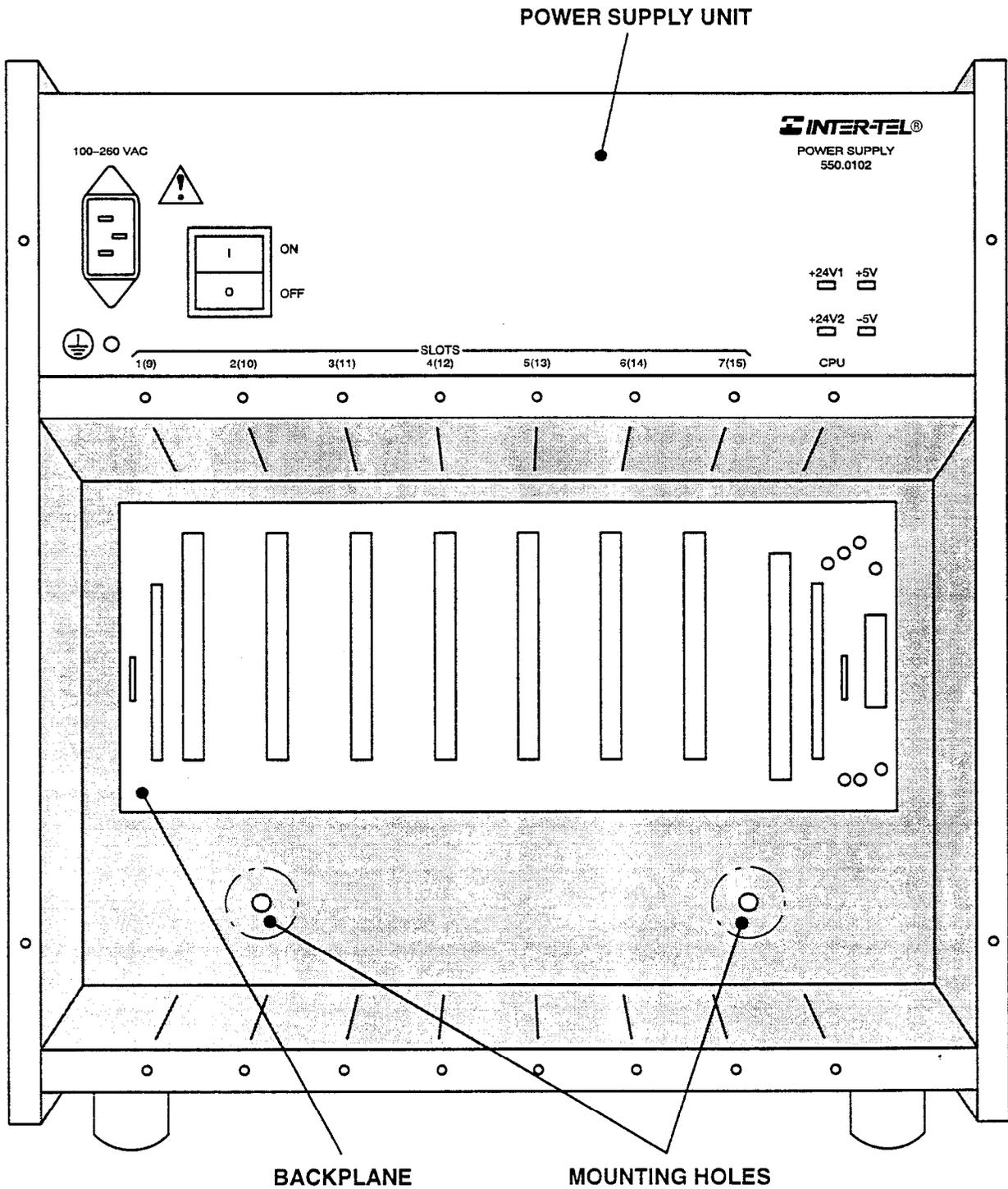


FIGURE 2-3. NEW-STYLE BASIC KSU

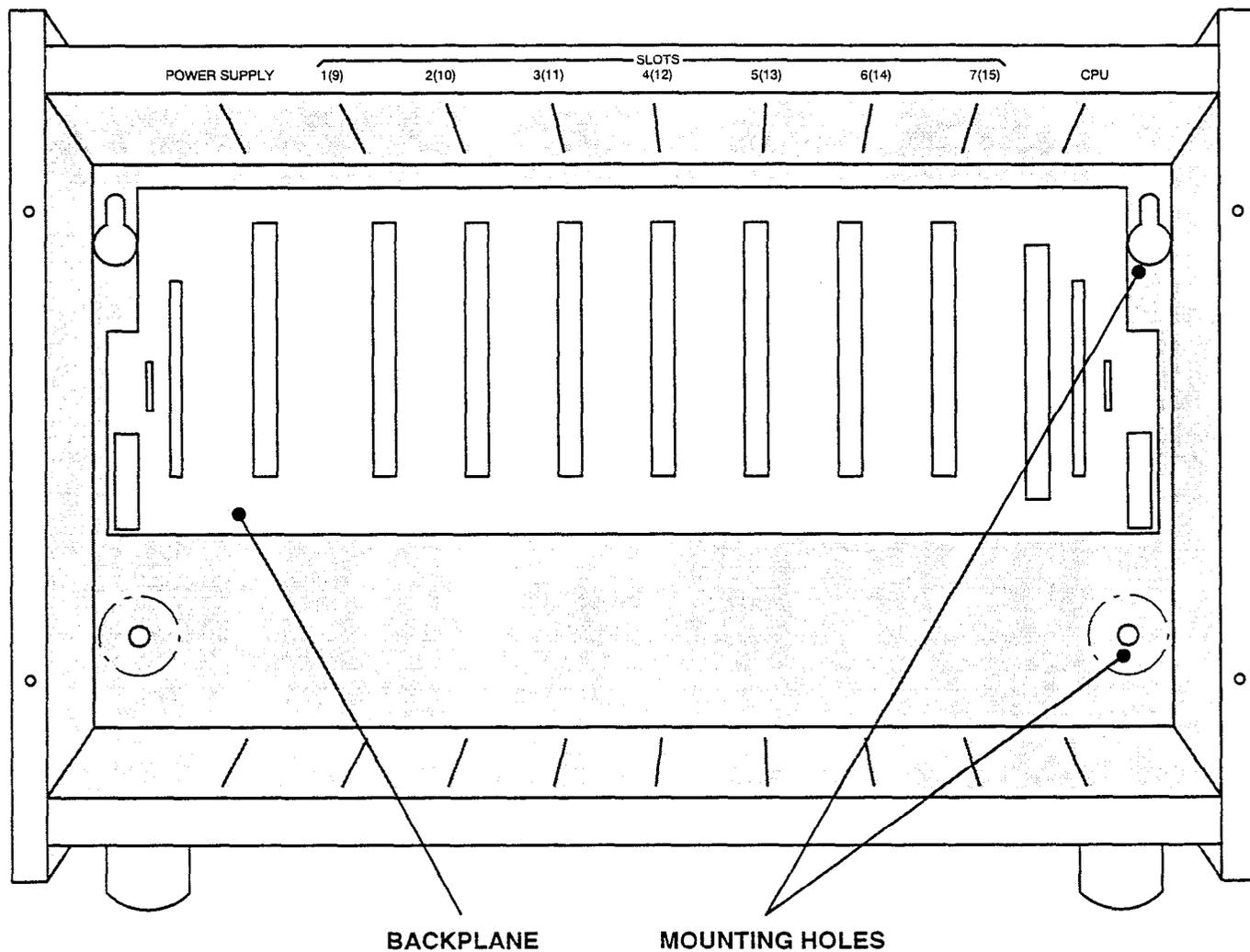
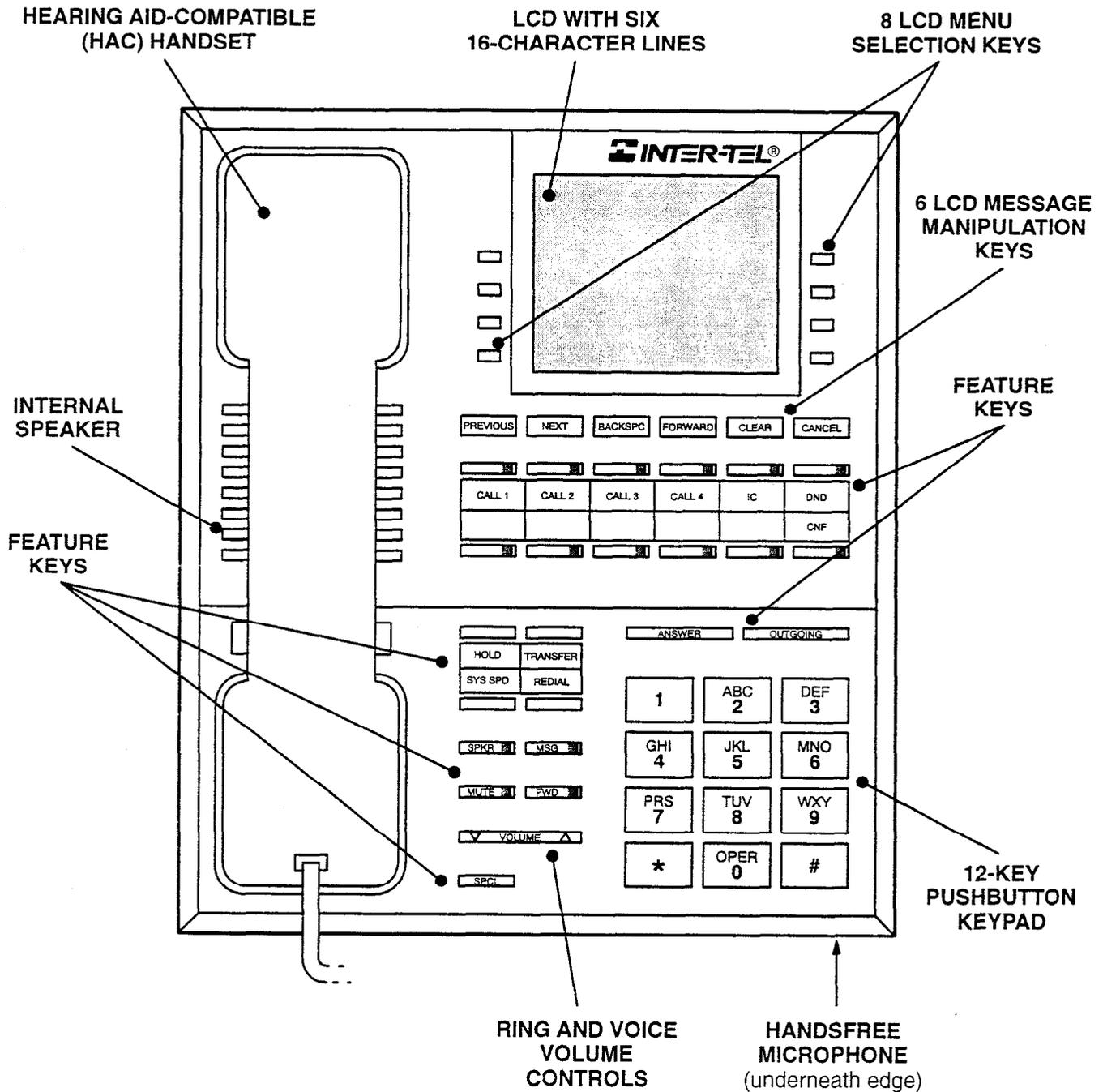
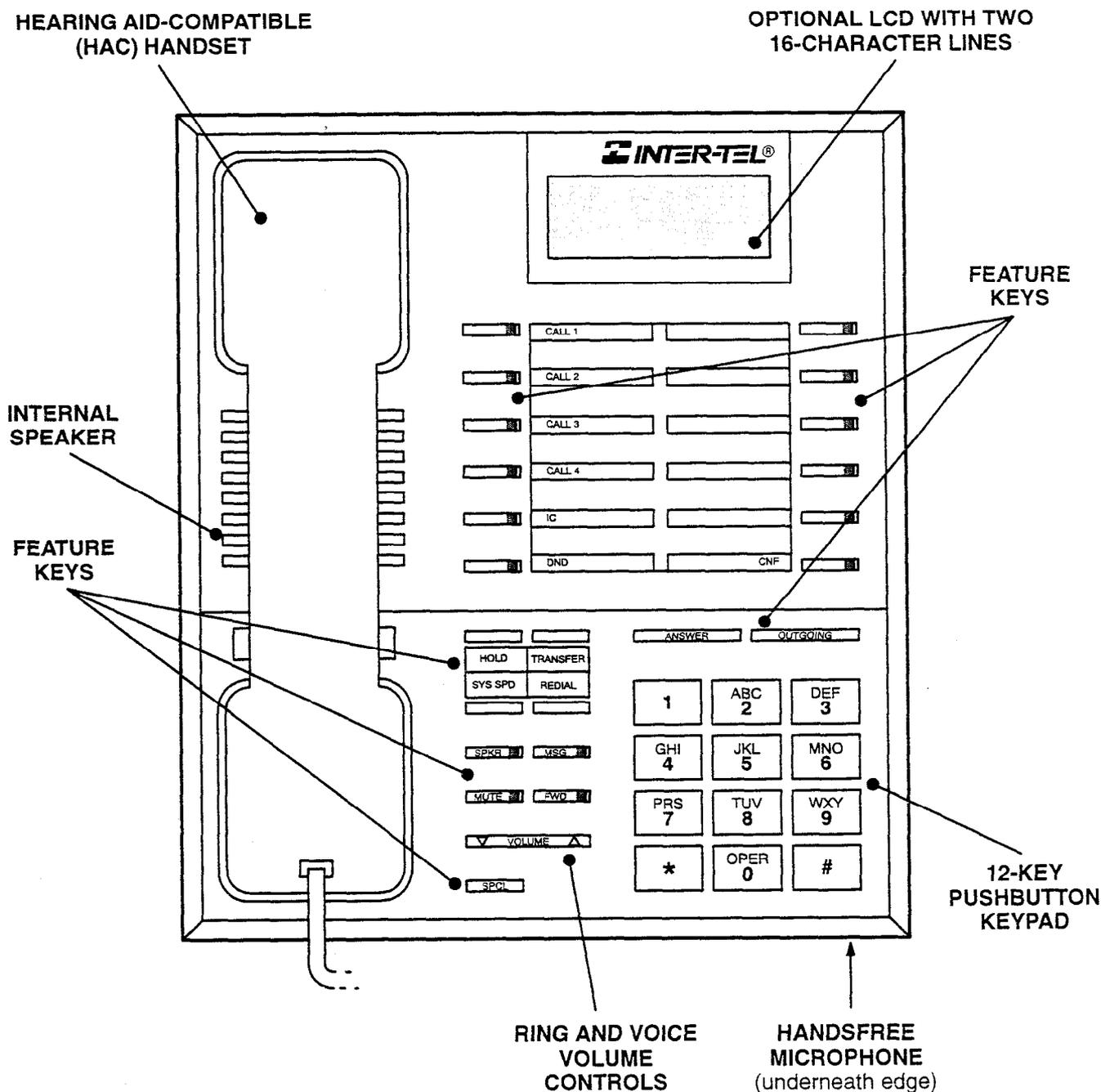


FIGURE 2-4. EXECUTIVE DIGITAL KEYSSET (also called Executive Digital Terminal)



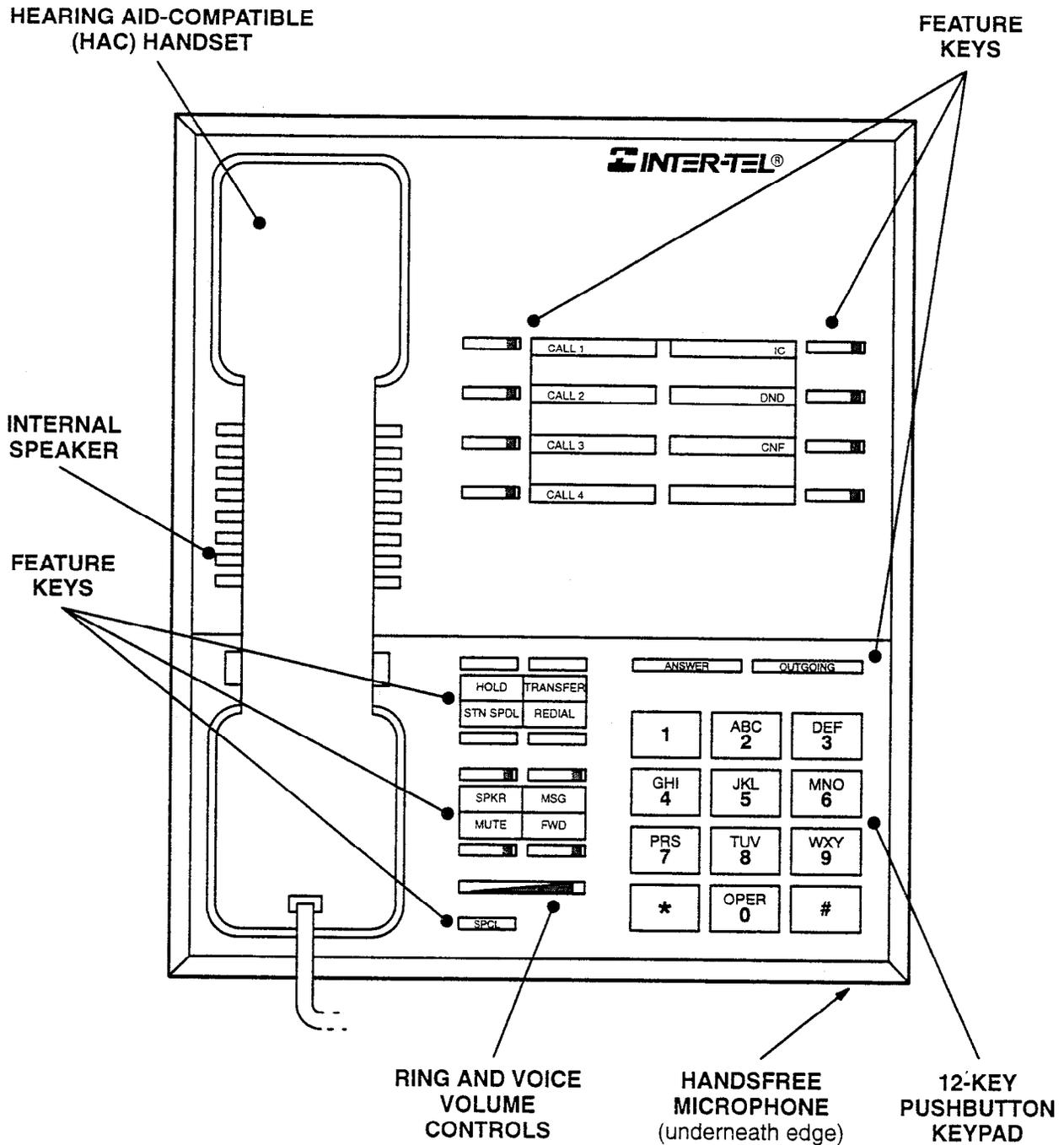
NOTE: The keys are shown as they appear in the default key map configuration.

FIGURE 2-5. STANDARD DIGITAL KEYSSET (also called Standard Digital Terminal)



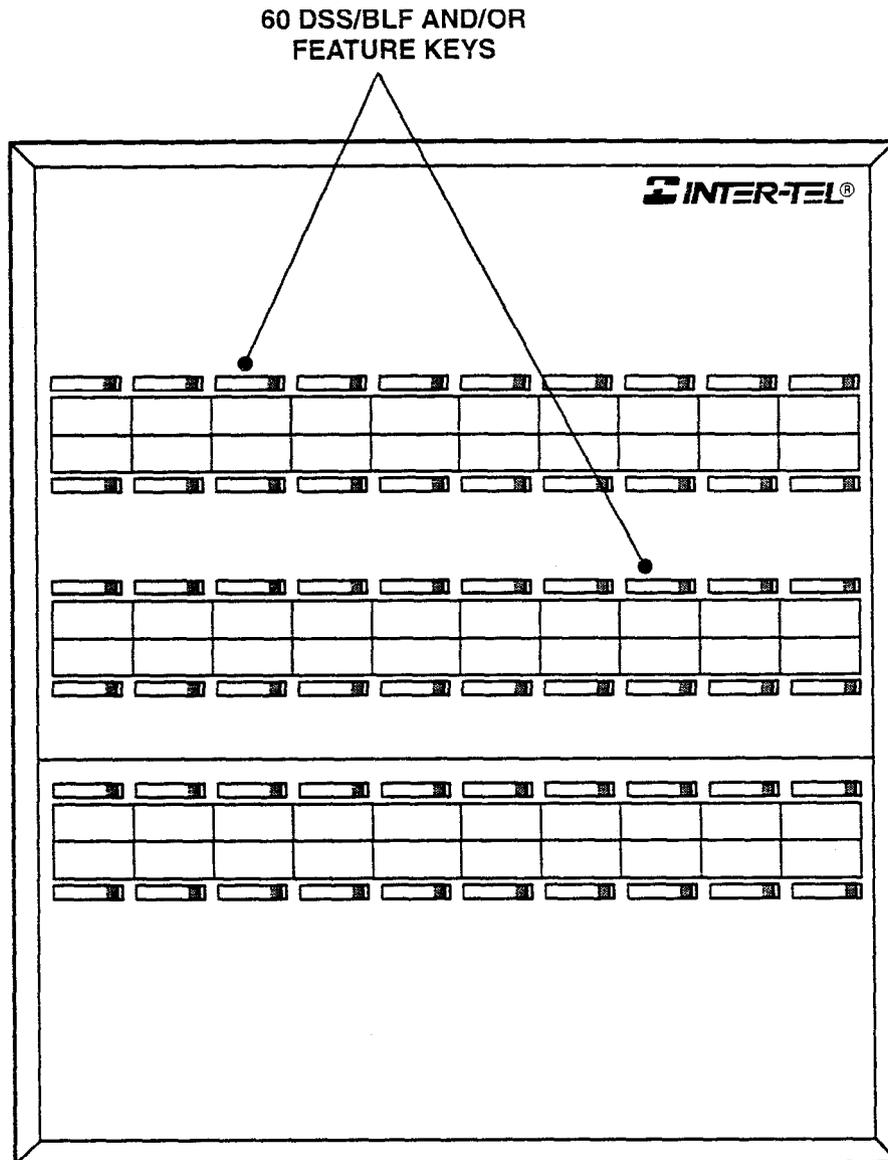
NOTE: The keys are shown as they appear in the default key map configuration.

FIGURE 2-6. BASIC DIGITAL KEYS (also called Basic Digital Terminal)



NOTE: The keys are shown as they appear in the default key map configuration.

FIGURE 2-7. DIGITAL DIRECT STATION SELECTION/BUSY LAMP  
FIELD (DSS/BLF) UNIT



# INSTALLATION

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## 1. INTRODUCTION

1.1 This section describes the recommended procedures for installing the Inter-Tel AXXESS System and AXXESSORY Talk PC. Refer to the SPECIFICATIONS section of the manual for hardware descriptions.

## 2. SYSTEM INSTALLATION OUTLINE

2.1 System installation is performed in the following order. Detailed instructions and figures for each step are located throughout the INSTALLATION section.

- (1) Plan the installation, including the KSU and main distribution frame (MDF) location, station locations, cable runs, and optional equipment.
- (2) Run cables to the keysets, single-line sets, and playback devices. Run wiring to any optional equipment, such as the AXXESSORY Talk PC, power failure transfer equipment, external paging equipment, general signaling devices, music source, etc.  
  
**NOTE:** DSS/BLF Units do not require a KSU cable run that is separate from the keyset's cabling. DSS/BLF Units are connected directly to keysets equipped with PC Data Port Modules, and they are powered by their own separate AC transformers.
- (3) Terminate the station cables on modular jack assemblies at the station locations.
- (4) Mount the MDF backboard and assemble the terminal blocks on the backboard. If any T1 trunks are to be installed, terminate them on eight-conductor modular jack assemblies at the MDF. If installing any single-line sets or non-T1 DID trunks, it may be desirable to attach the necessary Single-Line Adapters (SLAs) and their corresponding modular jack assemblies on the backboard.

**NOTE:** The T1 trunk is typically connected to the standard RJ48C modular jack provided on the T1 Card. However, in certain situations, it may be more convenient to use the card's DB15

connector instead. Refer to page 3-19 for more information.

- (5) Connect the trunks, station cables, and circuit card cables to the corresponding terminal blocks (or, for T1, modular jack assemblies).
- (6) Perform the station loop resistance test for each station cable.
- (7) Position the KSU near the MDF backboard or mount the KSU on the backboard.
- (8) Install the circuit cards in the KSU and connect them to the cables that run from the MDF blocks.
- (9) Install the station instruments and any optional station equipment, such as headsets, handset amplifiers, PC Data Port Modules, etc.
- (10) Install any optional system equipment, such as the AXXESSORY Talk PC, output device(s) for station message detail recording (SMDR) and error message recording, external paging network, external music source, etc.
- (11) Ensure that all equipment is working properly.
- (12) Refer to the PROGRAMMING section of this manual to configure and program the system.

### NOTICE

This *Inter-Tel AXXESS Installation and Field Maintenance Manual* instructs certified field technicians on the proper installation practices for the Inter-Tel AXXESS System. This manual does *not* provide step-by-step instructions for premises wiring practices as dictated by the National Electrical Code, which includes, but is not limited to, cable layouts, cable installation, AC power installation, proper AC grounding, eliminating or preventing external interferences (including, but not limited to, RFI, EMI, lightning, AC power disturbances, static discharge), and other telephony practices standard within the industry. Cable installers, electricians, and field technicians are expected to be properly trained and, if applicable, licensed in their trade practices. ***Official Inter-Tel AXXESS certification is required for technical assistance.***

### 3. PRE-INSTALLATION CHECKLIST

3.1 To make installation easier, use the checklist on the following pages when preparing to install the system. (Hardware specifications are included in the SPECIFICATIONS section.)

#### A. ESTABLISH SUITABLE ENVIRONMENTAL CONDITIONS FOR THE SYSTEM

- Locate the KSU within 5 feet (1.5 meters) of an isolated, dedicated, 105–125VAC, 57–63Hz, 15A, single-phase commercial power source.

**NOTE:** This *must* be an isolated, dedicated AC circuit for proper operation. All three wires (power, neutral, and ground) must be run separately from the outlet to the breaker panel without being bonded to any other wire or circuit. *DO NOT* plug any other equipment into this outlet. To maintain the protection provided by the isolated, dedicated circuit, the length of the AC power cord limits the distance between the power supply and the outlet; *DO NOT* use an extension cord. Also, to protect the system from AC voltage surges, a surge/spike protector is recommended (refer to page 2–8 for specifications).

- Select the KSU location to minimize cable run length. Station instruments connected to the system must not exceed the limits (using 24AWG wire) listed in the table on page 3–26. The resistance values (in ohms) are loop measurements; the distance values (in feet/meters) are the maximum one-way measurements from the KSU.
- Do not expose the KSU location to direct sunlight, high humidity, heat, dust, or strong magnetic fields (such as those generated by heavy motors and large copy machines).
- The MDF requires at least a 4 × 6-foot (1.2 × 1.8-meter), ¾-inch plywood backboard. This should provide sufficient room for all blocks and peripheral equipment.

**NOTE:** If a number of AC transformers and SLAs (along with their corresponding modular jack assemblies) will be installed at the MDF, a larger backboard may be necessary.

- For cooling purposes, provide ample air space around the KSU assembly (minimum one foot on all sides). Do not place or store items on top of the KSU.
- The SMDR/error message output device(s) must not have cables longer than 50 feet (15 meters).

- Locate the equipment in a climate-controlled room with the following environmental conditions:

| REQUIREMENTS                          | IN OPERATION                   | IN STORAGE                      |
|---------------------------------------|--------------------------------|---------------------------------|
| Temperature —<br>KSU                  | 32° to 104° F<br>0° to 40° C   | –40° to 185° F<br>–40° to 85° C |
| Temperature —<br>Station Instruments  | 32° to 113° F<br>0° to 45° C   | –40° to 185° F<br>–40° to 85° C |
| Relative Humidity<br>(Non-Condensing) | 5% to 95%                      | 5% to 95%                       |
| Altitude                              | Up to 10,000 ft.<br>(3,048 m.) | Up to 40,000 ft.<br>(12,192 m.) |

**NOTE:** It is recommended that the maximum operating temperature (as stated above) *never* be exceeded. Therefore, when installing the KSU and station instruments, allow a sufficient margin for error in case of air conditioning failure, routine maintenance, plant shutdown, etc. As a general rule, if conditions are suitable for office personnel, they are also suitable for all equipment and station instrument operation. A properly controlled environment will help to extend the operating life of the equipment.

*From UL 1459, a product safety specification governing telephone equipment:*

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.

#### B. ASSEMBLE THE NECESSARY TOOLS AND SUPPLIES

- Industry-standard, one-pair (two-conductor) twisted cable to run from the MDF to all station instruments, including: keysets, single-line DTMF sets, and playback devices. (For exceptions, see the NOTE following paragraph 4.6 on page 3–7.)
- Four-conductor modular jack assemblies for all station instruments. (For exceptions, see the NOTE following paragraph 4.6 on page 3–7.)
- A high-impedance digital multimeter to check the power supply and ensure correct wiring of the modular jack assemblies. Multimeter accuracy must be ±0.5% or better.
- Standard terminal blocks (66M1-50 type) and bridging clips for constructing the MDF.

- Industry-standard, 25-pair cable for connecting the MDF terminal blocks to the circuit cards in the KSU.
- Industry-standard, cross-connect wire may be needed for certain applications.
- 50-pin female amphenol-type connectors (with recommended non-conducting, plastic covers) and a connecting machine.
- Ferrite beads for all station, trunk, and RS-232-C cables, if necessary. (Refer to SPECIFICATIONS, page 2-3.)
- Gas discharge tubes with silicon avalanche suppressors for lightning protection on the CO, DID, and OPX trunks.
- Grounding terminal and 10AWG wire for grounding the KSU, Single-Line Adapters, etc.
- Standard telephone hand tools and the mounting hardware for the MDF backboard, trunk and station blocks, modular jack assemblies, etc.
- For on-site or stand-alone/remote system programming, an IBM-compatible personal computer (refer to page 2-28 for specifications).

**3.2 If any T1 trunks are to be installed:** Depending on the type of T1 termination used by the telephone company (telco) and how close it is to the MDF, the following tools and supplies are also needed.

**NOTE:** The T1 trunk is typically connected to the standard RJ48C modular jack provided on the T1 Card. However, in certain situations, it may be more convenient to use the card's DB15 connector instead. Refer to page 3-19 for more information.

**For T1 trunks terminated on RJ48C jacks near the MDF:**

- Four-pair, non-reversing, mod-to-mod line cords (one for each T1 trunk installed).

**For T1 trunks terminated on RJ48C jacks away from the MDF (see Figure 3-8 on page 3-17):**

- Eight-conductor modular jack assemblies (two for each T1 trunk installed).
- Four-pair, non-reversing, mod-to-mod line cords (two for each T1 trunk installed).
- T1 cable — enough to extend from each telco RJ48C jack to the MDF (see page 2-18 for cable specifications).

**For T1 trunks terminated on an RJ-type block (see Figure 3-10 on page 3-18):**

- Eight-conductor modular jack assemblies (one for each T1 trunk installed).
- Four-pair, non-reversing, mod-to-mod line cords (one for each T1 trunk installed).
- T1 cable — enough to extend from each telco termination to the MDF (see page 2-18 for cable specifications).

**C. PLAN STATION LOCATIONS AND TYPES OF STATION INSTRUMENTS**

- Prepare a cable identification plan using station *circuit* numbers; do not use extension numbers (see page 3-7 for details).
- **Keysets:** The basic Inter-Tel AXCESS KSU has the capacity for up to 112 keysets. The expanded KSU has the capacity for up to 224 keysets. Refer to page 2-20 for a listing of the available keyset models and for more information on maximum station capacities. Any non-display Standard keyset can be converted to a display keyset by installing an optional Liquid Crystal Display (LCD) Unit.
- **DSS/BLF Units:** Up to ten DSS/BLF Units can be installed on the system. These can be single units or tandem units (two units connected together). Tandem units count as two units.

**NOTE:** DSS/BLF Units do not require a KSU cable run that is separate from the keyset's cabling.

- **Single-Line Sets:** Up to 48 (basic KSUs) or 104 (expanded KSUs) industry-standard, single-line DTMF sets can be installed on the system. Single-line sets are connected to Single-Line Cards (SLCs), or they can be connected to Single-Line Adapters (SLAs), which are in turn connected to Digital Keyset Card circuits.
- **Playback Devices:** Playback devices can be used in place of single-line stations. If the AXCESSORY Talk PC is not used, playback devices are especially useful as hunt group overflow/announcement stations. (See page 2-25 for specifications.)

**D. ASSEMBLE THE OPTIONAL EQUIPMENT**

- AXCESSORY Talk PC and applications software for integrated voice processing (voice mail, automated attendant, hunt group announcement and overflow, optional Fax On Demand, SMDR storage, etc.).
- Headsets (electret compatible) for keyset stations and handset amplifiers for single-line set stations.

- Personal Computer Data Port Modules (PCDPMs) for using Off-Hook Voice Announce (OHVA) features, and for installing a DSS/BLF Unit and/or an optional Modem Data Port Module. If a DSS/BLF Unit is not installed, the module's RS-232-C port (4800-baud) can be used to connect an SMDR/error message output device or a personal computer for programming the system database.
- Modem Data Port Modules (MDPMs) for connecting modem-equipped data devices or single-line sets.
- SMDR/error message output device(s) must not have cables longer than 50 feet (15 meters). (See page 2-28 for specifications.)
- System battery back-up — uninterruptable power supply or standby power supply. (Refer to page 2-32 for specifications.)
- OPX repeater(s) for amplifying voice volume levels, if necessary. (Refer to page 2-24 for specifications.)
- External music source.
- External paging speakers and amplifier(s). (Refer to the NOTE and CAUTION on page 2-5.)
- Power failure transfer equipment (customer-provided PFT relay card, card mounting case, and external power source).
- Electronic equipment (alarms, lights, etc.) to connect to the night transfer relay.
- Voice mail equipment. (Refer to page 2-32.)
- Facsimile machine. (Refer to page 2-32.)
- PC wall-mount shelf (accommodates most PC models); refer to page 8-3 in REPLACEMENT PARTS.

## 4. STATION CABLING

4.1 Floor plans should be developed to aid in proper station cabling in a star (home run) configuration from the KSU. The cables are run from the station locations to the station blocks at the MDF. Refer to page 2-3 for cabling requirements.

4.2 Both ends of each cable should be labeled with the station's circuit number (hardware address). The circuit number (XX.YY.ZZ) designates the station card's position in the KSU (XX = 01-07 or 09-15), the circuit position on the card (YY = 01-08), and whether the circuit is a multi-purpose circuit (ZZ = 01-03; see next paragraph). For example, circuit number 04.06.01 identifies the sixth circuit on the card installed in slot number four.

4.3 In some circumstances, a station circuit can have more than one purpose. For example, two single-line devices can be installed on a single DKSC circuit. The first device is assigned circuit number XX.YY.01 and the second device is assigned circuit number XX.YY.02. Similarly, a keyset's PC Data Port Module and Modem Data Port Module can be assigned their own circuit numbers. In this case, the keyset is assigned circuit number XX.YY.01, the first data port is assigned number XX.YY.02, and the second data port is assigned number XX.YY.03. For more information, refer to page 6-237.

4.4 When the system is first powered up, the default configuration is used to assign extension numbers to the station circuits. Card slots 1-5 (and 9-13 in expanded systems) are considered DKSCs and slots 6-7 (and 14-15 in expanded systems) are LSCs with attached Daughter Cards (LSC-Ds). Changes to the default configuration can be made through database programming. Refer to PROGRAMMING, page 6-232, for more information.

4.5 The default system assigns extension number 1000 to station circuit 01.01.01, extension number 1001 to station circuit 01.02.01, and so on to match the initial configuration. Circuit 01.01.01 is equipped as an administrator and as the primary attendant's keyset when the system is in the default configuration. Through database programming, the circuits can be assigned 1-5 digit extension numbers. Refer to PROGRAMMING, page 6-75, for more information.

**NOTE:** DSS/BLF Units do *not* require a DKSC circuit and KSU cabling that is separate from the associated keyset's circuit and cabling. Instead, each unit is connected directly to the keyset (equipped with a PC Data Port Module) and is powered by a separate AC transformer.

### A. RUNNING CABLE

4.6 From the MDF location, run industry standard, one-pair (two-conductor) twisted (24AWG, level-1 or better) cable to keysets, single-line sets, and playback devices. Follow these guidelines:

**NOTE:** If desired, two- or three-pair twisted cable and four- or six-conductor modular jacks may be used for all station connections. This allows the various types of station instruments to be easily interchanged, if necessary. (If three-pair cable is used, extra terminal blocks and the use of cross-connect wiring techniques are required.)

- Install proper type cable for the application according to the National Electrical Code and local building codes.
- Avoid cable runs parallel to fluorescent light fixtures or AC lines not in conduit. If these obstacles are unavoidable, run the cables across them at right angles.
- Do not run station cables inside electrical conduit already occupied by AC power cable. (To do so is a violation of the National Electrical Code.)
- Do not run cables near equipment with electric motors or through strong magnetic fields, such as those generated by large copy machines, arc welding equipment, heavy motors, etc.
- Do not place station cables where they can be stepped on or where they can be rolled over by office furniture.
- Do not exceed the loop limit measurements (using 24AWG wire) for the station cable lengths as outlined in the table on page 3-26. The resistance values (in ohms) are loop measurements; the distance values (in feet/meters) are the maximum one-way measurements from the KSU.

4.7 Since the AXXESS System utilizes digital voice and data transmission between the keysets and the KSU, there are some additional keyset-only cabling requirements:

- Do not use shielded cable, and do not use cable smaller than 24AWG.
- Do not parallel cables (i.e., do not "double up on the copper").
- Do not "bridge" or "Y" off the cable to another location.
- Unlike analog keysets, the AXXESS digital keysets do not need to be routed in separate multi-pair cable runs. For example, if using 25-pair cable runs to multiple station locations, it is acceptable to include single-line sets, auxiliary equipment, and trunks in a cable being used for keysets.

**B. TERMINATING THE CABLES AT  
STATION LOCATIONS**

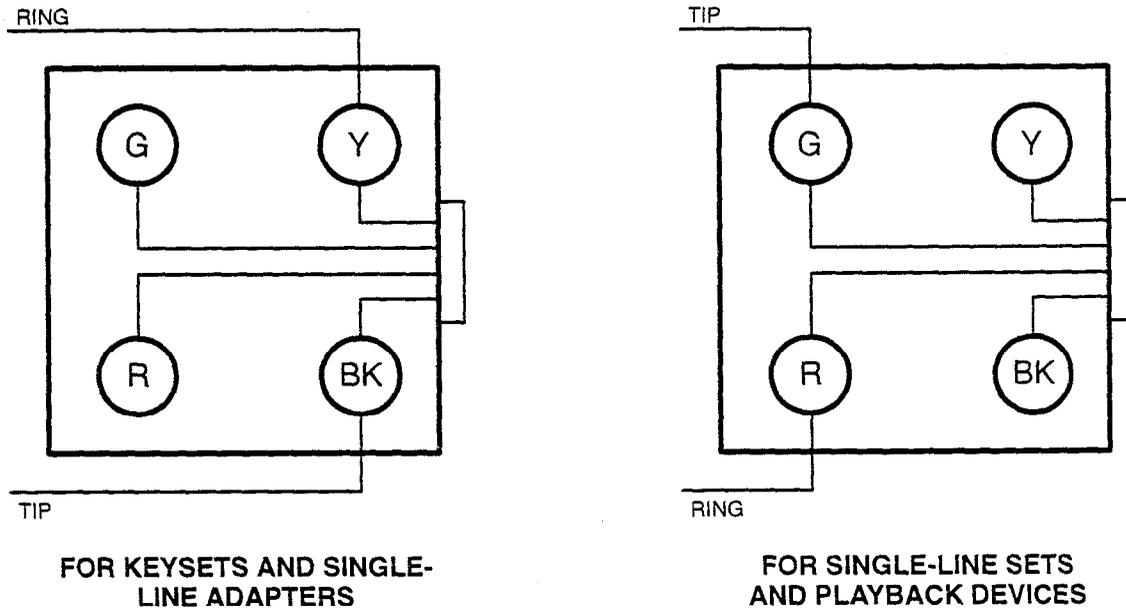
4.8 Terminate the keyset, single-line set, and playback device station cables on four-conductor modular jack assemblies at the station locations. (For exceptions to this, refer to the NOTE following paragraph 4.6 on the previous page.)

4.9 Do not mount the assemblies on the wall at this time; they will be wall mounted later when the station instruments are installed. Refer to Figure 3-1 below for a wiring diagram.

**CAUTION**

If tip and ring are reversed when installing a keyset, the keyset will not function.

**FIGURE 3-1. STATION MODULAR JACK ASSEMBLY WIRING**



### 5. ASSEMBLING THE MAIN DISTRIBUTION FRAME (MDF) BACKBOARD

5.1 The MDF is the point at which the station instruments, trunks, and auxiliary system equipment are connected to terminal blocks (or, in the case of T1 trunks, modular jack assemblies are used instead). These terminal blocks are then connected to the circuit cards in the Inter-Tel AXCESS KSU. It is extremely important that the connections be made carefully and accurately.

**NOTE:** To simplify the MDF installation instructions, this manual outlines basic one block-to-one card installation using bridging clips. However, it is quite acceptable, and in some situations more functional, to use additional blocks and then cross connect between them.

5.2 Assemble the MDF as follows:

- (1) Mount at least a 4 × 6-foot (1.2 × 1.8-meter), 3/4-inch plywood backboard at the MDF location. (Depending on the number of stations and trunks to be installed, a larger backboard may be necessary.)

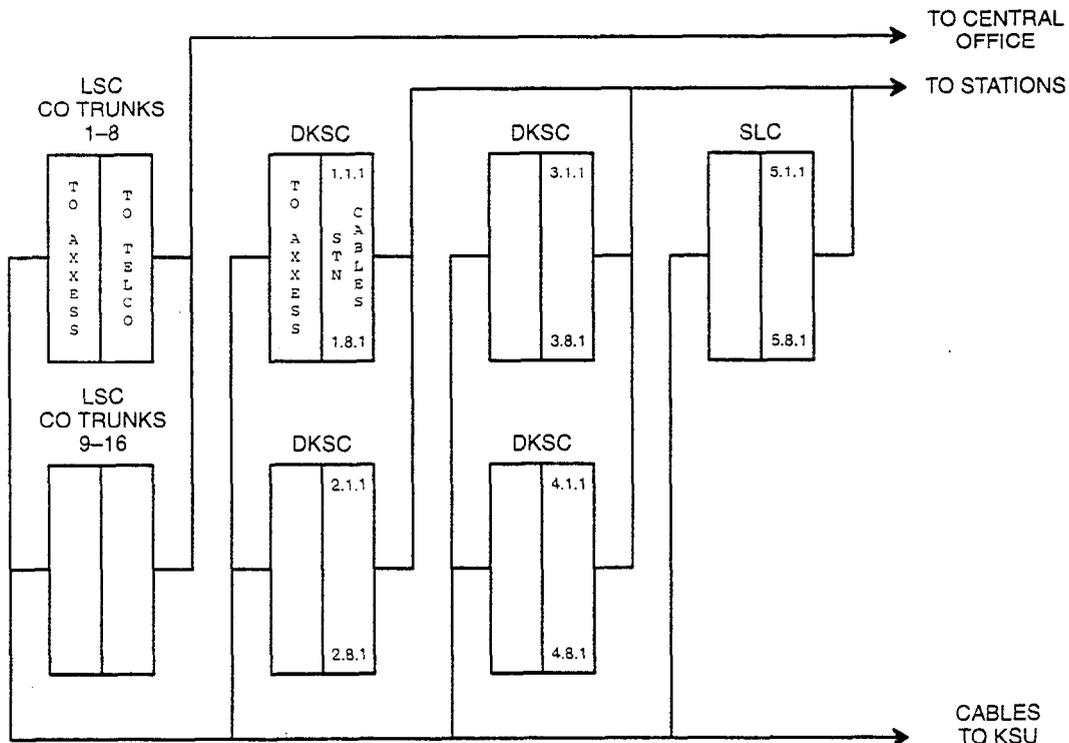
- (2) Attach the 66M1-50-type terminal blocks to the plywood backboard. Refer to Figure 3-2 below for a sample MDF block layout and cable assignments. Blocks include:

- Up to 13 blocks for connecting CO trunks and the 25-pair cables for the Loop Start Cards (LSCs).
- Up to 14 blocks for connecting station cables and the 25-pair cables for the station cards — Digital Keypad Cards (DKSCs) and/or 16-Port Digital Keypad Cards (DKSC-16s) for digital keysets and SLAs, and Single-Line Cards (SLCs) for single-line sets and playback devices.

**NOTE:** If three-pair cable is used, extra terminal blocks and the use of cross-connect wiring techniques are required.

- (3) If any T1 trunks are to be installed, attach eight-conductor modular jack assemblies to the MDF as required. (For complete information on installing T1 trunks, refer to page 3-16.)

FIGURE 3-2. SAMPLE MDF BLOCK LAYOUT AND CABLE ASSIGNMENTS



- (4) *If installing any single-line devices or DID trunks, attach the necessary SLAs and corresponding modular jack assemblies to the plywood backboard. See Figure 3-7 on page 3-15 and Figure 3-14 on page 3-23 for complete diagrams of the SLA setup.*

The SLA can be placed horizontally on a table or it can be wall-mounted using the two L-shaped brackets that accompany the unit, as described below:

- a. Remove the two screws on one side of the unit and use them to attach the two L-shaped

wall mounting brackets (see Figure 3-3 below).

- b. Position the SLA on the MDF backboard and mark the location of the mounting screw holes on the wall. Set the SLA aside.
- c. Drive a screw into the center of each mounting hole marking, allowing the heads of the screws to protrude slightly.

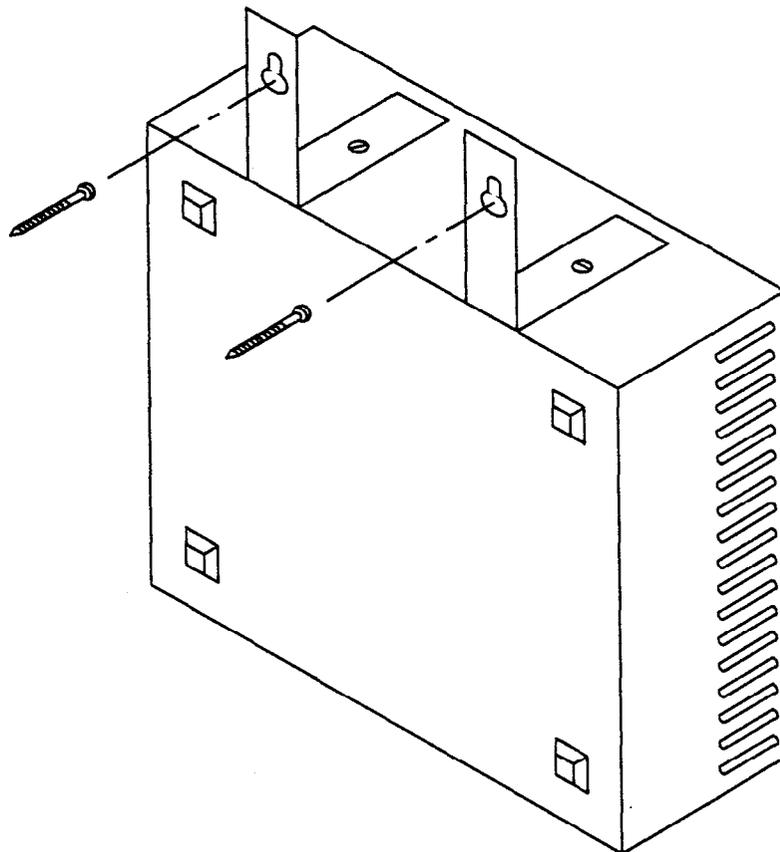
**NOTE:** Use screws of sufficient strength to support the SLA.

- d. Hang the SLA on its screws. If necessary, adjust the screws to ensure that the SLA is held firmly in place.

---

**FIGURE 3-3. WALL MOUNTING THE SLA**

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A. CONNECTING THE TRUNK CABLES TO THE MDF

CO Trunks

5.3 Connect the CO trunks and Loop Start Card (LSC) cables as outlined below. Note that step 2 mentions two installation methods. Although the first method is more flexible, the second method can be used to minimize the number of terminal blocks that are used. Refer also to Figures 3-5 and 3-6 on the following pages.

- (1) Cross connect the CO trunks from the telephone company RJ-type blocks to the *right* side of the LSC blocks.

**NOTE:** For additional lightning protection, see paragraph 5.5.

- (2) *Method A:* Using enough 25-pair cable to run from the LSC blocks to the cards, make the termination cables. Attach a 50-pin female amphenol-type connector to one end of each LSC cable. Label each connector and cable end with the appropriate slot number (for example, SLOT-6). These connectors will be attached to the cards after they are installed in the KSU.

*Method B:* Using enough 25-pair cable to run from the LSC blocks to the cards, make the special termination cables. Attach up to three 50-pin female amphenol-type connectors to one end of each LSC cable as shown in Figure 3-6. Connect CO trunks 1-4 (or 1-8 if an LSC Daughter Card is installed) to one connector, trunks 5-8 (or 9-16) to another connector, trunks 9-12 (or 17-24) to a third connector, and so on for each cable. Label each connector with the appropriate slot number (for example, SLOT-6). These connectors will be attached to the cards after they are installed in the KSU.

- (3) *If necessary:* Using standard electrical tape, tape two ferrite split beads (part no. 808.1195) around each 25-pair cable just below the amphenol-type connector (as shown in Figure 3-4 on page 3-12).

**NOTE:** Ferrite beads may be necessary to help reduce electromagnetic interference (EMI) and radio frequency interference (RFI).

- (4) Terminate the other end of each 25-pair cable on the *left* side of the corresponding LSC block.
- (5) Install bridging clips to complete the connections.

DID Trunks

5.4 Connect the Direct Inward Dialing (DID) trunks to the Single-Line Adapters as outlined below. Refer to Figure 3-7 on page 3-15 for a diagram.

**NOTE:** DID trunks are also supported through T1 circuits. And, besides DID trunks, SLAs can also be used to install single-line sets, playback devices, and off-premises stations. Any combination using the two ports on the SLA is possible. Refer to pages 3-20 to 3-25 for station installation instructions.

- (1) Mount one four-conductor modular jack assembly next to each telephone company RJ jack.
- (2) For each modular jack assembly mounted in step 1, also mount a corresponding four-conductor modular jack assembly near the SLA location.
- (3) To connect the modular jack assemblies mounted in steps 1 and 2:
  - a. Run one-pair cable between the corresponding modular jack assemblies.
  - b. Wire each end of the one-pair cables onto their respective modular jack assemblies. Refer to Figure 3-7 on page 3-15 for a diagram of the wiring.
- (4) Plug one end of a two-pair mod-to-mod line cord into each RJ jack and plug the other end into the corresponding modular jack assembly beside it.
- (5) At the MDF backboard, plug one end of a two-pair mod-to-mod line cord into each modular jack assembly. The other end will *later* be plugged into the corresponding DID jack on the SLA.

Lightning Protection

5.5 For additional lightning protection, install gas discharge tubes with silicon avalanche suppressors to ground (grounding rod or copper, cold water pipe) on each CO, DID, and OPX trunk. This must be done external to the system. Each gas discharge tube is installed directly between the telephone company RJ-type block and the system's CO/DID/OPX input. This protection should provide energy absorption and filter low-level surge potentials.

5.6 Also, in areas with frequent occurrences of lightning, it is recommended that the cable between the telephone company RJ-type blocks and the gas discharge tubes be at least 75 feet long (the cable may be coiled up if desired).

FIGURE 3-4. EXAMPLE OF FERRITE BEAD INSTALLATION

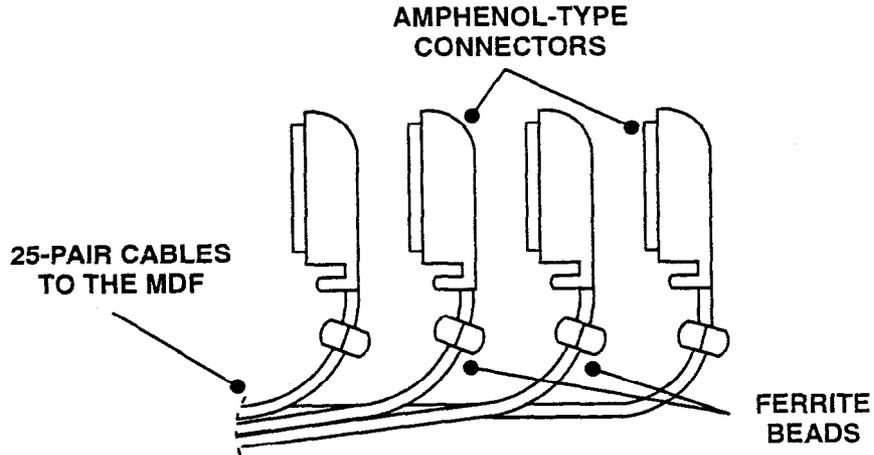
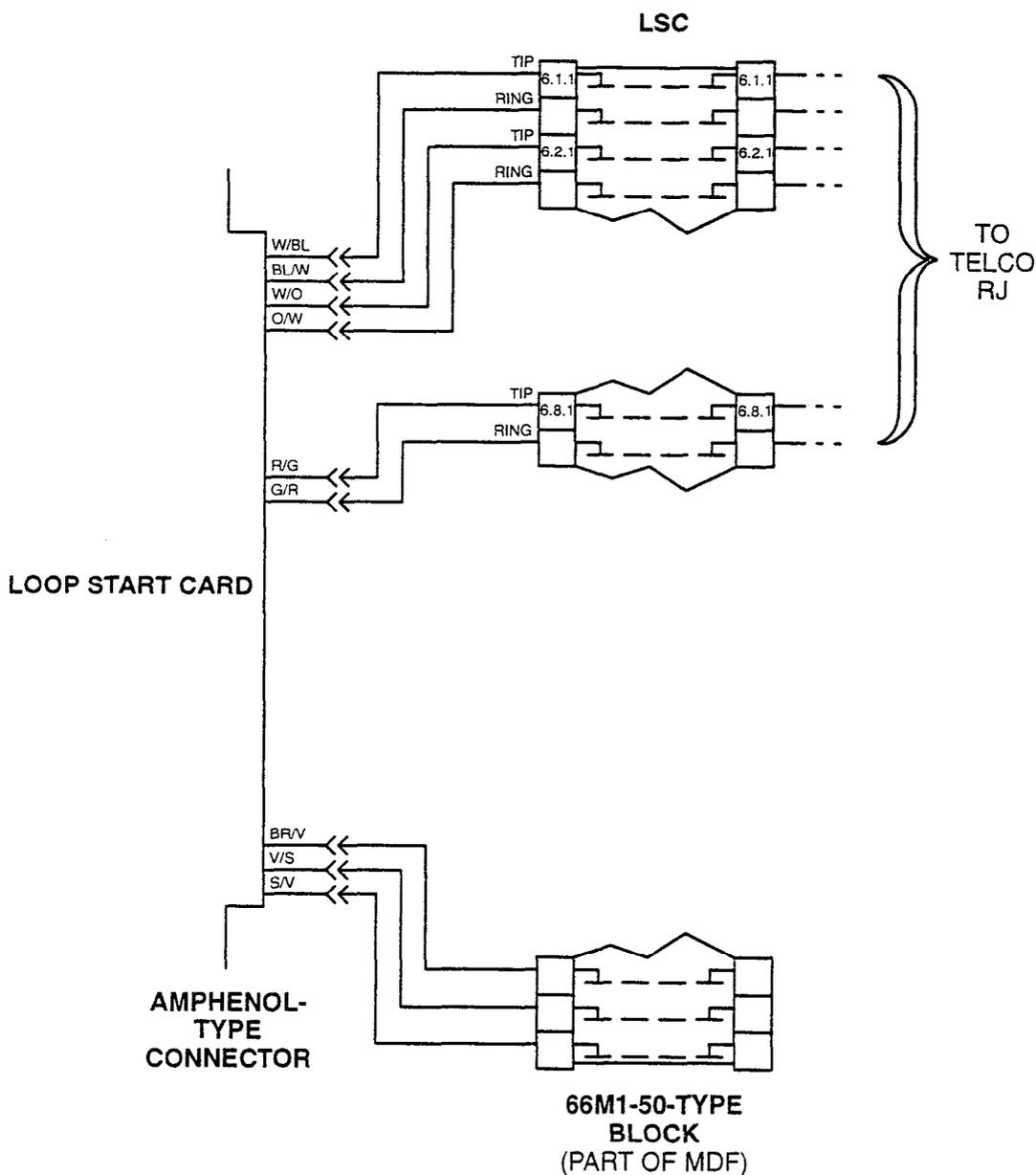


FIGURE 3-5. LSC BLOCK CABLE TERMINATIONS (METHOD A)



**NOTE:** Circuits 1-4 (06.01.01-06.04.01) above are used by the Loop Start Card itself. If a Daughter Card is attached, it uses circuits 5-8 (06.05.01-06.08.01).

FIGURE 3-6. LSC BLOCK CABLE TERMINATIONS (METHOD B)

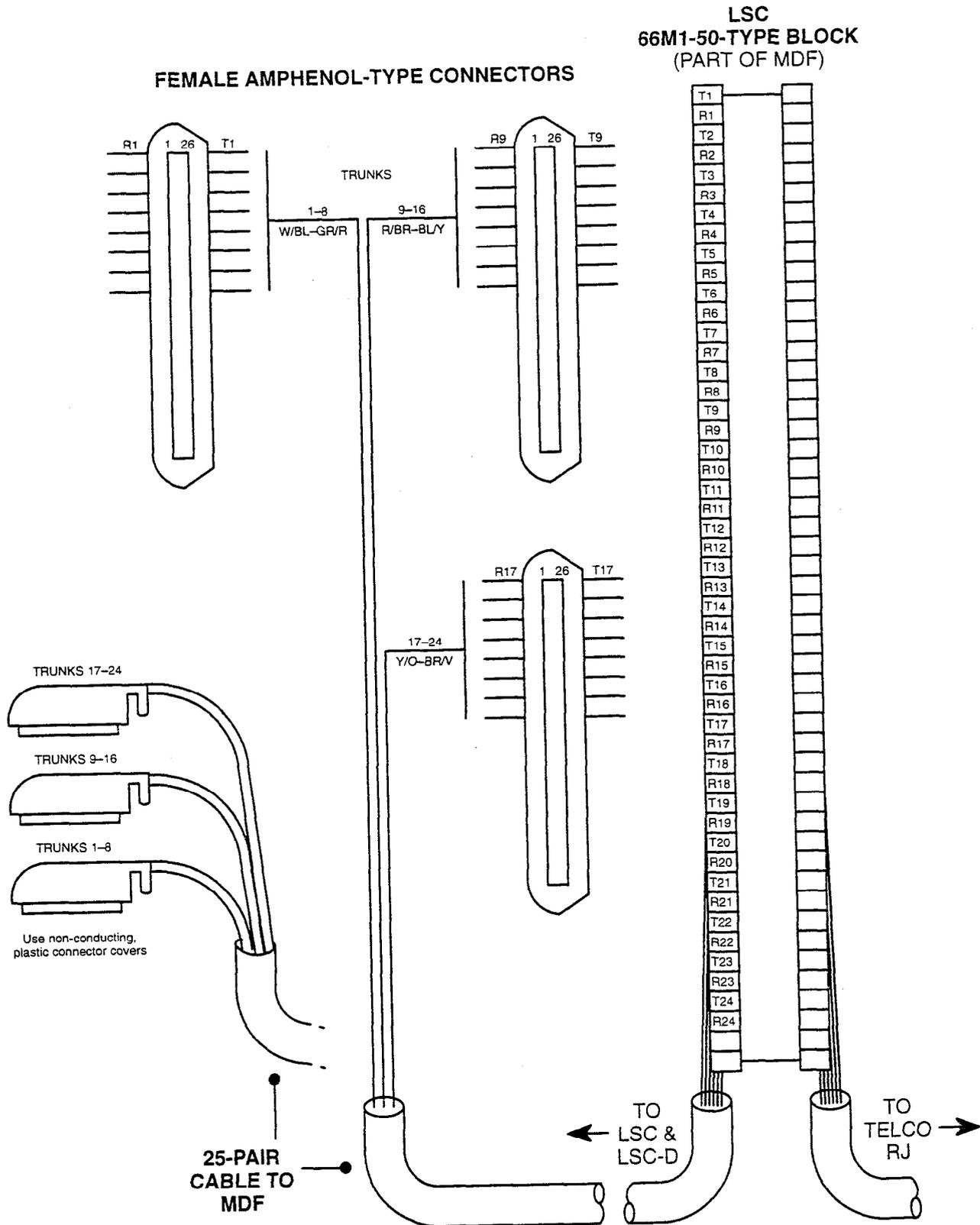
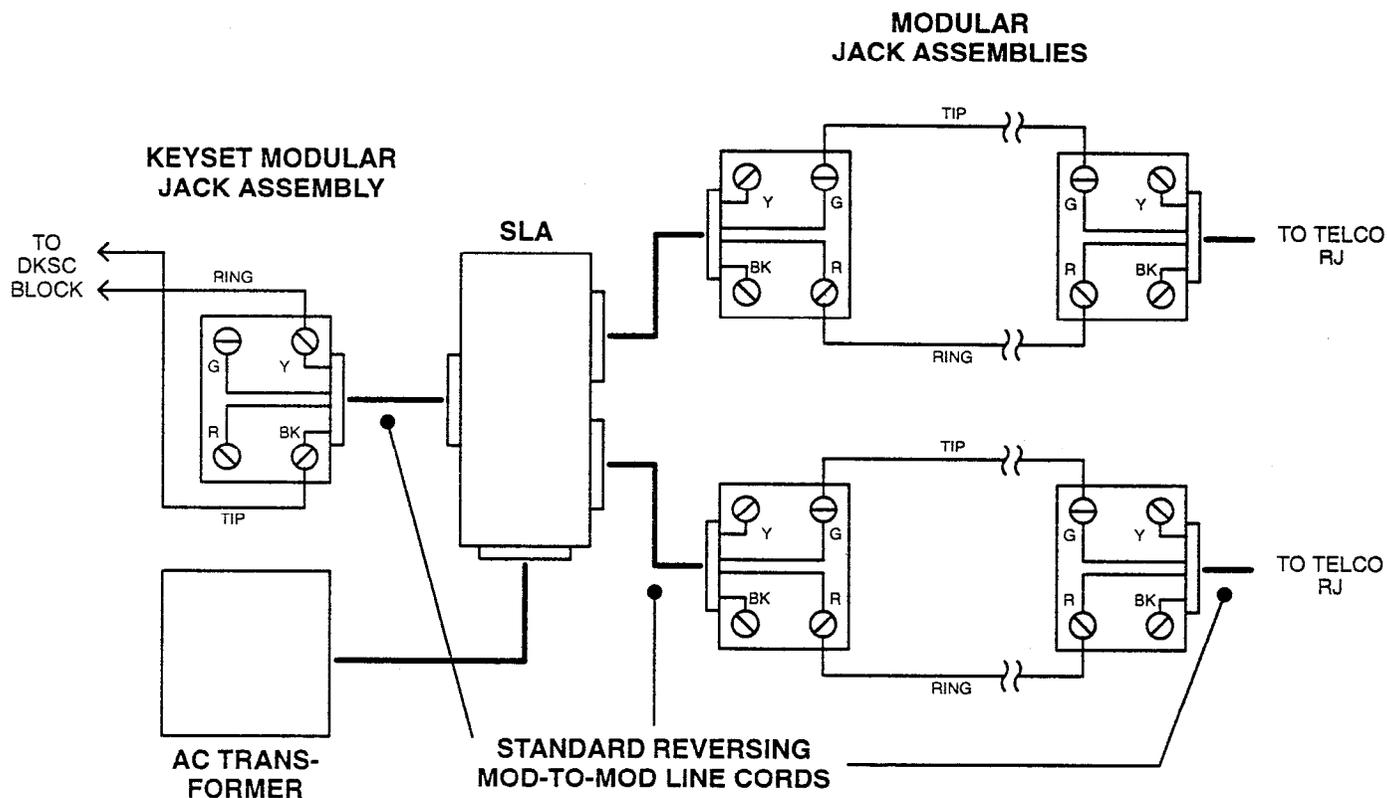


FIGURE 3-7. SLA TERMINATIONS FOR DID TRUNKS



**NOTE:** If the telephone company termination is near the SLA, it can be plugged directly into the unit.

## B. CONNECTING T1 TRUNKS TO THE MDF

5.7 The installation procedure used to connect T1 trunks at the MDF is dependent on the type of termination used by the telephone company and how close it is to the MDF. The T1 trunks may be terminated on RJ48C modular jacks or on RJ-type terminal blocks.

5.8 Follow one of the three T1 termination methods (A, B, or C) outlined on the following pages.

**NOTE:** The T1 trunk is typically connected to the standard RJ48C jack provided on the T1 Card. However, in certain situations, it may be more convenient to use the card's DB15 connector instead. Refer to page 3-19 for more information.

### Method A — T1 Trunks Terminated On RJ48C Jacks Near The MDF

5.9 Install T1 trunks terminated on RJ48C jacks near the MDF as outlined in below.

Plug one end of a four-pair, non-reversing (straight through), mod-to-mod line cord into each telephone company RJ48C jack. The other end of each line cord will *later* be plugged into the T1 jack on the corresponding T1 Card.

**NOTE:** Make sure the connectors on the ends of each line cord are properly attached. If any of the wires are cracked or broken, T1 transmission problems can occur.

### Method B — T1 Trunks Terminated On RJ48C Jacks Away From The MDF

5.10 Install T1 trunks terminated on RJ48C jacks away from the MDF as outlined in the following steps. Refer to Figure 3-8 on the next page for a diagram of the complete layout.

- (1) Mount one eight-conductor modular jack assembly next to each telephone company RJ48C jack.

- (2) For each modular jack assembly mounted in step 1, also mount a corresponding eight-conductor modular jack assembly on the MDF backboard.
- (3) To connect the modular jack assemblies mounted in steps 1 and 2:

- a. Run T1 cable between the corresponding modular jack assemblies.

**NOTE:** If the telephone company termination is more than 2000 feet from the MDF, special T1 cable *must* be used (see page 2-18 for cable specifications). For shorter distances, two lengths of standard two-pair voice-frequency cable (one cable for transmit and one cable for receive) may be used instead.

- b. Wire each end of the cables onto their respective modular jack assemblies. Refer to Figure 3-9 on the next page for a diagram of the wiring.

- (4) At the telephone company termination, plug one end of a four-pair, non-reversing (straight through), mod-to-mod line cord into each RJ48C jack and plug the other end into the corresponding modular jack assembly next to it.
- (5) At the MDF backboard, plug one end of a four-pair, non-reversing (straight through), mod-to-mod line cord into each modular jack assembly. The other end of each line cord will *later* be plugged into the T1 jack on the corresponding T1 Card.

**NOTE:** Make sure the connectors on the ends of each line cord are properly attached. If any of the wires are cracked or broken, T1 transmission problems can occur.

FIGURE 3-8. T1 TRUNK TERMINATIONS FROM RJ48C JACKS

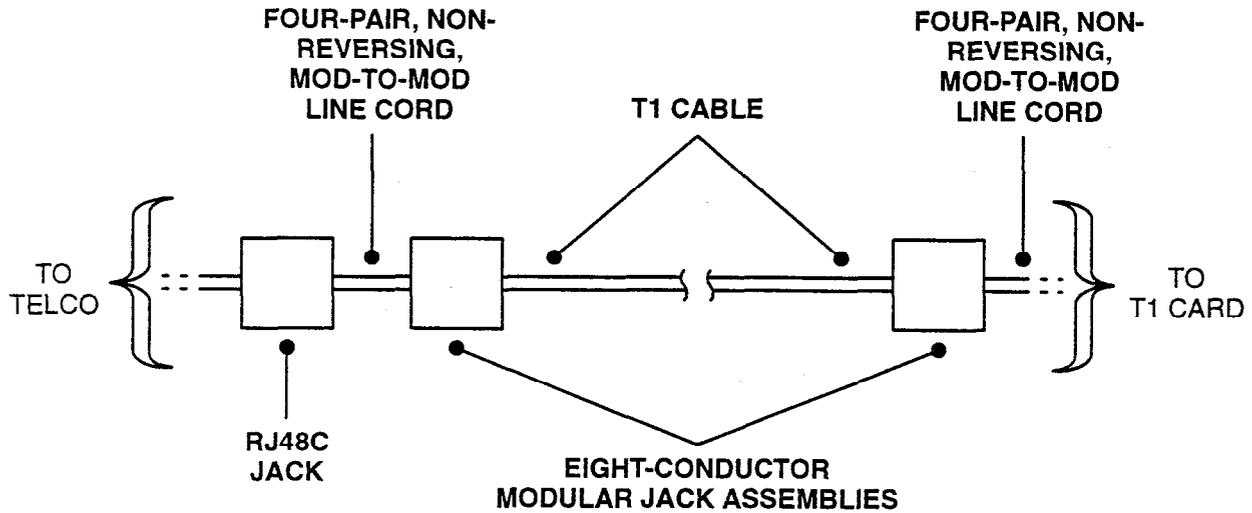
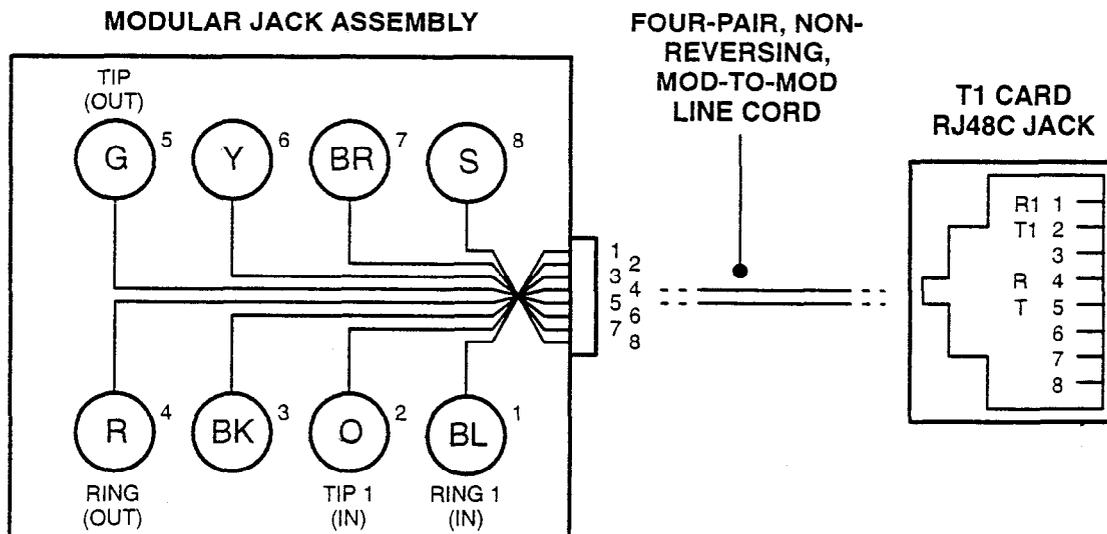


FIGURE 3-9. MODULAR JACK ASSEMBLY WIRING FOR T1 TRUNKS



NOTE: OUT = transmit to network, IN = receive from network

**Method C — T1 Trunks Terminated On An RJ-Type Block**

5.11 Install the T1 trunks as outlined in the following steps. Refer to Figure 3-10 below for a diagram of the complete layout.

- (1) On the MDF backboard, mount one eight-conductor modular jack assembly for each T1 trunk termination on the telephone company RJ-type block(s).
- (2) Connect T1 cable between the telephone company terminations and the corresponding modular jack assemblies as follows:

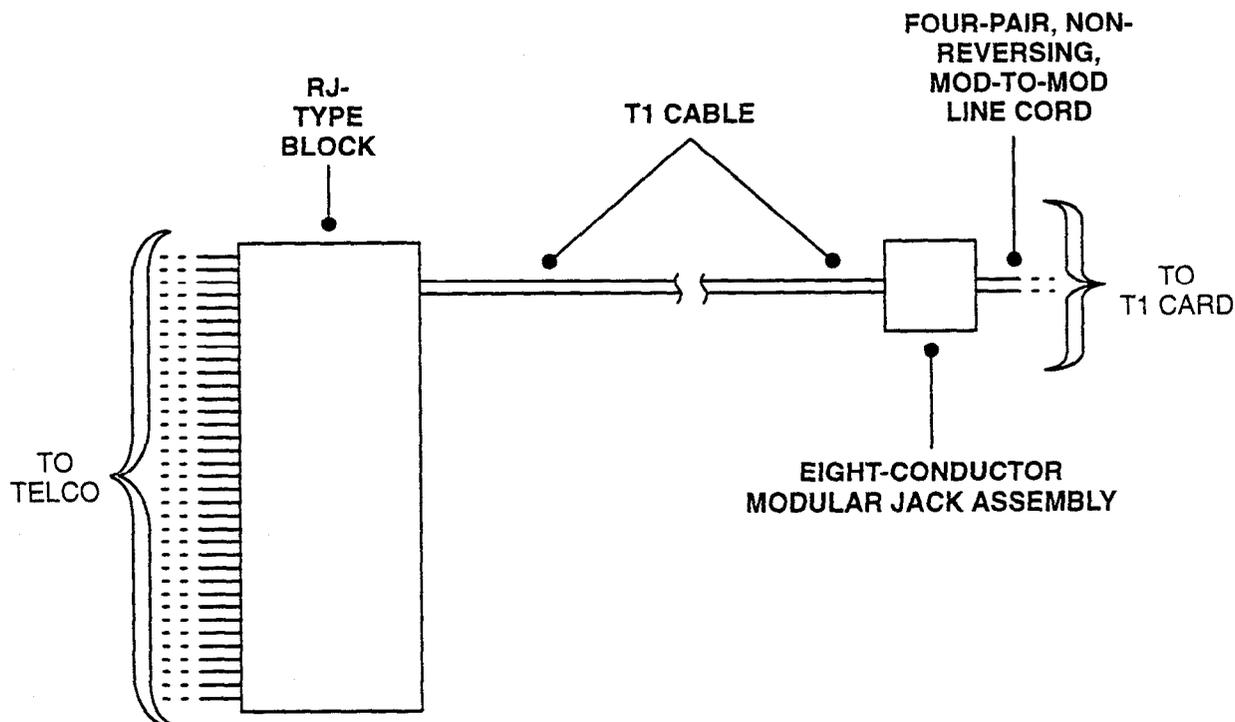
**NOTE:** If the telephone company termination is more than 2000 feet from the MDF, special T1 cable *must* be used (see page 2-18 for cable specifications). For shorter distances, two lengths of standard two-pair voice-frequency cable (one

cable for transmit and one cable for receive) may be used instead.

- a. Terminate one end of a six-pair cable on each modular jack assembly. Refer to Figure 3-9 on the previous page.
  - b. Terminate the other end of the six-pair cable on the *right* side of the T1 RJ-type terminal block.
- (3) Plug one end of a four-pair, non-reversing (straight through), mod-to-mod line cord into each modular jack assembly (mounted in step 1). The other end of each line cord will *later* be plugged into the T1 jack on the corresponding T1 Card.

**NOTE:** Make sure the connectors on the ends of each line cord are properly attached. If any of the wires are cracked or broken, T1 transmission problems can occur.

**FIGURE 3-10. T1 TRUNK TERMINATIONS FROM RJ-TYPE BLOCKS**



**Using The DB15 Connector In Place Of The RJ48C Jack**

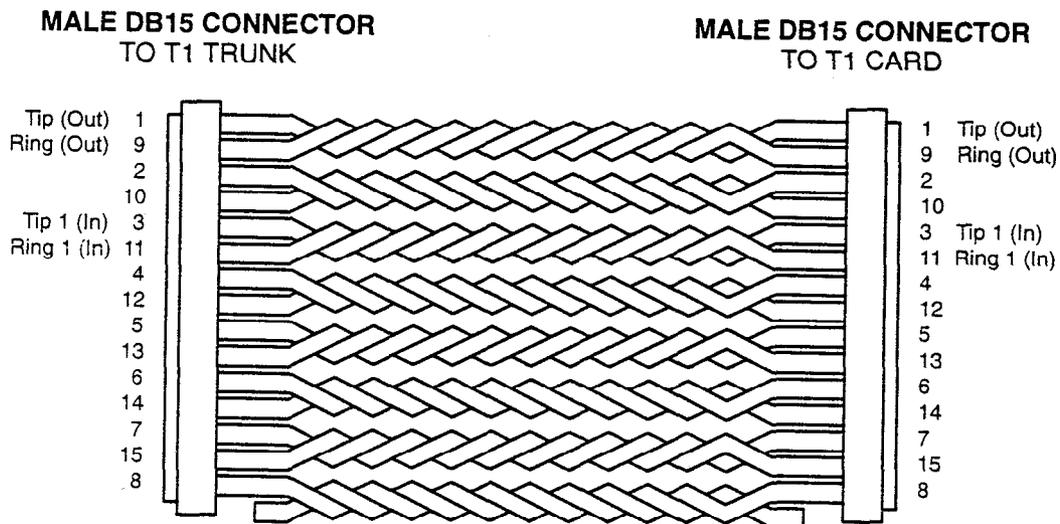
5.12 The three T1 installation methods described on the preceding pages show the T1 trunk being connected to the RJ48C jack on the T1 Card. However, in certain situations, the installer may wish to use the card's DB15 connector instead.

5.13 The pin functions of the T1 Card DB15 connector (15-pin D-subminiature female connector) are as follows:

| SIGNAL NAME | FUNCTION      | PIN |
|-------------|---------------|-----|
| Tip (Out)   | Transmit Data | 1   |
| Ring (Out)  | Transmit Data | 9   |
| Tip 1 (In)  | Receive Data  | 3   |
| Ring 1 (In) | Receive Data  | 11  |

5.14 To connect the DB15 connector on the T1 Card to a DB15 connector coming from the T1 trunk, a flat, 28AWG, twisted-pair ribbon cable with a maximum capacitance of 16pF/ft. may be used for distances of up to 50 feet, as shown in the figure below. For distances longer than 50 feet, use the special high-speed data cable described in paragraph 3.95 on page 2-18.

**FIGURE 3-11. USING THE T1 CARD'S DB15 CONNECTOR**



NOTE: OUT = transmit to network, IN = receive from network

### C. CONNECTING STATION CABLES TO THE MDF

5.15 Keysets are connected to Digital Keypad Cards (DKSCs) and/or 16-Port Digital Keypad Cards (DKSC-16s). Single-line sets and playback devices are connected to Single-Line Cards (SLCs), or they can be connected to Single-Line Adapters (SLAs), which are in turn connected to available DKSC/DKSC-16 circuits.

**NOTE:** Besides single-line sets, playback devices, and off-premises extensions, SLAs can also be used to install DID trunks. Any combination using the two circuits on the SLA is possible. Refer to pages 3-11 and 3-15 for DID trunk installation instructions.

5.16 After the station cables are run, connect them and the 25-pair cables to the DKSC/DKSC-16 blocks on the MDF as follows:

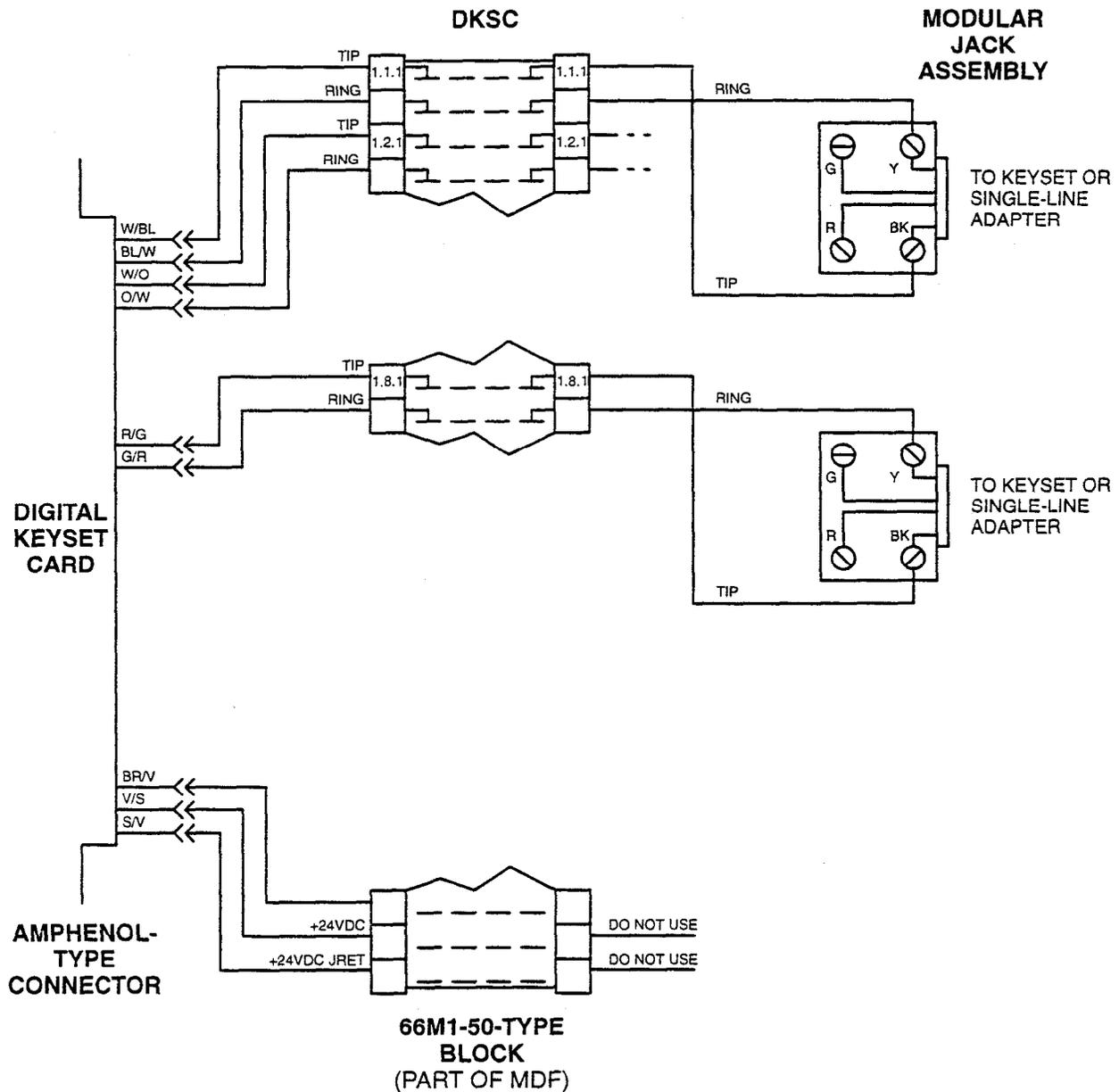
- (1) Ensure that both ends of each station cable are labeled with the circuit number of the associated station instrument.
- (2) Terminate each station cable on the *right* side of the corresponding station block. Refer to Figures 3-12 through 3-16 on the following pages for station cable terminations.

**NOTE:** For simplicity, the figures show station instruments being installed using one-pair cable

and four-conductor modular jacks. Of course, if three-pair cable and six-conductor modular jacks are used instead, extra terminal blocks and the use of cross-connect wiring techniques are required.

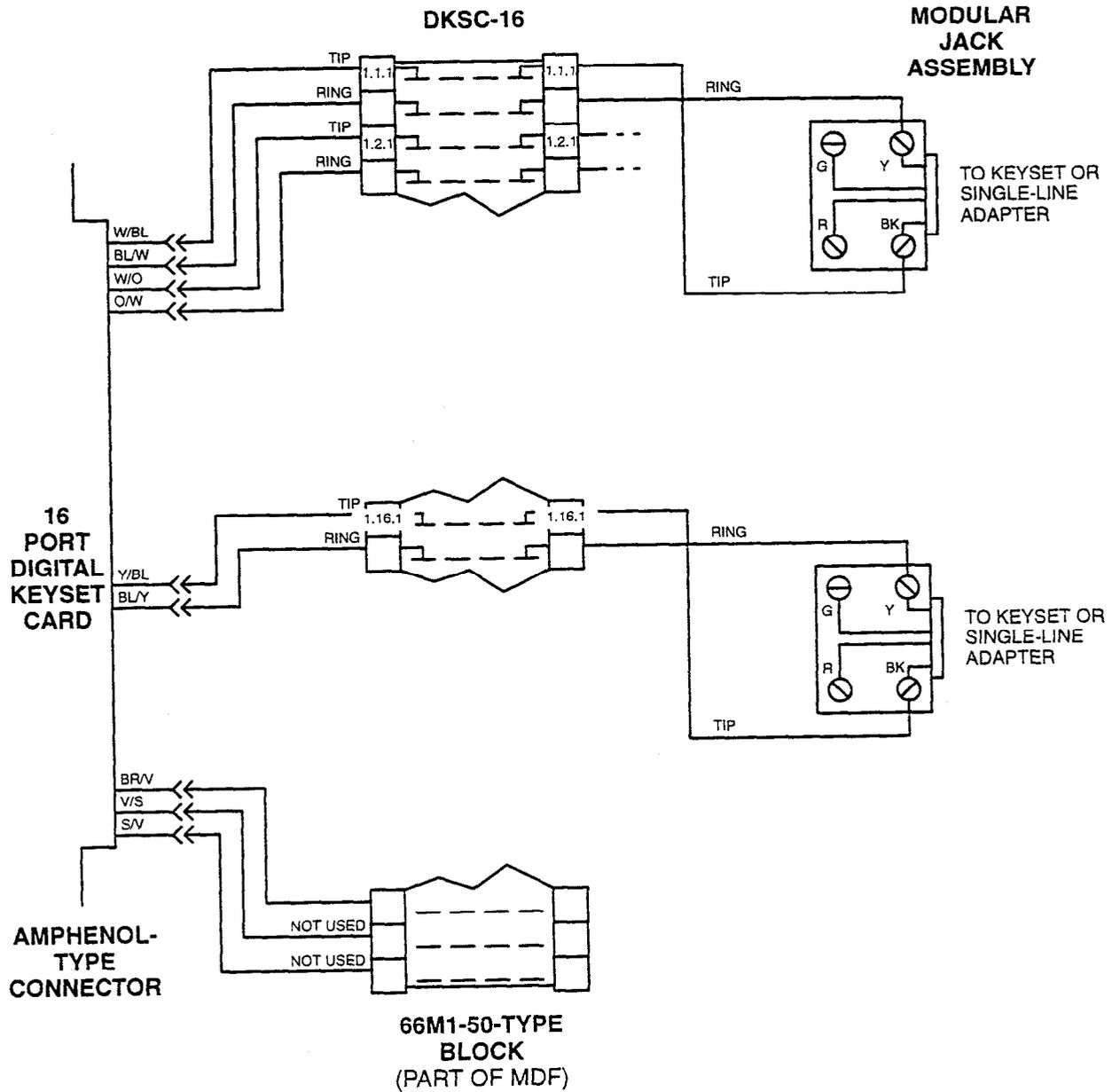
- (3) Using enough 25-pair cable to run from each block to each station card in the KSU, make the termination cables. Attach a 50-pin female amphenol-type connector to one end of each cable. Label each connector and cable end with the appropriate slot number (for example, SLOT-2). These connectors will be attached to the station cards after the circuit cards are installed.
- (4) *If necessary:* Using standard electrical tape, tape two ferrite split beads around each 25-pair cable just below the amphenol-type connector (as shown in Figure 3-4 on page 3-12).  
**NOTE:** Ferrite beads may be necessary to help reduce electromagnetic interference (EMI) and radio frequency interference (RFI). The part number for a single split bead is 808.1195.
- (5) Terminate the other end of each 25-pair cable on the *left* side of the corresponding station block.
- (6) **DO NOT** attach bridging clips until the loop resistance tests have been performed (as described on page 3-26).

FIGURE 3-12. DKSC BLOCK CABLE TERMINATIONS FOR KEYSETS



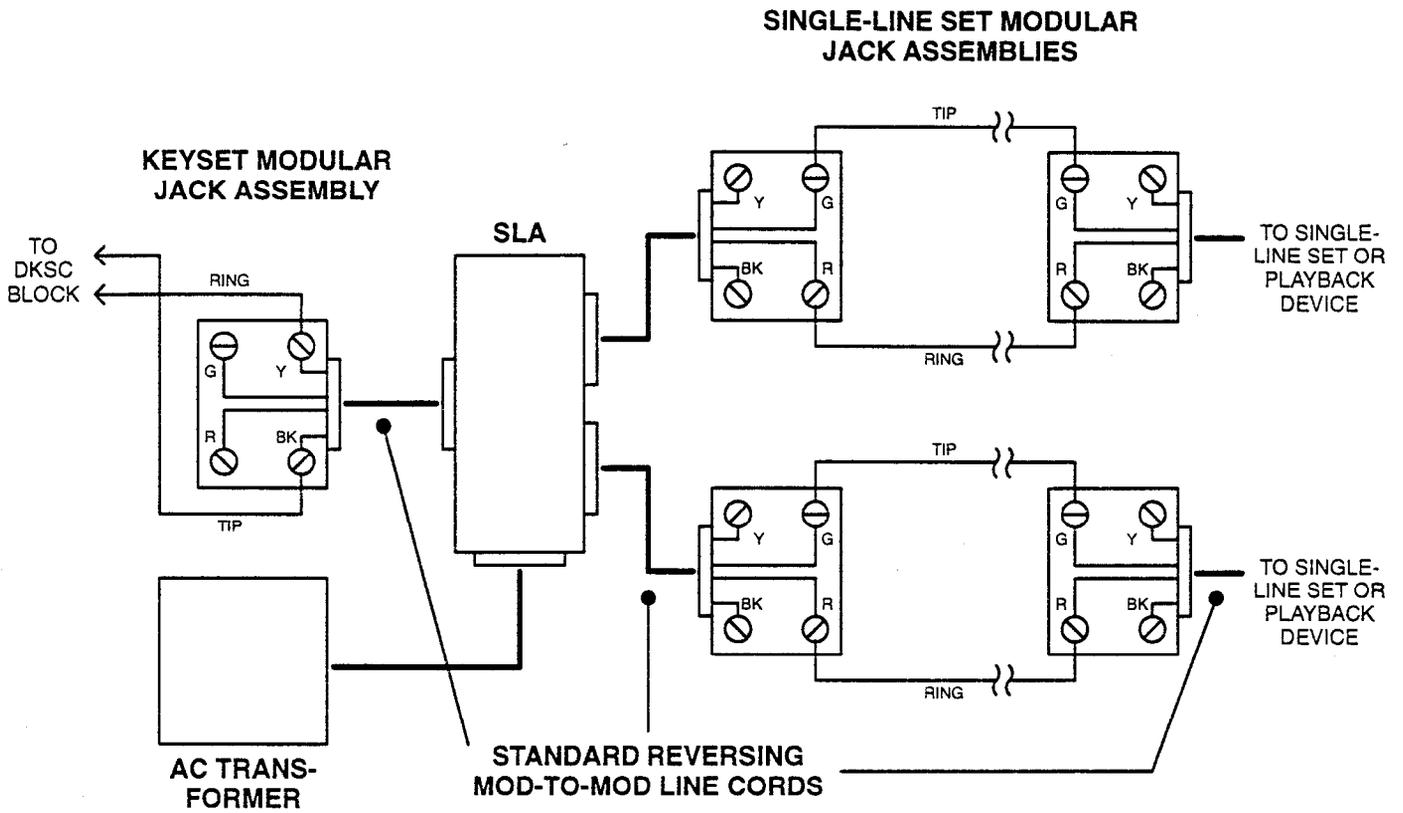
**NOTE:** For simplicity, this figure shows keysets being installed using one-pair cable and four-conductor modular jacks. Of course, if two-pair cable or three-pair cable is used instead, extra terminal blocks and the use of cross-connect wiring techniques are required. Note that tip and ring are connected to the *second pair* of terminals (black and yellow) on the modular jack.

FIGURE 3-13. DKSC-16 BLOCK CABLE TERMINATIONS FOR KEYSETS



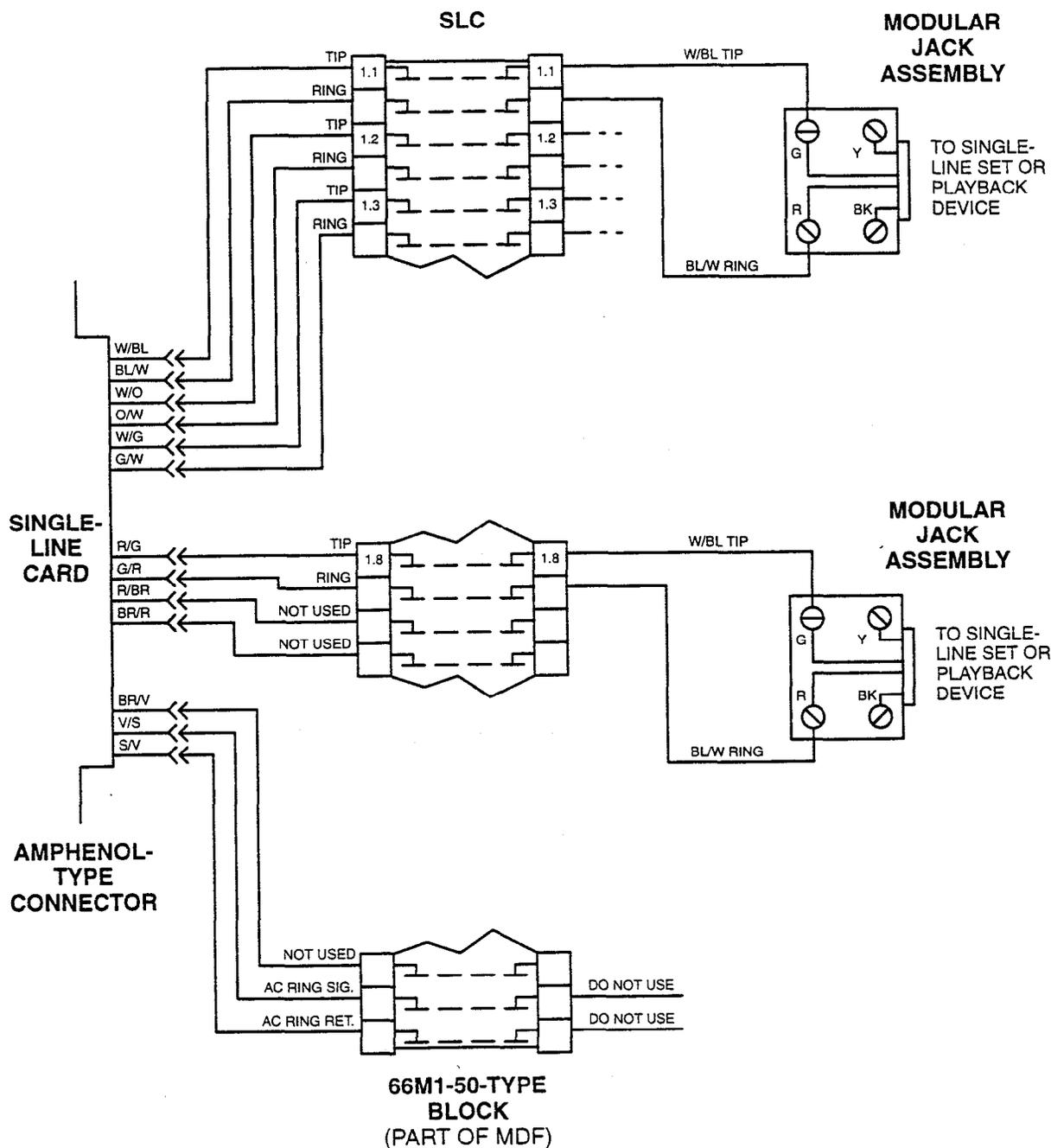
**NOTE:** For simplicity, this figure shows keysets being installed using one-pair cable and four-conductor modular jacks. Of course, if two-pair cable or three-pair cable is used instead, extra terminal blocks and the use of cross-connect wiring techniques are required. Note that tip and ring are connected to the *second pair* of terminals (black and yellow) on the modular jack.

FIGURE 3-14. SLA TERMINATIONS FOR SINGLE-LINE SETS



NOTE: If a single-line set or playback device is located near the SLA, it can be plugged directly into the unit.

FIGURE 3-15. SLC BLOCK CABLE TERMINATIONS



**NOTE:** For simplicity, this figure shows single-line sets and playback devices being installed using one-pair cable and four-conductor modular jacks. Of course, if three-pair cable and six-conductor modular jacks are used instead (as is recommended), extra terminal blocks and the use of cross-connect wiring techniques are required.

FIGURE 3-16. STATION CABLE TERMINATIONS ON THE STATION BLOCKS

| AMPHENOL NO. | CABLE PAIR | DKSC                  | DKSC-16  | SLC            | CIRCUIT NO.* | EXT. NO.* |
|--------------|------------|-----------------------|----------|----------------|--------------|-----------|
| 26           | W-BL       | TIP                   | TIP      | TIP            | 01.01.01     | 1000      |
| 1            | BL-W       | RING                  | RING     | RING           |              |           |
| 27           | W-O        | TIP                   | TIP      | TIP            | 01.02.01     | 1001      |
| 2            | O-W        | RING                  | RING     | RING           |              |           |
| 28           | W-G        | TIP                   | TIP      | TIP            | 01.03.01     | 1002      |
| 3            | G-W        | RING                  | RING     | RING           |              |           |
| 29           | W-BR       | TIP                   | TIP      | TIP            | 01.04.01     | 1003      |
| 4            | BR-W       | RING                  | RING     | RING           |              |           |
| 30           | W-S        | TIP                   | TIP      | TIP            | 01.05.01     | 1004      |
| 5            | S-W        | RING                  | RING     | RING           |              |           |
| 31           | R-BL       | TIP                   | TIP      | TIP            | 01.06.01     | 1005      |
| 6            | BL-R       | RING                  | RING     | RING           |              |           |
| 32           | R-O        | TIP                   | TIP      | TIP            | 01.07.01     | 1006      |
| 7            | O-R        | RING                  | RING     | RING           |              |           |
| 33           | R-G        | TIP                   | TIP      | TIP            | 01.08.01     | 1007      |
| 8            | G-R        | RING                  | RING     | RING           |              |           |
| 34           | R-BR       | NOT USED              | TIP      | NOT USED       |              |           |
| 9            | BR-R       | NOT USED              | RING     | NOT USED       |              |           |
| 35           | R-S        | NOT USED              | TIP      | NOT USED       |              |           |
| 10           | S-R        | NOT USED              | RING     | NOT USED       |              |           |
| 36           | BK-BL      | NOT USED              | TIP      | NOT USED       |              |           |
| 11           | BL-BK      | NOT USED              | RING     | NOT USED       |              |           |
| 37           | BK-O       | NOT USED              | TIP      | NOT USED       |              |           |
| 12           | O-BK       | NOT USED              | RING     | NOT USED       |              |           |
| 38           | BK-G       | NOT USED              | TIP      | NOT USED       |              |           |
| 13           | G-BK       | NOT USED              | RING     | NOT USED       |              |           |
| 39           | BK-BR      | NOT USED              | TIP      | NOT USED       |              |           |
| 14           | BR-BK      | NOT USED              | RING     | NOT USED       |              |           |
| 40           | BK-S       | NOT USED              | TIP      | NOT USED       |              |           |
| 15           | S-BK       | NOT USED              | RING     | NOT USED       |              |           |
| 41           | Y-BL       | NOT USED              | TIP      | NOT USED       |              |           |
| 16           | BL-Y       | NOT USED              | RING     | NOT USED       |              |           |
| 42           | Y-O        | NOT USED              | NOT USED | NOT USED       |              |           |
| 17           | O-Y        | NOT USED              | NOT USED | NOT USED       |              |           |
| 43           | Y-G        | NOT USED              | NOT USED | NOT USED       |              |           |
| 18           | G-Y        | NOT USED              | NOT USED | NOT USED       |              |           |
| 44           | Y-BR       | NOT USED              | NOT USED | NOT USED       |              |           |
| 19           | BR-Y       | NOT USED              | NOT USED | NOT USED       |              |           |
| 45           | Y-S        | NOT USED              | NOT USED | NOT USED       |              |           |
| 20           | S-Y        | NOT USED              | NOT USED | NOT USED       |              |           |
| 46           | V-BL       | NOT USED              | NOT USED | NOT USED       |              |           |
| 21           | BL-V       | NOT USED              | NOT USED | NOT USED       |              |           |
| 47           | V-O        | NOT USED              | NOT USED | NOT USED       |              |           |
| 22           | O-V        | NOT USED              | NOT USED | NOT USED       |              |           |
| 48           | V-G        | NOT USED              | NOT USED | NOT USED       |              |           |
| 23           | G-V        | NOT USED              | NOT USED | NOT USED       |              |           |
| 49           | V-BR       | NOT USED              | NOT USED | NOT USED       |              |           |
| 24           | BR-V       | NOT USED              | NOT USED | NOT USED       |              |           |
| 50           | V-S        | +24V (Do Not Use)     | NOT USED | AC RING SIGNAL |              |           |
| 25           | S-V        | +24V RET (Do Not Use) | NOT USED | AC RING RETURN |              |           |

\* The station circuit numbers shown above are for the first station card installed in the KSU. The extension numbers are the default numbers assigned to those circuits.

**D. STATION LOOP RESISTANCE TEST**

**5.17** Perform the loop resistance test for each station cable individually.

- (1) Ensure that bridging clips have not been installed on the station blocks and that the station instrument is not connected to the modular jack assembly.
- (2) Place a short across the BLACK and YELLOW wires (keysets) or RED and GREEN wires (single-line sets) on the modular jack assembly.
- (3) At the MDF, measure the resistance across the TIP and RING wires on the *right* (station) side of the station block. The reading should not exceed the limits (for 24AWG, level-1 or better wire)

listed in the chart below. The resistance values (in ohms) indicate loop measurements; the distance values (in feet/meters) indicate the maximum one-way measurements from the KSU. If necessary, longer loop lengths can be achieved by using a heavier gauge cable, such as 22AWG.

**NOTE:** Excessive and/or improperly made connections increase the resistance of a cable, which reduces the allowable cable run length.

- (4) Remove the short after the test is complete.
- (5) Repeat this test for each station cable.
- (6) Install bridging clips on the station blocks to complete the cable connections.

| <u>TYPE OF INSTRUMENT</u>                                                                   | <u>LOOP LIMITS</u>           |
|---------------------------------------------------------------------------------------------|------------------------------|
| From KSU to Digital Keysets (Basic, Standard, and Executive, display and non-display) . . . | 62 ohms/1200 ft. (366 m.)    |
| From KSU to Digital Keysets with attached PC and Modem Data Port Modules . . . . .          | 62 ohms/1200 ft. (366 m.)    |
| From Modem Data Port Modules to single-line sets . . . . .                                  | 195 ohms/3800 ft. (1158 m.)  |
| From KSU to Single-Line Adapters (SLAs) . . . . .                                           | 128 ohms/2500 ft. (762 m.)   |
| From SLAs to single-line sets or playback devices . . . . .                                 | 800 ohms/15560 ft. (4742 m.) |
| From KSU (SLCs) to single-line sets or playback devices . . . . .                           | 257 ohms/5000 ft. (1524 m.)  |

**NOTE:** Do not use shielded cable. Longer loop lengths can be achieved by using heavier gauge cable, such as 22AWG. (For additional station cabling requirements, refer to page 3-7.)

**E. CONNECTING OPTIONAL  
OFF-PREMISES EXTENSIONS (OPXs)**

**5.18** Off-premises extensions are remote single-line DTMF sets that are connected to the Inter-Tel AXXESS System through telephone company OPX circuits (or customer-provided circuits). The circuits are connected to Single-Line Adapter (SLA) circuits, which are in turn connected to available Digital Keypad Card (DKSC) and/or 16-Port Digital Keypad Card (DKSC-16) circuits.

**NOTE:** SLAs do not support *visual* message waiting applications. If single-line sets with message waiting lamps are installed on SLAs, the lamps will not function. However, single-line sets can be configured in database programming to receive *audible* message waiting indication tones.

**5.19** Off-premises station instruments must be AC ringer-equipped. The SLA's onboard high-voltage ringing adapter (HVRA) provides isolation from the telephone company OPX circuits as required by FCC regulations.

**5.20** Each SLA can support up to two off-premises extensions. (On premises, SLA circuits can be used for installing AC-ringing single-line sets, playback devices, etc.)

**5.21** In certain off-premises applications, voice volume levels may not be acceptable. This degradation in

voice volume is due to the natural voice frequency range limitations of the telephone company or customer-provided circuit. To increase the voice frequency range, installation of a two-wire, negative impedance repeater unit is recommended. (Refer to page 2-24 for specifications.)

**5.22** The repeater unit is installed at the MDF between the SLA and the cabling to the off-premises single-line station. For proper installation with the Inter-Tel AXXESS System, the following are connected to the appropriate "pins" on the repeater unit (refer to the manufacturer's instructions for proper pin locations): -Battery (-24 to -56VDC), Ground, System Tip, System Ring, OPX Tip, and OPX Ring. Information on operating and adjusting the repeater unit is included with the product.

**5.23** Install the off-premises extensions as follows (refer to Figure 3-14 on page 3-23):

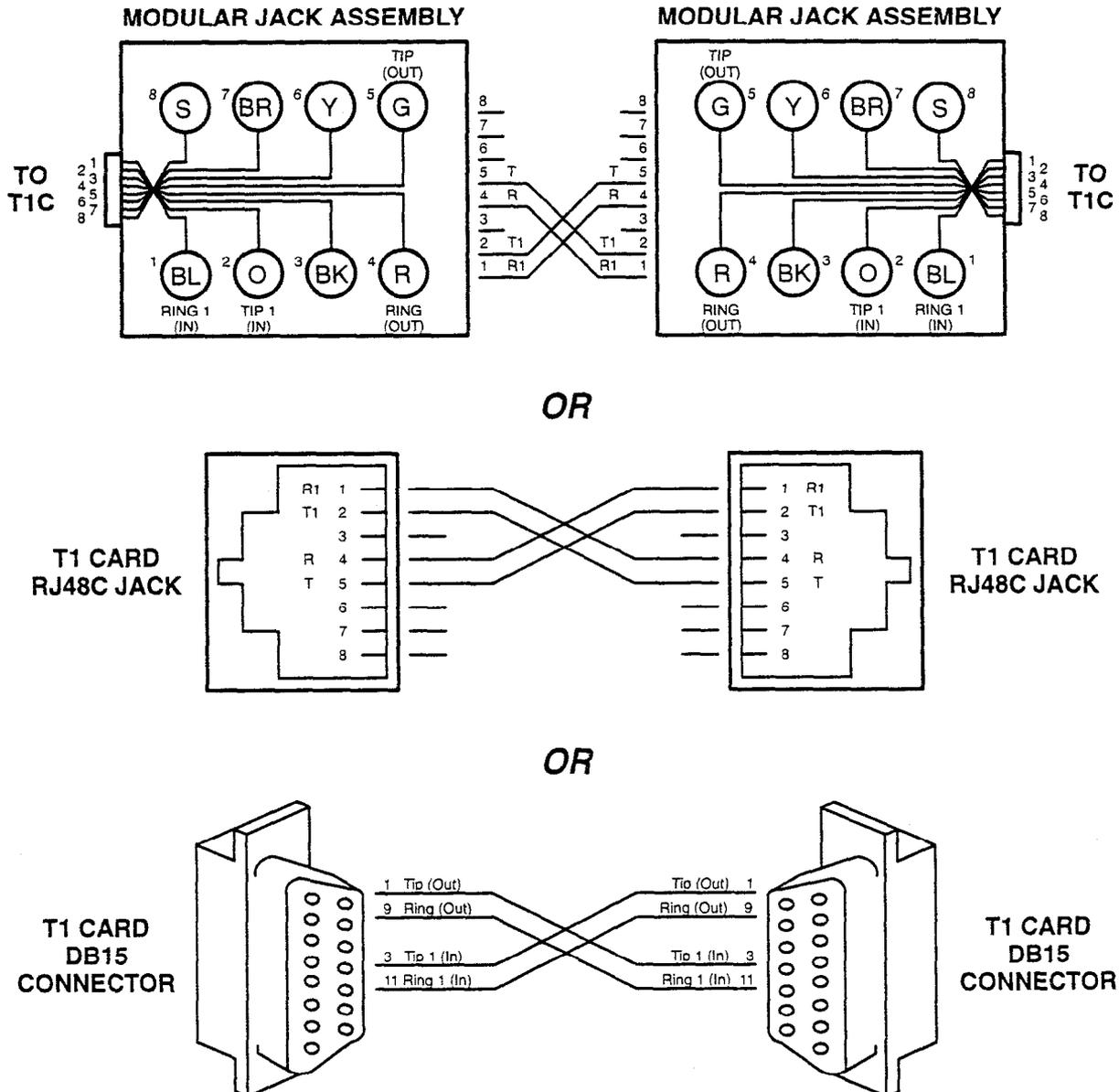
- (1) At the MDF, terminate each telephone company OPX circuit (or customer-provided circuit) on the desired SLA circuit.
- (2) At the off-premises location, terminate each telephone company OPX circuit (or customer-provided circuit) on the appropriate single-line set modular jack assembly.

**F. CONNECTING TWO AXXESS SYSTEMS TOGETHER USING T1 CARDS**

**5.24** Although most T1 interfaces will be with the public network, it is possible to use T1 Cards to connect two telephone systems together (e.g., two AXXESS Systems). The systems may be located in separate buildings and the cabling between them may be as long as 6000 feet.

**5.25** When connecting two AXXESS Systems together, the line cord (or cabling) between the two T1 Cards must be wired so that the receive pair (tip 1 in and ring 1 in) on each card is connected to the transmit pair (tip out and ring out) on the other card, as shown in the figure below. (For information on programming various types of T1 installations, refer to pages 6-131 to 6-135.)

**FIGURE 3-17. CONNECTING TWO T1 CARDS TOGETHER**



## 6. ORIGINAL KEY SERVICE UNIT (KSU) INSTALLATION

6.1 The original KSU, backplane, and power supply unit have been redesigned. Installation instructions for the original equipment start below. Installation instructions for the new equipment start on page 3-36.

### A. UNPACK THE EQUIPMENT

6.2 Unpack the equipment and inspect the KSU and all accompanying parts following these guidelines:

- (1) Check the parts against the packing slip and inspect them for damage. If any item is missing or damaged, contact Customer Support immediately.
- (2) Check all circuit card assemblies as follows:

**NOTE:** *The cards contain static-sensitive components.* Handle all cards by the edges only; however, avoid touching the gold contacts on the side of the card that plugs into the KSU. (For additional precautionary information, refer to the CAUTION on page 3-42.)

- a. Check each card to ensure there is no shipping foam or tape attached.
- b. Inspect each card for shorted components.
- c. Return all cards to their protective bags until they are ready to be installed in the KSU.

### B. CHECK THE KSU PRE-ASSEMBLY

6.3 The KSU is shipped fully assembled. To ensure that none of the items have been damaged or have become unattached during shipment, follow these steps.

- (1) Position the KSU near the MDF backboard.

**NOTE:** The KSU can be placed on a table or other secure horizontal surface, or it can be mounted on the wall as outlined in section D.

- (2) Loosen the four screws securing the panel on the front of the KSU and set the panel aside.
- (3) Remove the four screws securing the panel on the top of the KSU and set the panel aside.
- (4) Check to see that the backplane is securely installed in the rear of the KSU.
- (5) Check to see that the power supply unit is securely installed in the top of the KSU.

- (6) Ensure that all cables are securely attached to their appropriate connectors.
- (7) *DO NOT* plug in the system AC power cable until the power supply electrical test, as outlined on page 3-35, has been performed.
- (8) If installing an expanded KSU, connect the two basic KSUs together as outlined in section C.
- (9) To wall mount the KSU, if desired, refer to section D.
- (10) Ground the system according to the instructions on page 3-34.

### C. ATTACH TWO UNITS TOGETHER, IF NECESSARY

6.4 To create an expanded KSU, connect two basic KSUs together following these steps:

**NOTE:** If necessary, an original KSU and a new-style KSU can be connected together to create an expanded KSU.

- (1) On one KSU, remove the two screws securing the small access panel on the *right* side of the KSU and set the panel aside.
- (2) On the other KSU, remove the two screws securing the small access panel on the *left* side of the KSU and set the panel aside.
- (3) With the cutouts to the middle, place the two KSUs side by side.
- (4) Using the screws removed in steps 1 and 2, connect the two KSUs together as shown in Figure 3-18 on page 3-30. (The screws are inserted through the KSU on the left into the KSU on the right.)
- (5) Remove the resistor from connector RN2 on the backplane in the right-hand KSU (as viewed from the front) and attach it to connector RN5 on the *same* backplane. (Refer to Figure 3-19 on page 3-31.) In the left-hand KSU, the resistor should remain in location RN2.
- (6) Attach one end of the 60-pin KSU expansion cable to connector J10 on the backplane in the left-hand KSU.
- (7) Route the free end of the KSU expansion cable through the cutout into the other KSU and attach it to connector J9 on the backplane in the right-hand KSU.

### D. WALL MOUNT THE KSU, IF DESIRED

6.5 The basic or expanded KSU may be mounted on the MDF backboard as outlined in the following steps.

- (1) With the top cover removed, position the KSU on the MDF backboard and mark the location of the *top* two mounting screw holes. (Be sure to allow sufficient air circulation around the KSU.) Set the KSU aside.
- (2) Drive a screw into the center of each mounting hole marking, allowing the heads of the screws to protrude slightly.

**NOTE:** Use screws of sufficient strength to support the KSU.

- (3) Hang the KSU on the two screws. If necessary, adjust the screws to ensure that the KSU is held firmly in place.
- (4) To further secure the KSU to the backboard, insert screws into the *bottom* two mounting holes from inside the KSU.

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**FIGURE 3-18. CONNECTING TWO KEY SERVICE UNITS TOGETHER**

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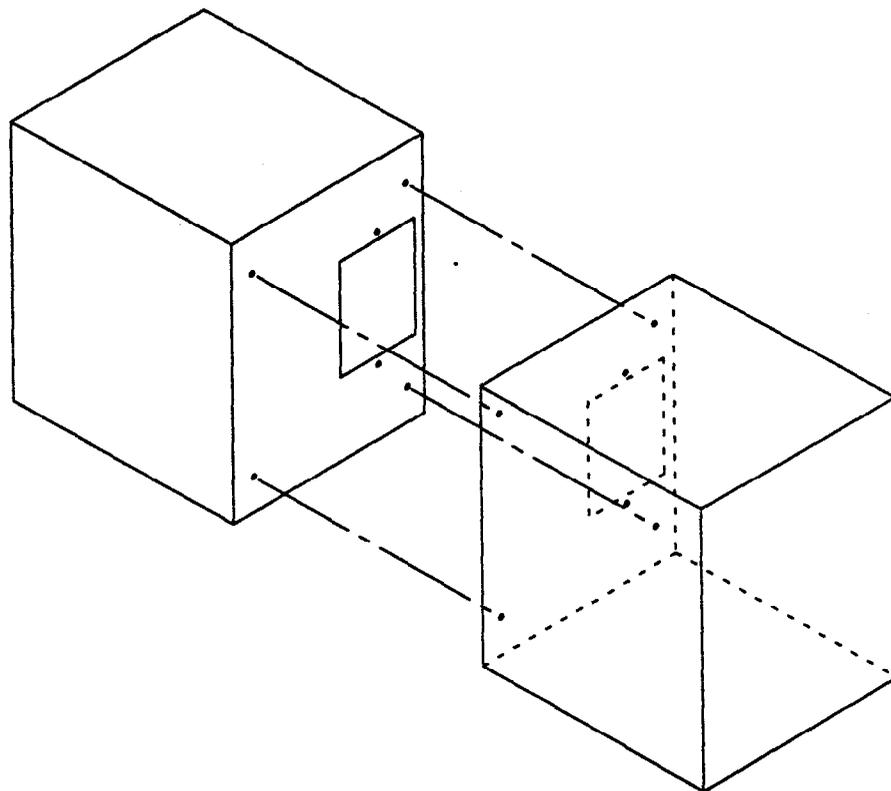
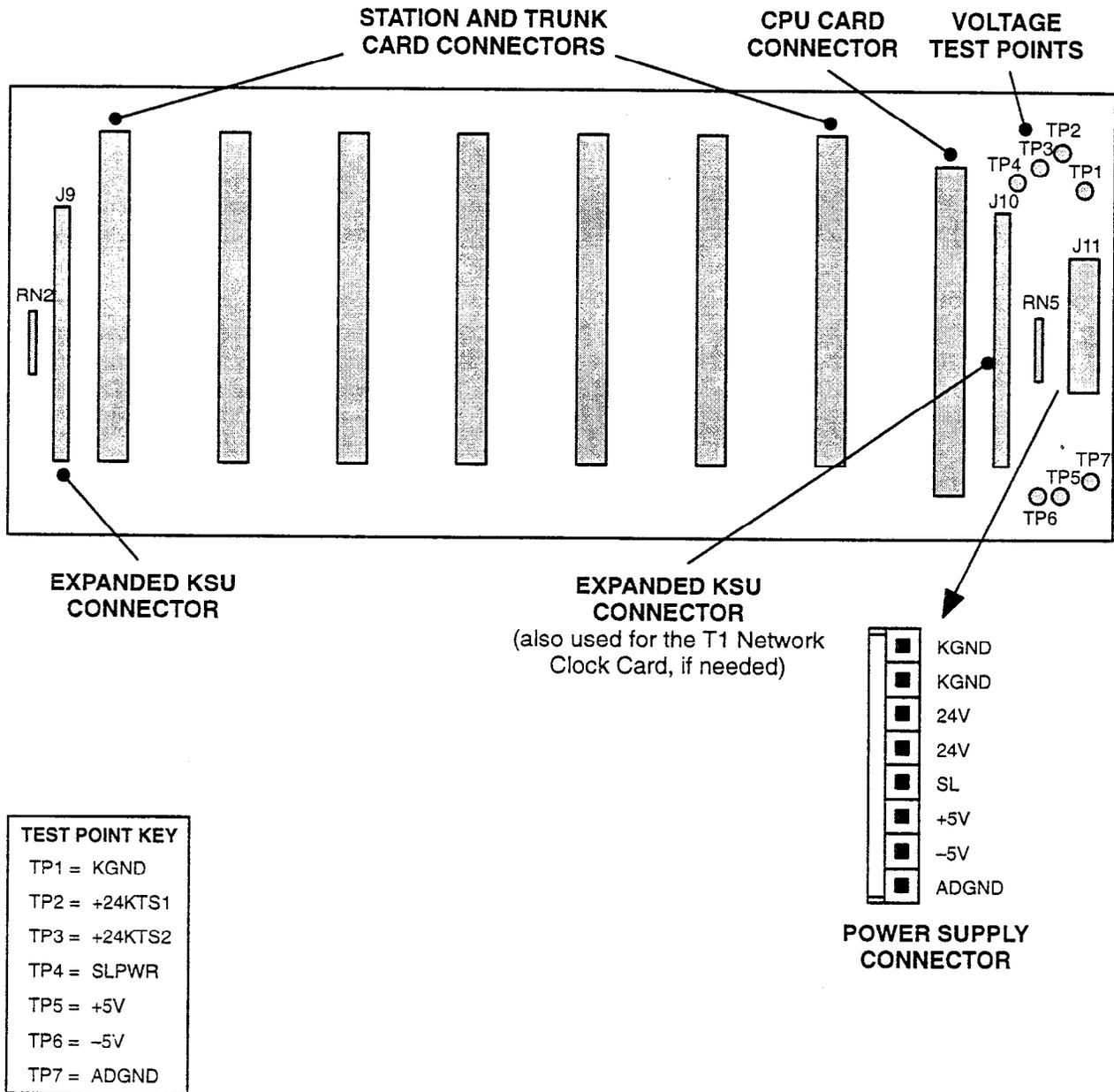


FIGURE 3-19. ORIGINAL KSU BACKPLANE



**E. REPLACING THE ORIGINAL POWER SUPPLY UNIT, IF NECESSARY**

**CAUTION**

 **HIGH VOLTAGE.** When the system power is turned on, the power supply unit contains 110VAC. Before inserting or removing the power supply unit, make sure that the AC POWER switch has been turned OFF for *at least five minutes*. Failure to allow the high voltage to dissipate can cause bodily injury.

**6.6** If the power supply is defective, replace the unit as follows (see Figure 3-20 on the following page):

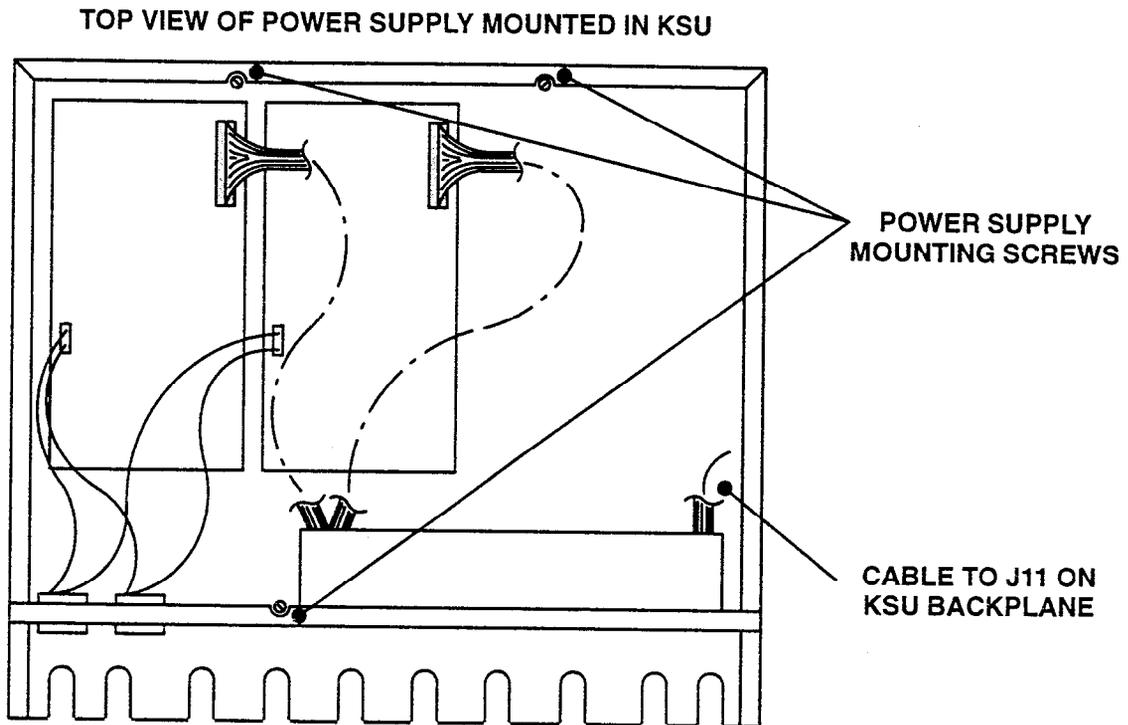
- (1) Remove the four screws securing the panel on the front of the KSU and set the panel aside.
- (2) Turn OFF the system AC POWER switch and wait at least five minutes.
- (3) Disconnect the AC power cable and the ground wire from the front of the power supply unit.
- (4) Remove the four screws securing the panel on the top of the KSU and set the panel aside.
- (5) Disconnect the backplane-to-power supply interface cable from connector J11 on the KSU backplane.
- (6) Remove the three screws securing the power supply unit to the top of the KSU cardfile (see Figure 3-20).
- (7) Lift the power supply unit up out of the KSU and set it aside.
- (8) Insert the new power supply unit and replace the three screws.

- (9) Connect the new backplane-to-power supply interface cable to connector J11 on the KSU backplane.
- (10) Replace the top panel on the KSU.
- (11) Connect the AC power cable and the ground wire to the front of the new power supply unit.
- (12) Remove all the circuit cards from the KSU, then perform the power supply electrical test as outlined on page 3-35.

**WARNING:** The power supply must be properly tested and grounded to prevent possible system damage.

- (13) Ensure that the power supply unit is properly grounded by performing one of the following tests:
  - Use a digital multimeter to measure the difference of potential between the KSU ground point and the power neutral, and between the KSU ground point and the third wire ground. If the voltage measurement exceeds 0.5V, noise may develop on the system. If this occurs, call an electrician.
  - Use a Megger to test the ground point. (A Megger should be available through the local power company.) The reading should be 5 ohms or less.
- (14) Turn OFF the system AC POWER switch, replace the circuit cards in the KSU, and then turn the system AC POWER switch back ON.
- (15) Replace the front panel on the KSU.
- (16) To receive proper credit for the advance replacement, return the defective power supply unit to Inter-Tel.

FIGURE 3-20. ORIGINAL POWER SUPPLY UNIT INSTALLATION



### Grounding Requirements

6.7 The KSU must be properly grounded to an earth ground point. A copper, cold water pipe is usually a good ground point.

**NOTE:** According to UL 1459, "an insulated grounding conductor that is not smaller in size and equivalent in insulation material and thickness to the grounded and ungrounded branch-circuit supply conductors, except that it is green with or without one or more yellow stripes, is to be installed as part of the circuit that supplies the product or system." Also, "the attachment-plug receptacles in the vicinity of the product or system are all to be of a grounding type, and the grounding conductors serving these receptacles are to be connected to earth ground at the service equipment."

6.8 The grounding wire should be 10AWG or larger and should not exceed 25 feet (7.5 meters) to help provide RFI/EMI protection, or should not exceed 10 feet (3 meters) to help provide both RFI/EMI and lightning protection.

6.9 To ground the system (see Figure 3-21 below):

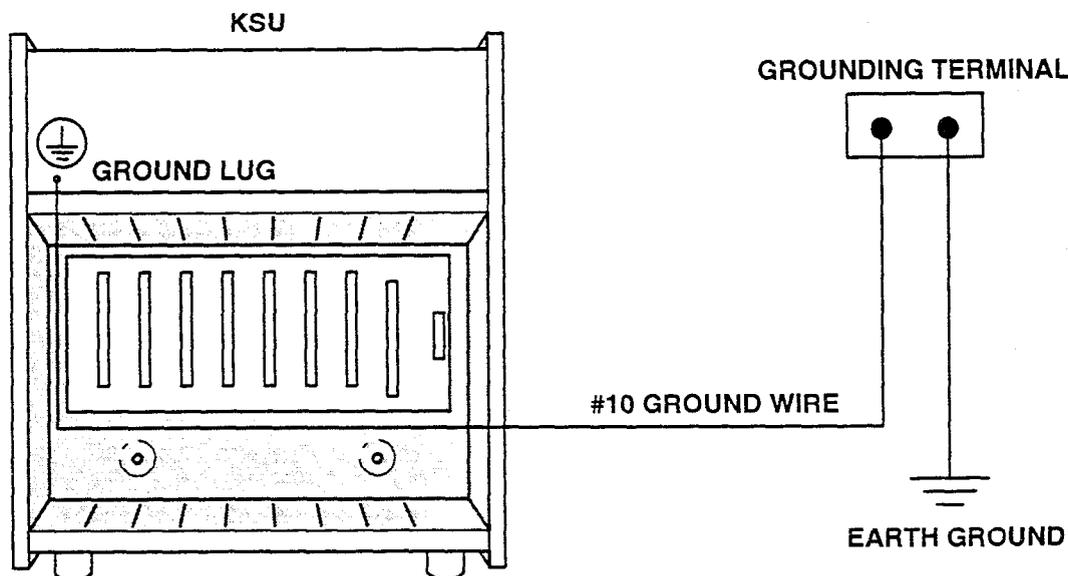
- (1) Ensure that the system AC power cable is not plugged into the AC outlet.
- (2) Mount a grounding terminal on the MDF back-board and connect it to:

- a. An earth ground.
- b. The ground lug (indicated by the symbol ⊕) on the front of the power supply unit.
- c. The ground lug (indicated by the symbol ⊕) on each Single-Line Adapter, if used.
- d. Battery compartments, if used.
- e. Trunk gas discharge tubes, if used.

6.10 If AC power-related problems appear on the system while in operation, one of the following three methods can be used to test the ground.

- Use a digital multimeter to measure the difference of potential between the KSU ground point and the power neutral, and between the KSU ground point and the third wire ground. If the voltage measurement exceeds 0.5V, noise may develop on the system. If this occurs, call an electrician.
- Use a Megger to test the ground point. (A Megger should be available through the local power company.) The reading should be 5 ohms or less.
- Unplug the AC power cord from the outlet and insert a ground isolation plug into the outlet. Plug the AC power cord into the ground isolation plug. If the problem ceases, call an electrician. When finished, remove the ground isolation plug to restore ground protection.

FIGURE 3-21. KSU GROUNDING



**Power Supply Electrical Test**

**6.11** Perform the following electrical check on the power supply.

- (1) Ensure that the system AC power cable is not plugged in and the AC POWER switch on the front of the power supply is OFF.
- (2) Plug the recommended surge/spike protector provided into a 105–125VAC, 57–63Hz, 15A, single-phase commercial power source.

**NOTE:** This *MUST* be an isolated, dedicated circuit. *DO NOT* use an extension cord when installing the power supply. Also, *DO NOT* plug any other equipment into the same AC outlet.

- (3) Plug the system AC power cable into the surge/spike protector and turn ON the AC POWER switch.
- (4) Observe the four LEDs on the front of the power supply unit. All four LEDs (+5V, -5V, +24V1, and +24V2) should be lit. *If any of the LEDs are blinking or are unlit*, the power supply is defective and the entire unit must be replaced.

**NOTE:** A blinking LED indicates that an overly high voltage has been detected. A lit LED merely indicates that there is some voltage present (as shown in the table below); it does not, however, indicate whether the voltage level is acceptable. To determine the exact voltage level present, perform the following step.

| <u>VOLTAGE</u> | <u>LED</u> | <u>OUTPUT</u>   |
|----------------|------------|-----------------|
| +5VDC          | OFF        | ≤ 1V            |
|                | ON         | > 1V & < 6.5V   |
|                | BLINKING   | ≥ 6.5V          |
| -5VDC          | OFF        | ≥ -1V           |
|                | ON         | < -1V & > -6.5V |
|                | BLINKING   | ≤ -6.5V         |
| +24VDC         | OFF        | ≤ 1V            |
|                | ON         | > 1V & < 29V    |
|                | BLINKING   | ≥ 29V           |

- (5) Referring to Figure 3–19 on page 3–31, measure the following system voltages on the KSU backplane. A digital voltmeter of ±0.5% accuracy is required. Insert the “common” voltmeter probe into the ground point and insert the other probe into the desired voltage test point (TP1 is ground for test points 2, 3, and 4; TP7 is ground for test points 5 and 6). The measurements should be within the limits listed in the following chart.

| <u>VOLTAGE</u> | <u>TOLERANCE</u> |
|----------------|------------------|
| -5VDC          | ±5%              |
| +5VDC          | ±5%              |
| +24VDC         | ±5%              |
| SLPWR (+24VDC) | ±5%              |

- (6) *If the voltages are within the specified limits*, turn OFF the AC POWER switch and proceed to the next section.

*If voltage measurements are not within the specified limits*, replace the defective power supply unit.



**CAUTION**

*DO NOT* attempt to adjust the power supply voltages. Damage caused by unauthorized voltage adjustment will not be covered by the warranty.

## 7. NEW-STYLE KSU INSTALLATION

7.1 The original KSU, backplane, and power supply unit have been redesigned. Installation instructions for the new equipment start below. Installation instructions for the original equipment start back on page 3-29.

### A. UNPACK THE EQUIPMENT

7.2 Unpack the equipment and inspect the KSU and all accompanying parts following these guidelines:

- (1) Check the parts against the packing slip and inspect them for damage. If any item is missing or damaged, contact Customer Support immediately.
- (2) Check all circuit card assemblies as follows:

**NOTE:** *The cards contain static-sensitive components. Handle all cards by the edges only; however, avoid touching the gold contacts on the side of the card that plugs into the KSU. (For additional precautionary information, refer to the CAUTION on page 3-42.)*

- a. Check each card to ensure there is no shipping foam or tape attached.
- b. Inspect each card for shorted components.
- c. Return all cards to their protective bags until they are ready to be installed in the KSU.

### B. CHECK THE KSU PRE-ASSEMBLY

7.3 The KSU is shipped fully assembled. To ensure that none of the items have been damaged or have become unattached during shipment, follow these steps.

- (1) Position the KSU near the MDF backboard.  
**NOTE:** The KSU can be placed on a table or other secure horizontal surface, or it can be mounted on the wall as outlined in section D.
- (2) Loosen the four screws securing the panel on the front of the KSU and set the panel aside.
- (3) Check to see that the backplane is securely installed in the rear of the KSU.
- (4) *DO NOT* plug in the system AC power cable until the power supply electrical test, as outlined on page 3-41, has been performed.
- (5) If installing an expanded KSU, connect the two basic KSUs together as outlined in section C.

- (6) To wall mount the KSU, if desired, refer to section D.
- (7) Ground the system according to the instructions on page 3-40.

### C. ATTACH TWO UNITS TOGETHER, IF NECESSARY

7.4 To create an expanded KSU, connect two basic KSUs together following these steps:

**NOTE:** If necessary, an original KSU and a new-style KSU can be connected together to create an expanded KSU.

- (1) On one KSU, remove the two screws securing the small access panel on the *right* side of the KSU and set the panel aside.
- (2) On the other KSU, remove the two screws securing the small access panel on the *left* side of the KSU and set the panel aside.
- (3) With the cutouts to the middle, place the two KSUs side by side.
- (4) Using the screws removed in steps 1 and 2, connect the two KSUs together as shown in Figure 3-22 on page 3-37. (The screws are inserted through the KSU on the left into the KSU on the right.)
- (5) Remove the resistor from connector RN2 on the backplane in the right-hand KSU (as viewed from the front) and attach it to connector RN5 on the *same* backplane. (Refer to Figure 3-23 on page 3-38.) In the left-hand KSU, the resistor should remain in location RN2.
- (6) Attach one end of the 60-pin KSU expansion cable to connector J10 on the backplane in the left-hand KSU.
- (7) Route the free end of the KSU expansion cable through the cutout into the other KSU and attach it to connector J9 on the backplane in the right-hand KSU.

### D. WALL MOUNT THE KSU, IF DESIRED

7.5 The basic or expanded KSU may be mounted on the MDF backboard as outlined in the following steps.

- (1) With the front cover removed, position the KSU on the MDF backboard and mark the location of the *top* two mounting screw holes. (Be sure to allow sufficient air circulation around the KSU.) Set the KSU aside.

- (2) Drive a screw into the center of each mounting hole marking, allowing the heads of the screws to protrude slightly.

**NOTE:** Use screws of sufficient strength to support the KSU.

- (3) Hang the KSU on the two screws. If necessary, adjust the screws to ensure that the KSU is held firmly in place.

- (4) To further secure the KSU to the backboard, insert screws into the *bottom* two mounting holes from inside the KSU.

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**FIGURE 3-22. CONNECTING TWO KEY SERVICE UNITS TOGETHER**

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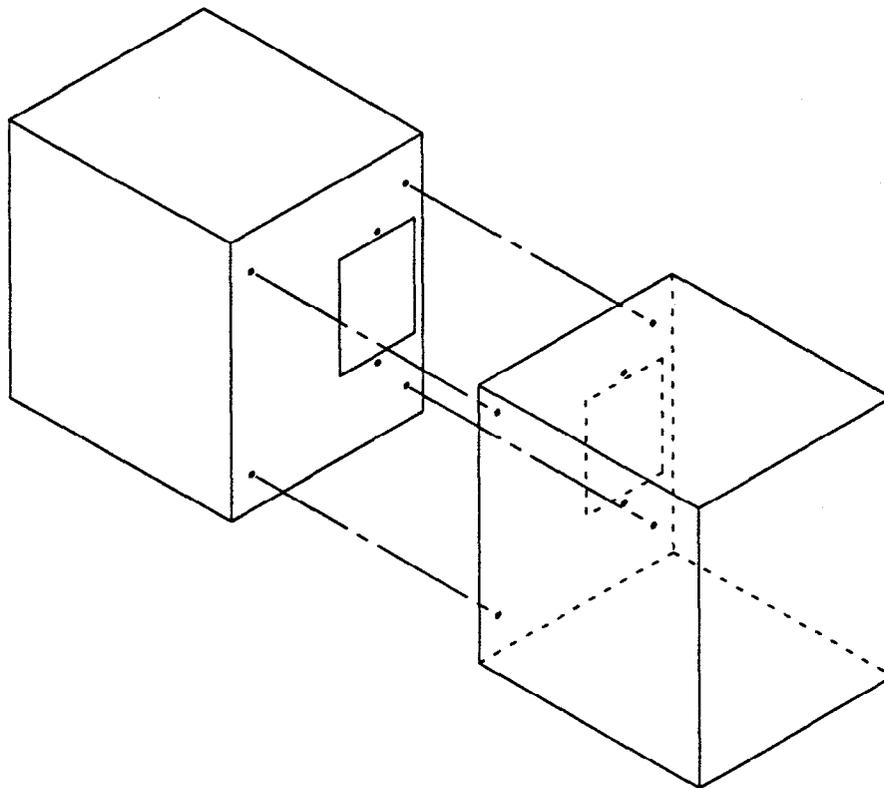
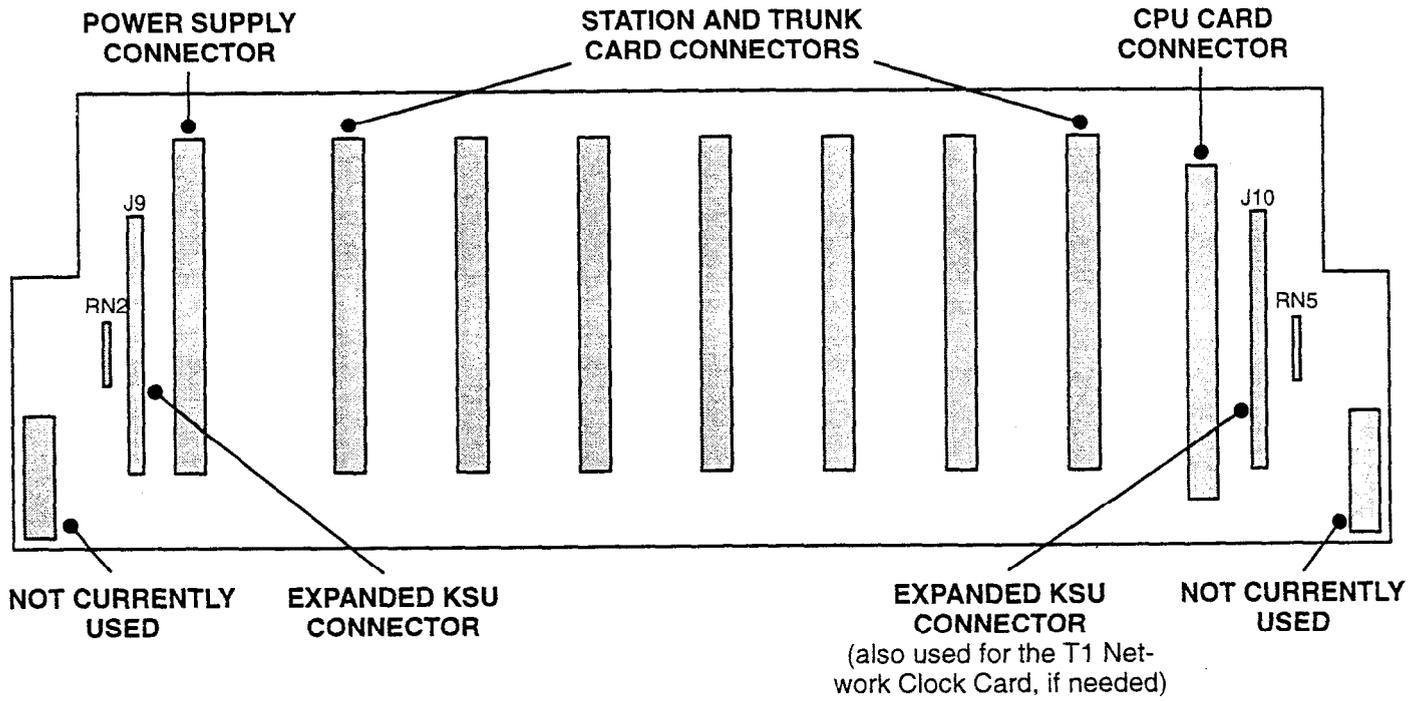


FIGURE 3-23. NEW-STYLE KSU BACKPLANE



E. INSTALL THE POWER SUPPLY UNIT

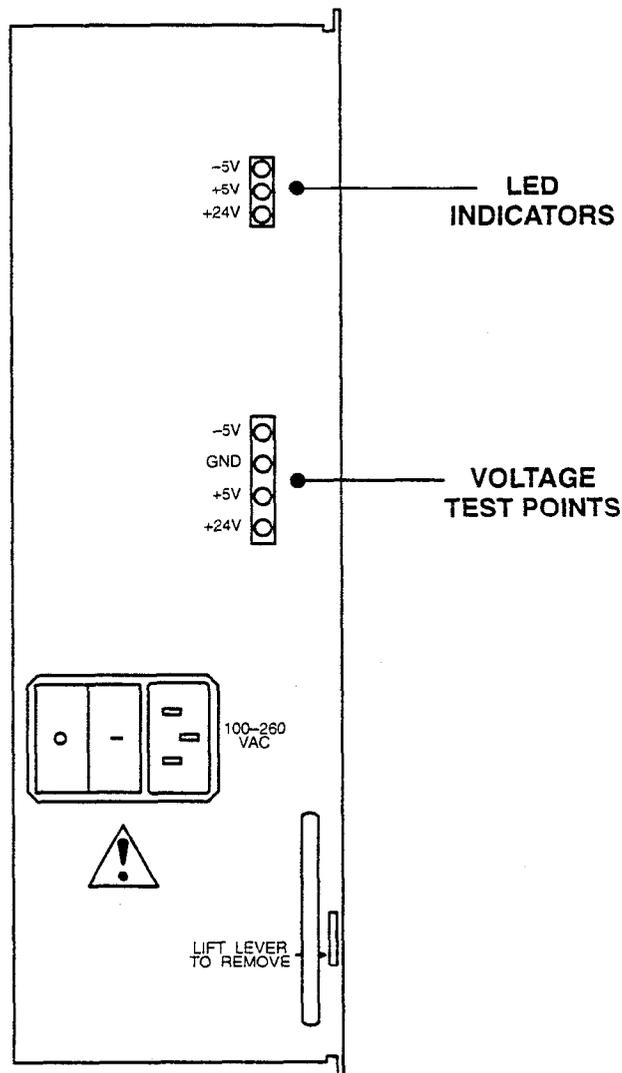
**CAUTION**

 **HIGH VOLTAGE.** When the system power is turned on, the power supply unit contains 110VAC. Before inserting or removing the power supply unit, make sure that the AC POWER switch has been turned OFF for *at least five minutes*. Failure to allow the high voltage to dissipate can cause bodily injury.

7.6 Install the power supply unit in the KSU as outlined in the following steps (see Figure 3-24 below):

- (1) Remove the four screws securing the panel on the front of the KSU and set the panel aside.
- (2) Carefully slide the power supply unit into the far left slot in the KSU until it locks securely into place.
- (3) Connect the AC power cable to the front of the power supply unit.

FIGURE 3-24. NEW-STYLE POWER SUPPLY UNIT



### Grounding Requirements

7.7 The KSU must be properly grounded to an earth ground point. A copper, cold water pipe is usually a good ground point.

**NOTE:** According to UL 1459, "an insulated grounding conductor that is not smaller in size and equivalent in insulation material and thickness to the grounded and ungrounded branch-circuit supply conductors, except that it is green with or without one or more yellow stripes, is to be installed as part of the circuit that supplies the product or system." Also, "the attachment-plug receptacles in the vicinity of the product or system are all to be of a grounding type, and the grounding conductors serving these receptacles are to be connected to earth ground at the service equipment."

7.8 The grounding wire should be 10AWG or larger and should not exceed 25 feet (7.5 meters) to help provide RFI/EMI protection, or should not exceed 10 feet (3 meters) to help provide both RFI/EMI and lightning protection.

7.9 To ground the system (see Figure 3-25 below):

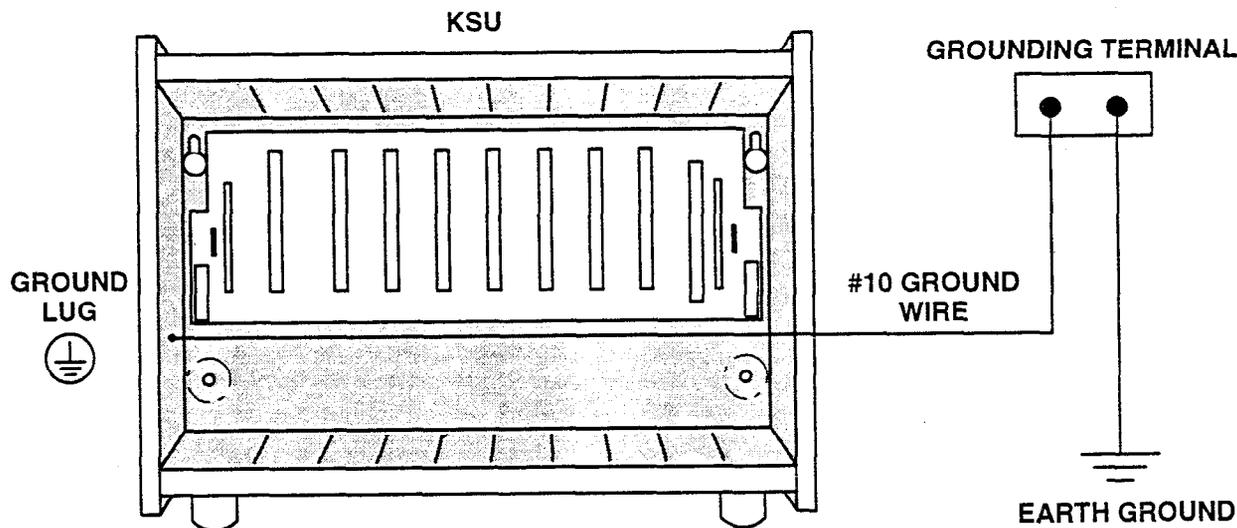
- (1) Ensure that the system AC power cable is not plugged into the AC outlet.
- (2) Mount a grounding terminal on the MDF back-board and connect it to:

- a. An earth ground.
- b. The ground lug on the left, inside wall of the KSU.
- c. The ground lug (indicated by the symbol ⊕) on each Single-Line Adapter, if used.
- d. Battery compartments, if used.
- e. Trunk gas discharge tubes, if used.

7.10 If AC power-related problems appear on the system while in operation, one of the following three methods can be used to test the ground.

- Use a digital multimeter to measure the difference of potential between the KSU ground point and the power neutral, and between the KSU ground point and the third wire ground. If the voltage measurement exceeds 0.5V, noise may develop on the system. If this occurs, call an electrician.
- Use a Megger to test the ground point. (A Megger should be available through the local power company.) The reading should be 5 ohms or less.
- Unplug the AC power cord from the outlet and insert a ground isolation plug into the outlet. Plug the AC power cord into the ground isolation plug. If the problem ceases, call an electrician. When finished, remove the ground isolation plug to restore ground protection.

FIGURE 3-25. KSU GROUNDING



**Power Supply Electrical Test**

**7.11** Perform the following electrical check on the power supply.

- (1) Ensure that the system AC power cable is not plugged in and the AC POWER switch on the front of the power supply is OFF.
- (2) Plug the recommended surge/spike protector provided into a 105–125VAC, 57–63Hz, 15A, single-phase commercial power source.

**NOTE:** This *MUST* be an isolated, dedicated circuit. *DO NOT* use an extension cord when installing the power supply. Also, *DO NOT* plug any other equipment into the same AC outlet.

- (3) Plug the system AC power cable into the surge/spike protector and turn ON the AC POWER switch.
- (4) After waiting five seconds, observe the three LEDs on the front of the power supply unit. All three LEDs (+5V, –5V, and +24V) should be lit. *If any of the LEDs are blinking or are unlit, the power supply is defective and the entire unit must be replaced.*

**NOTE:** A blinking LED indicates that an overly high voltage has been detected. A lit LED merely indicates that there is some voltage present (as shown in the table below); it does not, however, indicate whether the voltage level is acceptable. To determine the exact voltage level present, perform the following step.

| <u>VOLTAGE</u> | <u>LED</u> | <u>OUTPUT</u>   |
|----------------|------------|-----------------|
| +5VDC          | OFF        | ≤ 1V            |
|                | ON         | > 1V & < 6.5V   |
|                | BLINKING   | ≥ 6.5V          |
| –5VDC          | OFF        | ≥ –1V           |
|                | ON         | < –1V & > –6.5V |
|                | BLINKING   | ≤ –6.5V         |
| +24VDC         | OFF        | ≤ 1V            |
|                | ON         | > 1V & < 29V    |
|                | BLINKING   | ≥ 29V           |

- (5) Referring to Figure 3–24 on page 3–39, measure the following system voltages on the front of the power supply unit. A digital voltmeter of ±0.5% accuracy is required. Insert the “common” voltmeter probe into the ground point and insert the other probe into the desired voltage test point. The measurements should be within the limits listed in the following chart.

| <u>VOLTAGE</u> | <u>TOLERANCE</u> |
|----------------|------------------|
| –5VDC          | ±5%              |
| +5VDC          | ±5%              |
| +24VDC         | ±5%              |

- (6) *If the voltages are within the specified limits, turn OFF the AC POWER switch and proceed to the next section.*

*If voltage measurements are not within the specified limits, replace the defective power supply unit.*



**CAUTION**

*DO NOT* attempt to adjust the power supply voltages. Damage caused by unauthorized voltage adjustment will not be covered by the warranty.

## 8. CIRCUIT CARD INSTALLATION

### A. INSTALL THE CIRCUIT CARDS

8.1 With the exception of the CPU/MEM Card, CPU020/PCM-D Card, and Network Clock Card, the circuit cards can be installed in any card slot. However, to facilitate installation and programming, it is recommended that the cards be installed to match the default configuration as closely as possible. (Refer to page 2-14 in SPECIFICATIONS for information on the default configuration.)

#### CAUTION

The cards and components are static sensitive. Handle the cards by the edges only and keep them in their protective bags until they are to be installed. Do not bend or touch the pins of the components or subject them to a static charge. When working with the cards, use a properly terminated anti-static wrist strap and cover the work surface with the bag that protected the card during shipping. Any static charge (no matter how small the charge) must be discharged from the body before touching the cards or components. *The warranty for this equipment does not cover damage caused by static or mishandling. Cards or components damaged in such a manner will not be replaced.*

#### Network Clock Card (NCC)

8.2 If any optional T1 Cards are to be installed in a KSU using the original CPU/MEM Card configuration, a Network Clock Card must also be attached to the KSU backplane. To allow adequate room for installation, it is best to install the NCC before installing the CPU Card.

**NOTE:** Do not install an NCC in KSUs equipped with the new CPU020/PCM-D Card; it could cause T1 timing problems. If one is accidentally installed, the programming PC displays a warning.

- (1) Ensure that all integrated circuits and components on the card are seated securely in their sockets and that no pins are bent.
- (2) *Make sure the power supply's AC POWER switch is turned OFF. Installing the NCC with the power on may damage the circuitry on the card.*
- (3) Install the NCC with the components *facing left* in the expanded KSU connector slot (J10) on the far right side of the KSU backplane. (See backplane drawing on page 3-31.)

**NOTE:** When two basic KSUs are attached together to form an expanded KSU, the NCC is

installed only in the second (right-hand) KSU, as viewed from the front.

- (4) Turn OFF the AC POWER switch.

#### Central Processing Unit (CPU) Card and Attached Memory (MEM) Card

8.3 Before installing the CPU Card and its attached MEM Card, install the two PALs and 13 ROMs that contain the system software as outlined below. (For programming software installation instructions, refer to page 6-12.)

- (1) Check the part numbers on the labels of the software components. They must match the software configuration purchased by the customer (e.g., *Premium* ROMs/PAL and the appropriate-unit PAL).
- (2) Check the socket numbers printed on the labels. There should be two PALs labeled U13 and U19, and thirteen ROMs labeled U2, U6, U7, U34, U35, U39, U40, U41, U42, U45, U46, U47, and U48.

**NOTE:** PAL U19 and ROMs U6 and U7 are installed on the MEM Card, as outlined on the next page.

- (3) Place the CPU Card on a clean, flat, anti-static, non-conductive surface.
- (4) Carefully install the software components in the corresponding sockets on the CPU Card. (See Figure 3-26 on page 3-44.) The notch (or small dot in the corner) indicating pin 1 on each component must match the notch of the outline silk-screened on the card.

**NOTE:** The label on the chip does not necessarily indicate orientation.

- (5) Check that all components on the card are seated securely in their sockets and that no pins are bent.

8.4 The MEM Card must be attached to the CPU Card to provide additional memory and system resources (see page 2-10 for more information).

8.5 Before installation, the MEM Card must be equipped with three special software components (kit no. 828.1278) that allow the card to work with version 2 or greater system software. However, instead of using the version 2 PAL included in the kit, use the new version 3 PAL (827.8387) that was left over from the *Premium* software installed above. In addition, the MEM Card must be equipped with the two ROMs (U6 and U7) also left over from the *Premium* software installed above.

8.6 Install the MEM Card and its software components as outlined below.

- (1) Check the part numbers on the labels of the three special software components (*if not already installed*). There should be one version 3 PAL labeled 827.8387 (U19) and two RAMs stamped 658512 (U17 and U18). There should also be two ROMs (U6 and U7) left over from the *Premium* software installed on the CPU Card.

**NOTE:** Do *not* use the version 2 PAL labeled 827.8075 (U19).

- (2) Place the MEM Card on a clean, flat, anti-static, non-conductive surface.
- (3) Carefully install the software components in the corresponding sockets on the MEM Card. (See Figure 3-26 on page 3-44.) The notch (or small dot in the corner) indicating pin 1 on each component must match the notch of the outline silk-screened on the card.
- (4) Check that all components on the card are seated securely in their sockets and that no pins are bent.
- (5) Attach the MEM Card to the CPU Card as shown in Figure 3-26 on page 3-44. Make sure that the connectors and the standoffs are properly aligned and seated.

**NOTE:** If the components on the cards are not properly seated and/or if the MEM Card itself is not properly seated, the CPU ACTIVE LED may flash when the CPU Card is installed and the card will not operate properly.

- (6) After installing the MEM Card, the optional output and/or relay devices may be connected to the card at any time.

8.7 Install the CPU Card in the KSU as follows. Refer to Figure 3-26 on page 3-44 for an illustration of the card.

- (1) Ensure that all integrated circuits and components on the card are seated securely in their sockets and that no pins are bent.
- (2) Place the battery back-up (BATTERY) jumper strap in the ON position (over the right two pins) to enable database battery back-up. If the jumper strap is placed in the OFF position (left two pins), the BATTERY OFF LED lights when the card is installed and AC power is on.

**NOTE:** The BATTERY OFF LED will not light if the jumper strap is missing.

- (3) *Make sure the power supply's AC POWER switch is turned OFF. Installing the CPU Card with the power on may damage the circuitry on the card.*

- (4) Install the CPU Card with the components *facing right* in the last (8th) card slot in the KSU.

**NOTE:** Expanded KSUs require only one CPU Card to control the entire system. However, the CPU Card must be installed in the 8th slot of the *left-hand* KSU (as viewed from the front).

- (5) Turn ON the AC POWER switch and observe the LEDs on the front edge of the card for the following indications. *If they are incorrect*, recheck the system voltages as outlined on page 3-41, and then contact Customer Support. (Refer to Figure 3-26 on page 3-44 for LED indicator locations.)

| NAME              | CORRECT INDICATION |
|-------------------|--------------------|
| CPU ACTIVE        | Lit (Green)        |
| DATABASE ERROR    | Off* (Red)         |
| MINOR ALARM       | Off* (Yellow)      |
| EXT. CLOCK ACTIVE | Off (Green)        |
| BATTERY OFF       | Off (Red)          |

\* When a new system is installed, the DATABASE ERROR LED remains lit until the system database has been programmed. The MINOR ALARM LED may also be lit and can later be cleared from an administrator station using the Clear System Alarm feature code (default is 9850).

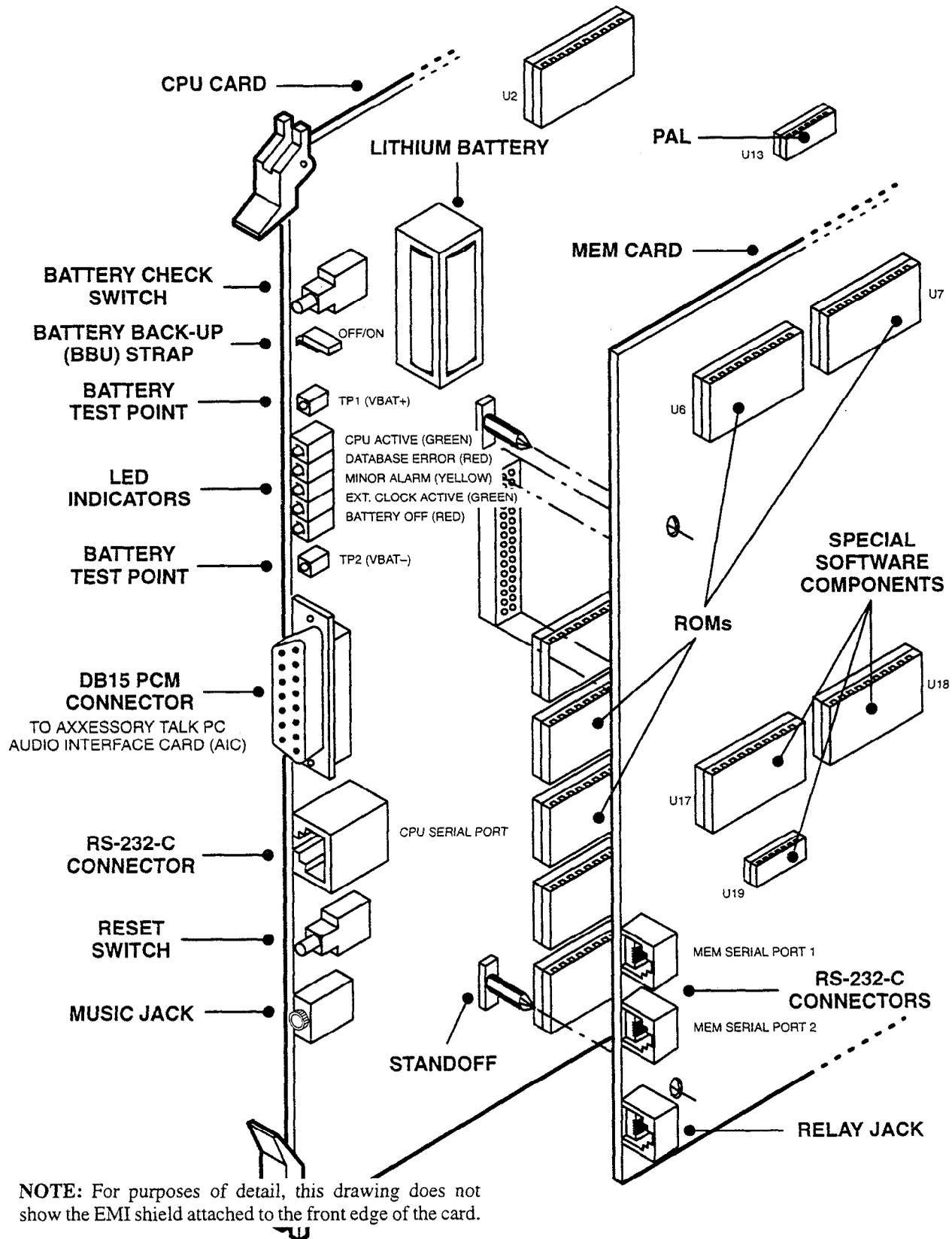
- (6) While pressing the battery check button on the CPU Card, measure the database back-up battery voltage. The voltage test points (TP1 to TP2) are located on the front edge of the card. Insert the "common" voltmeter probe into the ground point (TP2) and insert the other probe into the voltage test point (TP1). If the voltage is not greater than 3.3VDC, replace the battery as described on page 3-48. (Refer to Figure 3-26 on the next page for back-up battery voltage test point locations.)

**NOTE:** This procedure may be performed with the AC power on or off.

- (7) After installing the CPU Card, the optional music source, AXCESSORY Talk PC, power failure transfer equipment, output device, etc. may be connected to the CPU Card at any time. (Refer to page 3-74 for AXCESSORY Talk PC installation instructions and to page 3-88 for external music source installation instructions.)

- (8) Turn OFF the AC POWER switch.

FIGURE 3-26. CPU CARD AND ATTACHED MEM CARD



**Central Processing Unit 020 (CPU020) Card/Pulse Code Modulation Dual (PCM-D) Card**

**NOTE:** Once a CPU020/PCM-D Card is installed and equipped in the database, it cannot be replaced with a CPU/MEM Card without first defaulting the database.

**8.8** Before inserting the CPU020/PCM-D Card in the KSU, install the PAL that contains the software key as outlined below. (For database programming software installation instructions, see page 6–12.)

**NOTE:** Unlike the pre-programmed system software ROMs used on the CPU/MEM Card, the CPU020/PCM-D Card employs flash memory circuitry. This technology allows the technician to install and upgrade software through the programming PC, rather than having to replace the software ROMs on the card. For information on uploading the system software to the CPU020/PCM-D Card, refer to page 3–60.

- (1) Check the part number and socket number printed on the label of the software component. The PAL must match the software configuration purchased by the customer and should be labeled with socket number U13.
- (2) Place the CPU020/PCM-D Card on a clean, flat, anti-static, non-conductive surface.
- (3) Carefully install the software component in the corresponding socket on the card. (See Figure 3–27 on page 3–47.) The notch (or small dot in the corner) indicating pin 1 on the component must match the notch of the outline silkscreened on the card.

**NOTE:** The label on the chip does not necessarily indicate orientation.

- (4) Check that all components on the card are seated securely in their sockets and that no pins are bent.

**NOTE:** If the components on the cards are not properly seated and/or if the two parts of the CPU020/PCM-D Card itself are not properly attached and seated, the CPU ACTIVE LED may flash when the card is installed and the card will not operate properly.

**8.9** Install the CPU020/PCM-D Card in the KSU as follows. Refer to Figure 3–27 on page 3–47 for an illustration of the card.

- (1) Ensure that all integrated circuits and components on the card are seated securely in their sockets and that no pins are bent.

- (2) Place the battery back-up (BATTERY) jumper strap in the ON position (over the bottom two pins) to enable database battery back-up. If the jumper strap is placed in the OFF position (top two pins), the BATTERY OFF LED lights when the card is installed and AC power is on.

**NOTE:** The BATTERY OFF LED will not light if the jumper strap is missing.

- (3) *Make sure the power supply's AC POWER switch is turned OFF. Installing the CPU020/PCM-D Card with the power on may damage the circuitry on the card.*
- (4) Install the CPU020/PCM-D Card with the components *facing right* in the last (8th) card slot in the KSU.

**NOTE:** Expanded KSUs require only one CPU020/PCM-D Card to control the entire system. However, the CPU020/PCM-D Card must be installed in the 8th slot of the *left-hand* KSU (as viewed from the front).

- (5) Turn ON the AC POWER switch and observe the LEDs on the front edge of the card for the following indications. *If they are incorrect*, recheck the system voltages as outlined on page 3–41, and then contact Customer Support. (Refer to Figure 3–27 on page 3–47 for LED indicator locations.)

| <u>NAME</u>       | <u>CORRECT INDICATION</u> |
|-------------------|---------------------------|
| CPU ACTIVE        | Lit (Green)               |
| DATABASE ERROR    | Off* (Red)                |
| MINOR ALARM       | Off* (Yellow)             |
| EXT. CLOCK ACTIVE | Off (Green)               |
| BATTERY OFF       | Off (Red)                 |

\* When a new system is installed, the DATABASE ERROR LED remains lit until the system database has been programmed. The MINOR ALARM LED may also be lit and can later be cleared from an administrator station using the Clear System Alarm feature code (default is 9850).

- (6) While pressing the battery check button on the CPU020/PCM-D Card, measure the database back-up battery voltage. The voltage test points (TP1 to TP2) are located on the front edge of the card. Insert the "common" voltmeter probe into the ground point (TP2) and insert the other probe into the voltage test point (TP1). If the voltage is not greater than 3.3VDC, replace the battery as described on page 3–48. (Refer to Figure 3–27 on the next page for back-up battery voltage test point locations.)

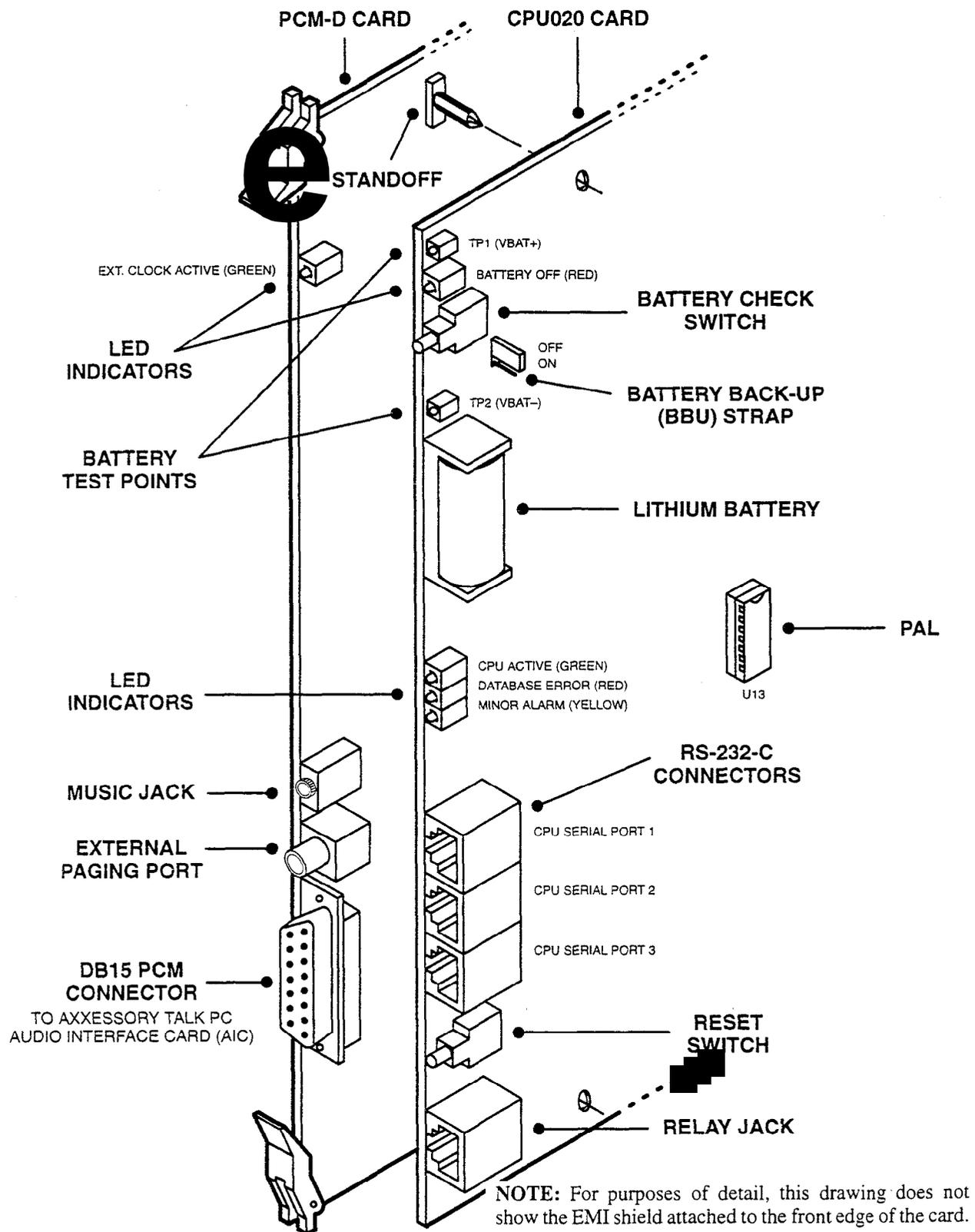
**NOTE:** This procedure may be performed with the AC power on or off.

- (7) *If the CPU020/PCM-D Card does not have the appropriate system software already installed in flash memory, refer to page 3-60 to upload the software from the programming PC to the card.*
- (8) After installing the CPU020/PCM-D Card, the optional music source, external paging equip-

ment, AXXESSORY Talk PC, power failure transfer equipment, output device, etc. may be connected to the CPU020/PCM-D Card at any time. (Refer to page 3-74 for AXXESSORY Talk PC installation instructions, to page 3-88 for external music source installation instructions, and to page 3-89 for external paging equipment installation instructions.)

- (9) Turn OFF the AC POWER switch.

FIGURE 3-27. PCM-D CARD AND ATTACHED CPU020 CARD



### Replacing the CPU Battery, If Necessary

**8.10** The CPU/MEM and CPU020/PCM-D Cards are each equipped with a 3.6V, 1/2AA, lithium battery (part no. 815.1011) that can support the database for at least two months of accumulated system down time.

**8.11** If the battery's voltage is not greater than 3.3VDC (as measured in step 6 on page 3-43 or step 6 on page 3-45), replace the battery as outlined in the following steps:

- (1) Turn OFF the system AC POWER switch, remove the card from its slot in the KSU, and place it on a clean, flat, anti-static, non-conductive surface.
- (2) *If necessary*, remove the plastic cover housing the existing battery (see Figure 3-26 on page 3-44).
- (3) Remove the existing battery and dispose of it properly.
- (4) Observing the proper polarity, install the new battery.
- (5) *If a plastic cover was removed in step 2*, replace the cover.
- (6) While pressing the battery check button on the card, measure the database back-up battery voltage. The voltage test points (TP1 to TP2) are located on the front edge of the card. Insert the "common" voltmeter probe into the ground point (TP2) and insert the other probe into the voltage test point (TP1). If the voltage is not greater than 3.3VDC, try another battery.

**NOTE:** This procedure may be performed with the AC power on or off.

- (7) Replace the card in its appropriate slot in the KSU and turn ON the system AC POWER switch.

**Digital Keypad Card (DKSC) and 16-Port Digital Keypad Card (DKSC-16)**

8.12 Install the DKSCs and/or DKSC-16s as described below. Refer to Figure 3-28 on page 3-50 for an illustration.

**NOTE:** When inserting or removing the CPU/MEM Card, Network Clock Card, or CPU020/PCM-D Card, the system power must be turned off to prevent damage to the card. All other cards can be inserted or removed with power on.

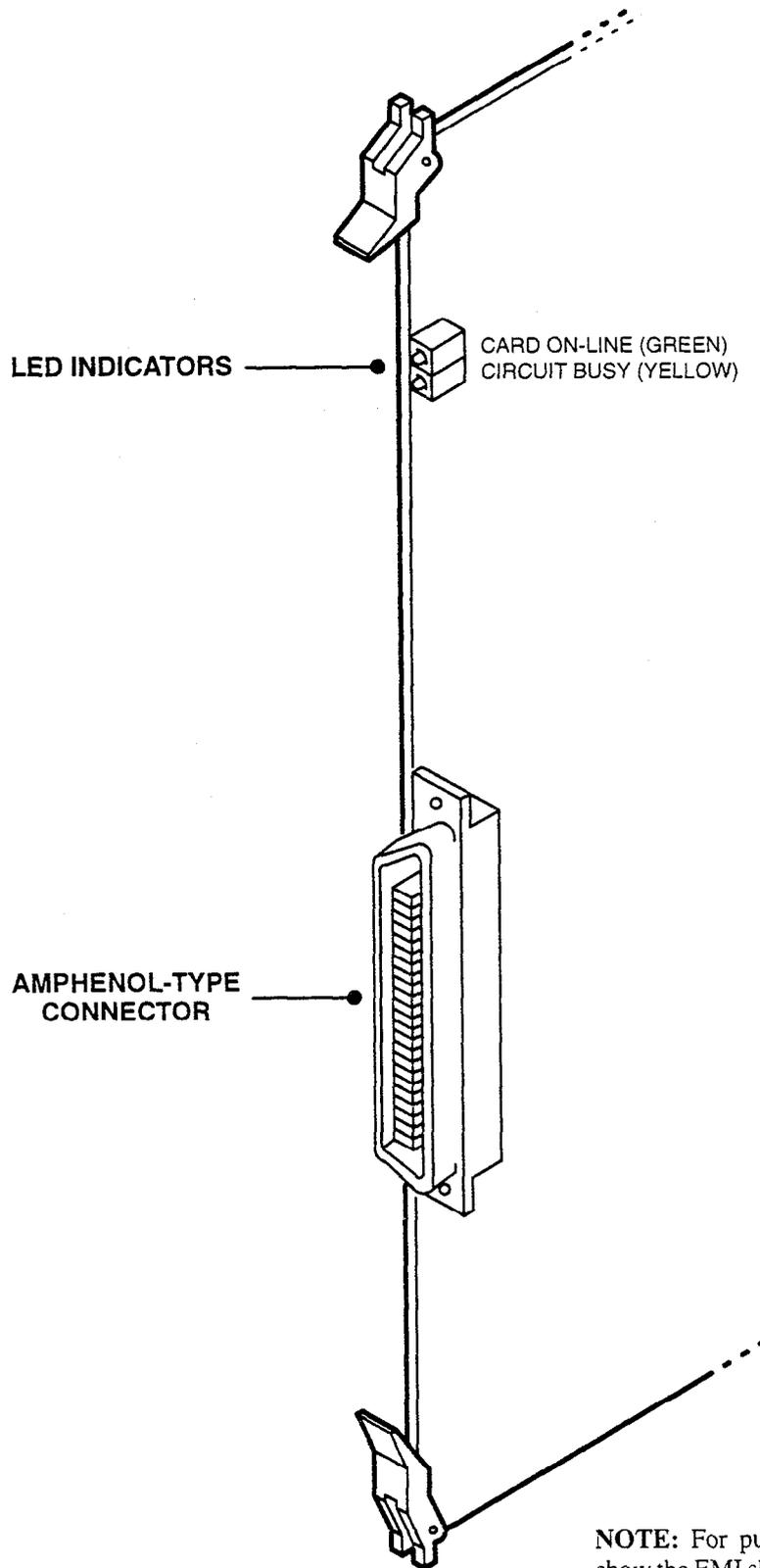
- (1) Check to see that all components on the cards are seated securely in their sockets and that no pins are bent.

**NOTE:** If installing any single-line devices or off-premises extensions, refer to page 3-27 before installing the DKSCs or DKSC-16s.

- (2) Install the DKSCs and/or DKSC-16s one at a time in the slots to be used for station connections. The component sides of the cards must *face right*. Any type of card may be installed in any of the first seven slots (in either KSU), and slots may be skipped, if desired. However, to facilitate installation and programming, it is recommended that the cards be installed to match the default configuration as closely as possible. (Refer to page 2-14 for information on the default configuration.)

**NOTE:** If, when first powered up, the actual cards installed do not exactly match the default configuration, adjustments must be made in database programming. Circuit 1.1.1 (a DKSC circuit) is preset as an administrator and as the primary attendant. If changing card types (e.g., changing from a DKSC to an LSC), refer to the programming procedures on page 6-232 and to the information on pages 3-7 and 3-8.

FIGURE 3-28. DIGITAL KEYSER CARD (DKSC) OR 16-PORT DIGITAL KEYSER CARD (DKSC-16)



NOTE: For purposes of detail, this drawing does not show the EMI shield attached to the front edge of the card.

### Single-Line Card (SLC) and Optional Lamp Option Card (LOC)

8.13 Install the SLCs as described below. Part numbers are listed in REPLACEMENT PARTS. Refer to Figures 3-29 on page 3-52 for an illustration.

**NOTE:** When inserting or removing the CPU/MEM Card, Network Clock Card, or CPU020/PCM-D Card, the system power must be turned off to prevent damage to the card. However, station and trunk cards can be inserted or removed with power on.

- (1) Check to see that all components on the cards are seated securely in their sockets and that no pins are bent.
- (2) *If an external AC ring generator will be used instead of the onboard ring generator, place the ring generator selection strap (J701) in the external position (see Figure 3-29 on the next page).*
- (3) *If installing the optional Lamp Option Card:*
  - a. Carefully, remove the solid, 8-position jumper strap from jumper location J7 (see Figure 3-29).
  - b. Attach the LOC to the SLC as shown in Fig-

ure 3-29. Make sure that the connectors and the standoffs are properly aligned and seated.

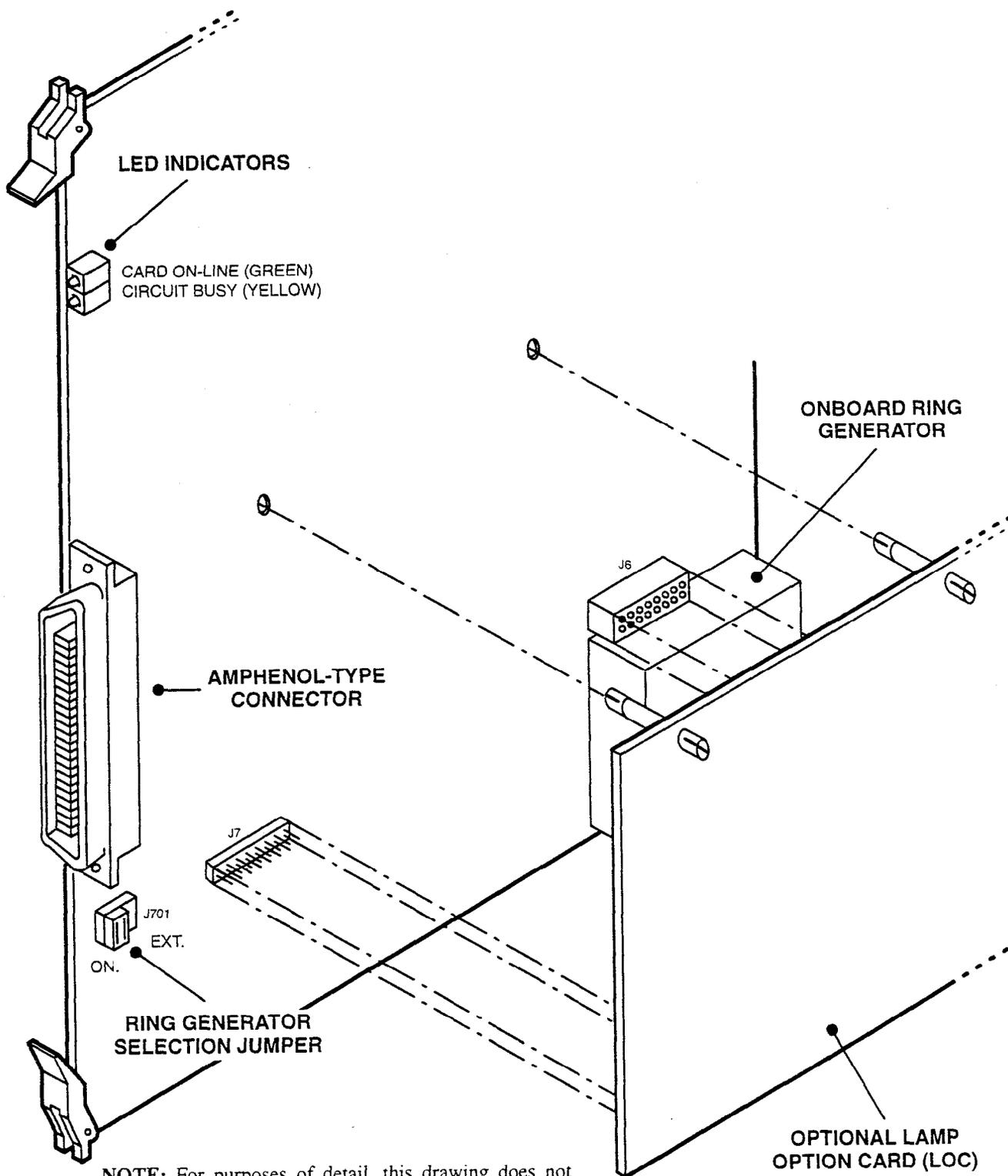
- c. When programming the database, be sure to enable the message waiting lamps in station programming.

**NOTE:** Unlike the CPU Card and the MEM Card, the SLC and LOC are attached with the component sides of the cards facing each other.

- (4) Install SLCs in the slots to be used for AC-ring-ing single-line set and AC playback device connections. The component sides of the SLCs must *face right*. Any type of card may be installed in any of the first seven slots (in either KSU), and slots may be skipped, if desired.

**NOTE:** If, when first powered up, the actual cards installed do not exactly match the default configuration, adjustments must be made in database programming. Circuit 1.1.1 (a DKSC circuit) is preset as an administrator and as the primary attendant. If changing card types (e.g., changing from an SLC to a DKSC), refer to the programming procedures on page 6-232 and to the information on pages 3-7 and 3-8.

FIGURE 3-29. SINGLE-LINE CARD (SLC) AND  
OPTIONAL LAMP OPTION CARD (LOC)



### Loop Start Card (LSC) and LSC Daughter Card (LSC-D)

8.14 Install each LSC and LSC-D as described below. Refer to Figure 3-30 on page 3-54 for an illustration.

**NOTE:** When inserting or removing the CPU/MEM Card, Network Clock Card, or CPU020/PCM-D Card, the system power must be turned off to prevent damage to the card. All other cards can be inserted or removed with power on.

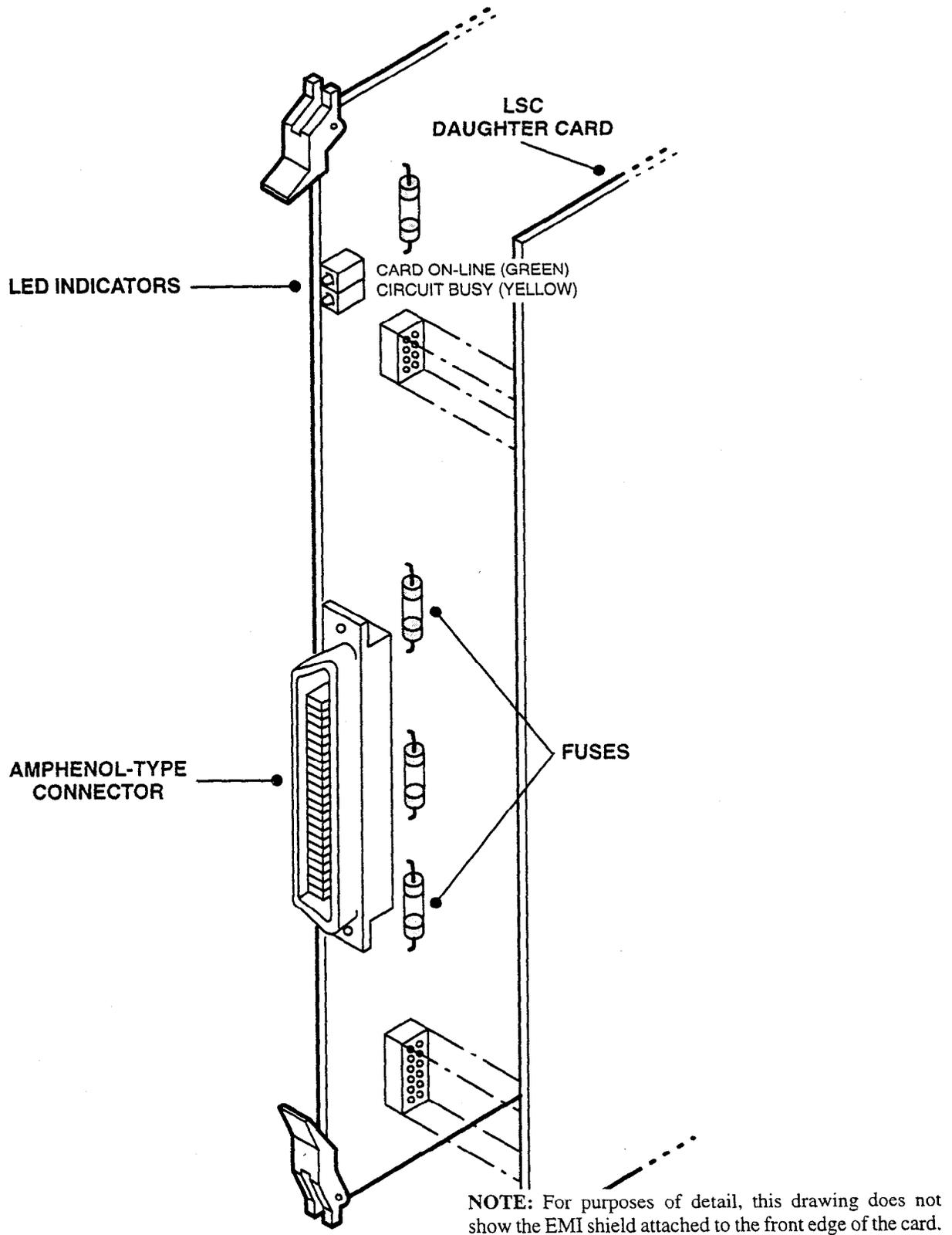
- (1) Check to see that all components on the card are seated securely in their sockets and that no pins are bent.
- (2) Check the fuses. There are four specially-designed fuses on each LSC and LSC-D that cannot be replaced in the field (see page 2-15 for more information).
- (3) If installing a Daughter Card, attach the LSC-D to the LSC as shown in Figure 3-30 on page 3-54. Make sure that the connectors and the standoffs are properly aligned and seated.

**NOTE:** Unlike the CPU Card and the MEM Card, the LSC and LSC-D are attached with the component sides of the cards facing each other.

- (4) Install the LSCs one at a time in the slots to be used for trunk connections. The component sides of the LSCs must *face right*. Any type of card may be installed in any of the first seven slots (in either KSU), and slots may be skipped, if desired. However, to facilitate installation and programming, it is recommended that the cards be installed to match the default configuration as closely as possible. (Refer to page 2-14 for information on the default configuration.)

**NOTE:** If, when first powered up, the actual cards installed do not exactly match the default configuration, adjustments must be made in database programming. If changing card types (e.g., changing from an LSC to a DKSC), refer to the programming procedures on page 6-232 and to the information on pages 3-7 and 3-8.

FIGURE 3-30. LOOP START CARD (LSC) AND OPTIONAL LSC DAUGHTER CARD (LSC-D)



### T1 Card (T1C)

**NOTE:** New T1Cs come equipped with two special software components — part nos. 827.8376 (U4) and 827.8375 (U5) — that allow the cards to work with the new version 3 system software (as well as all older versions of system software). Older T1Cs (those with U4 labeled 8317 and U5 labeled 8318) must first be equipped with an upgrade kit (part no. 828.1333) before using them with the new version 3 system software.

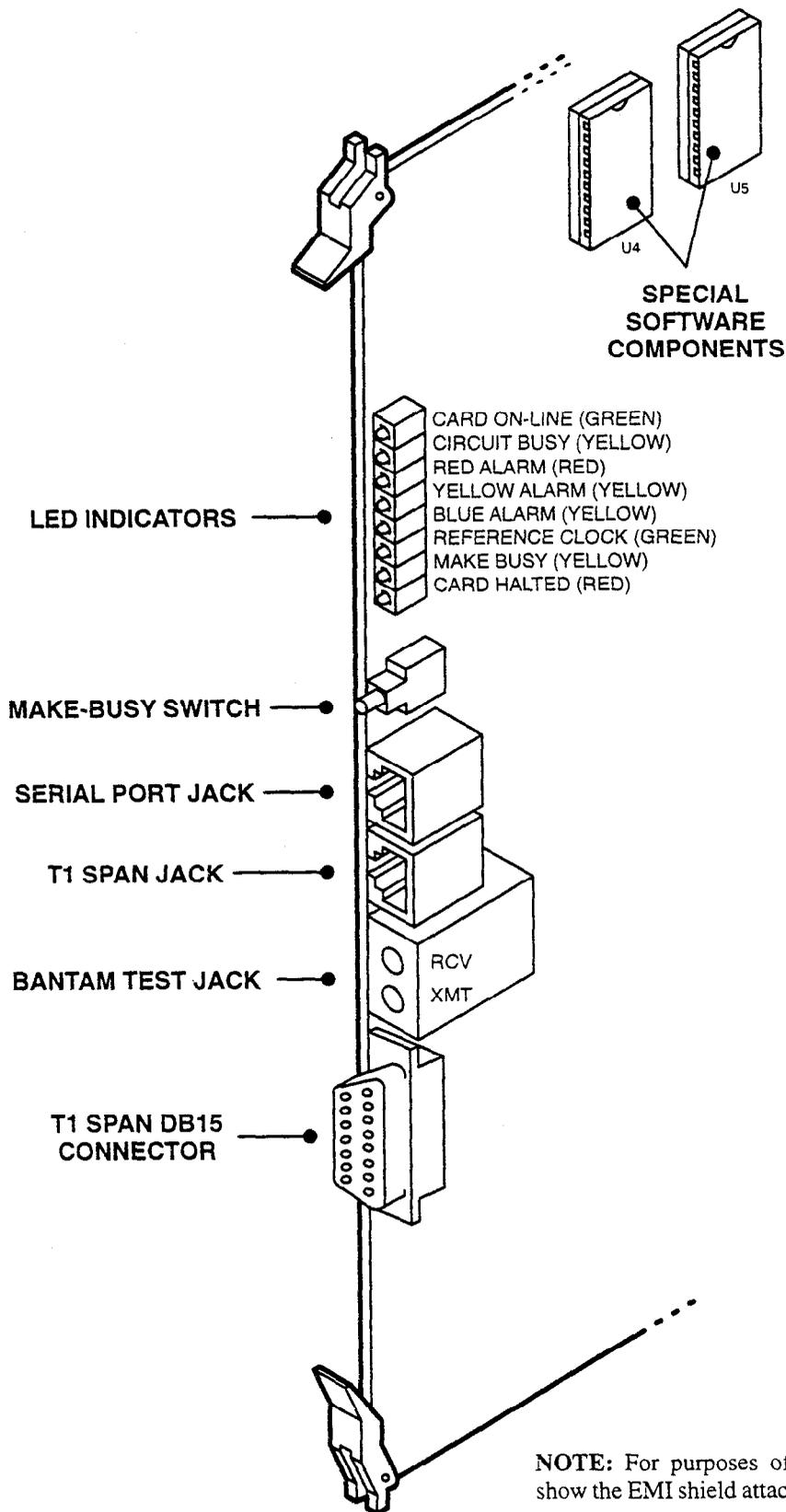
**8.15** Install each T1C as described in the following steps (see REPLACEMENT PARTS for the part number). Refer to Figure 3-31 on page 3-56 for an illustration.

**NOTE:** Like the other station and trunk cards, T1 Cards can be inserted or removed with the system power turned on, as long as the T1 trunk is not connected to the card. However, *before removing a T1 Card while power is on*, first press the make-busy switch on the card and allow the system to “busy out” the T1 trunk, then unplug the T1 trunk from the connector on the card (see page 2-17 for more information on the make-busy switch).

- (1) Ensure that the component in socket U4 is labeled 827.8376 and the component in socket U5 is labeled 827.8375 (see Figure 3-31 on page 3-56 for component locations). *If not*, replace them with the two new components contained in the T1C upgrade kit (part no. 828.1333).
- (2) Check to see that all components on the card are seated securely in their sockets and that no pins are bent.
- (3) Install the T1Cs one at a time with the components *facing right*. The cards may be installed in any of the first seven slots (in either KSU), and slots may be skipped, if desired.

**NOTE:** If, when first powered up, the actual cards installed do not exactly match the default configuration, adjustments must be made in database programming. If changing card types (e.g., changing from an LSC to a T1C), refer to the programming procedures on page 6-232 and to the information on pages 3-7 and 3-8.

FIGURE 3-31. T1 CARD (T1C)



Options Card (OPC)

**8.16** If desired, additional Digital Signal Processor (DSP) resources (for DTMF receivers, conferencing circuits, Caller ID receivers, and shared speakerphones) can be added to the system by installing one or more Options Cards (OPCs) as described below. Refer to Figure 3-32 on page 3-58 for an illustration.

**8.17** Each OPC comes equipped with one DSP and its associated PAL. Up to three more DSPs (along with the proper replacement PAL) may be added to each OPC. Refer to SPECIFICATIONS, page 2-19, and PROGRAMMING, page 6-243 for more information.

**8.18** In addition, each OPC must be equipped with two special software components (kit no. 828.1279) that allow the card to work with version 2.0 or higher system software. See steps 2-4 in the following instructions.

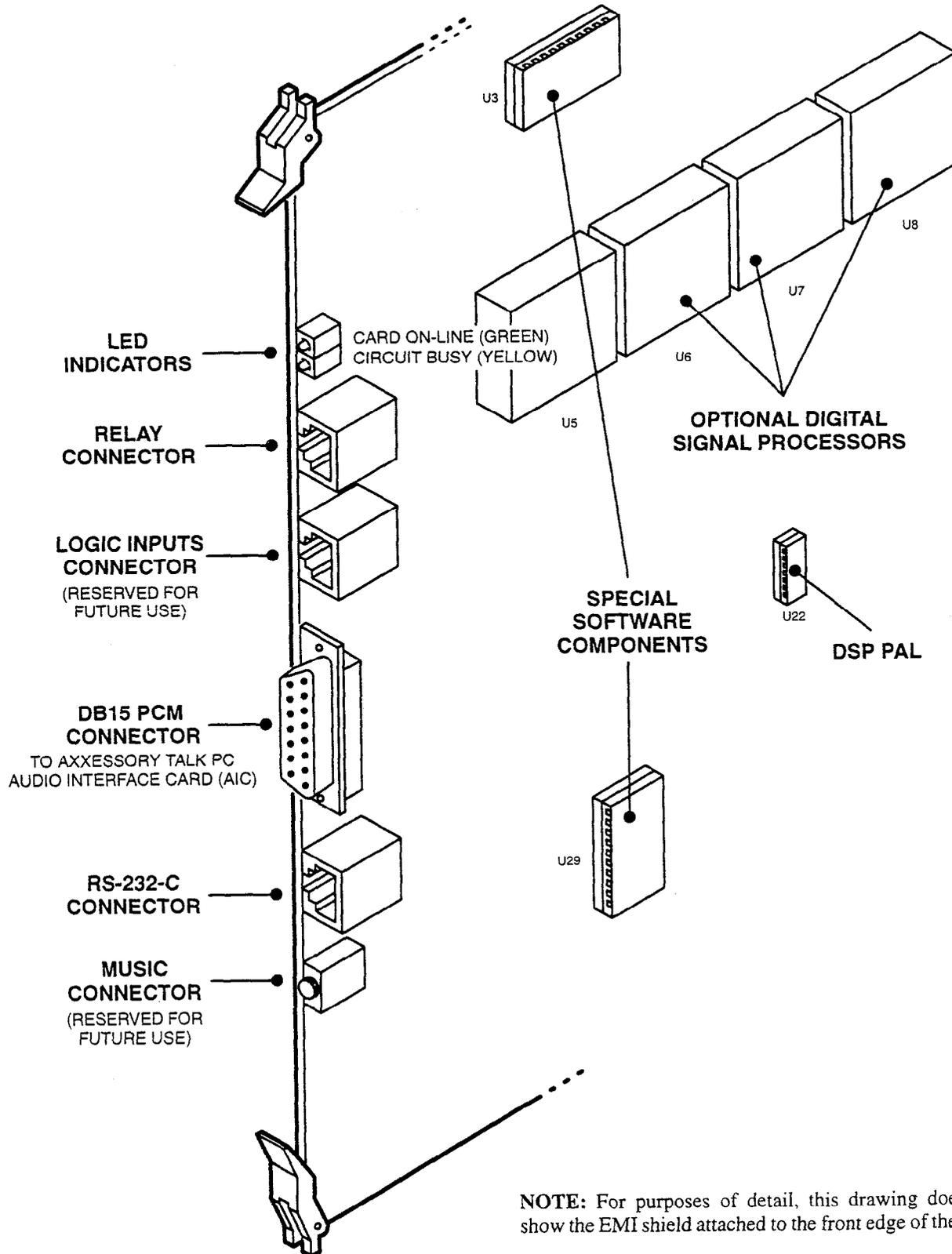
**NOTE:** When inserting or removing the CPU/MEM Card, Network Clock Card, or CPU020/PCM-D Card, the system power must be turned off to prevent damage to the card. All other cards can be inserted or removed with power on.

- (1) *If any additional DSPs are to be installed:*
  - a. Place the OPC on a clean, flat, anti-static, non-conductive surface.
  - b. Remove the existing PAL from socket U22. (See Figure 3-32 on page 3-58.)
  - c. Carefully install the new PAL (that allows the desired number of DSPs to be installed) in socket U22 (refer to the following chart). The notch (or small dot in the corner) indicating pin 1 on the component must match the notch of the outline silkscreened on the card.

| <u>NO. OF DSPs</u> | <u>PAL PT. NO.</u> |
|--------------------|--------------------|
| 1                  | 827.8023           |
| 2                  | 827.8024           |
| 3                  | 827.8025           |
| 4                  | 827.1020           |

- d. Carefully install the DSPs in the corresponding sockets on the OPC. Install the first additional DSP in socket U6, the second in U7, and the third in U8. (See Figure 3-32 on page 3-58.) The notch (or small dot in the corner) indicating pin 1 on each DSP must match the notch of the outline silkscreened on the card.
- (2) *If not already installed*, check the part numbers on the labels of the special software components (kit no. 828.1279). There should be one ROM labeled 827.8078 (U3) and one ROM labeled 827.8073 (U29).
- (3) Place the OPC on a clean, flat, anti-static, non-conductive surface.
- (4) Carefully install the software components in the corresponding sockets on the OPC. (See Figure 3-32 on page 3-58.) The notch (or small dot in the corner) indicating pin 1 on each component must match the notch of the outline silkscreened on the card.
- (5) Check to see that all components on the card are seated securely in their sockets and that no pins are bent.
- (6) Install the OPCs one at a time in any unused card slots. The component sides of the OPCs must *face right*.
- (7) After installing the OPC, the night transfer relay equipment, output device, AXCESSORY Talk PC port, etc. may be connected to the card at any time.

FIGURE 3-32. OPTIONS CARD (OPC)



NOTE: For purposes of detail, this drawing does not show the EMI shield attached to the front edge of the card.

**B. CHECK THE CIRCUIT CARDS AND  
COMPLETE THE KSU INSTALLATION**

**8.19** After all of the circuit cards have been installed in the KSU, check and complete the KSU installation by performing the following steps.

- (1) Turn ON the AC POWER switch and observe the top (green) LED on each DKSC, DKSC-16, SLC, LSC, T1C, and OPC installed in the KSU. *If, after one minute, the top LED on every card is lit, proceed to step 2. If not, follow these steps:*

- a. Remove all cards that do not have a lit green LED and check them for shorted or loose components, bent pins, etc.

**NOTE:** *DO NOT* remove or insert the CPU/MEM or CPU020/PCM-D Card with the system power turned on.

- b. Re-insert the cards one at a time and check the top LED again. *If the LED is not lit after one minute, replace the defective card.*

- (2) Connect each labeled female amphenol-type connector to the 50-pin male connector on the corresponding card. For T1 trunks, connect each labeled line cord or ribbon cable to the T1 jack or DB15 connector on the corresponding T1 Card.

**NOTE:** Before connecting any T1 trunks to the T1 Cards in the cabinet, always make sure the system power is turned on. All T1 trunks should always be disconnected from their cards before turning the system power on or off.

- (3) If attaching an output device or other peripheral device to the KSU, connect the cables to the corresponding card(s). If attaching an AXCESSORY Talk PC, refer to the instructions beginning on page 3-74.
- (4) Secure each cable to the KSU with a cable tie, leaving enough slack so that the card can be removed or replaced if necessary.
- (5) Replace the KSU top and front panels.

**C. UPLOAD THE SYSTEM SOFTWARE TO THE CPU020/PCM-D CARD (IF NECESSARY)**

**8.20** If the CPU020/PCM-D Card does not have the appropriate system software already installed in flash memory, use the following procedure to upload the software from the programming PC to the card.

- (1) Ensure that the programming PC is equipped with the database programming software. (See page 6–12 in PROGRAMMING for details.)
- (2) Attach an RS-232-C cable from an available COM port on the PC to the *top* RS-232-C port (labeled CPU SERIAL PORT 1) on the CPU020/PCM-D Card. (See Figure 3–27 on page 3–47 for a drawing showing the serial ports.)
- (3) Start up Windows (if not already running).
- (4) Insert the *Premium* Software disk in the PC's floppy disk drive.
- (5) Select the "AXXESS Upload – V. 3.0" icon in the AXXESS programming group directory. (The main upload screen is displayed.)
- (6) Select the appropriate "COM Port" and the desired "BPS Rate" (bit per second rate). Estimated upload times are listed in the following table.

| BPS RATE | APPROX. UPLOAD TIME |
|----------|---------------------|
| 9600     | 15 Minutes          |
| 19200    | 12 Minutes          |
| 38400    | 6 Minutes           |
| 57600    | 4 Minutes           |

**NOTE:** Be sure to select a bps rate that is compatible with the PC's capabilities. For example, only PCs equipped with high-speed serial communications chips (e.g., 16550 UART) can use the 38400 and 57600 bps rates.

- (7) Select the "Select File" command button. (The file selection screen is displayed.)
- (8) Enter the appropriate upload source drive in the "Drives" box. For example, to upload directly from the *Premium* Software disk, specify the drive (usually "A:\") containing the floppy disk.
- (9) Enter the appropriate upload source file name in the "File Name" box.

**NOTE:** Make sure the *complete* file name appears in the box.

- (10) Select the "OK" command button. (The main upload screen is again displayed.)
- (11) *If the AXXESS System has just been powered up, wait at least three minutes to allow the system to stabilize and finish printing power-up messages before performing the next step.*
- (12) Select the "Perform Upload" command button. The software is automatically uploaded into flash memory on the CPU020/PCM-D Card. (During the upload, the PC displays several messages, including "Attempting to login to the system..." and "Zmodem Upload in progress.")

**NOTE:** If the upload fails to start, press the reset switch on the CPU020/PCM-D Card six times within six seconds, then retry the upload. If the upload fails while in progress, the red and yellow LEDs on the CPU020/PCM-D Card blink rapidly (ten times per second) and the PC displays the reason for the failure. If possible, correct the problem and retry the upload.

- (13) When the upload is complete, the system resets and the PC displays "Operation Complete." Select the "OK" command button and then exit the program.
- (14) Remove the disk from the floppy disk drive and program the system database as outlined in the PROGRAMMING section of the manual.

## 9. STATION INSTALLATION

9.1 Keysets (and any attached DSS/BLF Units) are connected to Digital Keypad Cards (DKSCs) and/or 16-Port Digital Keypad Cards (DKSC-16s). Single-line DTMF sets and playback devices are connected to Single-Line Adapters, which are in turn connected to available DKSC/DKSC-16 circuits.

### A. KEYSSET INSTALLATION

9.2 Before installing keysets, unpack each one and check for damage. If items are damaged or missing, contact Customer Support. Each keyset should have the following:

- Baseplate
- One six-foot, three-pair line cord
- One handset
- One four-conductor coiled handset cord
- Slide-out directory card
- Extra feature key templates

#### Optional Liquid Crystal Display (LCD)

9.3 All Executive keysets are equipped with LCDs. Standard keysets are available in both display and non-display models. Basic keysets cannot have LCDs.

9.4 To convert a non-display Standard keyset to a display keyset, install the optional LCD Kit (part no. 828.1211) as outlined in the following steps (refer to Figure 3-33 on page 3-62):

- (1) Unpack the LCD kit. There should be a clear plastic display window, an LCD unit, a ribbon cable, and four small Phillips-head screws.
- (2) Remove the line cord and handset cord from the keyset. Then loosen the four screws on the bottom of the keyset.
- (3) Carefully open the keyset to expose the control board. To fully open the keyset, disconnect the following wires from the keyset control board: line (J2), microphone (J4), handset (J5), and, if equipped, data port (J3). See Figure 3-33.
- (4) Disconnect the speaker wires (J6) from the keyset control board.
- (5) Remove the single screw securing the control board and carefully flip the control board back to expose the inside of the faceplate top housing.

(6) Remove the dummy cover from the display opening in the top housing of the faceplate by pushing on the cover from the front of the keyset. (On some models, it may also be necessary to remove tape that is securing the dummy cover from the inside.)

(7) From the inside of the faceplate top housing, insert the top edge of the clear plastic window into the display opening and slide the window up into place.

(8) Remove the covering from the LCD unit and install as follows:

- a. *If not already connected*, slide open the bar of the clamp connector on the back of the LCD unit, insert one end of the ribbon cable into the connector, and close the bar.



**NOTE:** The blue stripe on the near end of the ribbon cable should be visible from the back side of the LCD unit (see Figure 3-33). Also, ensure that the metal strips on the end of the ribbon cable are fully seated and properly aligned in the connector.

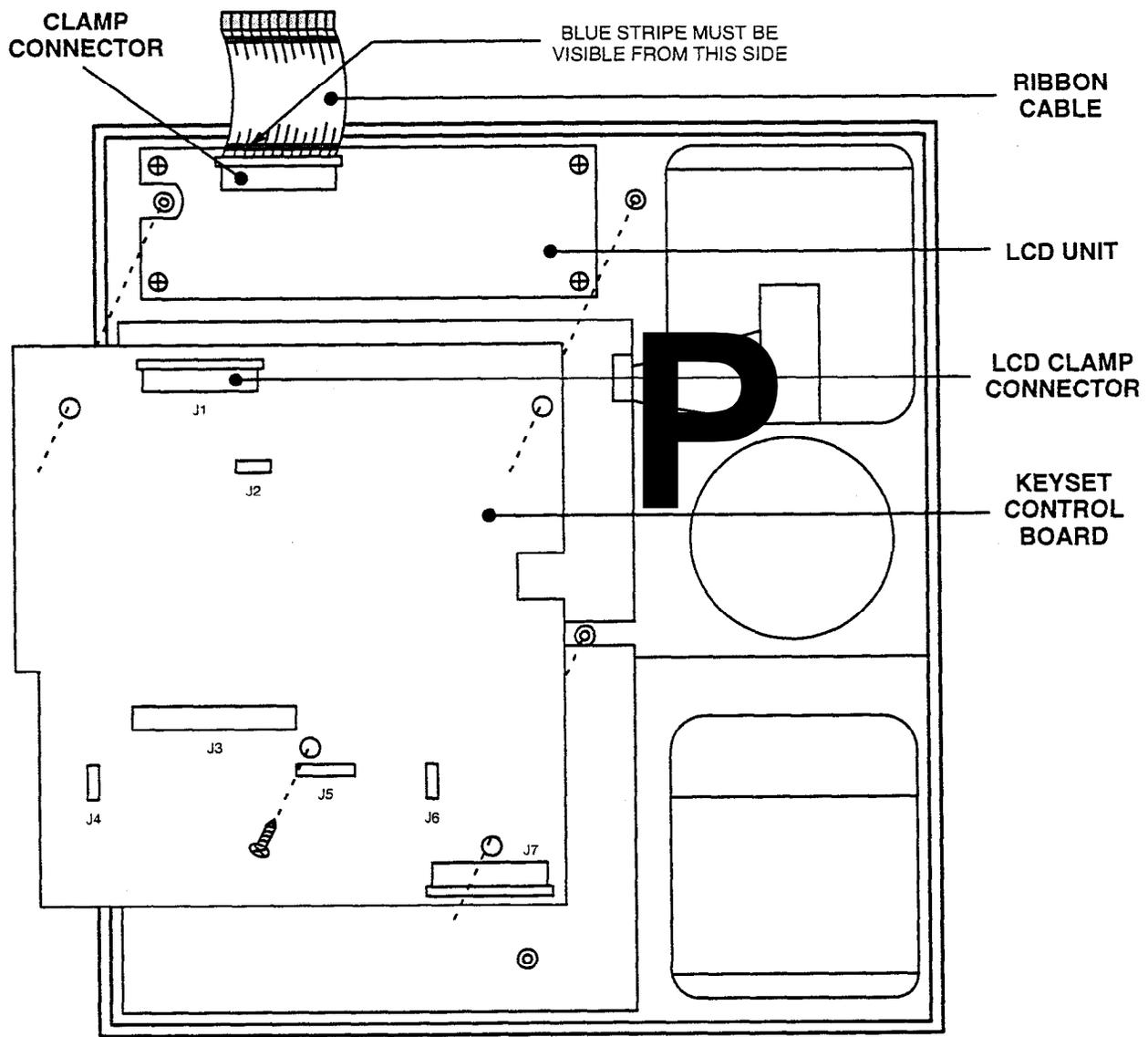
- b. Position the LCD unit on the clear plastic window so that the screw holes in the LCD unit align with the screw holes in the faceplate top housing. Install the four Phillips-head screws to hold the LCD unit in place.
- c. Leaving the free end of the LCD ribbon cable exposed, flip the control board back over, place it in its original position, and re-insert the single screw that held it in place.
- d. Slide open the bar of the LCD clamp connector (J1) on the control board (see Figure 3-33), insert the free end of the ribbon cable into the connector, and close the bar.

**NOTE:** The blue stripe on the free end of the ribbon cable should face down toward the keyset control board. Also, ensure that the metal strips on the end of the ribbon cable are fully seated and properly aligned in the connector.

- (9) Reconnect the line (J2), microphone (J4), handset (J5), speaker (J6), and, if equipped, data port (J3) wires to the keyset control board.

- (10) Ensure that the ribbon cable connecting the keyset control board (J7) to the board in the bottom of the faceplate housing is still fully seated and properly aligned.
- (11) Reattach the back of the keyset.
- (12) To ensure the LCD unit and keyset control board are properly connected and functioning, perform the keyset self-test as described on page 3-63.

FIGURE 3-33. STANDARD DIGITAL KEYSET LCD INSTALLATION



FACEPLATE HOUSING (INSIDE VIEW)

**Keypad Installation**

**9.5** Install all keysets as follows:

- (1) Before mounting the modular jack assembly and connecting the keypad, measure the voltage on the YELLOW terminal of the modular jack assembly with respect to the BLACK terminal. (The "common" probe of the voltmeter is placed on the BLACK terminal.) It must measure +24VDC ( $\pm 2.0$ VDC). If a negative voltage is measured, check the cabling for a reversed pair.

**CAUTION**

If tip and ring are reversed, the keypad will not function.

- (2) Mount the modular jack assembly on the wall.
- (3) Attach the coiled handset cord to the handset and to the handset jack on the bottom of the keypad. Place the handset on hook.
- (4) Plug one end of the line cord into the wall-mounted modular jack assembly. Plug the other end into the line cord jack on the bottom of the keypad.

**NOTE:** To aid in installation and troubleshooting, display keysets show their station circuit number, extension number, and assigned user name for several seconds when power is turned on and the line cord is first plugged in. This display also appears after a system reset, and whenever the line cord is removed and replaced while power is on. The station identification displays for several seconds, then the keypad changes to the appropriate display, depending on its current status.

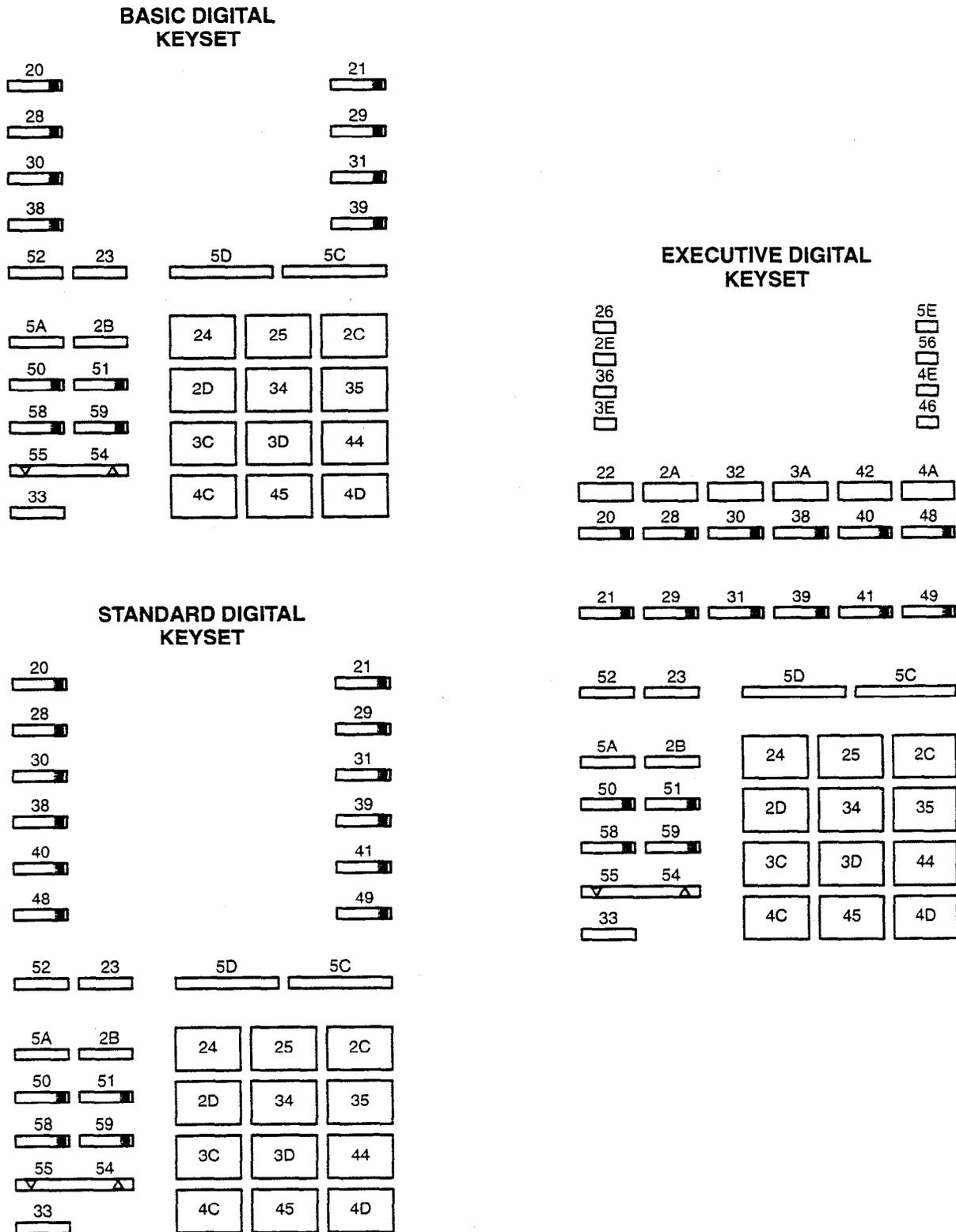
- (5) Perform the keypad self-test:
  - a. While pressing the asterisk (\*) and pound (#) keys, unplug and replace the keypad line cord.
  - b. Release the keys. The keypad rings momentarily. (Display keysets show a dark display — all pixels lit.)
  - c. Lift and replace the handset. The keypad rings momentarily. (Display keysets show a blank display — no pixels lit.)
  - d. Lift and replace the handset. The keypad rings momentarily and all LED-equipped keys light. (Display keysets show DKTS SELF TEST LED MATRIX.) If any of the LEDs do not light, return the keypad for repair.

- e. Lift and replace the handset. The keypad rings momentarily and all of the LEDs go out. (Display keysets show DKTS SELF TEST KEY MATRIX 00.)
- f. One at a time, press each of the keys on the keypad in any order. If the key is functioning properly, a key tone (or a DTMF tone for Executive keypad keys) is heard and, on display keysets, a specific code is shown. (The proper code for each key is diagrammed in Figure 3-34 on the next page.) If the signal is not heard or the displayed code is incorrect, the key is faulty; return the keypad for repair.
- g. Lift and replace the handset. The speaker tones are broadcast over the speakerphone speaker. (Display keysets show DKTS SELF TEST SPEAKER TONES.)
- h. Lift and replace the handset. Tones of various volume levels, from softest to loudest, are broadcast over the speakerphone speaker. (Display keysets show DKTS SELF TEST SPEAKER VOLUME.)
- i. Lift the handset, then press and release the hookswitch. The handset tones are broadcast over the handset receiver. (Display keysets show DKTS SELF TEST HANDSET TONES.)
- j. Place the handset back in its cradle. The keypad rings momentarily and it takes approximately five seconds for the keypad to return to normal operation. (Display keysets show DKTS SELF TEST COMPLETED! for several seconds. Then, as described in the NOTE to step 4, the keypad's identification displays for several seconds.)

**NOTE:** If the keypad watchdog timer fails, the DKTS SELF TEST COMPLETED! display is followed by a DKTS SELF TEST WATCHDOG ERROR display and eight short bursts of ring tone. Replace the defective keypad.

- k. Replace the keypad if faulty.
- (6) The keypad ring tone can be changed by performing the steps described in the FEATURES section on page 4-48.
- (7) *If necessary*, replace the keypad's paper template with one labeled to match the programmed feature keys.

FIGURE 3-34. KEYSSET SELF-TEST KEY MATRIX



### Wall Mounting Keysets

9.6 To mount the keyset on a wall, use an industry-standard wall-mount bracket (sometimes called a wall jack assembly).

9.7 If a wall-mount bracket is not available, use the two-screw method outlined below:

- (1) Remove the keyset baseplate from the top half of the back of the keyset.
- (2) Rotate the baseplate 180° and attach it to the bottom half of the back of the keyset.

**NOTE:** If a PCDDPM (or OHVA Module) is already installed inside the baseplate, first open the keyset and reroute the PCDDPM-to-keyset interface cable through the knockout in the bottom half of the keyset (see Figure 3-36 on page 3-68).

- (3) Using a ruler, mark the location of the keyset mounting holes on the wall. (The centers of the two perpendicular mounting holes on the back of the keyset are four inches apart.)
- (4) Drive a screw into the center of each mounting hole marking. Allow the head of the screw to protrude approximately ¼ inch.
- (5) In order to hold the handset in place while the keyset is wall-mounted, slide the reversible cradle hook out, rotate it 180°, and reinsert it.
- (6) Position the keyset mounting holes over the screws and slide the keyset into position on the wall. (If necessary, adjust the screws to ensure that the keyset is held firmly in place.)

### Optional Headsets

9.8 Refer to SPECIFICATIONS, page 2-21, for headset requirements. To attach a headset to a keyset:

- (1) Remove the coiled handset cord from the handset jack on the bottom of the keyset. Leave the handset in the cradle.
- (2) Insert the headset modular plug into the jack. Plug in the headset power source, if used.
- (3) If the headset has an on/off switch, turn on the headset.
- (4) On the keyset, press SPCL and enter the Headset Enable feature code (default value is 315).

- (5) To disable the headset, press SPCL and enter the Headset Disable feature code (default value is 316). Then unplug the headset and reconnect the handset.

### Optional Off-Hook Voice Announce (OHVA) Modules

9.9 For off-hook voice announce receive capability, any Standard or Executive keyset may be equipped with an optional OHVA Module (part no. 550.3114).

**NOTE:** The OHVA Module is essentially a PCDDPM without RS-232 capability. OHVA Modules do *not* require AC transformers.

9.10 Install the OHVA Module as outlined below. For a diagram of the installation, see Figure 3-35 on page 3-66.

- (1) Unplug the keyset line cord from its modular jack on the back of the keyset.
- (2) Remove the keyset baseplate.
- (3) On the back of the keyset, use a pair of cutting pliers to remove the plastic knockout covering the OHVA Module connector (J3) on the keyset control board (see Figure 3-35).

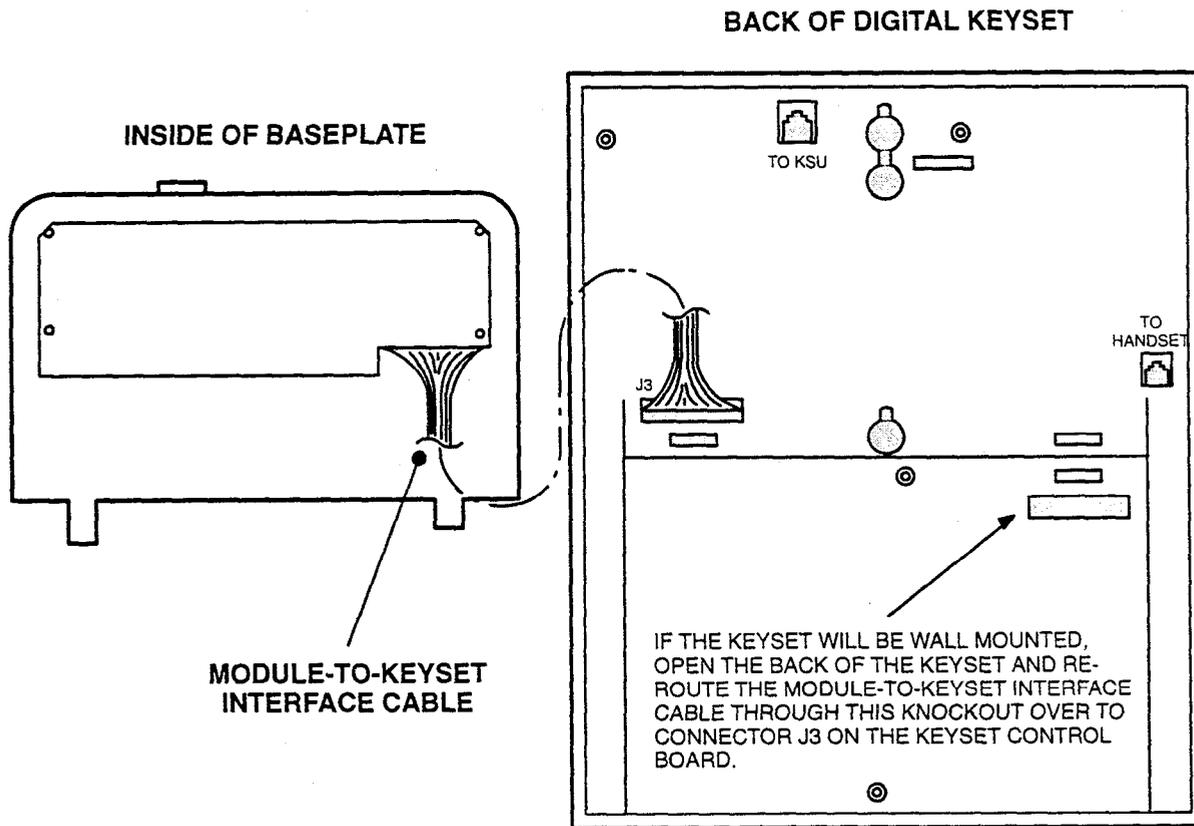
**NOTE:** Be careful not to let the plastic knockout fall inside the keyset. If the keyset will be wall mounted, use the knockout in the bottom half of the keyset instead (see Figure 3-35).

- (4) *If not already installed*, attach one end of the module-to-keyset interface cable to the connector on the back of the OHVA Module.
- (5) Align the OHVA Module over the four posts protruding from the inside of the baseplate and insert the screws (do not over tighten).
- (6) Plug the free end of the module-to-keyset interface cable into connector J3 on the keyset control board (where the plastic knockout was previously removed).

**NOTE:** Use a pencil (eraser end) or other suitable rod-like instrument to press each end of the cable connector into connector J3. Apply pressure until the connector clicks securely into place, one end at a time.

- (7) Being careful not to pinch the cable attached to the OHVA Module, reattach the baseplate.

FIGURE 3-35. OFF-HOOK VOICE ANNOUNCE (OHVA) MODULE INSTALLATION



### Optional Personal Computer Data Port Modules (PCDPMs)

**9.11** For off-hook voice announce receive capability, and to allow an optional DSS/BLF Unit and/or an optional Modem Data Port Module to be installed, any Standard or Executive keyset may be equipped with an optional PC Data Port Module (part no. 550.3014). If a DSS/BLF Unit is not installed, the module's RS-232-C port can be used to connect an SMDR/error message output device or a personal computer for programming the system database.

**9.12** Install the PC Data Port Module as outlined below. For diagrams of the installation, see Figures 3-36 and 3-37 on pages 3-68 and 3-69.

- (1) Unplug the keyset line cord from its modular jack on the back of the keyset.
- (2) Remove the keyset baseplate.
- (3) On the back of the keyset, use a pair of cutting pliers to remove the plastic knockout covering the PC Data Port Module connector (J3) on the keyset control board (see Figures 3-36).

**NOTE:** Be careful not to let the plastic knockout fall inside the keyset. If the keyset will be wall mounted, use the knockout in the bottom half of the keyset instead (see Figure 3-36).

- (4) *If not already installed*, attach one end of the PCDPM-to-keyset interface cable to the connector on the back of the PCDPM.
- (5) Align the PC Data Port Module over the four posts protruding from the inside of the baseplate and insert the screws (do not over tighten).
- (6) Plug the free end of the PCDPM-to-keyset interface cable into connector J3 on the keyset control board (where the plastic knockout was previously removed).

**NOTE:** Use a pencil (eraser end) or other suitable rod-like instrument to press each end of the cable connector into connector J3. Apply pressure until the connector clicks securely into place, one end at a time.

- (7) *If a DSS/BLF Unit (or a PC/output device) will be attached to the PC Data Port Module:*
  - a. Attach one end of a PCDPM-to-DSS interface cable (or PCDPM-to-RS232C interface

cable) to the RS-232-C connector (J2) on the module, as shown in Figure 3-36. (The other end of the cable will later be attached to the DSS/BLF Unit [or PC/output device] after it is installed.) For complete RS-232-C cable pinout requirements, see page 2-28.

**NOTE:** Pin 1 of the cable (indicated by the stripe on the edge of the cable) must correspond to pin 1 on the RS-232-C connector (indicated by the notch silkscreened on the module).

- b. Plug the AC transformer cable into the power connector (P1) on the module.

**NOTE:** PCDPMs do *not* require AC transformers when they are used for off-hook voice announce only or have attached MDPMs. For a diagram of AC transformer requirements, see Figure 2-1 on page 2-22.

- c. Plug the main AC transformer unit into an available AC power source. *DO NOT* use the outlet for the KSU.

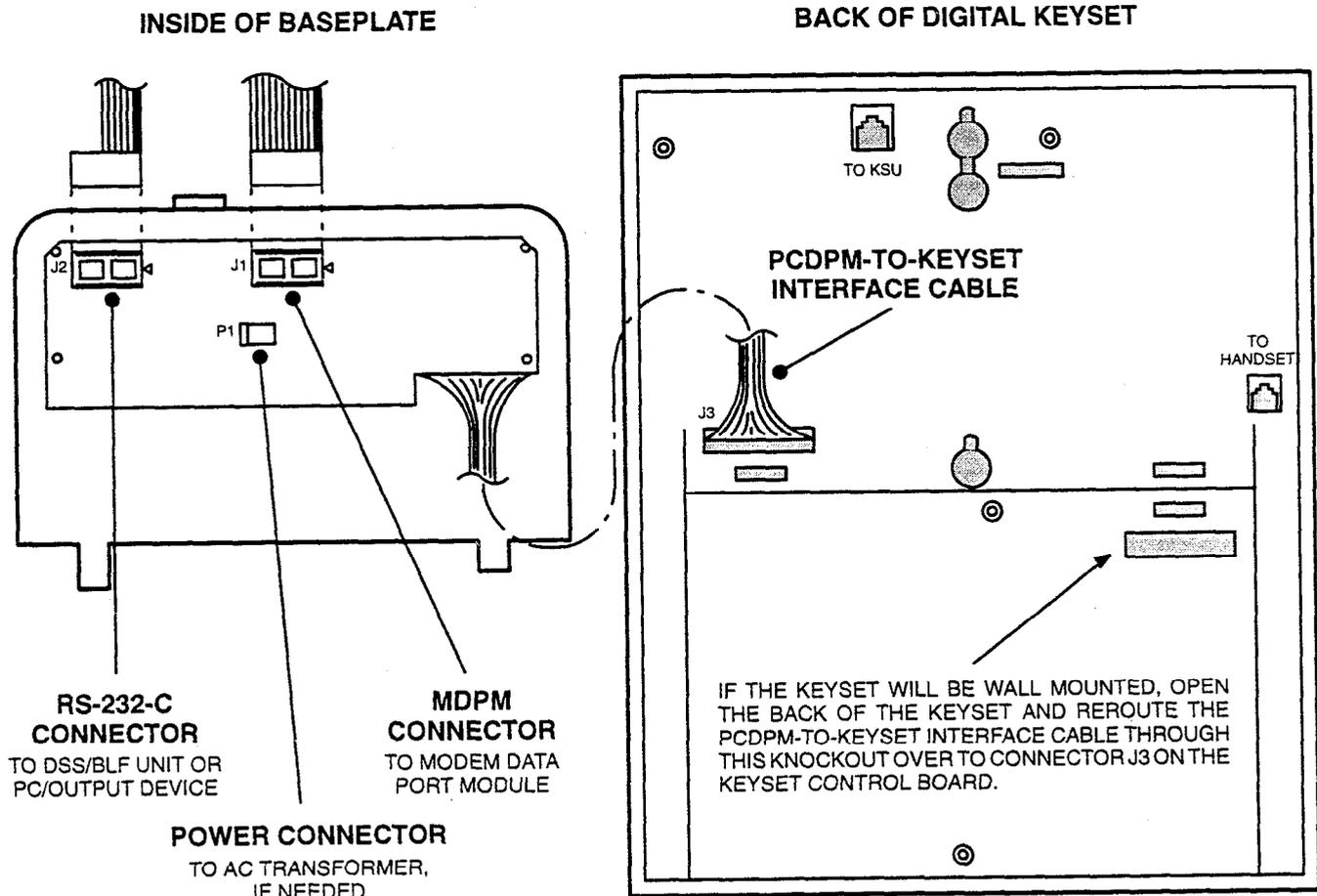
*If a Modem Data Port Module will be attached to the PC Data Port Module*, plug the appropriate end of the PCDPM-to-MDPM interface cable into the MDPM connector (J1) on the module. (The other end of the cable will later be attached to the Modem Data Port Module after it is installed.)

**NOTE:** Pin 1 of the cable (indicated by the stripe on the edge of the cable) must correspond to pin 1 on the MDPM connector (indicated by the notch silkscreened on the module). Some early PCDPM-to-MDPM cables may have the stripe on the wrong edge. If the MDPM doesn't respond properly, try reversing the connector on the PCDPM.

- (8) Being careful not to pinch any of the cables attached to the PCDPM, reattach the baseplate.
- (9) *If a Modem Data Port Module will be attached to the PC Data Port Module*, refer to the instructions on page 3-70.

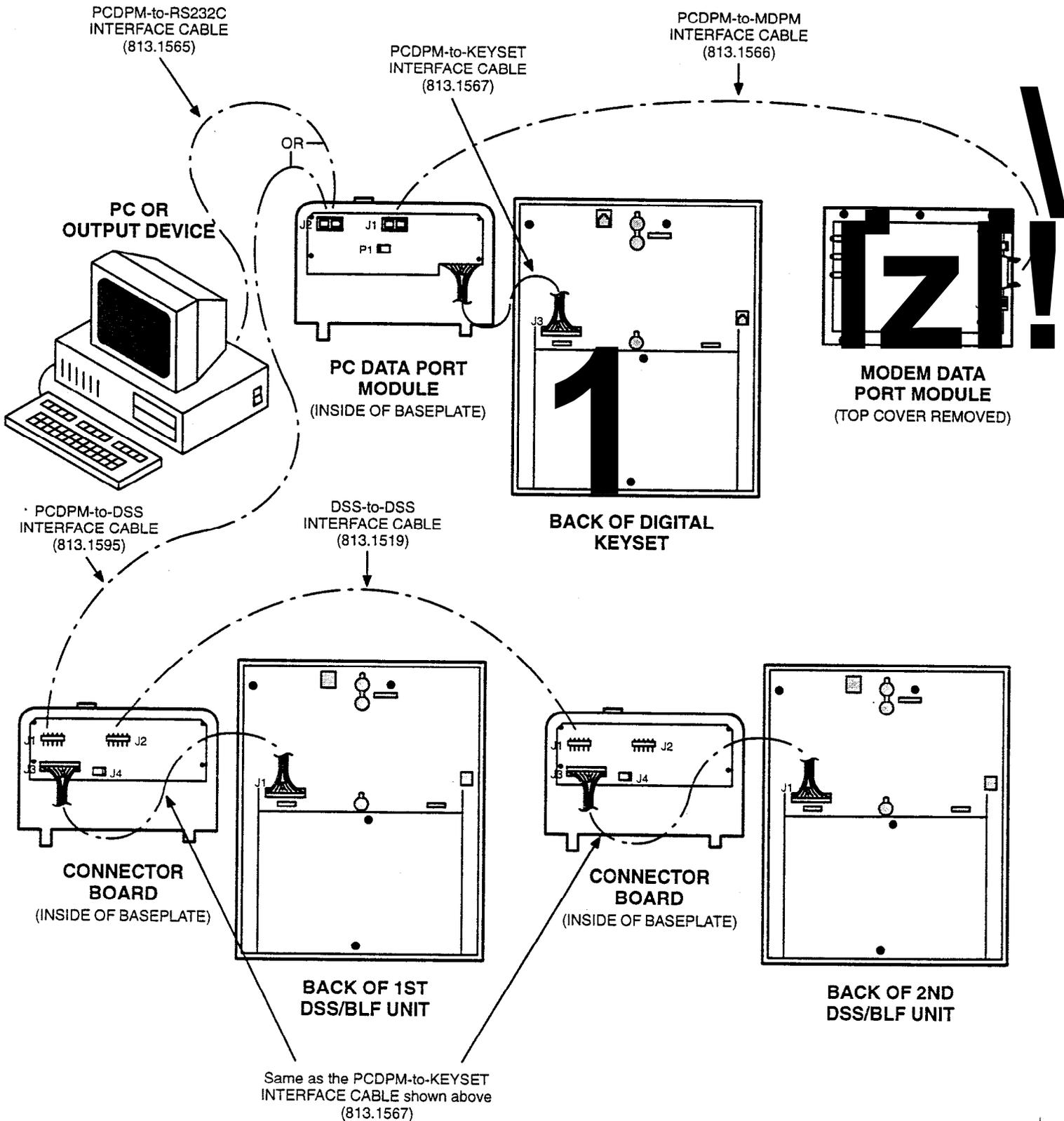
*If a Modem Data Port Module will not be attached to the PC Data Port Module*, reconnect the keyset line cord.

FIGURE 3-36. PC DATA PORT MODULE (PCDPM) INSTALLATION



**NOTE:** PCDPMs require AC transformers when they are connected to DSS/BLF Units only or PC/output devices only. PCDPMs do *not* require AC transformers when they are used for off-hook voice announce only or have attached MDPMs. For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-22. Also, Some early PCDPM-to-MDPM cables may have the stripe on the wrong edge. If the MDPM doesn't respond properly, try reversing the connector on the PCDPM.

FIGURE 3-37. SAMPLE PCDPM CABLE CONNECTIONS



### Optional Modem Data Port Modules (MDPMs)

9.13 Keysets equipped with PC Data Port Modules may be equipped with optional Modem Data Port Modules (part no. 550.3015). The MDPM contains a four-conductor modular jack that can be used to connect a data device (such as a personal computer with a direct-connect modem) or a single-line set to the keyset.

**NOTE:** Each "equipped" MDPM installed counts as one single-line device.

9.14 The data device can be used by the associated keyset(s) to communicate with remote data equipment over voice channels being used for CO or intercom calls. The data device's modem must be externally powered (or capable of operating on 20mA of loop current) and have an RJ11 CO trunk interface.

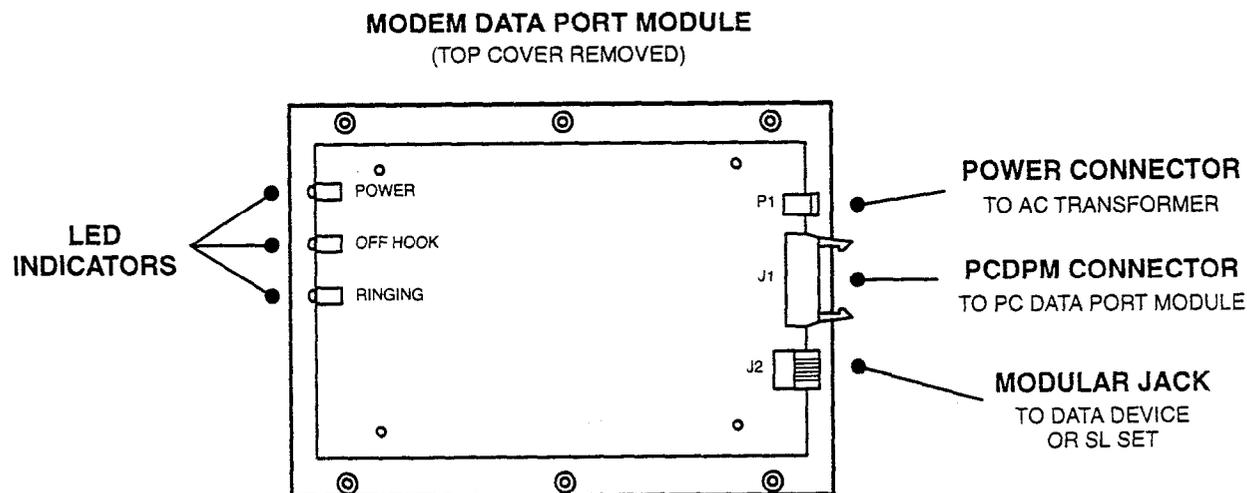
9.15 The data device can be activated by the associated keyset(s) or by an auto-dial modem. (For more details and an explanation of transferring the data connection, refer to page 4-101 in FEATURES). The data device is disconnected whenever one of the following occurs: the modem attached to the keyset disconnects from the call, the called modem disconnects from the call, or the data connection is transferred to the keyset's primary voice path and the call is disconnected.

9.16 Install the Modem Data Port Module and attach the data device as outlined below. For diagrams of the

installation, see Figure 3-37 on page 3-69 and see Figure 3-38 below.

- (1) Ensure that the keyset line cord is unplugged from its modular jack on the back of the keyset.
  - (2) Plug the free end of the PCDPM-to-MDPM interface cable into connector J1 on the Modem Data Port Module. (The other end of the cable was previously attached to the PC Data Port Module; see page 3-67.)
  - (3) Insert the modem line cord (which would normally be connected to a CO jack) into the modular jack (J2) on the Modem Data Port Module.
  - (4) Plug the AC transformer cable into the power connector (P1) on the Modem Data Port Module.
- NOTE:** MDPMs always require their own separate AC transformers. (For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-22.) Also, make sure the AC transformer is plugged in and working.
- (5) Plug the main AC transformer unit into an available AC power source. *DO NOT* use the outlet for the KSU.
  - (6) Reconnect the keyset line cord.

FIGURE 3-38. MODEM DATA PORT MODULE (MDPM) INSTALLATION



**B. DIRECT STATION SELECTION/BUSY  
LAMP FIELD (DSS/BLF) UNIT  
INSTALLATION**

**9.17** Up to ten DSS/BLF Units (one or two per keyset) can be installed on the system. These can be single or tandem units; tandem units count as two units. Each single DSS/BLF Unit has 60 keys for directly accessing up to 60 extension numbers and/or other features/resources. The numbers can be station extension numbers, hunt group pilot numbers, or other system features or resources.

**9.18** DSS/BLF Units are physically attached to the RS-232-C ports on keysets equipped with PC Data Port Modules (PCDPMs). The units are powered by their own AC transformer and do not require a DKSC/DKSC-16 circuit that is separate from the keyset's circuit. If desired, all ten units can be connected to keysets installed on the same Digital Keyset Card.

**9.19** Unpack and inspect the DSS/BLF Units before installing them.

**9.20** Install each DSS/BLF Unit as outlined below. For diagrams of the installation, see Figures 3-37 and 3-39 on pages 3-69 and 3-72.

- (1) Remove the baseplate on the back of the DSS/BLF Unit.
- (2) On the connector board located in the baseplate, plug the free end of the PCDPM-to-DSS interface cable into the main RS-232-C connector (J1). (The other end of the cable was previously attached to the PC Data Port Module on the corresponding keyset.)
- (3) Plug the AC transformer cable into the power connector (J4) on the baseplate connector board. (The transformer will later be plugged into an AC power source.)

**NOTE:** DSS/BLF Units always require their own separate AC transformers. For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-22.

- (4) To attach a second DSS/BLF Unit to the first unit:
  - a. Plug one end of a DSS-to-DSS interface cable into the secondary RS-232-C connector

(J2) on the baseplate connector board in the first unit.

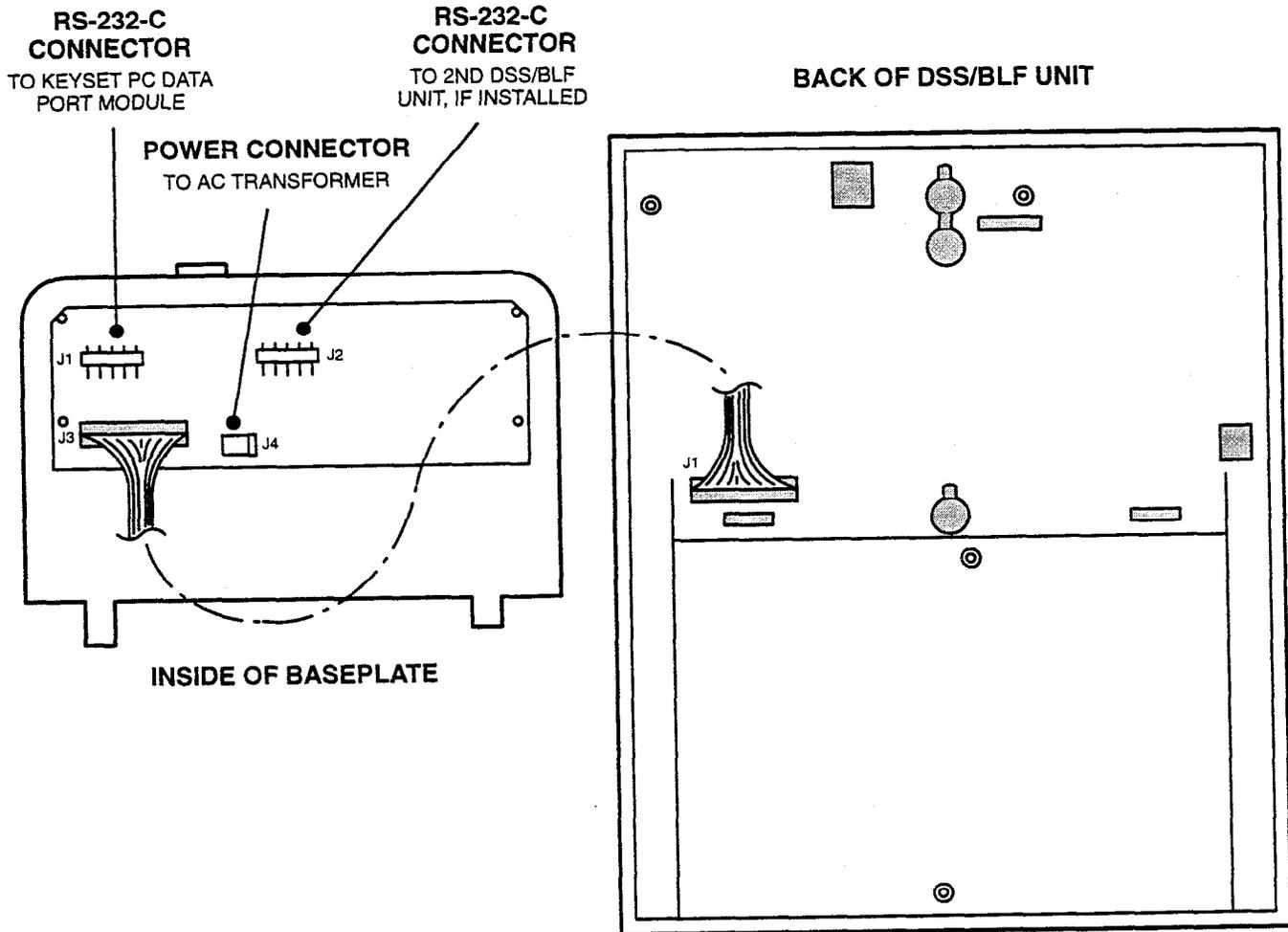
- b. Remove the baseplate on the back of the second DSS/BLF Unit.
- c. Plug the other end of the DSS-to-DSS interface cable into the main RS-232-C connector (J1) on the baseplate connector board in the second unit.
- d. Plug the AC transformer cable into the power connector (J4) on the baseplate connector board in the second unit. (The transformer will later be plugged into an AC power source.)

**NOTE:** If a tandem DSS/BLF Unit is installed, each individual unit must be equipped with its own AC transformer. In addition, the PC Data Port Module on the corresponding keyset must be equipped with its own AC transformer.

- (5) Perform the DSS/BLF Unit self-test:

- a. While holding down the first two keys in row one (extension numbers 1000 and 1001 in the default database), plug the main AC transformer unit into an available AC power source. (*DO NOT* use the outlet for the KSU.) All the keys should light up. If an LED does not light, unplug the AC transformer unit and plug it in while holding down the first two keys in row one (ext. 1000 and 1001). If the test fails again, replace the DSS/BLF Unit.
- b. Press each key individually (in any order) to remove the lit status. When finished, all keys should be unlit. If an LED does not go out, unplug the AC transformer unit and repeat steps a and b. If the test fails again, replace the DSS/BLF Unit. After all the keys have been tested, it takes approximately five seconds for the DSS/BLF Unit to return to normal operation.
- c. Being careful not to pinch any of the attached cables, replace the baseplate on the back of the DSS/BLF Unit.

FIGURE 3-39. BACK OF DSS/BLF UNIT



## C. SINGLE-LINE SET AND PLAYBACK DEVICE INSTALLATION

### Single-Line Sets

**9.21** Single-line sets are connected to Single-Line Cards (SLCs), or they can be connected to Single-Line Adapters (SLAs), which are in turn connected to DKSC/DKSC-16 circuits. The single-line sets (including OPXs) must be equipped with AC ringers.

**NOTE:** DC-ringing single-line devices may not be connected to SLCs or SLAs.

**9.22** SLAs do not support *visual* message waiting applications. If single-line sets with message waiting lamps are installed on SLAs, the lamps will not function. However, single-line sets connected to SLAs can be configured in database programming to receive *audible* message waiting indication tones.

**9.23** Each SLC can be equipped with an optional Lamp Option Card (LOC) to provide visual message waiting capabilities for single-line sets equipped with message lamps. Single-line sets connected to SLCs are then configured in database programming to receive *visual* and/or *audible* message waiting indication tones.

### Playback Devices

**NOTE:** For automated attendant features and for optimal playback device performance and functionality, use the Inter-Tel AXCESSORY Talk PC instead of SLC or SLA circuits as outlined below.

**9.24** Playback devices can be used in place of single-line sets on SLC or SLA circuits. These devices answer an incoming call, play a recorded message, and automatically disconnect from the call. They are installed like single-line sets, using the same cabling and modular jack assemblies. A playback device uses the extension number that is associated with its station circuit.

### Single-Line Set And Playback Device Installation

**9.25** To install a single-line set or a playback device:

- (1) *For SLAs only:*
  - a. Plug the AC transformer cable into the power connector on the corresponding Single-Line Adapter (SLA).

**NOTE:** SLAs always require their own separate AC transformers. For a diagram of AC transformer requirements, refer to Figure 2-1 on page 2-22.

- b. Plug the main AC transformer unit into an available AC power source. *DO NOT* use the outlet for the KSU.
- (2) Before connecting a single-line set or playback device to the system, measure the voltage on the RED terminal of the modular jack assembly with respect to the GREEN terminal. (The common probe of the voltmeter is placed on the GREEN terminal.) It must measure -48VDC ( $\pm 2$ VDC). If +48 is measured, check the cabling for a reversed pair.
  - (3) Mount the modular jack assembly on the wall at the station location.
  - (4) Plug one end of the line cord into the modular jack assembly and plug the other end into the jack on the single-line set or playback device.

### Optional Handset Amplifiers

**9.26** Single-line set users may wish to have a handset amplifier installed. Typically, the amplifier is an external unit that is placed between the single-line set and the handset (refer to page 2-24 for specifications).

**9.27** To install such an amplifier:

- (1) Unplug the coiled handset cord from the single-line set.
- (2) Plug the coiled handset cord into the amplifier jack labeled HANDSET.
- (3) Plug the amplifier line cord (coming from the jack labeled TELEPHONE) into the single-line set handset jack.
- (4) Plug the amplifier power supply cord into an AC outlet.
- (5) The handset volume can be increased or decreased, using the thumbwheel located on the amplifier. Verify that the amplifier is functioning correctly by placing a call and adjusting the volume from low to high.

## 10. AXCESSORY TALK PC INSTALLATION

10.1 For integrated voice processing (voice mail, automated attendant, hunt group announcement and overflow, optional Fax On Demand, buffered SMDR, etc.), an optional AXCESSORY Talk PC with special applications software can be attached to the AXCESS System. For more information, see SPECIFICATIONS, page 2-26, and AXCESSORY TALK FEATURES beginning on page 5-1.

### A. HARDWARE INSTALLATION

#### NOTICE

Personal computer (PC) technology is continually evolving. As it does, the Inter-Tel AXCESSORY Talk PC will continue to incorporate important design enhancements. Thus, depending on the actual version of equipment that is shipped, the following installation instructions could vary somewhat. If revised instructions are included with the equipment, refer to the new information instead.

10.2 Install the AXCESSORY Talk PC as outlined in the following steps. See Figure 3-40 on page 3-78 for sample diagrams of the assembled PC.

**NOTE:** Like the AXCESS System itself, the AXCESSORY Talk PC *must* have its own isolated, dedicated, properly grounded AC circuit for proper operation. Refer to the first note on page 3-4 for details.

- (1) Ensure that the AXCESSORY Talk PC's AC power switch is turned off and the AC power cord is unplugged.
- (2) *If the Audio Interface Card (AIC), Voice Processing Cards (VPCs), Disk Controller Combination Card, Monitor Card, and optional Fax Card are not already installed in the AXCESSORY Talk PC, proceed with the installation as outlined in the following steps.*

*If the AIC, VPCs, Disk Controller Combination Card, Monitor Card, and optional Fax Card are already installed in the AXCESSORY Talk PC, skip to step 10.*

**NOTE:** Some of the cards and cables inside the PC may have been spot-glued into place to help prevent them from working loose during shipment. To remove one of these cards or cables from the PC (if necessary), first break the glue seal by gently wiggling the connector with a pair of pliers.

- (3) Remove the cover from the PC by removing the screws and sliding the cover off.

#### CAUTION

The cards and components are static sensitive. Handle the cards by the edges only and keep them in their protective bags until they are to be installed. Do not bend or touch the pins of the components or subject them to a static charge. When working with the cards, use a properly terminated anti-static wrist strap and cover the work surface with the bag that protected the card during shipping. Any static charge (no matter how small the charge) must be discharged from the body before touching the cards or components. *The warranty for this equipment does not cover damage caused by static or mishandling. Cards or components damaged in such a manner will not be replaced.*

- (4) *If not already installed, install the Audio Interface Card (AIC) as follows (refer to Figure 3-42 on page 3-80):*

- a. Remove the bracket that covers the opening to the appropriate slot in the PC, and set the bracket and screw aside.

**NOTE:** To facilitate connection to the Voice Processing Cards (VPCs), the AIC should be installed so that the VPCs can all be placed to one side of the card. (Refer to Figure 3-41 on page 3-79 for a sample card slot arrangement.)

- b. Ensure that the AIC address selection DIP switches (S1) are set for address \$3E0. DIP switches 1 and 2 must be in the ON (closed) position and switches 3-6 must be in the OFF (open) position.
- c. Check to make sure that jumper straps are installed in the following locations on the AIC (see Figure 3-42 on page 3-80 for orientation):

| JUMPER PINS | STRAP LOCATION                  |
|-------------|---------------------------------|
| J3          | Over top two pins (1 and 2)     |
| J5          | Over one pin only (or no strap) |
| J6          | Over one pin only (or no strap) |

- d. Holding the AIC near the PC Motherboard, disconnect the two-pin reset switch cable from the PC Motherboard and attach it to connector J1 on the AIC. (The other end of the cable should remain attached to the reset switch on the PC.)

**NOTE:** It may be necessary to unbundle the reset switch cable to allow it to reach the AIC.

- e. Attach one end of the two-pin AIC-to-reset switch cable (supplied with the PC) to connector J2 on the AIC. Attach the other end of the cable to the PC Motherboard connector that was previously vacated in step 4d.

**NOTE:** Be sure that pin 1 marked on each end of the cable matches pin 1 on the AIC and the PC Motherboard. (If connected incorrectly, the PC will be reset continuously or will not boot up at all.)

- f. Insert the AIC in the appropriate PC slot and attach it to the chassis using the screw removed in step 4a. Make sure the card is securely attached to the PC Motherboard and does not touch any adjacent cards.

- g. Attach one of the connectors on the end of the AIC-to-VPC interface cable to the 40-pin connector on the AIC. (The other four connectors on the cable will be attached to the VPCs and optional Fax Card as they are installed.)

**NOTE:** Be sure that the colored edge of the AIC-to-VPC interface cable aligns with pin 1 on the connector (see Figure 3-42).

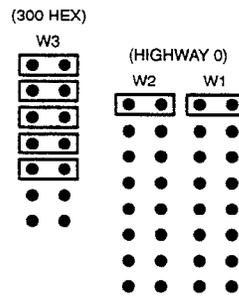
- (5) *If not already installed*, install each of the up to three Voice Processing Cards (VPCs) as follows (refer to Figure 3-43 on page 3-81):

- a. Remove the bracket that covers the opening to the appropriate 16-bit (full-size) slot as shown in Figure 3-41, and set the bracket and screw aside.

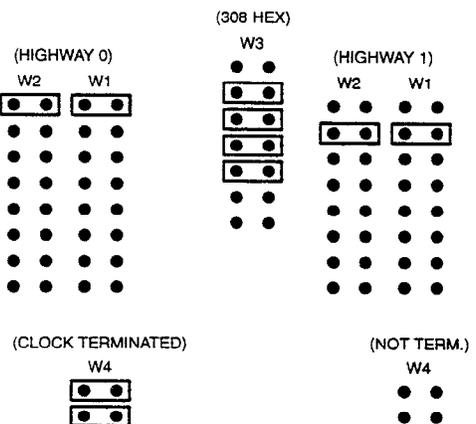
**NOTE:** The first VPC must be installed so that it can be connected to the far end of the AIC-to-VPC interface cable that was previously attached to the AIC.

- b. Depending on which number VPC (1-4) is being installed, check to make sure that jumper straps are installed in the following locations on the VPC (see Figure 3-43 for orientation).

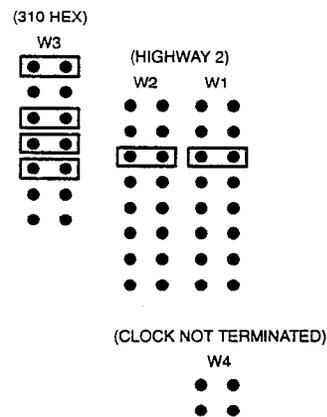
**FIRST VPC INSTALLED**



**SECOND VPC INSTALLED**



**THIRD VPC INSTALLED**



- c. Insert the VPC in the appropriate slot and attach it to the chassis using the screw removed in step 5a. Make sure the card is securely attached to the PC Motherboard and does not touch any adjacent cards.

- d. Attach the next available connector on the AIC-to-VPC interface cable to the 40-pin connector on the VPC. (One end of the cable was previously attached to the 40-pin connector on the AIC.)

**NOTE:** Be sure that the colored edge of the AIC-to-VPC interface cable aligns with pin 1 on the connector.

- (6) *If not already installed*, install the Disk Controller Combination Card (equipped with serial and parallel ports) as outlined below (refer to Figure 3-44 on page 3-82 for a "sample" card):

- a. Remove the brackets that cover the openings to two available 8-bit (half-size) slots, and set the brackets and screws aside.

- b. Referring to the manufacturer's user manual, check to make sure that any jumper straps, DIP switches, etc. are installed in the appropriate locations on the card.

**NOTE:** Some cards may need to be set to LPT2 even though the output device for the AXCESSORY Talk reports is set to LPT1 (as shown on page 6-205).

- c. Referring to the manufacturer's user manual, ensure that the two sections of the Disk Controller Combination Card are properly connected together.

- d. Insert the Disk Controller Combination Card in the appropriate slots and attach it to the chassis using the screws removed in step 6a. Make sure the card is securely attached to the PC Motherboard and does not touch any adjacent cards.

- e. Attach the appropriate end of the *floppy* disk-to-controller interface cable (supplied with the PC) to the 34-pin connector on the Disk Controller Combination Card. (See Figure 3-44 on page 3-82.)

**NOTE:** Be sure that the colored edge of the disk-to-controller cable aligns with Pin 1 on the connector.

- f. Plug the free end (the *outside* end if there are two) of the *floppy* disk-to-controller interface cable into the *male* connector on the back of the floppy disk drive.

**NOTE:** Be sure that the colored edge of the disk-to-controller cable aligns with Pin 1 on the disk drive's male connector.

- g. Attach the appropriate end of the *hard* disk-to-controller interface cable (supplied with the PC) to the 40-pin connector on the Disk Controller Combination Card. (See Figure 3-44 on page 3-82.)

**NOTE:** Be sure that the colored edge of the disk-to-controller cable aligns with Pin 1 on the connector.

- h. Plug the free end of the *hard* disk-to-controller interface cable into the *male* connector on the back of the hard disk drive.

**NOTE:** Be sure that the colored edge of the disk-to-controller cable aligns with Pin 1 on the disk drive's male connector.

- (7) *If not already installed*, install the Monitor Card as follows (refer to Figure 3-45 on page 3-83):

- a. Remove the bracket that covers the opening to the appropriate 8-bit (half-size) slot as shown in Figure 3-41, and set the bracket and screw aside.

- b. Insert the Monitor Card in the appropriate slot and attach it to the chassis using the screw removed in step 7a. Make sure the card is securely attached to the PC Motherboard and does not touch any adjacent cards.

- (8) *If desired and if not already installed*, install the optional Fax Card as follows (refer to Figure 3-46 on page 3-84):

- a. Remove the bracket that covers the opening to the appropriate 16-bit (full-size) slot as shown in Figure 3-41, and set the bracket and screw aside.

- b. Check to make sure that a jumper strap is placed over the bottom two pins (IRQ9) of interrupt jumper J7 (see Figure 3-46).

- c. Ensure that the eight address selection slide switches (S1) are set to 320 hex: 1-3 & 5-6 = ON; 4 & 7-8 = OFF (see Figure 3-46).

**NOTE:** The eight switches are labeled 1-8 on the switch block itself. On the card, they are labeled IPU and 3-9. If referring to the card designations, set the switches as follows: IPU, 3-4, & 6-7 = ON; 5 & 8-9 = OFF.

- d. Check to make sure the two MVIP clock termination DIP switches (S2) are set in the up (OFF) position.

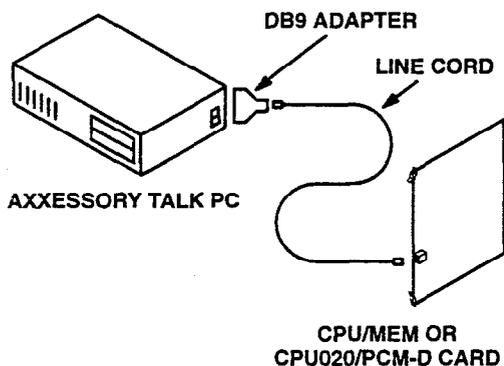
- e. Insert the Fax Card in the appropriate slot and attach it to the chassis using the screw removed in step 8a. Make sure the card is securely attached to the PC Motherboard and does not touch any adjacent cards.

- f. Attach the next available connector on the AIC-to-VPC interface cable to the 40-pin connector on the Fax Card. (One end of the cable was previously attached to the 40-pin connector on the AIC.)

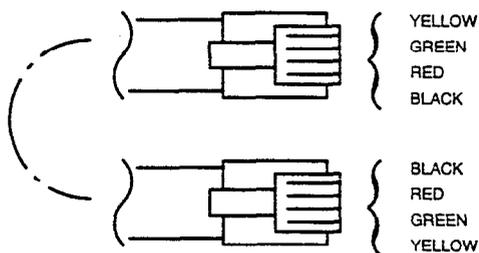
**NOTE:** Be sure that the colored edge of the AIC-to-VPC interface cable aligns with pin 1 on the connector.

- (9) Replace the cover on the PC and re-install the screws.

- (10) To set up the RS-232-C interface between the AXCESS System and the AXCESSORY Talk PC:
- Referring to the diagram at the top of the next page, attach the DB9 modular adapter (part no. 804.2420; supplied with the PC) to the DB9 (COM1) serial port connector on the PC.
  - Plug one end of the mod-to-mod line cord (part no. 813.1592; supplied with the PC) into the DB9 modular adapter.
  - Plug the other end of the line cord into an RS-232-C port on the AXCESS CPU/MEM or CPU020/PCM-D Card. Do *not* use the Options Card.



**NOTE:** The RS-232-C interface consists of a standard, two-pair, reversing, mod-to-mod line cord with an attached 9-pin modular adapter. A reversing line cord can be identified by examining the modular plug connectors side-by-side as shown below.



TWO-PAIR REVERSING LINE CORD

**NOTE:** The selected RS-232-C port on the AXCESS System must be designated as the AXCESSORY Talk communications port in system database programming (see page 6-247).

- (11) To supply the first eight audio interface ports (i.e., dedicated system voice channels) to the AXCESSORY Talk PC, attach one end of the AIC-to-CPU/OPC interface cable (supplied with the PC) to the DB15 PCM connector on the AXCESS CPU/MEM or CPU020/PCM-D Card. Attach the other end of the cable to the first DB15 PCM connector (J7) on the AIC (see Figure 3-42 on page 3-80).

**NOTE:** The right-angle connector end of the cable attaches to the CPU/MEM or CPU020/PCM-D Card. The straight-in connector end of the cable attaches to the AIC.

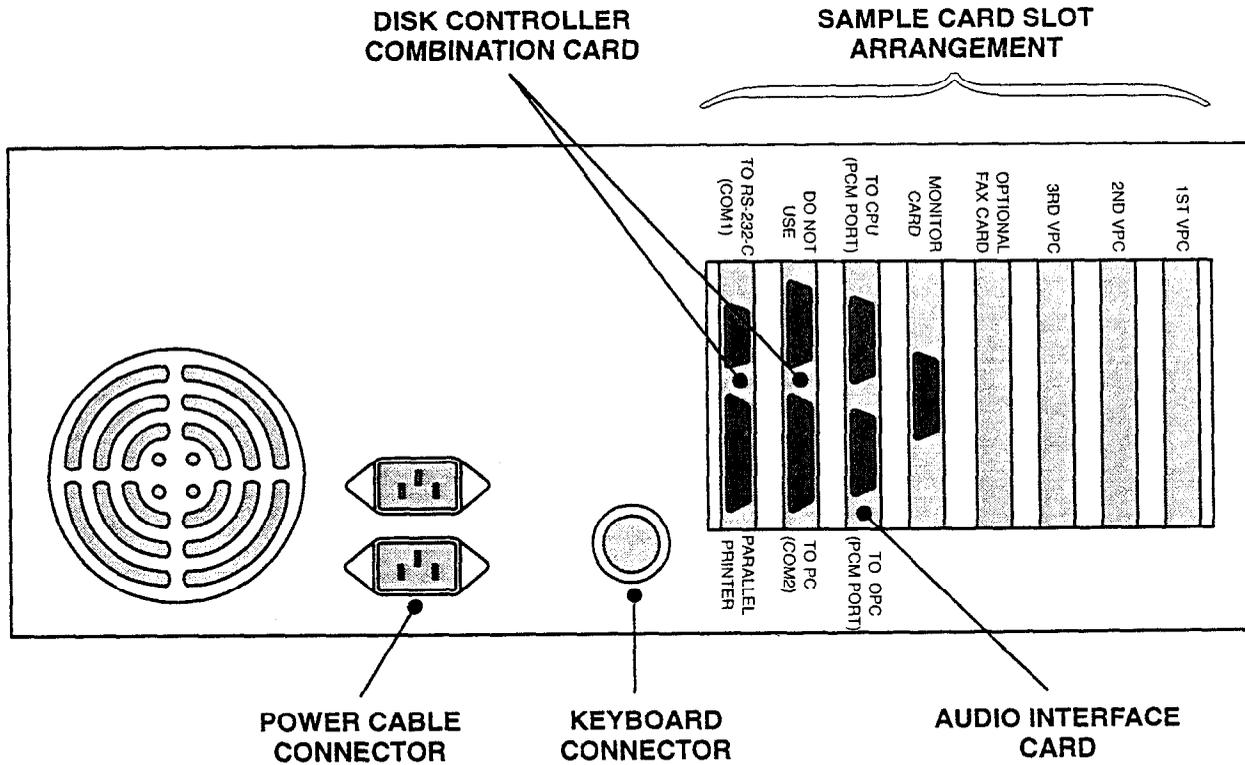
- (12) For an additional 4-24 ports (voice channels), attach one end of a second AIC-to-CPU/OPC interface cable (supplied with 12-port or higher PCs) to the DB15 PCM connector on the AXCESS Options Card. Attach the other end of the cable to the second DB15 PCM connector (J8) on the AIC (see Figure 3-42).

**NOTE:** The Options Card must be configured to have an AXCESSORY Talk connection. See PROGRAMMING, page 6-243.

- (13) Connect the power cable according to the PC manufacturer's instructions and turn on the AXCESSORY Talk PC's AC power switch.

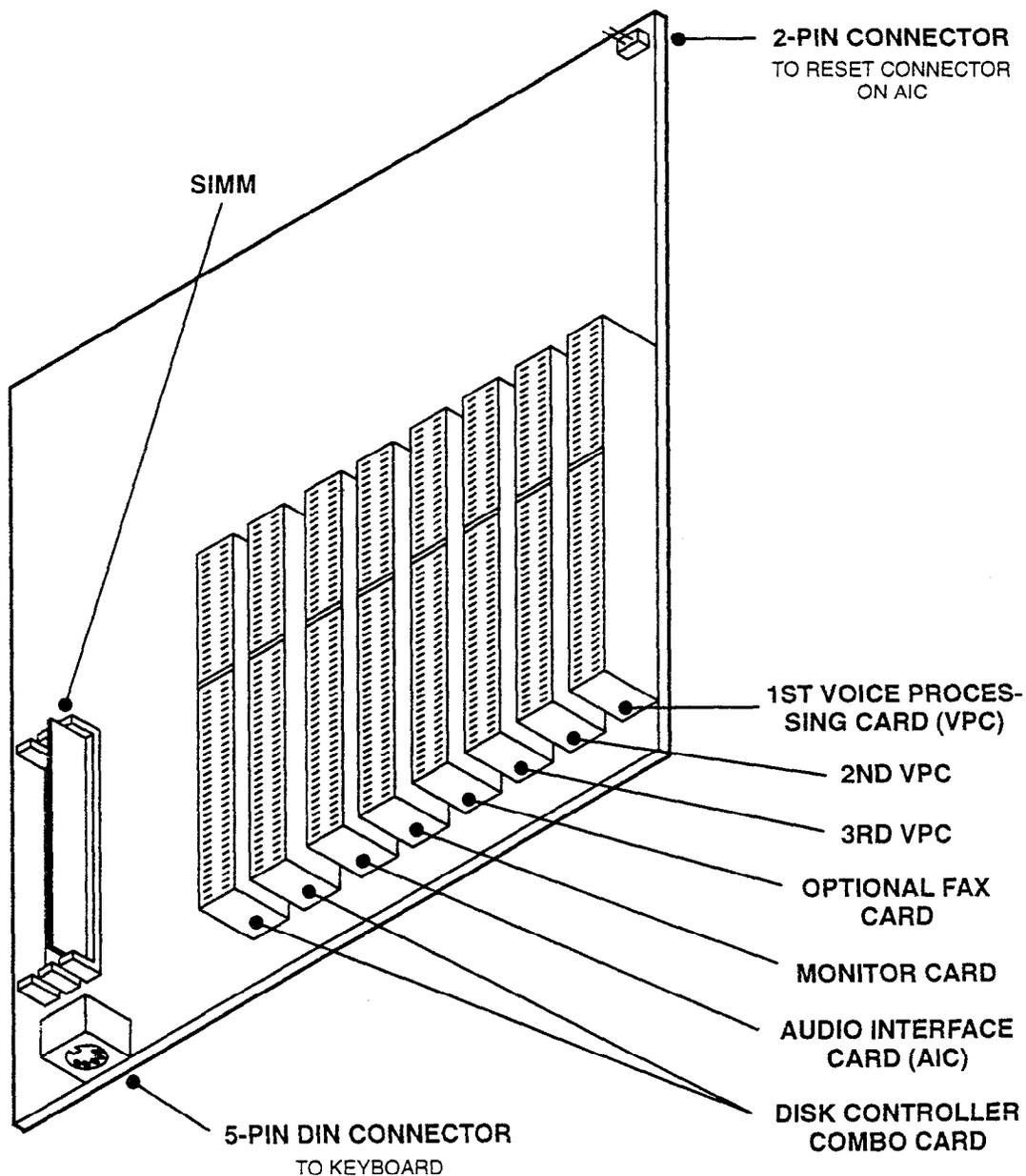
**NOTE:** For optimal performance, the AXCESSORY Talk PC is configured with turbo mode always enabled. Do *not* disable the turbo mode setting.

FIGURE 3-40. SAMPLE BACK OF ASSEMBLED AXCESSORY TALK PC



**NOTE:** Depending on the model of PC being used, the sample card slot arrangement and connector locations shown above could vary somewhat.

FIGURE 3-41. SAMPLE PC MOTHERBOARD CARD SLOT ARRANGEMENT



**NOTE:** Depending on the model of PC Motherboard being used, the sample card slot arrangement and the location of the reset connector shown above could vary somewhat.

FIGURE 3-42. AUDIO INTERFACE CARD (AIC)

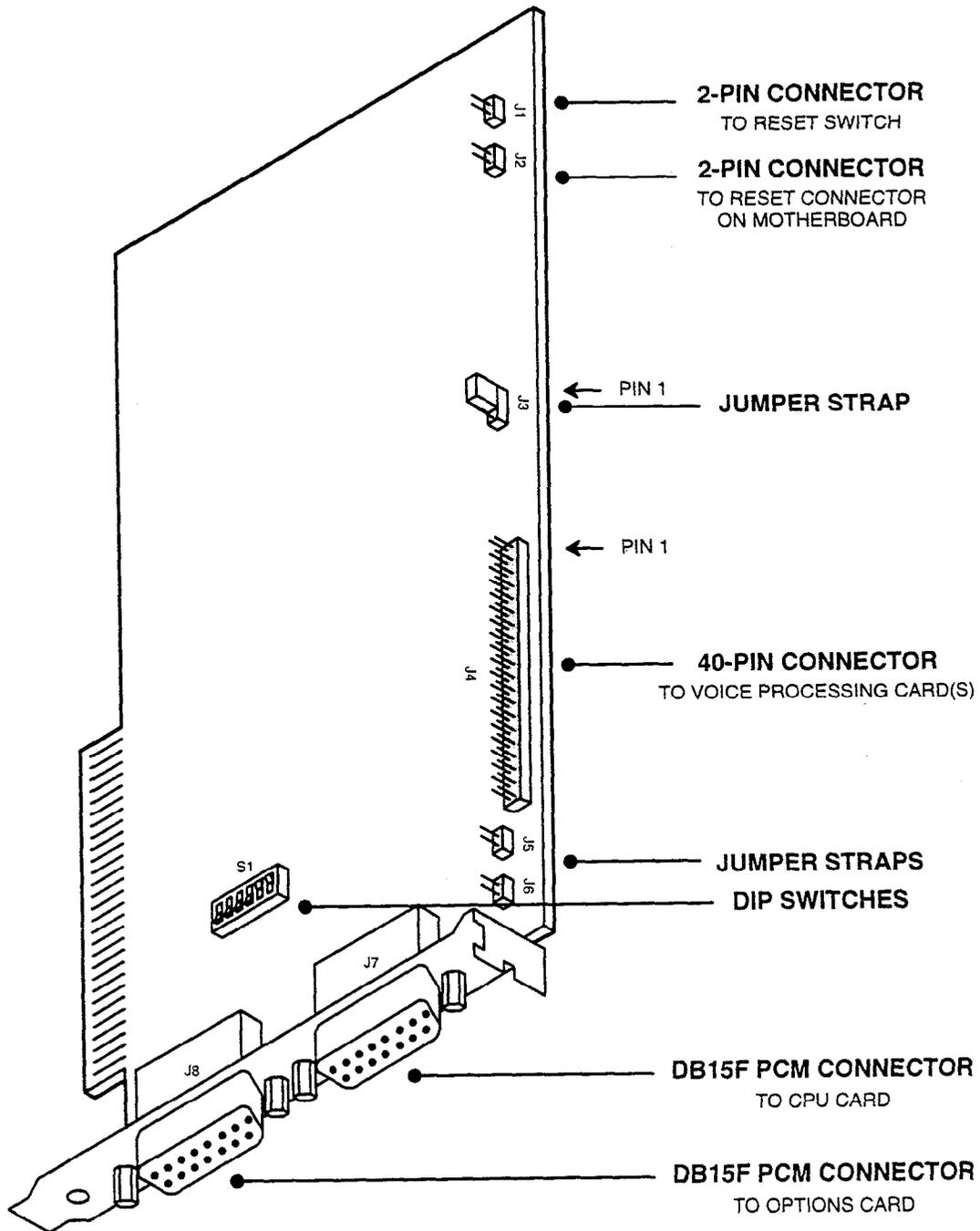


FIGURE 3-43. VOICE PROCESSING CARD (VPC)

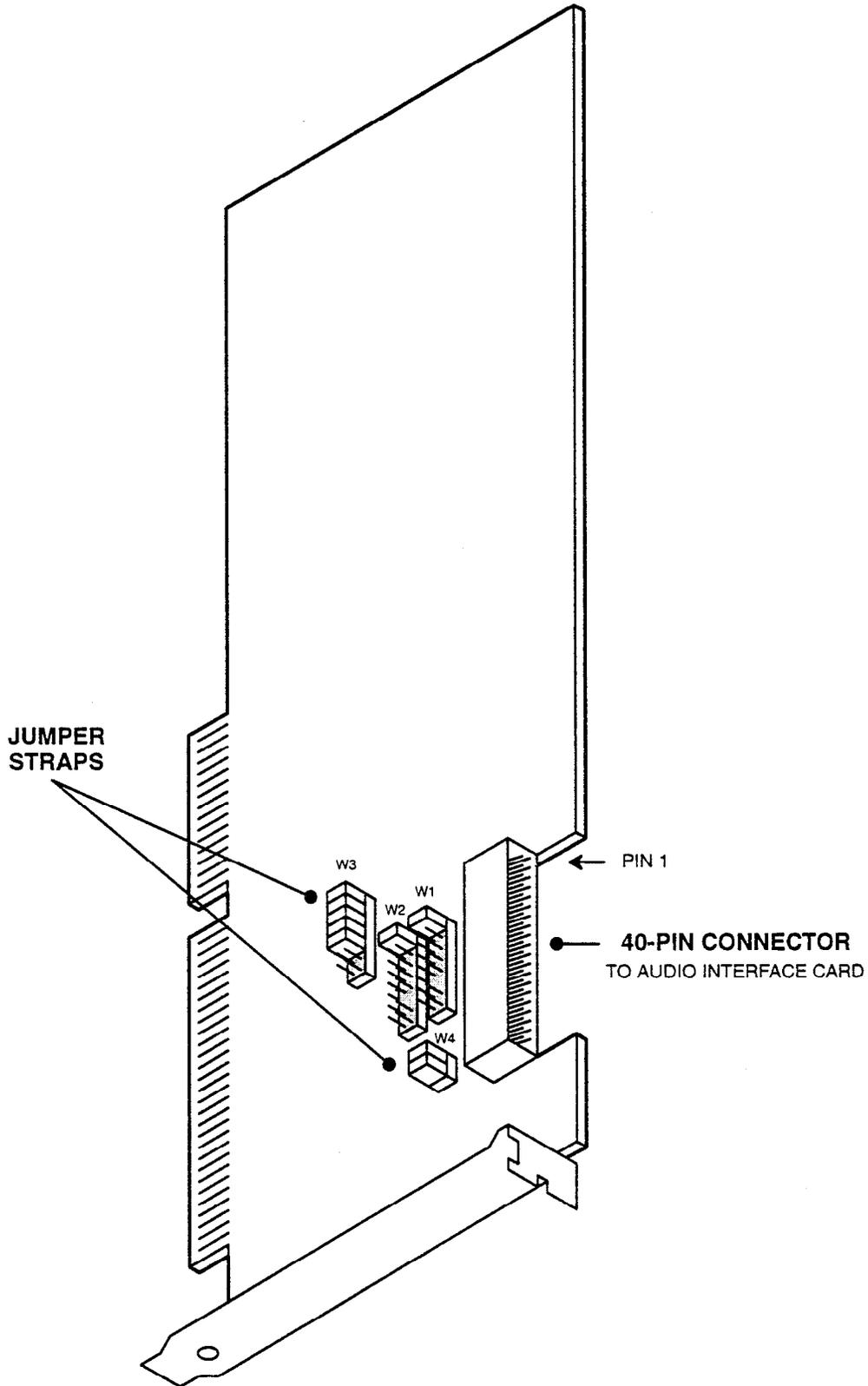
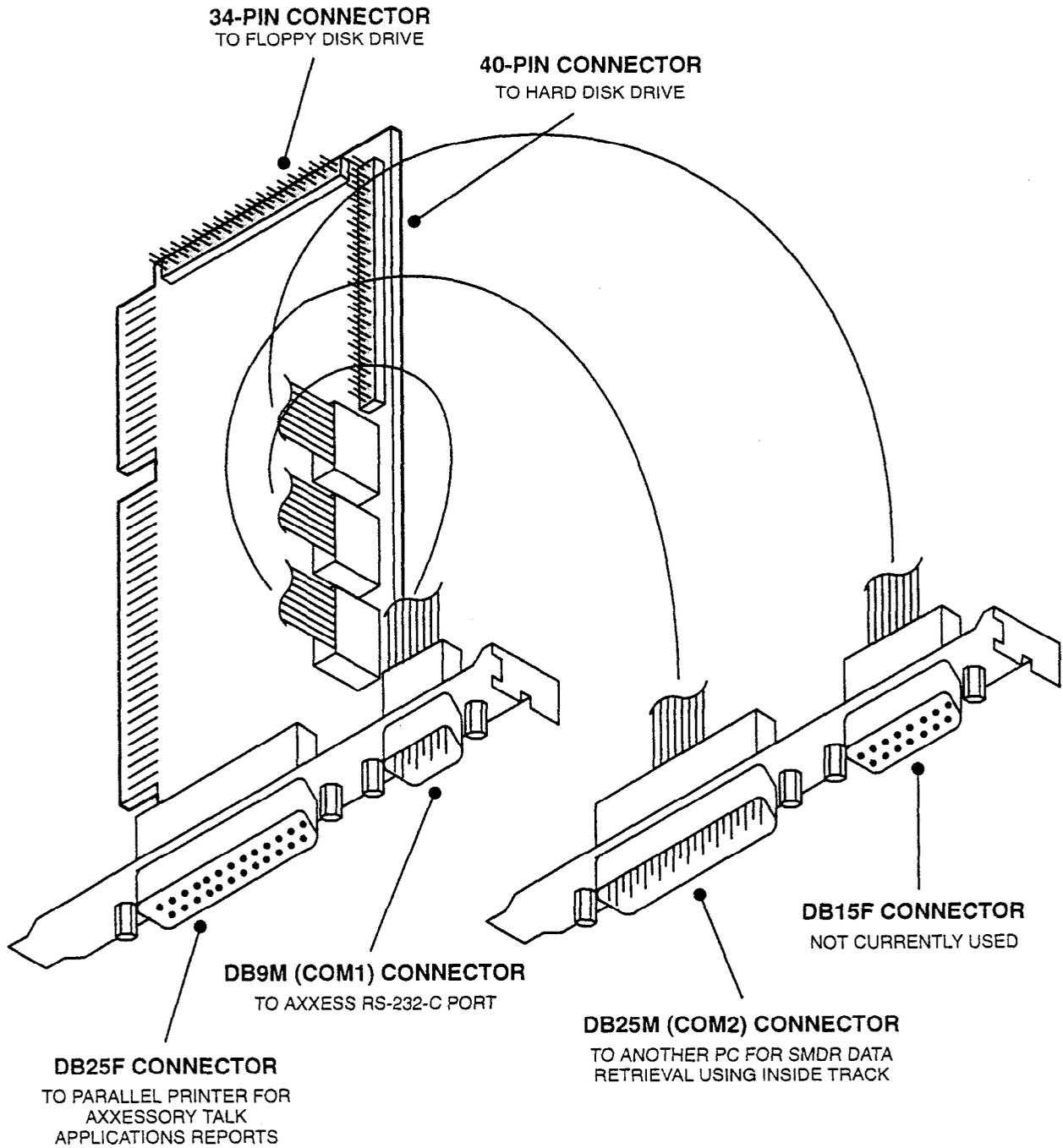


FIGURE 3-44. DISK CONTROLLER COMBINATION CARD



**NOTE:** Depending on the model of Disk Controller Combination Card being used, the location of the connectors and cables shown above could vary somewhat.

FIGURE 3-45. MONITOR CARD

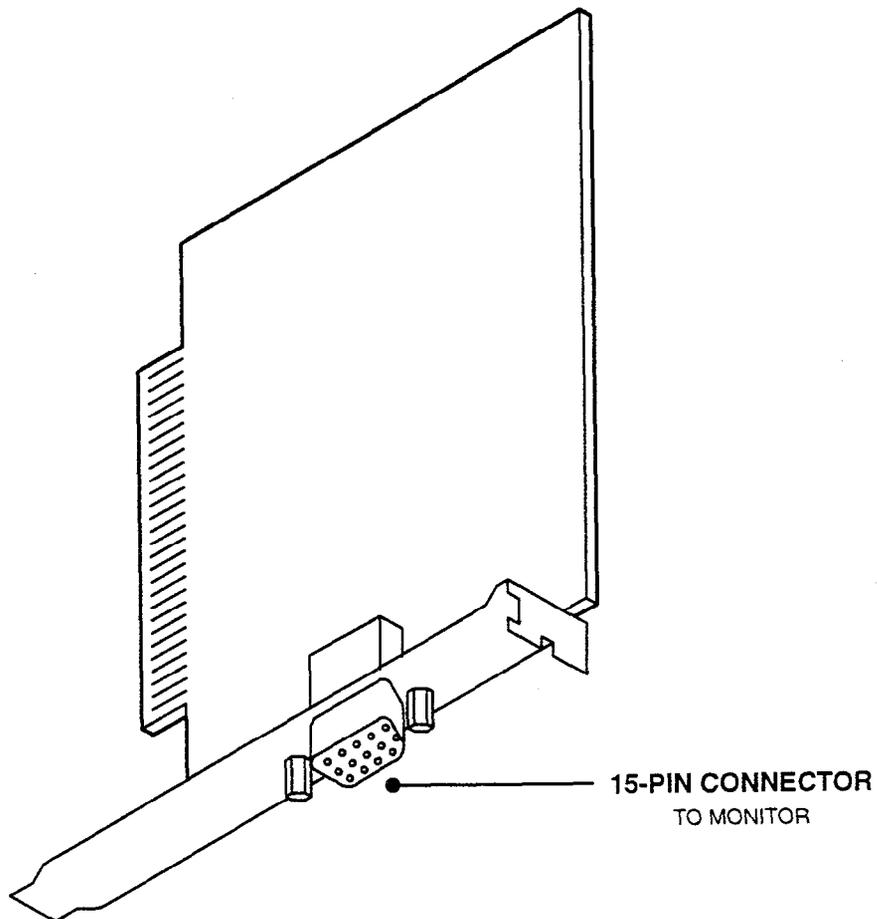
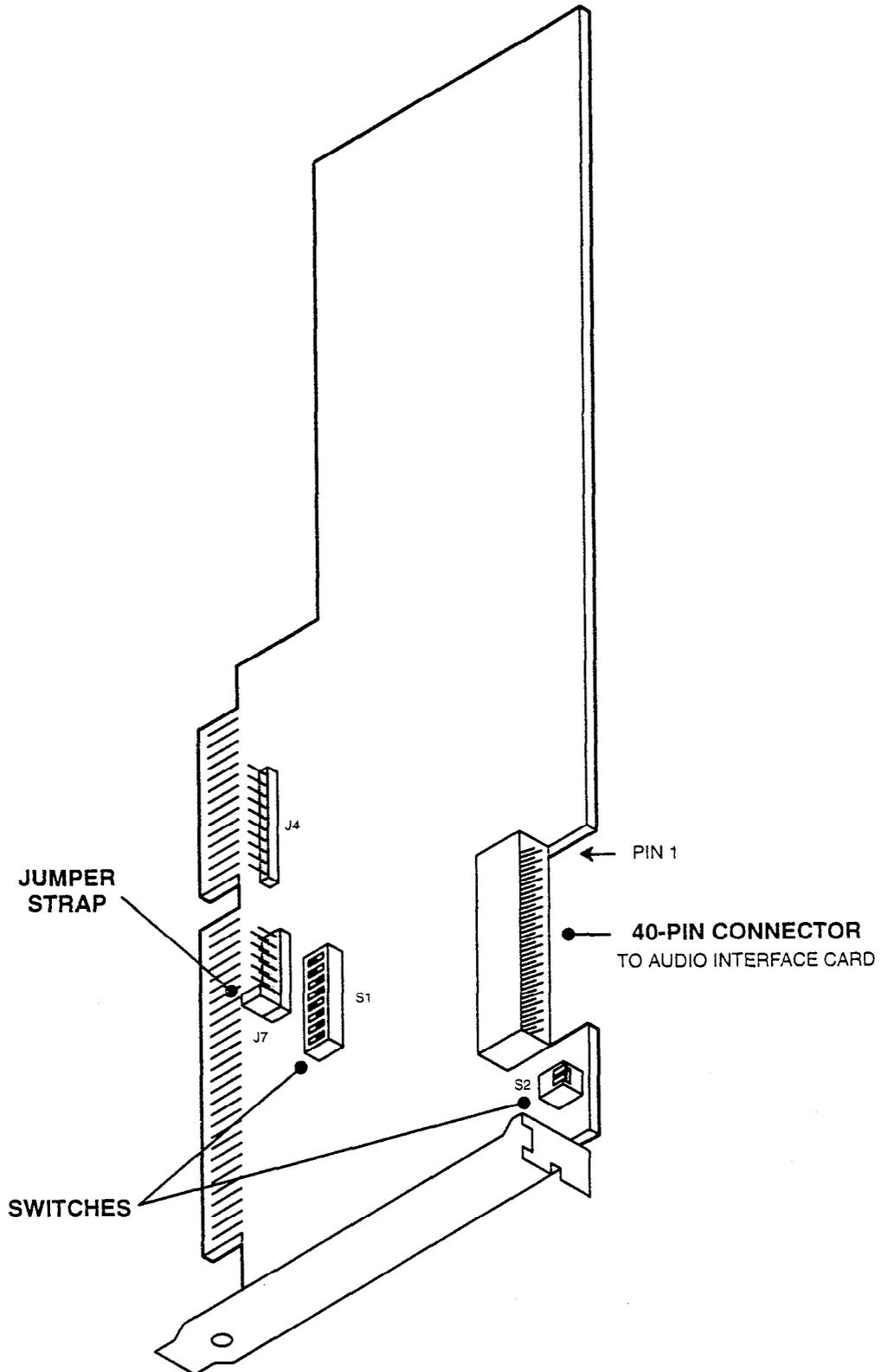


FIGURE 3-46. OPTIONAL FAX CARD



## B. SOFTWARE INSTALLATION

**10.3** The AXCESSORY Talk PC is shipped with the AXCESSORY Talk applications software already installed on the hard disk drive. As a back-up, 3½-inch floppy disks containing the software are also included. If the software is upgraded at a later time, a new set of software disks will be provided.

**10.4** If necessary, use the following procedure to install the AXCESSORY Talk applications software.

**NOTE:** To install the AXCESSORY Talk applications software, the hard disk drive must be properly formatted and must have IBM OS/2 Warp (3.0) installed. If using a PC with equipment other than that specifically recommended, the system will not operate properly.

- (1) *If not already installed*, attach a customer-provided VGA monitor to the 15-pin Monitor Card connector on the back of the AXCESSORY Talk PC. Then, plug in the monitor's AC power cord and turn on the monitor's AC power switch.
- (2) *If not already installed*, attach a customer-provided keyboard to the keyboard connector on the back of the PC.

- (3) Turn on the PC's AC power switch. (After some initial power-up information, the monitor eventually displays "Waiting 5 seconds. Press <ESC> to escape to the command line...")
- (4) Press the ESC (escape) key before the five seconds expire. (The monitor displays the C drive programming prompt "C:\>".)
- (5) Insert Applications Software Disk 1 of 5 in the PC's floppy disk drive.
- (6) At the C:\> prompt, enter "a:setup" and press ENTER. Then follow the installation instructions displayed on the monitor.

**NOTE:** If re-installing the AXCESSORY Talk applications software, the monitor may occasionally display error messages such as "file not found" or "directory already exists." Ignore these messages and continue with the installation.

- (7) After the installation is complete, remove the last software disk. Then press the CTRL, ALT, and DEL keys all at the same time to restart the system.
- (8) *If desired*, disconnect the monitor and keyboard.

### C. AXCESSORY TALK PC HARD DISK DRIVE REPLACEMENT

**10.5** If necessary, the hard disk drive in the AXCESSORY Talk PC can be replaced with a new drive as outlined below. The instructions are divided into four sections. Follow the steps outlined in each section.

**10.6** To replace the hard disk drive, the following items are needed:

- Monitor and keyboard
- One set of AXCESSORY Talk applications software floppy disks (these disks are included with the system)
- One set of IBM OS/2 Warp (3.0) floppy disks (these disks can be purchased from most computer stores)

**NOTE:** Some of the cards and cables inside the PC may have been spot-glued into place to help prevent them from working loose during shipment. To remove one of these cards or cables from the PC (if necessary), first break the glue seal by gently wiggling the connector with a pair of pliers.

#### Replacing The Hard Disk Drive

**10.7** Remove the existing hard disk drive and replace it with the new hard disk drive, as described in the steps below.

- (1) Save the existing AXCESSORY Talk database on properly formatted floppy disks. (For details, refer to page 6-213 in PROGRAMMING.)

**NOTE:** To save time and disk space, you may first want to have voice mail users delete all messages that do not need to be saved.

- (2) Turn off the PC's AC power switch and unplug the AC power cord.
- (3) Remove the cover from the PC by removing the screws and sliding the cover off.
- (4) Disconnect the cables on the back of the existing hard disk drive and remove it from its slot in the disk drive mounting shelf.
- (5) *If applicable:* Remove the frame extension brackets and the plastic slide rails from both sides of the existing hard disk drive and attach them to the new hard disk drive.
- (6) Attach the cables that were disconnected in step 4 to the back of the new hard disk drive.
- (7) While guiding the cables, carefully slide the new hard disk drive into the previously vacated slot in the disk drive mounting shelf until it locks into

place. Check to make sure the cables are not strained in any way.

**NOTE:** The hard disk drive can be mounted in any orientation (except upside down) using four screws (6-32 UNC-2A) and either the bottom or side mounting holes. If the screws are too long or tightened too much, the drive can be damaged.

- (8) Replace the cover on the PC and re-install the screws.

#### Checking The PC Motherboard Setup

**10.8** Check to see that the AXCESSORY Talk PC Motherboard is "set up" to work properly with the new hard disk drive, as outlined in the following steps.

#### NOTICE

Depending on the specific BIOS used by the PC Motherboard, the layout and editing functions of the setup screen could vary somewhat. If so, make any necessary changes by following the actual instructions displayed on the monitor, rather than those outlined in the following steps.

- (1) *If not already installed,* attach a customer-provided monitor to the 15-pin Monitor Card connector on the back of the AXCESSORY Talk PC. Then, plug in the monitor's AC power cord and turn on the monitor's AC power switch.
- (2) *If not already installed,* attach a customer-provided keyboard to the keyboard connector on the back of the PC.
- (3) Plug in the PC's power cord and turn on the AC power switch. (The monitor displays the system memory check and then "Hit <DEL>, if you want to run SETUP".)
- (4) Press the DEL key. (The monitor displays the main menu of options, similar to the one shown below.)

```
STANDARD CMOS SETUP
ADVANCED CMOS SETUP
ADVANCED CHIPSET SETUP
AUTO CONFIGURATION WITH BIOS DEFAULTS
AUTO CONFIGURATION WITH POWER-ON DEFAULTS
CHANGE PASSWORD
HARD DISK UTILITY
WRITE TO CMOS AND EXIT
DO NOT WRITE TO CMOS AND EXIT
```

- (5) Use the up or down arrow keys to highlight the STANDARD CMOS SETUP option and press ENTER *twice*. (The monitor displays the Standard CMOS Setup screen, a portion of which is shown in the following example.)

```

Date (mm/date/year) : xx/xx/xx
Time (hour/min/sec) : xx:xx:xx
Hard Disk C: Type   : xx
Hard Disk D: Type   : Not Installed
Floppy Drive A:     : 1.44MB, 3.5"
Floppy Drive B:     : Not Installed
Primary Display     : Not Installed
Keyboard            : Not Installed
    
```

- (6) After setting the correct date and time, check to see that the Hard Disk C field is set to the proper type for the new drive that was just installed. *If it is not*, use the up or down arrow keys to highlight the Hard Disk C field, then use the PG UP or PG DN keys to change the setting to the proper type. Finally, enter the other hard drive data (cylinders, heads, etc.) as prompted.

**NOTE:** All Inter-Tel hard disk drives have a label with the necessary setup information on it.

- (7) Ensure that the other fields are set as shown in the box above. *If not*, use the up or down arrow keys to highlight the desired field, then use the PG UP or PG DN keys to change the setting.
- (8) Press the ESC key to exit. (The monitor again displays the main menu of options.)
- (9) All other CMOS setup options should be as they normally appear in the default configuration. *If necessary*, refer to the BIOS configuration sheets included with the system for setup specifics.
- (10) Use the down arrow key to highlight the WRITE TO CMOS AND EXIT option and press ENTER. (The monitor displays: "Write to CMOS and exit (Y/N)? N")
- (11) Enter "y" (for yes) and press ENTER. (The monitor again displays the system memory check.)
- (12) Refer to the next section to format the hard disk drive and install the operating system software.

### Formatting The Hard Disk Drive And Installing IBM OS/2 Warp

**10.9** After setting up the PC Motherboard, format the disk and install IBM OS/2 Warp (3.0) using the instructions included with the OS/2 software and while observing the items listed below. Be sure to format the hard

drive in the same orientation in which it will be operating (i.e., vertical or horizontal).

- Use the "Advanced Installations" procedure.
- Accept all default settings.
- Install all of the disks included with the software.

**CAUTION:** *Formatting the hard disk drive erases all information stored on the drive. DO NOT format the hard disk drive unless instructed to do so by authorized personnel.*

### Installing The Software

**10.10** After formatting the hard disk drive and installing IBM OS/2 Warp, re-install the AXXESSORY Talk applications software and restore the database, as outlined in the following steps.

- (1) Turn on the PC's AC power switch. (The monitor displays the initial power-up messages.)
- (2) When, during power-up, "OS/2" is displayed in the upper-left corner, press the ALT and F1 keys both at the same time. (The monitor displays the Recovery Choice screen.)
- (3) Enter "c" and press RETURN. (The monitor displays the C drive programming prompt "C:\>".)
- (4) Insert Applications Software Disk 1 of 5 in the PC's floppy disk drive.
- (5) At the C:\> prompt, enter "a:setup" and press ENTER. Then follow the installation instructions displayed on the monitor.
- (6) After the installation is complete, remove the last software disk. Then press the CTRL, ALT, and DEL keys all at the same time to restart the system.
- (7) *If desired*, disconnect the monitor and keyboard.
- (8) Restore the saved database from step 1 on page 3-86. (For details, see page 6-213 in PROGRAMMING.)
- (9) After the restore is complete and the system re-sets, check the database programming to ensure that the system database has been successfully restored.

## 11. SMDR/ERROR MESSAGE OUTPUT DEVICE INSTALLATION

**11.1** The output device(s) for the station message detail recording (SMDR) and error message recording features must meet the requirements and match the RS-232-C pinouts described in SPECIFICATIONS on page 2-28. The cables for the device(s) must not be longer than 50 feet (15 meters).

**11.2** To connect an RS-232-C output device to the CPU/MEM Card, CPU020/PCM-D Card, Options Card(s), or PC Data Port Modules:

- (1) Match the baud rates on the output device and the RS-232-C port to which it will be attached. Refer to page 2-30 for the proper baud rate settings.
- (2) Turn on the AC power to both the device and the system *before* connecting the interface cable to the circuit card or PC DPM. This prevents any electrical surges from being transmitted by the interface.
- (3) Carefully connect the interface cable from the device to the appropriate connector on the CPU/MEM Card, CPU020/PCM-D Card, Options Card, or PC DPM.
- (4) *If necessary:* Using standard electrical tape, tape two ferrite split beads around the interface cable just below where the cable connects to the circuit card or PC DPM. (See Figure 3-4 on page 3-12 for an example of ferrite bead installation).

**NOTE:** Ferrite beads may be necessary to help reduce electromagnetic interference (EMI) and radio frequency interference (RFI). The part number for a single split bead is 808.1195.

- (5) To set the parameters for the SMDR and error message outputs, refer to PROGRAMMING.

## 12. EXTERNAL MUSIC SOURCE INSTALLATION

**12.1** If desired, a single external music source may be connected to the system for background music and music-on-hold. The music jack on the CPU/MEM or CPU020/PCM-D Card is the input for the optional external music source (radio, tape player, etc.). For the music-on-hold feature, music, silence, or tick-tones can be assigned on a trunk group-by-trunk group basis. For more information, see SPECIFICATIONS, page 2-10.

**NOTE:** In some circumstances, there may be broadcast restrictions associated with the music. Check with the music's original distributor and/or the radio station for copyright and broadcast restrictions concerning background music and music-on-hold.

**12.2** If using a radio as a music source, place it 5 to 10 feet away from the KSU to avoid RFI generated by the KSU. If the radio is placed more than 10 feet away from the KSU, use twisted-pair cable. For better reception, a radio with an external antenna is recommended.

**12.3** To install the external music source:

- (1) Attach a 1/8-inch, two-conductor, mini-phone plug to one end of a 5- to 10-foot (1.5- to 3.0-meter) length of shielded speaker cable (or twisted-pair cable) to run from the external music source to the CPU/MEM or CPU020/PCM-D Card.
- (2) **EITHER**, connect the other end of the cable to the speaker output terminals of the music source.

**OR**, if the music source has an earphone jack, attach the necessary connector to the other end of the cable, and plug it into the earphone jack on the music source.

**NOTE:** If the earphone jack is "padded" so that the optimal volume level cannot be reached, the *EITHER* procedure (above) may be more effective.

- (3) Plug in the AC power cord for the music source. *DO NOT* use the outlet for the KSU.
- (4) Turn on the AC power to the music source.
- (5) Insert the 1/8-inch mini-phone plug into the jack labeled MUSIC on the edge of the CPU/MEM or CPU020/PCM-D Card (see Figure 3-26 on page 3-44).
- (6) From a keyset:

**EITHER**, select a trunk and dial the telephone number of one of the other trunks to call back into the system. Put the call on hold to hear the music.

**OR**, place an intercom call to another station. Put the call on hold to hear the music.

- (7) While listening to music-on-hold, adjust the volume on the music source to an acceptable level.

### 13. EXTERNAL PAGING EQUIPMENT INSTALLATION

13.1 Optional external paging equipment can be connected to an available LSC circuit or to the speaker wires on a keyset. In addition, the new CPU020/PCM-D Card has its own dedicated external paging port (see page 2-12 for more information).

**NOTE:** When connecting external paging equipment to an LSC circuit, use a paging amplifier that provides talk battery. When connecting external paging equipment to a keyset or to the CPU020/PCM-D Card, use a paging amplifier that *DOES NOT* provide talk battery.

#### CAUTION

Using a paging amplifier with talk battery on a keyset may damage the keyset or the card.

13.2 To install external paging equipment, follow these steps:

- (1) *If installing the paging equipment on an LSC circuit:*
  - a. Cut a length of shielded speaker cable to run from the paging amplifier to the MDF backboard.
  - b. At the MDF, terminate one end of the cable onto tip and ring of an available LSC circuit.

*If installing the paging equipment on a keyset speaker:*

- a. Cut a length of shielded speaker cable to run from the paging amplifier to the keyset.
- b. At the keyset, terminate one end of the cable onto the two wires leading from the keyset's internal speaker.

*If installing the paging equipment on the CPU020/PCM-D paging port:*

- a. Cut a length of shielded speaker cable to run from the paging amplifier to the CPU020/PCM-D Card.
- b. Attach an RCA-type phono plug to one end of the cable.
- c. Insert the RCA-type phono plug into the external paging jack on the CPU020/PCM-D Card.

- (2) Connect the other end of the cable to the amplifier high-impedance input according to the manufacturer's instructions.

- (3) Connect the paging speaker(s) to the amplifier using speaker cable.
- (4) Plug in the amplifier's AC power cord. *DO NOT* use the outlet for the KSU.
- (5) Set the amplifier volume control to the lowest setting and turn on the amplifier.
- (6) *If installing the paging equipment on an LSC circuit:*
  - a. Ensure that the LSC circuit is not toll restricted.
  - a. From a station location, access the LSC circuit and adjust the amplifier to the desired level while placing the page.

*If installing the paging equipment on a keyset speaker or the CPU020/PCM-D paging port:*

- a. From a station location, make a page by lifting the handset, pressing the PAGE key (or dialing 7 — the default Page feature code), and dialing a zone code that includes the external paging zone or dialing the extension number of the external paging port (default is 91000).
- b. Adjust the amplifier to the desired level while placing the page.

### 14. PREVENTATIVE MAINTENANCE

14.1 For optimal system performance, periodically conduct the following preventative maintenance routines:

- **Clean and Dust** — To ensure proper air circulation and reduce excess heat, clean and dust the ventilation slots on the KSU and the components on the circuit cards.
- **Check Component Connections** — Ensure that all components on the circuit cards are seated securely in their sockets and that no pins are bent.
- **Check Card Connections** — Ensure that all circuit cards are seated securely in their appropriate card slots.
- **Check Cable Connections** — Ensure that all system power and interface cables are properly connected.
- **Check System Voltages** — Ensure that all system power supply voltages are within tolerance, as outlined on pages 3-35 or 3-41.

## 15. POST-INSTALLATION CHECKLIST

15.1 To ensure that the system has been installed properly, review the installation outline on page 3-3. Then review the items in the following list as a final check.

- KSU, MDF, and station locations, and cable runs meet environmental requirements and cable lengths are within loop limits.
- Ferrite beads are installed on all station, trunk, and RS-232-C cables, if necessary.
- Bridging clips are installed where required on all MDF blocks.
- Gas discharge tubes with silicon avalanche suppressors are installed on the trunks for lightning protection. Also, if extra protection is desired, the cable between the telephone company RJ-type block(s) and the gas discharge tubes is at least 75 feet long.
- If off-premises extensions are used, OPX or customer-provided circuits, and OPX repeaters (if needed), are connected at the MDF.
- The KSU is attached to an approved earth ground.
- The system power supply is plugged into an isolated, dedicated AC outlet, and no other equipment has been plugged into the same outlet. An extension cord was *not* used. A voltage surge/spike protector is installed to reduce the effects of AC voltage surges and spikes.
- Power supply voltages are in tolerance.
- Amphenol-type connectors, modular jack connectors, and station instrument line cords are all connected securely. All keyset, DSS/BLF Unit, single-line, and playback device stations are working properly.
- All AC transformers are plugged into an AC outlet.
- All optional equipment is properly installed and working correctly (for example, printer has paper and ribbon, radio is tuned to a station, etc.).
- CO dial tone is present and calls can be placed and received using all trunks. (Refer to FEATURES and PROGRAMMING for configuring the system and for programming outgoing access, allowed answer, and ring in.)
- After programming the system, the database is saved. (Refer to the PROGRAMMING section for details.)
- A remote programming session can be established using the modem on the programming PC.

## AXXESS SYSTEM FEATURES

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## 1. INTRODUCTION

1.1 The Inter-Tel AXXESS System, in addition to its sleek, modular appearance and easy installation and programming, provides many user-friendly features. To describe the system features, this FEATURES section has been divided into the following sections:

- **Access to the Features:** This section contains a list of the feature codes and their definitions.
- **System Organization:** This section describes possible Administrator assignments, attendant arrangements, and hunt groups (including UCD and ACD hunt groups).
- **Trunk Features:** This section explains the trunk functions and programmable features, including: dual-tone multi-frequency (DTMF) or dial-pulse signaling; types of trunks (loop start, T1, T1/E&M, DID); Caller ID, DNIS, and ANI; trunk groups; outgoing access, allowed-answer, and ring-in assignments; call routing tables; day and night modes of operation; automatic route selection (ARS); trunk and toll restriction; area/office code number plans; emergency calls; and direct inward system access (DISA).
- **Station Instruments:** This section describes the station instruments of the AXXESS System. Available station instruments include Executive, Standard, and Basic keysets, single-line sets, and Direct Station Selection/Busy Lamp Field (DSS/BLF) Units.
- **Intercom, Outside, and General Call Processing Features:** Several sections explain the use of the station features that are available to all station users, including intercom call features, outside call features, and general call processing features.
- **Attendant Features:** This section explains the special attendant-only features and the use of the DSS/BLF Unit.
- **Administrator Features:** This section explains the special Administrator-only features.
- **Record Keeping and Maintenance Features:** For record keeping purposes, the AXXESS System offers station message detail recording (SMDR). A system error reporting feature provides self-diagnostic information to make the system easier to service.

## 2. ACCESS TO THE FEATURES

### A. FEATURE CODES

2.1 Each of the station features is assigned a feature code. Using the station's keypad, these codes are entered to select trunks, process calls, and use special features. Complete explanations of the features and instructions for using them begin on the next page.

2.2 The codes shown on the following pages are the values that are assigned when the system is in the default state. If desired, they can be changed in database programming to any one- to five-digit value.

#### CAUTION

Changing a feature code may affect the accessibility of other feature codes. See PROGRAMMING, page 6-77, for details.

### B. FEATURE KEYS

2.3 Keysets have feature keys that allow one-key dialing of feature codes. Information is programmed in the database to determine the arrangement of the feature keys and their default values. If desired, some of the keyset feature keys can be designated as user-programmable keys.

### C. SPCL KEY AND HOOKFLASH

2.4 In some instances, feature codes are entered immediately after lifting the handset or while on hook. Other times, the user must signal the system before entering the feature code. Keyset users signal the system by pressing the SPCL key. Single-line DTMF set users perform a hookflash (press and release the hookswitch quickly). If the user does not enter a code or begin dialing before the Dial Initiation timer expires, the system sends reorder tones.

**D. TRUNK ACCESS CODES**

2.5 These feature codes are used for selecting trunks when placing outgoing calls.

| <u>FEATURE NAME</u>             | <u>CODE</u>              | <u>DEFINITION</u>                                                                                                                                                                                 |
|---------------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Automatic Route Selection (ARS) | 9200                     | Allows the system to select the desired route for placing a call, as programmed in the database. <i>This feature must be enabled in Premium Feature Selection. See page 6-220 in PROGRAMMING.</i> |
| Trunk Group Access 1-103        | 9201-9299<br>93000-93003 | Selects an available trunk from a programmed group of trunks for placing an outside call.                                                                                                         |
| Emergency Call                  | 911                      | Entering this feature code selects an outgoing trunk and automatically dials the programmed emergency number (defaults to Trunk Group 1 and 911).                                                 |
| Outgoing Call                   | 8                        | Selects an outgoing trunk according to the programmed outgoing access mode for that station. See PROGRAMMING, page 6-33. (Keysets use the OUTGOING key or a Call key.)                            |

**E. STATION FEATURE CODES**

2.6 The following pages list the general feature codes. When a default feature key can be used in place of the feature code, it is indicated at the end of the explanation. Refer to page 4-44 for a listing of the default keyset feature keys.

| <u>FEATURE NAME</u>                | <u>CODE</u> | <u>DEFINITION</u>                                                                                                                                                                                                                                                                    |
|------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Account Code — All Calls Following | 391         | Allows the station user to enter a forced or optional account code that will apply to all calls following the entry of this feature code and will appear in the SMDR. To disable the All Calls Following feature, the feature code is entered again without an account code.         |
| Account Code — Optional            | 390         | Allows the station user to enter an optional account code for SMDR reports during an outside call.                                                                                                                                                                                   |
| ACD Agent Login                    | 326         | These feature codes allow an ACD hunt group member (agent) to log into and out of the ACD hunt group(s). The agent will only receive calls through the ACD hunt group(s) while logged in.                                                                                            |
| ACD Agent Logout                   | 327         |                                                                                                                                                                                                                                                                                      |
| ACD Agent Login/Logout Toggle      | 328         |                                                                                                                                                                                                                                                                                      |
| ACD Agent Wrap-Up Terminate        | 329         | When an ACD agent completes a call, no other ACD hunt group call will ring at the station until the ACD Wrap-Up Timer expires or the agent enters this feature code to terminate the wrap-up session.                                                                                |
| Answer (Ringing Call)              | 351         | Answers the call that has been ringing or holding the longest at that station. Refer to page 4-26 for the priority list. (Keysets use the ANSWER key.)                                                                                                                               |
| Automatic Trunk (CO) Access On/Off | 360         | <i>(Keysets Only)</i> Allows the keyset user to determine how ringing outside calls will be answered: simply by lifting the handset or pressing SPKR (automatic answer), or by lifting the handset or pressing SPKR and pressing a Call key, individual trunk key or the ANSWER key. |
| Automatic Intercom Access On/Off   | 361         | <i>(Keysets Only)</i> Allows the keyset user to determine how ringing intercom calls will be answered: simply by lifting the handset (automatic answer), or by lifting the handset and pressing the IC key (or a Call key, if there is no IC key).                                   |

| <u>FEATURE NAME</u>              | <u>CODE</u> | <u>DEFINITION</u>                                                                                                                                                                                                                                                |
|----------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Automatic Trunk Answer           | 350         | Using this feature code, station users with allowed answer can pick up trunks that are ringing into the system, but that are not actually ringing at their stations. This feature does not pick up transferred calls or recalls that are ringing at the station. |
| Background Music On/Off          | 313         | <i>(Keysets Only)</i> Turns on and off background music heard through the keyset speaker.                                                                                                                                                                        |
| Call Forward — All Calls         | 355         | Immediately forwards all calls to another station or to an outside telephone number. (Keysets use the FWD key.)                                                                                                                                                  |
| Call Forward — If Busy           | 357         | Immediately forwards all calls to another station or to an outside telephone number when the station is in use.                                                                                                                                                  |
| Call Forward — If No Answer      | 356         | Forwards all calls to another station or to an outside telephone number if not answered within a predetermined time.                                                                                                                                             |
| Call Forward — If No Answer/Busy | 358         | Forwards all calls to another station or to an outside telephone number if not answered within a predetermined amount of time, or immediately if the station is in use.                                                                                          |
| CO Hookflash                     | 330         | Sends a timed hookflash over the trunk while on an outside call.                                                                                                                                                                                                 |
| Conference                       | 5           | Connects from three to four parties in a conference. A conference consists of any combination of inside and outside parties. (Keysets use the CNF key.)                                                                                                          |
| Data                             | 340         | <i>(Keysets Only)</i> Allows operation of a data device attached to a keyset that has a PC Data Port Module and a Modem Data Port Module (also requires a modem-equipped data device).                                                                           |
| Default Station                  | 394         | This single feature code cancels do-not-disturb, manual call forwarding, background music, ring intercom always, and queue requests; restores handsfree mode, pages, hunt group calls, and system forwarding; and returns keyset volumes to default values.      |
| Directory                        | 307         | <i>(Keysets Only)</i> Allows display keyset users to search for extension numbers or system speed-dial numbers. The number can then be dialed, if desired. <i>This feature must be enabled in Premium Feature Selection. See page 6-220 in PROGRAMMING.</i>      |
| Display Time/Date                | 300         | <i>(Keysets Only)</i> Temporarily displays the system date and time, user name, and extension number during a call or when other displays are shown.                                                                                                             |
| Do-Not-Disturb                   | 370         | The Do-Not-Disturb feature code halts all intercom calls, transferred calls, and pages to the station. The Cancel code returns the station to normal operation. The on/off code can be used to turn do-not-disturb on or off. (Keysets use the DND key.)         |
| Do-Not-Disturb Cancel            | 371         |                                                                                                                                                                                                                                                                  |
| Do-Not-Disturb On/Off            | 372         |                                                                                                                                                                                                                                                                  |
| Do-Not-Disturb Override          | 373         | <i>(Keysets Only)</i> If enabled in the database, allows the keyset user to break through another station's do-not-disturb mode when placing an intercom call.                                                                                                   |

| <u>FEATURE NAME</u>          | <u>CODE</u> | <u>DEFINITION</u>                                                                                                                                                                                                                                                                                                                           |
|------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Enhanced Speakerphone Enable | 310         | <i>(Keysets Only)</i> When entered at an keyset station, this feature code enables the enhanced speakerphone as described on page 4–38. (Keysets can also use the SPCL + SPKR keys.)                                                                                                                                                        |
| Feature Key Default          | 395         | <i>(Keysets Only)</i> Keysets have user-programmable feature keys that can be set to enter feature codes. This code returns the user-programmable keys to the database default values.                                                                                                                                                      |
| Handsfree On/Off             | 319         | <i>(Keysets Only)</i> Disables/enables the keyset's handsfree intercom answering. Incoming intercom calls ring as private calls if handsfree answering is disabled.                                                                                                                                                                         |
| Headset Enable               | 315         | <i>(Keysets Only)</i> The enable code signals the system that a headset has been connected to the keyset. The disable code returns the keyset to normal operation. The on/off feature code can be used to toggle the feature on or off.                                                                                                     |
| Headset Disable              | 316         |                                                                                                                                                                                                                                                                                                                                             |
| Headset On/Off               | 317         |                                                                                                                                                                                                                                                                                                                                             |
| Hold — Individual            | 336         | Places a call on hold so that it can be picked up directly at that station or through a reverse transfer from any other station. (Keysets use the HOLD key.)                                                                                                                                                                                |
| Hold — System                | 335         | Places an outside call on system hold. It can be picked up directly at any keyset that has an individual trunk key and has allowed-answer and/or outgoing access for that trunk, or by the station that placed it on hold. (If used on conference or intercom calls, the system places the call on individual hold.)                        |
| Hunt Group Remove            | 322         | Removes the station from its assigned hunt group(s) or places it in again. Does not affect non-hunt group calls. The remove/replace feature code can be used to toggle the feature.                                                                                                                                                         |
| Hunt Group Replace           | 323         |                                                                                                                                                                                                                                                                                                                                             |
| Hunt Group Remove/Replace    | 324         |                                                                                                                                                                                                                                                                                                                                             |
| Message                      | 365         | This feature code is used for leaving and retrieving a message waiting indication at a called station or the called station's message center. Depending on how the message was left, the called station user either retrieves the message from his/her message center or from the station that left the message. (Keysets use the MSG key.) |
| Message — Cancel             | 366         | Allows the station user to cancel a message waiting indication that he or she left at another station.                                                                                                                                                                                                                                      |
| Message — Cancel Current     | 368         | Cancels a message waiting indication that is waiting at the station without requiring the user to respond to it. (Keysets can use the asterisk [*] key while viewing the message.)                                                                                                                                                          |
| Message — Silent             | 367         | Leaves a message waiting indication at a station without first placing an intercom call. (This is the code that should be used by analog voice mail units connected to the AXXESS System.)                                                                                                                                                  |
| Mute On/Off                  | 314         | <i>(Keysets Only)</i> Turns the microphone on or off during a call. If muted, the keyset user can hear the other party, but the party cannot hear the keyset user. (Keysets use the MUTE key.)                                                                                                                                              |
| Page                         | 7           | When followed by a paging zone code (0–9), it allows announcements to be made through keyset speakers.                                                                                                                                                                                                                                      |

| <u>FEATURE NAME</u>             | <u>CODE</u> | <u>DEFINITION</u>                                                                                                                                                                                                                                          |
|---------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Page On/Off                     | 325         | <i>(Keysets Only)</i> Halts pages through the keyset speaker or allows them to be received again.                                                                                                                                                          |
| Program Baud Rate               | 393         | <i>(Executive and Standard Keysets Only)</i> This allow a keyset user to change the baud rate of an attached PCDDPM's serial port.                                                                                                                         |
| Program Keys                    | 397         | <i>(Keysets Only)</i> User-programmable feature keys and station speed-dial keys can be programmed using this feature code.                                                                                                                                |
| Queue Request                   | 6           | Requests (or cancels) an automatic callback when a busy trunk or station becomes available.                                                                                                                                                                |
| Redial                          | 380         | Redials the last outside telephone number dialed or saved at the station (up to 32 digits). Also used to save numbers at keysets programmed for last number saved. (Keysets use the REDIAL key.)                                                           |
| Reminder Message                | 305         | <i>(Keysets Only)</i> The keyset user can set reminder messages that signal the station at specific times. Or, the user can cancel all reminder messages for the station.                                                                                  |
| Reminder Message Cancel         | 306         |                                                                                                                                                                                                                                                            |
| Reverse Transfer (Call Pick-Up) | 4           | Picks up a call ringing or holding at a station or hunt group.                                                                                                                                                                                             |
| Review Keys                     | 396         | <i>(Keysets Only)</i> User-programmable feature keys and station speed-dial keys can be viewed using this feature code.                                                                                                                                    |
| Ring Intercom Always On/Off     | 377         | Enables/disables the feature that allows the station to always place private (non-handsfree) intercom calls.                                                                                                                                               |
| Ring Tone Selection             | 398         | <i>(Keysets Only)</i> Selects the type of ringing alert tone that will be heard from the keyset.                                                                                                                                                           |
| Station Monitoring              | 321         | <i>(Hunt Group Supervisors Only)</i> Allows a designated hunt group supervisor to monitor a call of anyone in the associated hunt group.                                                                                                                   |
| Station Speed Dial              | 382         | Dials/programs one of the 10 station speed-dial numbers when followed by a location code (0-9).                                                                                                                                                            |
| Station Speed Dial Programming  | 383         |                                                                                                                                                                                                                                                            |
| Switch Keymap                   | 399         | <i>(Keyset Only)</i> This allows a keyset user to switch between standard and alternate keymaps.                                                                                                                                                           |
| System Forward Enable           | 352         | Enables/disables the database-programmed System Forwarding feature for this station. The on/off feature code can be used to toggle the feature on or off. <i>This feature must be enabled in Premium Feature Selection. See page 6-220 in PROGRAMMING.</i> |
| System Forward Disable          | 353         |                                                                                                                                                                                                                                                            |
| System Forward On/Off           | 354         |                                                                                                                                                                                                                                                            |
| System Speed Dial               | 381         | Dials one of the 1000 system speed-dial telephone numbers when followed by a location code (000-999). Also used for reviewing system speed-dial numbers. (Keysets use SYS SPD key.)                                                                        |
| Transfer to Hold                | 346         | Transfers a call to another station and places it on individual hold so that it does not ring or send call waiting signals until it recalls.                                                                                                               |
| Transfer to Ring                | 345         | Transfers a call to another station or to an outside telephone number. (Keysets use TFR key.)                                                                                                                                                              |

**F. ADMINISTRATOR FEATURE CODES**

2.7 The following feature codes may be used only at designated Administrator stations. Non-Administrator station users hear reorder tones if they attempt to use these feature codes.

| <u>FEATURE NAME</u>       | <u>CODE</u> | <u>DEFINITION</u>                                                                                                                                                                                          |
|---------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Clear System Alarm        | 9850        | Cancels a system alarm display.                                                                                                                                                                            |
| Diagnostics Mode          | 9900        | Enables or disables system diagnostics mode so that the database can be frozen and/or unfrozen, message/reset logs can be printed, and devices seized using the diagnostic feature codes.                  |
| System History — Freeze   | 9993*       | The system fault history can be halted (frozen) or re-enabled using these feature codes, when diagnostics mode is enabled. The fault history is used by service personnel when troubleshooting the system. |
| System History — Unfreeze | 9998*       |                                                                                                                                                                                                            |
| Night Ring On/Off         | 9860        | Places system in night mode or cancels night mode. While in night mode, the night toll and trunk restriction lists are used and the night transfer relays on the OPC are activated.                        |
| Print Message Log         | 9975*       | Sends a report to a designated printer or file that lists system error messages, to be used for troubleshooting purposes.                                                                                  |
| Print Reset Log           | 9972*       | Sends a report to a designated printer or file that shows system reset history information, to be used for troubleshooting purposes.                                                                       |
| Program Station Data      | 9802        | Can be used for programming station user name and serving attendant for any station in the system.                                                                                                         |
| Program System Speed Dial | 9801        | Programs system-wide speed-dial numbers when followed by location codes (000-999).                                                                                                                         |
| Seize Device              | 9973*       | Used during troubleshooting to seize a specific trunk or station by indicating the board number, port number, and device number.                                                                           |
| Set Time/Date             | 9800        | Programs system time and date.                                                                                                                                                                             |

\*The Diagnostics Mode feature code (9900) must be entered at the Administrator's station to enable system diagnostic mode before these feature codes can be used.

**G. EXTENSION NUMBERS**

2.8 Extension numbers are recognized as feature codes by the system. When the system is in the default state, the extension numbers are assigned as follows:

|                             |                                                                                                    |
|-----------------------------|----------------------------------------------------------------------------------------------------|
| Attendant                   | 0                                                                                                  |
| Stations                    | 1000-1255                                                                                          |
| Hunt groups 1-75            | 2000-2074                                                                                          |
| AXXESSORY Talk Applications | 2500-2649                                                                                          |
| Page Zones                  | 960-969 (Used only for programming a feature key to select a page zone.)                           |
| External Page Port          | 91000                                                                                              |
| Individual Trunks           | 94001-95664 (Determined by card slot and device number. Used for programming and troubleshooting.) |

### 3. ADMINISTRATOR STATIONS

3.1 Any keyset station (attendant or non-attendant) can be assigned as a system Administrator. Administrator stations provide the following services by using the feature codes shown on page 4-9:

- Receive and clear displayed system alarms
- Place the entire system in night mode or day mode
- Program specific station information
- Program system speed-dial numbers
- Set the system time of day, date, and day of week
- Freeze and unfreeze system database history
- Print error logs
- Seize specific devices for troubleshooting purposes

3.2 Administrator features are described in detail beginning on page 4-104.

3.3 Any keyset can be designated as an Administrator station during database programming (see page 6-37 in PROGRAMMING). All Administrator stations should be equipped with display keysets to show system alarms and make programming easier.

### 4. ATTENDANT STATIONS

**NOTE:** For information on *automated* attendants, refer to page 5-4 in AXXESSORY Talk FEATURES.

4.1 Attendant stations can be called by dialing 0 at the stations they serve. Usually, they are also programmed to provide these services:

- Central operators for incoming calls
- Message centers
- Recall stations for unanswered calls

4.2 One attendant is designated as the primary attendant who can receive unsupervised outside call recalls, hunt group recalls, and calls that cannot be matched to patterns in call routing tables. (See page 6-87 in PROGRAMMING for primary attendant programming.)

4.3 Any station can be designated as an attendant station during database programming (see page 6-37 in PROGRAMMING). Attendant stations should be equipped with display keysets to show recall sources.

4.4 If using an Executive or Standard keyset, an attendant's station can also be used with a PC Data Port Module (PCDPM) and single or tandem DSS/BLF Units for one-key intercom dialing of extension numbers and for constant station/hunt group status indications. (Non-attendant keysets can also be equipped with DSS/BLF Units.) Up to 10 DSS/BLF units can be equipped per system; tandem units count as two DSS/BLF units

4.5 A hunt group can be assigned to serve as an attendant. However, the individual stations in the hunt group are not required to be programmed as attendant stations, and the database will not reflect that the individual stations serve as an attendant for any other stations. (This feature is especially useful when a voice mail hunt group is assigned as an attendant.)

#### One-Attendant or Multiple-Attendant Operation

4.6 One attendant (designated as the primary attendant) provides all of the attendant services listed in paragraphs 4.1 and 4.2. All trunks (except private trunks) are usually programmed to ring in at this attendant's station.

4.7 Any or all stations can be assigned as attendants. (For example, there may be one or more attendants to serve each department in a business.) Trunk groups are programmed to ring at any or all attendant stations.

4.8 Attendants can be arranged in a hierarchy. That is, one attendant may be the attendant for another. In this case, the "serving" attendant is reached by dialing 0 at the "served" attendant.

#### Attendant Recall

4.9 When a call is placed on hold or is transferred from one station to another, the Hold and Transfer timers limit the amount of time the call may remain unattended. After that time, the call recalls the station that transferred it or placed it on hold and the Recall timer is started. If the call remains unanswered at the station until the Recall timer expires, it recalls the station's attendant and the Abandoned Call timer starts. (If there is no attendant, the call continues to recall at the station that transferred it or placed it on hold.) If the attendant station is busy, the call camps on and the display shows the source of the recall. If the call is not answered before the Abandoned Call timer expires, the system disconnects the call.

4.10 If an attendant station transfers a call and it is not answered before the Attendant Transfer timer expires, it will recall the attendant station.

**4.11** If a station user transfers or forwards an outside call to an outside telephone number, it becomes an "unsupervised" CO-to-CO call because no inside parties are involved. The CO-to-CO call is limited by the Unsupervised CO timer. If unanswered when the timer expires, the call recalls the primary attendant station and causes the CNF key to flash. (Display keysets show UNSUPERVISED CO RECALL.) This serves two purposes:

- It allows the attendant to monitor the length of CO-to-CO calls. When a CO-to-CO call recalls, the attendant can disconnect the call or allow it to continue.
- If the callers hang up before the attendant receives the recall, the system may not have disconnected the trunks because a disconnect was not received from the central office. The attendant must disconnect the call.

**4.12** When a recall rings at the attendant's station, a call or individual trunk key flashes at the medium rate.

**4.13** If the attendant has calls forwarded, recalls from stations follow internal call forward requests. Recalls do not forward to outside telephone numbers, but recall the attendant's station until they are answered or the Abandoned Call timer expires. Placing the attendant's station in do-not-disturb does not block recalls or direct ring-in calls.

**4.14** TO ANSWER A HOLD OR TRANSFER RECALL AT AN ATTENDANT STATION:

When you see a hold or transfer recall display (XXXX RCL FROM YYYY) and hear a recall ringing:

- (1) *If desired*, lift the handset.
- (2) **Outside call recall:** Press the medium-flashing Call key or individual trunk key, or press the ANSWER key. (If more than one trunk is recalling, pressing the ANSWER key selects the outside call indicated on the display.)

**Intercom call recall:** Press the IC key or the ANSWER menu key. (If you are busy when the intercom call recalls, it will camp on. The IC key flashes at the medium rate, but you do not hear recall ring signals.)

**Conference call recall:** Press the flashing CNF key to connect with the conference call. The

CNF key flashes slowly and the display shows CONFERENCE IN PROGRESS. *If the parties are still talking*, press the CNF key again and hang up to return the parties to their conversation. The CNF key flutters. You can enter the conference at any time by pressing the fluttering CNF key. If the Hold timer expires, the conference recalls your station again. *If the parties have hung up*, hang up to disconnect the call.

## 5. EXTENSION LISTS

**5.1** An extension list is a group of intercom numbers or trunk numbers. These lists are used when programming features that use common devices. For example, a group of keyset stations could be assigned to the same paging zone, have ring-in for the same trunk groups, and share common toll restrictions. With an extension list, the programmer would have to enter only one extension list number instead of repeatedly entering all of the station numbers for each list.

**5.2** There are four possible types of extension lists:

- **Trunk Group:** A trunk group extension list includes only trunk group access numbers.
- **Stations:** A station extension list can include keyset and/or single-line intercom numbers.
- **Keyset:** This type of extension list includes only keyset intercom numbers.
- **Single-Line:** This type of extension list includes only single-line set intercom numbers.

**5.3** Station extension lists can be included in hunt groups. For example, a hunt group can be programmed to send calls first to an individual station, then to an extension list (where it will ring all stations on the list), and then to another individual station or an extension list.

**5.4** The number of extension lists allowed on the system is determined by the number of entries in the lists. There can be a combined total of up to 2500 entries (station or trunk extensions) in all of the extension lists.

**NOTE:** When using an extension list for ring-in or hunt groups, do not exceed 30 stations per list. The system can send ring signal to up to 30 stations.

## 6. HUNT GROUPS

6.1 The Hunt Group feature permits calls to be placed to a group of stations and to be automatically transferred to an available station within the group. Up to 75 hunt groups can be programmed in the database. Hunt group lists can contain individual stations and/or extension lists.

6.2 The order in which hunt group stations receive incoming calls is determined by a list stored in the database. A station or extension list can appear in a single hunt group more than once and it can appear in multiple hunt group lists, if desired.

6.3 Hunt groups have a special extension number called a pilot number (defaults to 2000–2074). Individual stations within the hunt group can be called using their assigned extension numbers.

6.4 Two other Premium Feature hunt group types are also available: UCD Hunt Groups and ACD Hunt Groups. For UCD information, refer to page 4–15. For ACD, refer to page 4–18.

### A. HUNT GROUP CALL DISTRIBUTION

6.5 When an intercom or outside call is transferred or rings in to the pilot number, it circulates through the hunt group in linear or distributed order until answered, as described below.

- **Linear order:** Incoming calls always start circulating by ringing at the first station (or extension list) on the hunt group list that is stored in the database.
- **Distributed order:** To even out the call load, distributed order shifts the starting point of each call. When a station user receives a call, the next station or extension list in the hunt group receives the next incoming call. If the receiving station is busy (or all stations in the extension list are busy), or if there is no answer before the No Answer Advance timer expires, the call goes to the next station or extension list on the hunt group list.

**NOTE:** See page 4–18 for information on the additional distribution types available in ACD hunt groups.

6.6 If an extension list is included in a hunt group, a call will ring all stations on the extension list when it reaches that point in the hunt group list. Therefore, to create an “all ring” type of hunt group, you can program the hunt group as either linear or distributed and then assign an extension list at the only hunt group member.

### B. HUNT GROUP CALL PROCESSING

6.7 Hunt group stations receive the following indications when a call is ringing in:

- If an outside call is ringing, the station designated to receive the call first shows ring flash on the associated individual trunk key (if it has one) and a Call key until the call is answered or the No Answer Advance timer expires and the call moves to the next station.
- If all stations on the hunt group list (or any stations in an extension list in the hunt group) are unavailable (busy, in do-not-disturb, or with hunt group remove enabled), an intercom or outside call will camp on and the stations will receive the following indications:
  - *Busy stations* receive hunt group camp-on tones (if enabled) and display. If there is an individual trunk key associated with the trunk, it shows ring flash. (There is a programmable station flag that can disable the camp on tones for hunt group calls. See page 6–30 in PROGRAMMING.)
  - *Stations with Hunt Group Remove enabled* receive camp-on tones and display. If there is an individual trunk key associated with the trunk, it shows ring flash.
  - *Stations with Do-Not-Disturb enabled* receive no camp on indications, but if there is an individual trunk key associated with the trunk, it shows ring flash.
  - *The first station that becomes available* receives ringing and a flashing trunk and/or Call key. The camp-on and ring flash indications end at the other stations. (The associated trunk key will be steadily lit at those stations to show that the trunk is busy.)
- 6.8 Stations within the hunt group can receive direct trunk ring-in, intercom, forwarded, or transferred calls to their individual extension numbers without affecting other stations in the hunt group.
- 6.9 Trunk groups can be programmed to ring in directly to either a pilot number or extension number(s). If assigned to a pilot number, ring in for the trunk group cannot be assigned to any other extension number(s).
- 6.10 If an outside call rings in to a pilot number that does not have hunt group station assignments, the call is sent to the primary attendant. If a station user attempts to transfer a call to an invalid pilot number, the call is placed on individual hold and the station user hears reorder tones. A station user attempting to place an intercom call to an invalid pilot number will hear reorder tones

and the display will show NO MEMBERS IN HUNT GROUP.

6.11 Hunt group programming affects the Call Forwarding feature in the following ways:

- If a station in a hunt group is in the unconditional call forward mode to another station, calls to the hunt group will follow the station forwarding request. A forwarded hunt group call will ring at the forwarding destination until the No Answer Advance timer expires. If it is not answered before the timer expires, the call will return to the hunt group and continue circulating through the hunt group list.
- Stations with their calls conditionally forwarded (no answer, busy, or unavailable) to another station will receive the hunt group call until the Forward No Answer timer expires. At this point, if the hunt group's No Answer Advance timer has not expired, then the call will be forwarded. Once the No Answer Advance timer expires, the call will circulate to the next station in the hunt group list.
- Hunt group calls will not forward to voice mail, outside numbers, or system forwarding paths.
- If an announcement or overflow station has call forward enabled, hunt group calls will follow the forward and the forwarding destination station will act as the announcement or overflow station.
- Stations can forward calls to a hunt group's pilot number.

6.12 Hunt groups can be assigned as message centers and/or alternate message sources for individual stations.

### C. HUNT GROUP TIMERS

6.13 Several timers are programmed on a hunt group-by-hunt group basis:

- **No Answer Advance:** This timer determines the amount of time a call will ring at a hunt group station or extension list (unanswered) before advancing to the next station or extension list on the hunt group list. The default value is 18 seconds. It can be programmed for 1–255 seconds.
- **Announcement:** (*UCD Hunt Groups Only*) This determines the amount of time a call will remain unanswered before it is sent to the hunt group's announcement station. The default value is 18 seconds. It can be programmed for 1–255 seconds.
- **Overflow:** (*UCD Hunt Groups Only*) This determines the amount of time a call will circulate through the hunt group (unanswered) before being

sent to the hunt group's overflow station. This timer is started when the Announcement timer expires or, if there is no announcement station, when the call is received by the hunt group. It is restarted each time the call leaves the overflow station. The default value is 72 seconds. It can be programmed for 1–255 seconds.

- **Recall:** This determines the amount of time a call will circulate through the hunt group (unanswered) before being sent to the hunt group's recall destination station. This timer is started when the call is received by the hunt group. The default value is 180 seconds. It can be programmed for 1–65535 seconds.
- **ACD Wrap-Up Duration:** (*ACD Hunt Groups Only*) Each time an agent ends an ACD hunt group call, the ACD Wrap-Up Duration timer is started. Until that timer expires, the agent will not receive another call through any ACD hunt group. (However, the agent can receive other non-ACD hunt group calls, direct ring-in calls, and transfers.) The default value is 15 seconds. The range is 1–65535 seconds.
- **Average Connect Time Per Call:** (*UCD and ACD Hunt Groups Only*) An AXCESSORY Talk application announcement station's message can be programmed to include the caller's queue position and/or estimated wait time. The estimated wait time is based on the Average Connect Time Per Call multiplied by the number of calls ahead of the caller in the queue, divided by the number of available hunt group members (*avg. connect time per call x no. of waiting calls ÷ available members*). The default value for Average Connect Time Per Call is 60 seconds. The range is 1–10,000 seconds. (See page 4–16 for more information.)

### D. RECALL DESTINATION STATIONS

6.14 An incoming call to a hunt group immediately registers the Recall timer if there is a recall destination identified for that hunt group. If a call is not answered by a hunt group station before this timer expires, the call will exit the hunt group and begin ringing at the recall destination station. The call will remain at this destination until it is answered or the caller hangs up.

6.15 If there is no recall destination station, the call will remain in the hunt group until it is answered or the caller hangs up.

6.16 If the recall destination is an AXCESSORY Talk application and the AXCESS cannot communicate with the AXCESSORY Talk PC, the call will remain in the hunt group until it is answered or the caller hangs up.

## E. HUNT GROUP REMOVE/REPLACE AND DO-NOT-DISTURB

**6.17** Hunt group members can temporarily stop hunt group calls from ringing at their stations by entering the Hunt Group Remove feature code as described below. (If a station is assigned to more than one hunt group, this halts calls from all hunt groups. Hunt group assignments cannot be removed individually.) Do-not-disturb can also be used to halt hunt group and other calls to the station (see page 4-97 for details).

**NOTE:** This feature has no effect on ACD hunt groups. See page 4-18 for ACD login/logout information.

**6.18** When the Hunt Group Remove feature is enabled, the user will still receive the camp-on display and tone, and the individual trunk key flashes if one exists, for calls to the hunt group. (The station continues to receive calls placed to its extension number.) Hunt group overflow and announcement stations cannot block hunt group calls using this feature.

**6.19** If a keyset user has programmed a key for entering the Hunt Group Remove/Replace feature code, and

if that key has a lamp, the lamp will be lit whenever the station is removed from the hunt group.

**6.20** TO REMOVE THE STATION FROM ITS HUNT GROUP(S)  
OR REPLACE THE STATION IN ITS HUNT GROUP(S):

**Keyset:** While on or off hook, enter the Hunt Group Remove feature code (322) to halt hunt group calls or enter the Hunt Group Replace feature code (323) to return the station to its hunt group(s). Or use the Hunt Group On/Off feature code (324) to toggle the hunt group mode on or off. You hear a confirmation tone and the display shows ACCEPT (or DIVERT) HUNT GROUP CALLS. *If off hook, hang up.*

**Single-Line Set:** Lift the handset and enter the Hunt Group Remove feature code (322) to halt hunt group calls or enter the Hunt Group Replace feature code (323) to return the station to its hunt group(s). Or use the Hunt Group On/Off feature code (324) to toggle the hunt group mode on or off. You hear dial tone.

**F. UCD HUNT GROUPS**

**NOTE:** This feature must be enabled in Premium Feature Selection. See page 6-220 in PROGRAMMING.

**6.21** Uniform Call Distribution (UCD) hunt groups provide additional features to improve hunt group efficiency. The features added when UCD is enabled are as follows:

- Announcement and overflow stations pick up unanswered calls when the hunt group stations are busy.
- Hunt group priority ranking will place calls to one hunt group before another at stations that are members of more than one hunt group.
- Hunt group supervisors can monitor outside calls of any member of the hunt group.

**Announcement and Overflow Stations**

**6.22** Announcement and overflow stations are individual stations that receive unanswered calls when all of the hunt group stations are unavailable. (They are not usually included in the hunt group list.) Announcement and overflow stations can be separate stations or they can be the same station. Also, each of the hunt groups can have the same announcement and overflow stations or they can be assigned different stations.

**6.23 Announcement Stations:** When a call rings in or is transferred to a hunt group, the Announcement and Recall timers are started. The incoming call circulates through the hunt group until it is answered or the Announcement timer expires. When this timer expires, the unanswered call is picked up by the designated announcement station which is a playback device that answers the call and plays a message. Meanwhile, the call continues circulating through the hunt group (unless it was sent to an AXCESSORY Talk application and then transferred to a station). If it is answered by an available hunt group station while the announcement station is connected to the call, the call will leave the announcement station. Each direct ring-in call will transfer to the announcement station only once. If it remains unanswered when the Overflow timer expires, the call will be sent to the overflow station. Or, if there is no overflow station, the call will be sent to the recall destination station when the Recall timer expires.

**6.24 Overflow Stations:** The Overflow timer is started when the Announcement timer expires or, if there is no announcement station, when the call is received by the hunt group. If an incoming hunt group call is unanswered when the Overflow timer expires, the call is picked up by an overflow station. The overflow station is a playback device that answers the call and plays a message. Meanwhile, the call continues circulating

through the hunt group (unless it was sent to an AXCESSORY Talk application and then transferred to a station). If the call is answered by an available hunt group station while the overflow station is connected to the call, the call will leave the overflow station. The Overflow timer restarts each time the unanswered call leaves the overflow station. An unanswered call will return to the overflow station each time the Overflow timer expires, until the call is answered by a hunt group station or it is sent to the recall destination station.

**6.25** The following chart outlines the path that an incoming hunt group call will follow for all possible combinations of the announcement and overflow stations:

| ANN. STATION | OVERFLOW STATION | CALL PATH                                                                                                                                        |
|--------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| No           | No               | Call remains in hunt group.                                                                                                                      |
| Yes          | No               | Call goes to announcement station only once, after Announcement timer expires.                                                                   |
| No           | Yes              | Call goes to overflow station after each expiration of Overflow timer.                                                                           |
| Yes          | Yes              | Call goes to announcement station once (after Announcement timer expires) then goes to overflow station after each expiration of Overflow timer. |

**6.26** If an announcement or overflow station has call forward enabled, hunt group calls will follow the forward and the forwarding destination station will act as the announcement or overflow station.

**AXCESSORY Talk Applications As Announcement Or Overflow Stations**

**6.27** When an AXCESSORY Talk application is used as an announcement or overflow station, calls to the application automatically stop circulating through the hunt group if the caller selects a valid digit translation option (such as pressing a digit to select an extension from a Call Routing Announcement menu) and the call is transferred. This allows the application to send the call to other stations without the call being "pulled back" into the hunt group when a hunt group station answers the call. However, if the caller does not dial a valid digit translation option, the call will be pulled back if a hunt group member answers. Note that Standard and Basic keysets do not send DTMF tones on intercom calls and therefore cannot stop circulating through the hunt group by dialing a digit.

**6.28** An AXXESSORY Talk Call Routing Announcement application's message can be programmed to include the caller's queue position and/or estimated wait time. The queue position announcement tells the caller how many calls are ahead of his or her call. This includes calls being served and waiting calls. The estimated wait time is based on a programmed Average Connect Time Per Call multiplied by the number of calls ahead of the caller in the queue, divided by the number of available hunt group members (*avg. connect time per call x no. of waiting calls ÷ available members*). See pages 5-6, 6-81, 6-86, and 6-158 for details.

**6.29** If an AXXESSORY Talk application is used as an announcement or overflow station or as the recall destination, and the AXXESS is unable to communicate with the AXXESSORY Talk PC, outside calls will not be sent to the announcement or overflow application. They will continue to camp on to the hunt group.

#### UCD Hunt Group Priority List

**6.30** Some stations may be members of more than one UCD hunt group. For this reason, hunt groups are assigned a "priority level." The priority level determines which hunt group's calls should be received first when calls ring in or camp on to several hunt groups at once.

**6.31** UCD priority levels range from 0 (low) to 20 (high). If two hunt groups with the same priority level receive calls at once, the hunt group call that is handled first is selected randomly. (Non-UCD hunt groups are treated as if they have a priority level of 0.)

#### UCD Hunt Group Supervisors And Station Monitoring

**6.32** The Station Monitor feature allows hunt group supervisors to monitor the outside calls of anyone in a specified hunt group. It can be useful in training or in evaluating the performance of hunt group members.

**NOTE:** As a courtesy, hunt group members should be notified in advance that their calls may be monitored. In addition, a programmable option can be enabled that sends a tone to the station being monitored whenever the hunt group supervisor joins an ongoing call. See page 6-91 in PROGRAMING. (Note that call monitoring may be illegal in some locations. It is up to the end user to ensure that use of this feature is in compliance with local laws.)

**6.33** In database programming, each hunt group can have one or more keysets assigned as the hunt group supervisor(s). (An extension list can be assigned as the supervisor to provide multiple supervisors.) The supervisor is usually not a member of the hunt group. If the supervisor is a member of the hunt group, the Hunt

Group Remove/Replace feature can be used at any time without affecting the Station Monitor ability. If desired, one keyset can be assigned as the supervisor for more than one hunt group.

**6.34** To monitor a hunt group member's call, the supervisor enters the Station Call Monitoring feature code and dials the desired extension number. The supervisor is then connected to the ongoing call and can hear both parties, but cannot be heard by either one. If the monitored call is terminated, transferred, or placed on hold by the hunt group member, the monitor function is terminated.

**6.35** In the associated hunt group, the supervisor may monitor any active intercom or CO-to-intercom call (both hunting and non-hunting), including incoming, outgoing, and DISA-to-intercom calls. Conference calls and calls that do not involve hunt group members cannot be monitored.

**6.36** If the supervisor attempts to monitor a station that is not on an active call, the system sends reorder tones and allows the supervisor to dial another extension number. If the supervisor attempts to monitor a station that is not in the hunt group or an idle station in the hunt group, the system sends reorder tones and cancels the Station Call Monitor feature.

**6.37** Station monitoring requires conferencing circuits. If resources are not available when a supervisor attempts to monitor a station, the supervisor's display will show NO CNF CIRCUITS AVAILABLE and the monitor will not be allowed.

**6.38** *TO MONITOR A HUNT GROUP CALL (DESIGNATED SUPERVISOR ONLY):*

- (1) **To use the speakerphone:** While on hook, enter the Station Call Monitoring feature code (321). You hear a confirmation tone and the SPKR key lights. The display shows ENTER EXT TO MONITOR.

**To use the handset:** Lift the handset and enter the Station Call Monitoring feature code (321). You hear a confirmation tone. The display shows ENTER EXT TO MONITOR.

- (2) Dial the extension number (or press the lit station speed-dial or DSS/BLF key) of the station to be monitored. You are automatically connected to the call and the display shows MONITORING <username>. The MUTE key lights.

- (3) **To monitor another hunt group member's call:**

**EITHER,** Enter the Station Call Monitoring feature code (321), and dial the extension number (or press the speed-dial key).

**OR,** Press the DSS/BLF key for another station without entering a feature code.

**To terminate the monitor feature:** *If off hook,* hang up. *If on hook,* press the SPKR key.

## G. ACD HUNT GROUPS

**NOTE:** The ACD Hunt Group feature must be enabled in Premium Feature Selection. To take full advantage of all hunt group features, the UCD Hunt Group premium feature should also be enabled. See page 6-220 in PROGRAMMING.

**6.39** Automatic Call Distribution (ACD) can be programmed to distribute hunt group calls to equalize call time or call count among the available members. If the System OAI Events premium feature is enabled, ACD hunt groups can also be programmed to send call information records that can be processed by an external device connected to a system serial port (such as AX-CESSORY ACD).

**6.40** ACD hunt groups can use the standard hunt group features described on page 4-12, and/or the UCD features described on page 4-15 (if the UCD Hunt Group premium feature is enabled).

### ACD Call Distribution

**6.41** When an intercom or outside call is transferred or rings in to the ACD hunt group, it can circulate in linear or distributed order (as described on page 4-12) or using one of the ACD distribution methods: Longest Idle or Balanced Call Count order.

- **Longest Idle:** An incoming call is sent to the station that has not been involved in a call to this hunt group for the longest period of time. (It does not count calls that were received through other hunt groups, direct ring-ins, or transfers.)
- **Balanced Call Count:** To balance the call load, each incoming call is sent to the station that has received the fewest calls through this hunt group. (It does not count calls that were received through other hunt groups, direct ring-ins, or transfers.)

**6.42** If an extension list is included in an ACD hunt group set for Longest Idle or Balanced Call Count distribution, it will treat each station in the extension list as a separate agent; it will not ring all of the stations on the list at once. If the hunt group is set for linear or distributed order, a call will ring at all stations on an extension list at once when the call reaches that point in the hunt group list.

### ACD Agent Login

**6.43** ACD hunt group members are referred to as "agents." Agents can log in to and out of the ACD hunt group at any time. While logged in, the agent will re-

ceive calls through the ACD hunt group. When the agent is logged out, calls to that ACD hunt group will bypass the station. (The Hunt Group Remove/Replace feature, described on page 4-14, does not have any effect on ACD hunt group calls when entered by an ACD agent. However, placing the agent's station in do-not-disturb will halt all ACD and non-ACD hunt group calls.)

**6.44** There are three feature codes that can be used for logging in to and out of the ACD hunt groups: ACD Agent Login, ACD Agent Logout, and ACD Agent Login/Logout. The first two perform only one operation. The third (Login/Logout) is a toggle feature code that logs the station in or out of *all* associated ACD hunt groups at once. If the toggle feature code or Login feature code is programmed in a user-programmable key with a lamp, the lamp will be lit when the agent is logged in to an ACD hunt group.

**6.45** *TO LOG INTO OR OUT OF ALL OF YOUR ACD HUNT GROUPS AT ONCE:*

While on or off hook (single-line users must lift the handset), enter the ACD Agent Login/Logout feature code (328). The display shows AGENT LOGGED INTO ALL ACDS or AGENT LOGGED OUT OF ALL ACDS, and you hear a confirmation tone. Hang up if off hook.

**6.46** *TO LOG IN TO AN ACD HUNT GROUP:*

- (1) While on or off hook (single-line users must lift the handset), enter the ACD Agent Login feature code (326). You hear a confirmation tone and the display shows AGENT LOGIN ACD NUMBER.
- (2) Enter the pilot number of the desired ACD hunt group or press # to log in to all of your ACD hunt groups at once. You hear a confirmation tone and the display shows AGENT LOGGED INTO <hunt group>.

*If you were already logged in, the display shows ALREADY LOGGED INTO <hunt group>.*

*If you entered an invalid hunt group number, the display shows NOT AN ACD HUNT GROUP and you hear reorder tones. Start over.*

*If you are not a member of the entered hunt group, the display shows NOT AN AGENT IN THIS HUNT GROUP and you hear reorder tones. Start over.*

- (3) If off hook, hang up.

**6.47 TO LOG OUT OF AN ACD HUNT GROUP:**

- (1) While on or off hook (single-line users must lift the handset), enter the ACD Agent Logout feature code (327). One of the following will occur:
  - a. *If you were logged in to only one hunt group*, you hear a confirmation tone and the display shows AGENT LOGGED OUT OF <hunt group>. The procedure is complete. Hang up if you were off hook.
  - b. *If you were logged in to more than one hunt group*, you hear a confirmation tone and the display shows AGENT LOGOUT ACD NUMBER go to the next step.
  - c. *If you were not logged in to any hunt group*, the display shows NOT LOGGED INTO ANY ACD GROUP and you hear reorder tone.
- (2) Enter the pilot number of the desired ACD hunt group or press # to log out of all of your ACD hunt groups. You hear a confirmation tone and the display shows AGENT LOGGED OUT OF <hunt group>.

*If you were not logged in to the hunt group number that you entered*, the display shows NOT LOGGED INTO <hunt group>. Start over.

- (3) If off hook, hang up.

**ACD Agent Wrap-Up Timer**

**6.48** Each time an agent ends an ACD hunt group call, an ACD Wrap-Up Duration timer is started. Until that timer expires, the agent will not receive another call through any ACD hunt group. (However, the agent can receive non-ACD hunt group calls, direct ring-in calls, and transfers.)

**6.49** The range of the ACD Wrap-Up Duration timer is 1 to 65535 seconds. The default value is 15 seconds. It is programmed individually for each ACD hunt group.

**6.50** If an agent wishes to end the wrap-up session before the timer expires, he or she can use the following procedure.

**6.51 TO TERMINATE ACD AGENT WRAP-UP:**

While on or off hook (single-line users must lift the handset), enter the ACD Wrap-Up Terminate feature code (329). The display shows ACD WRAP-UP TERMINATED. (*If you were not logged in to an ACD hunt group*, the display shows CANNOT ACCESS RESERVED FEATURE.)

**ACD Serial Port**

**6.52** The database contains a list of system serial ports. One or more of the serial ports can be programmed to provide call and device information to an external device. The information can then be processed by the device to generate reports on call traffic, answer times, and other management issues. For more information, refer to the manual provided with your Open Architecture Interface product (such as the AXXESSORY ACD).

**H. ANALOG VOICE MAIL HUNT GROUPS**

**NOTE:** The Analog Voice Mail feature must be enabled in Premium Feature Selection. See page 6-220 in PROGRAMMING.

**6.53** A hunt group can be designated as a "voice mail hunt group" to enable it to contain the multiple ports of an analog voice mail unit (not AXXESSORY Talk). Each voice mail unit port is programmed in the distribution list like a regular hunt group station. With this feature, incoming calls to the voice mail unit can be sent to a single pilot number where they can be processed even if one port is busy or out of service.

**6.54** If the voice mail hunt group is assigned as the message center for a station, it is called after the Message Wait timer expires. When the voice mail unit answers the call, the called party's mailbox number is automatically dialed. **NOTE:** Analog voice mail units should use the Silent Message feature code (367) instead of the Message feature code (365).

**6.55** If the voice mail hunt group is a system forwarding point (see the system forwarding description on page 4-82) or if a station is forwarded to the voice mail hunt group, the mailbox number that is dialed when the voice mail unit answers is the original destination station's extension number. (For example: The principal station is called, the call is sent to the first system forwarding point, and then is sent to a voice mail forwarding point where the principal station's extension number is dialed.)

**6.56** The voice mail hunt group can also be assigned as the alternate message source for each of the voice mail ports. Then, when a port leaves a message at a station, and the station user responds to the message, the hunt group will be called instead of the individual port. (For more information on alternate message sources, refer to page 4-64.)

## 7. TRUNK FEATURES

7.1 The AXXESS System can contain up to 104 trunks. This section explains the trunk functions and programmable features. Trunk capacities are explained in SPECIFICATIONS on page 2-2.

### NOTE REGARDING TRUNK SECURITY

While this system is designed to be reasonably secure against CO trunk misuse by outside callers, there is no implied warranty that it is invulnerable to unauthorized intrusions and toll fraud. If the central office does not provide supervision and disconnect the call when one party hangs up, it is possible for a caller to remain connected to a CO trunk circuit. If this happens, and the caller begins dialing, the call could be placed through the AXXESS System and would then be billed to the system's owner. The system cannot check this type of call for toll restriction and may not register the call in SMDR. This problem could arise when a call is connected to a station, when a call is in an unsupervised conference, or when a call is forwarded or transferred to the public network.

To determine if disconnect supervision exists on a trunk, connect a test set to that trunk. Then place a call to an outside party using the trunk to be tested and have the called party hang up while you remain off hook. If there is disconnect supervision, you will hear dial tone within 30 seconds. If you do not hear dial tone, there is no supervision. If supervision does not exist, contact the telephone company to determine if it can be enabled. Centrex and loop start trunks frequently do not provide disconnect supervision. Each trunk should be checked when it is first installed and periodically rechecked to reduce the probability that the trunk will be used for unauthorized calls.

### A. DUAL-TONE MULTI-FREQUENCY (DTMF) OR DIAL-PULSE SIGNALING

7.2 Trunks can be designated for DTMF or dial-pulse signaling through database programming (see PROGRAMMING, page 6-125).

7.3 Keysets and DTMF single-line sets can be used on either type of trunk. While on a dial-pulse trunk, a station user can switch from dial-pulse to DTMF signals,

while using a dial-pulse trunk, by pressing the pound (#) or asterisk (\*) keys. After the pound or asterisk key is pressed, all digits that follow during that call are sent out as DTMF tones. (This is useful when calling computerized services that require a DTMF telephone, such as voice mail.)

### B. TYPES OF TRUNKS AVAILABLE

7.4 The AXXESS System supports the following types of trunks:

- **Loop start trunks on the Loop Start Card (LSC):** Loop start trunks support the Caller-ID feature. (See page 4-25 for details.)
- **T1 trunks on the T1 Card (T1C):** (See page 4-21 for more T1 information.) The AXXESS System will support the following types of T1 trunks:
  - *Loop-start:* Supports incoming and outgoing calls and Caller-ID.
  - *Ground-start:* Supports incoming and outgoing calls.
  - *DID:* Supports DID, ANI, and DNIS call routing. (See page 4-25 for details.)
  - *Basic E&M:* Supports DID, ANI, and DNIS call routing as well as basic networking (such as ring in to DISA and connection of two systems). For E&M information, refer to page 4-23. See page 4-25 for DID, ANI, and DNIS information.
  - *OPX:* A single-line set can be connected to the system via a T1C connection.
- **DID trunk interface on a Single-Line Adapter (SLA):** Each SLA can be configured to support up to two DID trunk interfaces.

7.5 Because loop start trunks frequently do not provide supervision, unsupervised trunk-to-trunk calls (such as unsupervised conferences and forward to an outside number), are limited by the Unsupervised CO timer. When this timer expires, the call recalls the primary attendant who can determine whether the trunks are still in use or if the call should be disconnected. (Refer to page 4-10 for attendant recall information.) If the trunk connections are ground start or DID trunks, this timer is not needed as they supply reliable disconnection signals.

## C. T1 TRUNKS

**NOTE:** The Advanced CO Interfaces feature must be enabled in Premium Features and requires a T1 Card (T1C). A Network Clock Card (NCC) is required only if the CPU020/PCM-D card is *not* used. See page 6-220 in PROGRAMMING.

**7.6** The term "T1" refers to a specific digital method of transmitting voice and data; it is the basic 24-channel time-division multiplex, pulse code modulation system used in the United States. Since each T1 trunk actually consists of 24 individual circuits (or channels) multiplexed together, it is often less expensive to purchase a single T1 trunk than it is to purchase multiple individual trunks.

**7.7** T1 trunks can be programmed to provide the following services:

- **Loop-Start Interface:** Loop-start T1 trunks can provide the same services as regular loop-start trunks, including Caller-ID. See page 4-25 for Caller-ID information.
- **Ground-Start Interface:** Calls can be placed and received using ground-start T1 trunks.
- **Direct Inward Dialing (DID) Interface:** Direct inward dialing (DID) allows an outside party to dial into the system without attendant intervention. Refer to page 4-24 for more information on DID.
- **E&M Interface:** E&M trunks, also called "tie" lines, are special trunks that tie two distant telephone systems together. They allow the users of either telephone system access to the users and resources of the other telephone system. Refer to page 4-23 for more information on E&M trunks.
- **Off-Premises Extension (OPX) Interface:** Off-premises extensions are remote single-line DTMF sets that are connected to the T1 Card through tele-

phone company OPX circuits (or customer-provided circuits).

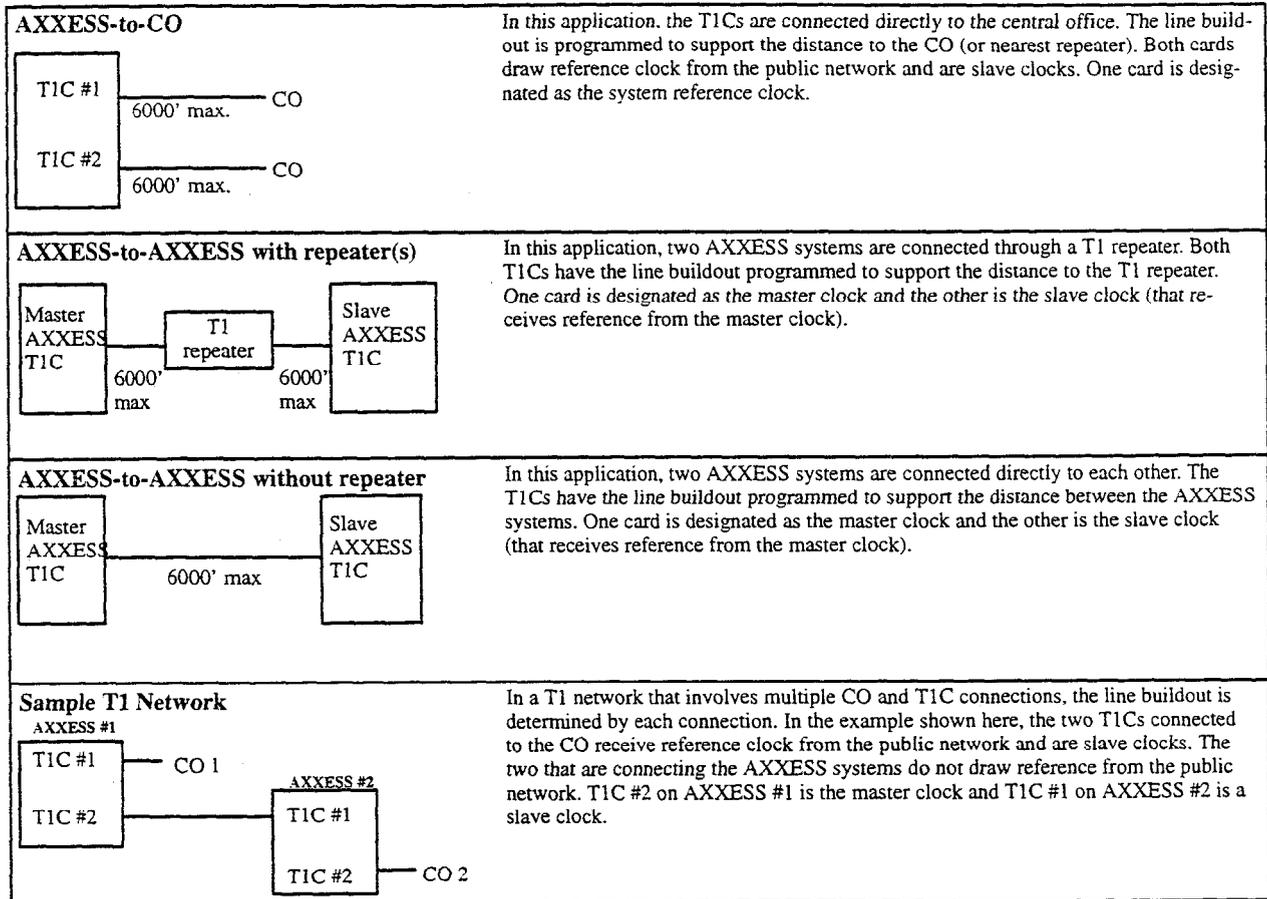
**7.8** Refer to Figure 4-1 on the next page for examples of T1 installations.

**7.9** Fractional T1 (FT1), which uses fewer than the standard 24 circuits, can be used on the AXXESS system. If FT1 is used, the unused circuits of the T1C must be unequipped. Refer to PROGRAMMING, page 6-242, for details.

**7.10** When purchasing a T1 trunk, there are several variables involved, depending on the T1 application required. (Refer to SPECIFICATIONS, page 2-16, for details.) The variables include the following:

- **Card framing type:** The type of framing scheme used by the T1 trunks connected to the card can be D4 Superframe (normally used for voice transmissions) or Extended Superframe (ESF is usually used for data transmissions).
- **Zero code suppression scheme:** The T1 trunk zero-suppression scheme (that limits the number of consecutive zeroes in transmissions) for the trunks on the T1 card can be AMI (Bit 7), Bipolar Eight Zero Substitution (B8ZS), or "None."
- **Line build-out (LBO):** The LBO attenuation of the T1 trunk connected to the card must be designated in programming. This value is determined by the distance to the nearest public network T1 repeater.
- **Reference clock programming:** If the T1 Card is connected to the public network, the card is automatically designated as a slave clock (the public network always acts as the master clock and one T1C provides the AXXESS system reference clock). If the card is not connected to the public network, but is instead connected to another T1 Card or a card in another telephone system, it can be a master clock or a slave clock (in relation to the card on the other end).

FIGURE 4-1. T1 TRUNK APPLICATIONS



## D. E&M TRUNKS

**NOTE:** This feature is available only on T1 Card circuits.

**7.11** E&M trunks are special trunks that tie two distant telephone systems together. They allow the users of either telephone system access to the users and resources of the other telephone system.

**7.12** E&M trunks, like standard trunks, may be programmed to ring in to call routing tables, individual stations, multiple stations, or hunt groups, or as a DISA call. (If programmed to ring in at a single station, the E&M call will follow any programmed forward.)

**7.13** When a call is placed over an E&M interface, one of three things will happen:

- If programmed for "Immediate" start type, the calling system will immediately begin sending the dialed digits to the receiving system.
- If programmed for "Wink" start type, the systems perform a "handshake" to allow the receiving system to signal that it is ready to receive the digits dialed by the other system. (This is the default start type.)
- If programmed for "Delay Dial" start type, the calling system will wait until its E&M Dial Delay timer expires before sending any digits to the receiving system.
- If programmed for "Dial Tone" start type, the calling system will wait until it receives dial tone from the other system before sending any digits.

**7.14** E&M trunks on the AXXESS system can be programmed to support DID (see page 4-24). Other options include DNIS and ANI (see page 4-25).

**7.15** E&M trunks are programmed into trunk groups. The trunk group programming determines day and night mode outgoing access for the trunks.

**7.16** When the system is in the default configuration, all E&M trunks are configured for DTMF signaling. If

necessary, some or all of the trunks can be reprogrammed for dial-pulse signaling through database programming.

**7.17** The DID/E&M Receive Busy Instead Of Camp-On station flag determines whether E&M and DID callers will receive busy signal or receive ringback and camp on when calling a busy station. In the default state, busy tones are disabled and the callers will hear ringback while camped on to the called station. This flag is programmed on a station-by-station basis (see page 6-30 in PROGRAMMING).

**7.18** The following programming is required to use the E&M feature:

- (1) Enable the Advanced CO Interfaces feature in Premium Feature Selection (see page 6-220 in PROGRAMMING).
- (2) Install and configure a T1 Card (T1C), as described on page 6-242 (System Configuration) in PROGRAMMING. Configure the appropriate circuits as "E&M" and assign extension numbers to the trunks.
- (3) Program the T1C as required. See page 6-131 (T1 Programming) in PROGRAMMING.
- (4) Program a Call Routing Table to be used by the E&M trunk group. See page 6-118 (Call Routing Tables) in PROGRAMMING. Also refer to page 4-27 for more information regarding Call Routing Tables. If it will be used for DID service, set up the table using the DID numbers.
- (5) Create a trunk group that contains the E&M trunk(s) and program it to ring in to the Call Routing Table created above. See page 6-136 (Trunk Groups) in PROGRAMMING.
- (6) Program the individual trunks. See page 6-125 (Individual Trunk Programming) in Programming. For E&M Trunk programming instructions, refer to page 6-129. If marked for DID service, program the numbers to match the Call Routing Table created above.

## E. DIRECT INWARD DIALING (DID) TRUNKS

**7.19** Direct Inward Dialing is available on T1 Card circuits and Single-Line Adapter (SLA) interfaces. (See page 2-13 in SPECIFICATIONS for more information.) E&M trunks on T1 cards can also be designated as DID trunks.

**7.20** Direct inward dialing (DID) allows an outside party to dial into the system without attendant intervention. To gain direct access to the system, an outside party dials a number that was assigned by the telephone company to the DID trunks installed on the AXXESS System. The system then provides ring signal to the proper station(s), hunt group, or DISA according to the programmed ring-in for that DID number.

**7.21** DID trunks are purchased with blocks of numbers. When a caller dials one of the numbers, the central office rings the trunk that contains that number. When the AXXESS system answers the call, it handshakes with the central office and receives digits that tell it which DID number was dialed. The AXXESS then routes the call according to the call routing programmed for that number.

**7.22** When a call is placed to a DID trunk, one of three things will happen:

- If the receiving DID trunk is programmed for "Immediate" start type, it will immediately begin receiving the dialed digits to the receiving system.
- If programmed for "Wink" start type, the DID trunk performs a "handshake" to signal that it is ready to receive the incoming digits. (This is the default start type.)
- If programmed for "Delay Dial" start type, the DID trunk will perform a handshake and pause before receiving any digits.

**7.23** Each DID trunk is programmed with a base number and is programmed to collect a set number of digits. The base number is made up of the digits that are dialed by the caller that are *not* redialed by the central office after the handshake. For example, if the dialed number is 961-9000 and the base number is 9619, the central office would send only 000 after the handshake. The AXXESS would then send the call to the ring-in destination associated with 000 in the trunk's call routing table. The number sent to the keyset display could combine the base number and the collected digits to show 961-9000 or can be programmed to show a name.

**7.24** DID trunks are programmed into trunk groups. However, because DID trunks do not allow outgoing calls to be placed, the outgoing access programming for

the trunk group is ignored. If a user attempts to seize a DID trunk for an outgoing call, the user will hear reorder tones and the keyset display will show OUTGOING ACCESS DENIED.

**7.25** The DID/E&M Receive Busy Instead Of Camp-On station flag determines whether E&M and DID callers will receive busy signal or receive ringback and camp on when calling a busy station. In the default state, busy tones are disabled and the callers will hear ringback while camped on to the called station. This flag is programmed on a station-by-station basis (see page 6-30 in PROGRAMMING).

**7.26** The following programming is required to use the DID feature:

- (1) Enable the Advanced CO Interfaces feature in Premium Features (see page 6-220 in PROGRAMMING).
- (2) If installing DID on a T1 Card, do the following:
  - a. Install and configure a T1 Card (T1C), as described on page 6-242 (System Configuration) in PROGRAMMING. Configure the appropriate circuits as "DID" and assign extension numbers to the trunks. (If using an E&M trunk, see the instructions on page 4-23.)
  - b. Program the T1C as required. See page 6-131 (T1 Programming) in PROGRAMMING.
- (3) If installing DID using a Single-Line Adapter (SLA), do the following:
  - a. Install the SLA on a Keyset Card circuit and configure the card, as described on page 6-242 (System Configuration) in PROGRAMMING.
  - b. Program the station circuit as required. See page 6-37 (Individual Station Programming) in PROGRAMMING.
- (4) Program the individual trunks. See page 6-125 (Individual Trunk Programming) in Programming. For DID trunks, refer to page 6-130.
- (5) Create a trunk group that contains the DID trunks. Program the trunk group to ring in to a Call Routing Table. (Note the Call Routing Table number. It will be programmed in step 6.) If there are only DID trunks in the trunk group, or the trunks will be used only for incoming calls, you can flag the trunk groups as "Incoming Only." See page 6-136 (Trunk Groups) in PROGRAMMING.

- (6) Program a Call Routing Table to be used by the DID trunk group. See page 6-118 (Call Routing Tables) in PROGRAMMING. Also refer to page 4-27 for more information regarding Call Routing Tables. Set up the table using the DID numbers to match the programming performed in step 4.
- (7) Enable caller information for keyset displays (see page 6-91 in PROGRAMMING).
- (8) Because DTMF receivers are required to receive DID and ANI information, you should enable additional receivers in OPC programming (see page 6-243 in PROGRAMMING).

#### F. CALLER ID, DNIS, AND ANI

**NOTE:** The Advanced CO Interfaces feature must be enabled in Premium Feature Selection to use these features (see page 6-220 in PROGRAMMING).

**7.27** The AXXESS System supports Caller ID, ANI, and DNIS. These features provide information about the source of the call.

- **Caller ID:** Caller ID information gives the caller's telephone number and/or name.
- ● **ANI:** Automatic Numbering Identification (ANI) information identifies the caller's telephone number.
- ● **DNIS:** Dialed Number Identification Service (DNIS) identifies the number that was dialed to reach your location.

**7.28** Using these features and the call routing tables, each incoming call can be identified and sent to selected destinations. For example, calls identified with Caller ID or ANI from specific regions of the country can be sent to the appropriate sales representative or calls from specific locations can be sent to selected individuals. Or, using DNIS information, responses to advertisements using one 800 number can be sent to one hunt group and calls from other 800 numbers can be sent to other hunt groups. Or, they can all be sent to the same destination with different identifying names for the keyset displays (such as Magazine Ad, TV Ad, etc.).

**7.29** Caller information services (Caller ID, ANI, and DNIS) must be enabled for the individual trunks (see page 6-125 in PROGRAMMING). Loop start trunks can use Caller ID. E&M and DID trunks can use ANI and DNIS. Caller information is not available on ground start trunks.

**7.30** Caller information displays (on keysets and Desktop Applications) can be enabled or disabled in database programming (see page 6-91). If enabled, the AXXESS determines the content of the displays using the following priority list:

- (1) If Desktop Interface is enabled, the *name* provided by the Desktop Application is displayed.
- (2) If a Caller ID name is supplied for the call, that *name* will be displayed.
- (3) If the incoming information exactly matches an entry in the trunk's call routing table, the *name* programmed in the table is used.
- (4) If the incoming information exactly matches a system speed-dial number, the *name* associated with that speed-dial bin is used.
- (5) If Desktop Interface is enabled, the *number* provided by the Desktop Application is displayed.
- (6) If Caller ID, ANI, DNIS or DID digits are provided, the *number* provided by the central office is displayed. If DID or DNIS information is provided, the programmed base number is combined with the collected digits to display the number that the caller dialed.
- (7) If no other information is provided, or if the Caller Information option is disabled, the display will show the programmed name for the trunk group.

**7.31** ANI and Caller ID information is also sent to the AXXESSORY Talk voice mail application to provide the caller's telephone number as part of the message envelope.

**7.32** Caller Information features require the following special programming:

- The Advanced CO Interfaces feature must be enabled in Premium Feature Selection (see page 6-220 in PROGRAMMING).
- Caller information features require OPC programming (see page 6-243 in PROGRAMMING). Caller ID uses Caller ID receivers. Because DTMF receivers are required to receive DID and ANI information, you should enable additional receivers.
- Caller information displays must be enabled in database programming (see page 6-91 in PROGRAMMING).
- The caller information services must be enabled for the individual trunks (see page 6-125 in PROGRAMMING).

## G. TRUNK GROUPS

7.33 Each trunk is assigned to one of 104 possible trunk groups. Trunk group feature codes and trunk group keys are used to select a trunk in one of the programmed trunk groups. Each trunk must be assigned to a trunk group. For example, all local trunks could be in one group, while another group could contain WATS trunks that are used for long distance calling. Unused trunks can be placed in a single trunk group that is labeled "unused."

7.34 The trunk group is programmed to process outgoing calls in linear or distributed order:

- **Linear trunk group:** Requests for an outgoing trunk are always processed beginning with the highest numbered trunk circuit on the list and move through the list until an available trunk is found.
- **Distributed trunk group:** The first request will be processed beginning with the highest numbered trunk circuit on the list. The next request will begin with the second highest numbered trunk, and each subsequent request will begin one trunk lower on the list. When the end of the list is reached, requests begin again with the highest numbered trunk on the list.

## H. OUTGOING-ACCESS, ALLOWED-ANSWER, AND RING-IN ASSIGNMENTS

7.35 Each trunk group has programmed lists of stations for outgoing-access, allowed-answer, and ring-in assignments for day and night modes.

- **Outgoing-access** assignment for a particular trunk group permits the station user to place calls using trunks in that trunk group. Each station has a default outgoing access code programmed in the database. When the user presses the OUTGOING key, presses an idle Call key, or enters the Outgoing Call feature code (8), the system automatically selects an outgoing trunk. (Refer to page 6-34, in PROGRAMMING, for more information.)
- **Allowed-answer** access to a particular trunk group permits the station user to answer incoming calls on the trunks in that trunk group. Although the call can be answered, it does not ring at the user's station. On keysets, the individual trunk key flashes (if one ex-

ists) to indicate the ringing call. If a station is programmed with allowed-answer access only (no ring-in) for a trunk group, direct ring-in calls on that trunk group can be answered by entering the Automatic Trunk Answer feature code (350) or pressing the flashing individual trunk key.

- **Ring-in** assignment for a particular trunk group can be assigned to one or more stations, extension lists, or AXCESSORY Talk applications; to a hunt group; to DISA; or to a call routing table. The ring in destination(s) for the trunk group will receive direct ring-in calls on trunks in that trunk group. On keysets with ring in, the individual trunk or Call key flashes and the display indicates a ringing call. Allowed answer for the trunk group is automatically assigned to a station with ring in.

7.36 When keyset stations have outgoing-access or ring-in assignments, the associated individual trunk keys show the status of their trunks.

7.37 Stations that do not appear on any of the lists cannot place or directly receive outside calls; they are limited to intercom calls, conferences, transferred calls, and retrieving calls on system hold. (A call on system hold can only be picked up at the station that placed it on hold or at a station that has an individual trunk key and has allowed-answer and/or outgoing access for that trunk.)

7.38 A private trunk group (with one or more trunks) can be established by programming outgoing-access, ring-in, and allowed-answer permission for the trunk group to only one station.

## I. ANSWER FEATURE CODE

7.39 For calls that are ringing or holding at the station, the user may enter the Answer feature code (351) or press the ANSWER key. When more than one call is ringing or holding, the following priority list determines which call is answered first:

- Ringing outside calls (ring ins, recalls, callbacks, or transfers) are answered in the order they were received.
- Then calls on individual hold are answered in the order they were placed on hold.

## J. CALL ROUTING TABLES

**NOTE:** The Advanced CO Interfaces feature must be enabled in Premium Feature Selection to use Call Routing Tables. See page 6–220 in PROGRAMMING.

**7.40** A trunk group can be programmed to ring in to a call routing table to utilize the information received from DID DNIS, ANI, and Caller ID. This added information will allow the station user to receive information about the callers (such as location, name, or which advertisement they saw) on the keyset display.

**7.41** Call routing applications include the following:

- **DID:** DID and E&M trunks send a string of digits to indicate the desired destination. Each DID digit string can be programmed to ring in to a different destination and display a different name.
- **ANI/Caller ID:** ANI/Caller ID information identifies the source of the call. Each incoming call can be identified and sent to selected destinations. For example, calls from specific regions of the country can be sent to the appropriate sales representative or calls from specific telephone numbers can be sent to selected individuals.
- **DNIS:** DNIS identifies the number that was dialed to reach your location. Using this number, the call routing table can send the call to the desired destination. For example, responses to advertisements using one 800 number can be sent to one hunt group and calls from other 800 numbers can be sent to other hunt groups. Or, they can all be sent to the same destination with different identifying names for the keyset displays (such as Magazine Ad, TV Ad, etc.).

**7.42** A call routing table consists of fields for dialing patterns strings, ring-in types, ring-in destinations, and names. The fields are used for analyzing the source of the call and directing it to the proper destination.

- **Pattern strings:** The patterns strings in the table are compared against the digits received from the trunk interface for the incoming call. If the digits match one of the pattern strings in the table, the call is routed according to the ring-in type and destination fields associated with that pattern. If a match is not found, the call is sent to the primary attendant. However, there are two wildcard patterns that allows any number (+) or an empty pattern to match (E).
- **Ring-in type and destination:** The call can ring in to a single extension number (station, hunt group, or application), an extension list, or as a DISA call (which allows the caller to select a destination).
- **Name:** The name field determines how the call will be identified at display keyset stations. It can contain up to 12 characters. The name can be a word or num-

ber that identifies the call source. If the name is left blank, the system will use the priority list shown on page 4–25 to determine what will be displayed on the keyset.

**7.43** The system can have up to 15 call routing tables. There can be a total of 900 patterns in all of the call routing tables combined. To program a call routing table, refer to the information on page 6–118 in PROGRAMMING.

**7.44** Each individual trunk, not the trunk group, is programmed to collect digits using Caller ID, DID, ANI, or DNIS. If the trunk is programmed to collect digits, but the trunk group does not use call routing tables, the system routes the call based on the trunk group programming and ignores the collected digits. (However, the collected digits will appear in SMDR and can be used by the Desktop Interface.) If the trunk is not set up to collect digits and the trunk group uses call routing tables, the system uses the call routing destination for “no-digit” calls.

**7.45** Four sample call routing tables are shown on the next page. (Actual tables would have more than the sample entries, these are abbreviated lists to show how the tables work.)

- **Sample #1:** This is an example of a DID routing table. (An actual DID table would have more than four entries, this is an abbreviated list.) Each DID number is identified by the three digits that are sent by the central office (000–003). The base number of the DID numbers is 9619. Therefore, the names of each of the patterns combine the base number and the additional three digits to form the complete number for display (961–9000 to 961–9003).
- **Sample #2:** This is an ANI table for various area codes and a special 800 number. If the incoming ANI information begins with one of the indicated area codes, it will be routed to the designated destination and the display will show the state where the call was placed.
- **Sample #3:** This table is set up for Caller ID. It is like the ANI table except that it uses office codes instead of area codes and includes an entry for a complete telephone number. However, note that if the system Caller Information flag is enabled, the Caller ID information received from the central office overrides the call routing table’s name on the keyset display (see the priority list shown on page 4–25).
- **Sample #4:** This is an example of a DNIS application pattern. If the DNIS digits match 8005586969, the call came in on the Technical Support 800 number and is sent to the Technical Help hunt group. The display will show that the call is from “Help Line.”

**FIGURE 4-2. SAMPLE CALL ROUTING TABLES**

**Sample #1:** Call Routing Table for DID Numbers 961-9(000-003)

| PATTERN | RING-IN TYPE   | RING-IN DESTINATION  | NAME     |
|---------|----------------|----------------------|----------|
| 000     | Single         | Extension Number 101 | 961-9000 |
| 001     | DISA           | Not Applicable       | 961-9001 |
| 002     | Extension List | Extension List P004  | 961-9002 |
| 003     | Single         | Pilot Number 255     | 961-9003 |

**Sample #2:** Call Routing Table for ANI Numbers from area codes 602, 505, 801, and 904

| PATTERN | RING-IN TYPE   | RING-IN DESTINATION  | NAME       |
|---------|----------------|----------------------|------------|
| 602+    | Single         | Extension Number 201 | Arizona    |
| 505+    | DISA           | Not Applicable       | New Mexico |
| 801+    | Extension List | Extension List P005  | Utah       |
| 904+    | Single         | Pilot Number 256     | Florida    |

**Sample #3:** Call Routing Table for Caller ID Numbers from office codes 961, 893, 255, and telephone number 254-9400

| PATTERN    | RING-IN TYPE   | RING-IN DESTINATION  | NAME       |
|------------|----------------|----------------------|------------|
| 602961+    | Single         | Pilot Number 257     | Chandler   |
| 602893+    | DISA           | Not Applicable       | Phoenix    |
| 602255+    | Extension List | Extension List P006  | Phoenix    |
| 6022549400 | Single         | Extension Number 203 | Phx Branch |

**Sample #4:** Call Routing Table pattern for DNIS Numbers using telephone number 800-669-5858 (the Technical Services Help Line)

| PATTERN    | RING-IN TYPE | RING-IN DESTINATION | NAME      |
|------------|--------------|---------------------|-----------|
| 8006695858 | Single       | Pilot Number 2001   | Help Line |

**K. AUTOMATIC ROUTE SELECTION (ARS)**

**NOTE:** This feature must be enabled in Premium Feature Selection. See page 6-220 in PROGRAMMING.

**7.46** ARS is a money-saving feature that allows the system to be programmed to select the least expensive route for placing outgoing calls. It can be used for placing outgoing calls and transferring or forwarding calls to outside telephone numbers. Stations can be restricted to using only ARS for placing outgoing calls.

**NOTE:** The ARS feature cannot be used in the KF-rated system. If a KF system user attempts to enter the ARS feature code or presses an ARS key, the system sends reorder tones.

**7.47** When ARS is selected, the user dials the number (including the area code, if needed), and the system does the following:

- **Checks the dialed number:** The database contains up to 16 lists of trunk groups called route groups. The system checks the route groups in numerical order (1-16) and selects the first group that applies to the dialing pattern of the number that was dialed. **NOTE:** If the Emergency Call feature is programmed to use ARS, the emergency calls will always go through route group 1, regardless of route group programming.
- **Checks for toll restrictions and outgoing access:** Before the number has been modified by dial rules, the system checks the station toll restrictions and outgoing access to determine whether the call is allowed. (All calls placed using ARS are toll restricted, regardless of whether the selected trunk is subject to toll restriction. However, Emergency Call feature calls are never toll restricted.) If allowed, the system continues to the next step. If not allowed, the system sends reorder tones and the call is not placed.
- **Adds or deletes digits according to the route group chosen:** Each route group has a programmed set of dial rules that tell the system what to dial. (The system can have up to 16 dial rules, 12 of which are programmable. Each route group can use up to 16 dial rules.) For example, if the selected route group

requires that the number contain "1" but no area code, the dial rules include the 1 and drop the area code. The modified telephone number can contain up to 32 digits. When programming ARS, you can use preset dial rules or create new dial rules that add up to 16 digits each. The pre-programmed dial rules are:

- *Dial Rule #1 — Echo Equal Access:* This non-programmable dial rule includes the equal access digits (10XXX or 101XXXX) in the number, if dialed.
- *Dial Rule #2 — Echo Toll Field:* The toll field (1, 0, 01, or 011) is included in the number, if dialed. This dial rule is non-programmable.
- *Dial Rule #3 — Echo 3 Digits After Toll Field:* With this non-programmable dial rule, the three digits after the toll field are included in the number. (These digits are usually the area code or country code.)
- *Dial Rule #4 — Echo Local Address:* This non-programmable dial rule allows ARS to dial the telephone number that was dialed by the station user.
- *Dial Rule #5 — Add #:* This dial rule adds a pound (#) to the number dialed. This dial rule can be programmed.

- **Dials the modified telephone number:** If the number is allowed, the system seizes an idle trunk in one of the selected trunk groups, waits for the Dialing Wait After Connect timer to expire, and then dials.

**NOTE:** If all of the trunks in the trunk group are busy, and the station is enabled for ARS camp on, the call will camp on to the route group until a trunk is available.

**7.48** When ARS is used, the station user hears dial tone when the feature code is entered (manually or automatically using a Call key, the ARS key, or the OUTGOING key). The user then dials the number and hears silence until the trunk is seized and dialing is completed. (The user will not hear the digits being dialed.) The call appears under an available Call key.

## L. TOLL RESTRICTION

**7.49** The following features provide toll restriction on the AXXESS System. (They are described in further detail in this section.)

- **Trunk Group Toll Restriction:** Each trunk group can be designated as "subject to toll restriction" or "not subject to toll restriction" in database programming. If subject to toll restriction, station class of service is checked when the trunk group is selected for placing an outgoing call.
- **Exemption From ARS-Only Restriction:** Each trunk group may be designated as "exempt from automatic route selection (ARS) only." If exempt, station users with the ARS-Only class of service can select the trunk group directly.
- **Absorbed Digits:** Trunk groups that are subject to toll restriction can be programmed to "absorb" (ignore) the first digit(s) dialed. This allows the system to handle the dialed digits just as they would be by the local telephone company or PBX to which the system is connected.
- **Station And Trunk Group Classes Of Service:** Each station and trunk group can be assigned one or more classes of service (COS) which can restrict or allow certain digit patterns when an outside call is dialed. (Trunk group COS is not checked when ARS is used.)
- **Toll Strings:** Toll string programming allows the programmer to define dialing patterns which are abbreviated to single character "wildcards." These programmable wildcards are used frequently in the toll restriction class of service programming and in other system areas such as ARS route group programming, trunk group absorbed digits programming, and others. *Note that changing these dialing patterns will affect all of the areas where they are used.*

### Trunk Groups Subject To Toll Restriction

**7.50** Each trunk group can be designated as "subject to toll restriction" or "not subject to toll restriction" in database programming. All trunk groups are subject to toll restriction when the system is in the default state.

- When a station user selects a trunk group that is designated as "subject to toll restriction," the system

checks the database for that station's class of service and call cost is determined by the digits that are dialed (see page 4-110).

- When a trunk group is chosen that is "not subject to toll restriction," the station's COS is not checked (except ARS-Only restriction).

**7.51** The exceptions to trunk group toll restriction are as follows:

- **Emergency Call Feature:** When the Emergency Call feature code is entered, the designated trunk access code is used to seize a trunk and the programmed emergency number is dialed regardless of any station or trunk group toll restrictions. (See page 4-36 for details.)
- **Automatic Route Selection (ARS):** Calls placed using ARS (except Emergency Call feature calls) are always subject to toll restriction, regardless of the selected trunk group's toll restriction programming. Note that only the station's COS is checked, the trunk group's COS is not.

**7.52** Trunk groups are often programmed as "not subject to toll restriction" to allow station users to have access to reduced-cost long distance carriers, or to use ringdown lines, dictation machines, voice mail systems, and other auxiliary equipment. When programming unrestricted trunk groups, one of five call cost factors can be selected to designate calls as free, local, toll local, toll long distance, or operator/international. The selected call cost is then used for all calls that are placed using that trunk group.

**7.53** Note that whether or not a trunk is marked as "subject to toll restriction," dialing is *not* required to hold the trunk. For example, when a user seizes a line to make an outgoing call (via any method), if there is an incoming call on the line for which ring-in had not yet been detected, the user can talk with the incoming caller without dialing any digits. (That is, the call will not be dropped when the Dial Initiation timer expires.) However, if the trunk is marked as "subject to toll restriction" and the user attempting to make the outgoing call dials one or more digits before realizing that there is an incoming call, and the digits dialed represent a restricted number for the station and trunk group being used, the call *will* be dropped. In other words, the system has protection for "glare" situations between incoming and outgoing calls, but the protection is overridden if the outgoing caller dials a restricted number.

### Trunk Group Exemption From ARS Only

**7.54** A trunk group may be designated as "exempt from Automatic Route Selection (ARS) Only." This allows users with the ARS-Only class of service (see COS 01 on page 4-32) to directly select specified trunk groups by pressing the appropriate trunk group keys or by entering the appropriate trunk group access codes.

**7.55** This capability is necessary if trunks are connected to auxiliary equipment, such as analog voice mail systems, dictation equipment, or ring-down lines. When such trunks are designated as exempt from ARS Only, stations with the ARS-Only COS (and allowed access) can use the special facilities.

**7.56** The default assignment for all trunk groups is "not exempt from ARS Only." This means that, by default, stations with the ARS-Only COS are denied direct access to the trunk groups.

### Absorbed Digits

**7.57** Trunk groups that are subject to toll restriction can be programmed to "absorb" (ignore) the first digit(s) so that the digits dialed are handled by the system just as they would be by the local telephone company or PBX to which the system is connected. There are two applications for this capability: PBX installations and installations in areas where part of the local office code is absorbed by the central office (CO). Trunk groups that connect to outside trunks in PBX installations are referred to as "PBX trunk groups." Trunk groups that use trunks for which the CO absorbs part of the local office code are referred to as "local trunk groups."

**7.58** When an AXXESS System is installed behind a PBX, users must dial special PBX codes to select the CO trunks. The AXXESS System trunk group that is used for PBX trunk access must be programmed to absorb PBX digits. The PBX access codes are then programmed as the absorbed digit patterns for that PBX trunk group. Up to 50 absorbed digit patterns are allowed, with a maximum of 21 digits in each.

**7.59** When a PBX trunk group is used and an absorbed digit string is *not* dialed, the system behaves as though the trunk group is "not subject to toll restriction" and does not perform toll restriction and call cost functions. The call is considered to be an internal PBX call; it is allowed no matter what digits are dialed. The call cost

rate is "PBX," and the call is designated as free (000) in the SMDR report.

**7.60** When a PBX trunk group is used and an absorbed digit string *is* dialed, the system absorbs the PBX access code and behaves as though the trunk group is "subject to toll restriction," using the remaining digits for toll restriction and call cost processing. When the Redial, Speed Dial, or Call Forward features are used, the system automatically inserts a short pause after the absorbed digit string to provide for the delay that occurs while a trunk is seized.

**7.61** In some rural areas, specific digits (dialed as all or part of the local exchange) are absorbed by the central office, thus reducing the number of digits required to dial local calls. These digits may also be "repeatable." That is, they are absorbed if dialed more than once. To determine if a central office absorbs digits and whether the digits are repeatable, contact the telephone company.

**7.62** When using this type of trunk, the system must be programmed to recognize the absorbed digits. That is, the absorbed digits must be programmed as an absorbed digit string for any trunk groups that include those trunks. For each local trunk group, only one string is allowed, with a maximum of 32 digits. The only characters allowed in the string are digits (0-9, #, and \*) and the wildcards. (See page 4-35 for wildcard information.)

**7.63** If the system is not programmed to recognize the absorbed digits for a PBX or local trunk, the system may be left open for users to bypass toll restriction. A user could bypass toll restriction by dialing the digits that are absorbed by the CO before dialing a toll number. If the system does not know that the first digits are absorbed, it will not recognize a toll digit that follows them. However, if the digits absorbed by the CO are programmed as an absorbed digit pattern for the trunk group, the system will recognize them, absorb them, and then recognize any digits that follow as possible toll digits.

**7.64** When dialed, absorbed digits (PBX or local) appear in the SMDR record if they are not suppressed during SMDR programming. Repeatable (local) absorbed digits will appear in SMDR only once, even if dialed repeatedly.

**7.65** Absorbed-digits are programmed on a trunk group-by-trunk group basis. In the default state, no trunk group absorbs digits. See page 6-143 in PROGRAMMING for more information.

## Equal Access

**7.66** Under the terms of the final divestiture agreement, Bell Operating Companies provide equal access to all long distance companies. The equal access provision requires each Bell Operating Company to modify existing switching equipment to make it possible for customers to have direct access to all available carriers serving their area code. Prior to equal access, routing long distance calls to long distance companies other than AT&T required a lengthy dialing process usually involving a local access number, authorization number, and public network number.

**7.67** As central offices are converted to provide equal access, customers served by those offices may choose one of two options for the routing of long distance calls. The options are:

- **Presubscription:** Normal "1+" or "0+" dialing procedures may be used and a switching arrangement automatically routes calls to the predesignated long distance company.
- **Non-Presubscription:** A long distance company is not predesignated and a five or six digit equal access code identifying a long distance company (10XXX or 101XXXX) is required to be dialed preceding the desired "1+" or "0+" long distance telephone number to designate the long distance company to handle the call.

**7.68** Presubscription does not limit long distance calling to the predesignated long distance company. An access code (10XXX or 101XXXX) may be dialed to direct a call to the long distance company of choice. Presubscription also does not affect the way an operator may be contacted. Any existing non-presubscription long distance company operator is called by dialing the carrier's access code followed by "0."

## Class Of Service (COS)

**7.69** Each station and each trunk group that is "subject to toll restriction" is assigned toll restriction classes of service (COS) that restrict or allow certain dialing patterns on outside calls.

**7.70** The classes of service (COS) are programmed individually for stations, AXXESSORY Talk applications, and trunk groups. There are separate COS designations for day and night modes. A station or trunk group can be completely unrestricted or can have any combination of the classes of service.

**7.71** The first nine COS designations (01–09) have default values. COS designations (10–16) do not have default values and are blank. All of the classes of service are programmable. Each may be specified as an "allowed" or "denied" class of service, dialing patterns can be programmed for each, and each can be assigned to stations and trunk groups as needed. (Refer to page 6–108 in PROGRAMMING for COS programming information.) The default values of COS 01–09 are as follows. The toll string wild cards and non-programmable wildcards are described and listed on page 4–35.

- **COS 01 — ARS Only:** (*This is a station COS only. It is not used for trunk groups. Also, it cannot be used unless the ARS premium feature is enabled.*) Calls can only be placed using the Automatic Route Selection (ARS) feature when this restriction is assigned. The user will hear reorder tones when attempting to place a call using any other method. A restricted user can still select individual trunks if the trunks are designated as "exempt from ARS Only" (as described on page 4–31), were transferred, were placed on hold, or are recalling or ringing. Trunk restriction determines which trunks in the ARS route group can be selected by the station or AXXESSORY Talk application.
- **COS 02 — Deny Area/Office:** This restriction is divided into three user groups to allow the use of varying area/office code restriction tables. This is useful for reducing restrictions for some of the stations, AXXESSORY Talk applications, or trunk groups while increasing restrictions for others. Each station, application, and trunk group is assigned a day mode and a night mode user group in database programming. Within each user group, area codes can be designated as restricted, allowed, or extended. Restricting an area code prevents users from placing calls to that area code. Allowing an area code allows all office codes within that area code. Designating an area code as extended allows the programmer to determine which office codes (up to 800) are allowed or restricted within that area code. For each user group, 800 area codes can be marked as allowed or restricted in the database list, and up to four area codes can be marked as extended.
- **COS 03 — Deny Operator:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]RN+, [Q]R0, and [Q]RE) are restricted, unless the number also matches a dial pattern in an "allowed" class of service that is assigned to the station, AXXESSORY Talk application, or trunk group being used.

- **COS 04 — Deny Toll Access:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]TN+ and [Q]TE) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, AXCESSORY Talk application, or trunk group being used.
- **COS 05 — Deny International:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]I+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, AXCESSORY Talk application, or trunk group being used.
- **COS 06 — Deny Equal Access:** Calls to numbers that match the dial patterns for this class of service (defaults to Q+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, AXCESSORY Talk application, or trunk group being used.
- **COS 07 — Deny Local Calls:** Calls to numbers that match the dial patterns for this class of service (defaults to N+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, AXCESSORY Talk application, or trunk group being used.
- **COS 08 — Denied Numbers:** Calls to numbers that match the dial patterns for this class of service (defaults to 1900NXXXXXX+ and 976XXXXX+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station, AXCESSORY Talk application, or trunk group being used.
- **COS 09 — Allowed Numbers:** Calls to numbers that match with the dial patterns for this class of service (defaults to 1800NXXXXXX+) are allowed, even if number also matches a dial pattern in a restricted class of service that is assigned to the station, AXCESSORY Talk application, or trunk group being used.

**7.72** When a station or AXCESSORY Talk application is actively connected to a trunk (that is, the dialed digits are being sent to the CO as they are dialed), the dialed number is restricted only if it *exactly* matches a pattern programmed for a “denied” class of service assigned to the station or trunk group being used. All numbers are allowed that do not match or only partially match the “denied” pattern(s).

**7.73** When a station or AXCESSORY Talk application is *not* actively connected to a trunk (that is, the dialed digits are *not* being sent to the CO as they are dialed, as with ARS and forwarding to outside numbers), a complete or partial match a pattern in a “denied” station or trunk class of service will cause the dialed number to be restricted. The dialed number will be allowed only if there is a complete or partial match with a pattern in an “allowed” class of service assigned to the station or trunk group being used.

**7.74** Exact (complete) pattern matches with classes of service marked as “allowed” always override exact pattern matches with classes of service marked as “denied.” Also, complete or partial pattern matches with classes of service marked as “allowed” always override partial pattern matches with classes of service marked as “denied.” The only time a pattern in a “denied” class of service overrides a pattern in an “allowed” class of service is when the match with the “denied” pattern is exact (complete) and the match with the “allowed” pattern is partial.

**7.75** System speed-dial numbers can be programmed to bypass COS restrictions on a system-wide basis. If the option is not enabled, all system speed-dial numbers are subject to toll restriction.

**7.76** Because a condition may exist where a critical or life threatening situation needs to be reported, using the Emergency Call feature code will override all toll restrictions and trunk access programming.

**7.77** In the event that the classes of service for the station or AXCESSORY Talk application and the trunk group conflict, the decision to restrict or allow a number is based on the following ordered checks. Note that these ordered checks apply to *all* calls to outside telephone numbers, including calls forwarded to outside telephone numbers.

- (1) *Station or AXCESSORY Talk application COS is checked:* If the digits dialed *exactly* match a pattern included in a “denied” class of service assigned to the station or AXCESSORY Talk application and not with a pattern included in an “allowed” class of service assigned to the station or AXCESSORY Talk application, the number is restricted.
- (2) *If ARS is not being used and forward to an outside number is not being programmed, trunk group COS is checked:* If the digits dialed *exactly* match a pattern included in a “denied” class of service assigned to the trunk group and not with a pattern included in an “allowed” class of service assigned to the trunk group, the number is restricted.

- (3) *If ARS is being used or a forward to an outside number is being programmed, station or AXXESSORY Talk application COS is checked: If the digits dialed **partially** match a pattern included in a "denied" class of service assigned to the station or AXXESSORY Talk application and not with a pattern included in an "allowed" class of service assigned to the station or AXXESSORY Talk application, the number is restricted.*
- (4) *If a forward is being programmed to an outside number, trunk group COS is checked: If the digits*

dialed **partially** match with a pattern included in a "denied" class of service assigned to the trunk group and not with a pattern included in an "allowed" class of service assigned to the trunk group, the number is restricted.

- (5) *If none of the above cases apply: The number is allowed.*

**7.78** Note that if the trunk group is "not subject to toll restriction," neither the trunk group or station COS is checked, unless the call was placed using ARS. All ARS calls are subject to **station** toll restriction only.

**Toll String Dialing Pattern Wildcards**

**7.79** Toll strings are dialing patterns that are abbreviated to single character “wildcards.” These programmable wildcards are used frequently in the toll restriction class of service programming and in other parts of the system, including ARS route group programming, trunk group absorbed digits programming, and others. *Note that changing these dialing patterns will affect all of the other parts of the system where they are used.*

**7.80** Toll strings can contain any digit 0–9, #, or \*. In addition, a variety of special characters may be entered into the database to reflect particular digit strings, hookflashes, or special digit strings (as described below).

**7.81** Each of the following toll string wildcards can be reprogrammed and/or renamed to meet the customer’s requirements. The programmable toll string wildcards are as follows:

- **Operator Access (R):** Using the “R” wildcard represents the digit string that is required to reach a telephone company operator. In the default state, this dialing pattern is 0.
- **Toll Access (T):** Entering the “T” wildcard represents the digit(s) required when using long distance service. In the default state, this toll string is 1.
- **International (I):** An “I” wildcard represents the digits required for international dialing. In the default state, the dialing patterns for this toll string are 011 and 01.
- **Equal Access (Q):** Using the “Q” wildcard represents the digits required for access to secondary carriers using equal access dialing. In the default state, this toll string is 101XXXX, 10NXX, and 100XX.
- **Any Toll String (S):** The “S” wildcard indicates that any of the designated patterns can be dialed at that point in the digit string. In the default state, the dialing patterns for this toll string are International (I), Operator Access (R), and Toll Access (T).

**Non-Programmable Wildcards**

**7.82** The following chart shows the special characters that may be used when specifying dialing patterns. These characters are not programmable.

| CHARACTER | MEANING                                                                                                                                                                              |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X         | Any digit 0–9                                                                                                                                                                        |
| A         | Any keypad entry (0–9, #, *)                                                                                                                                                         |
| N         | Any digit 2–9                                                                                                                                                                        |
| Z         | Any digit 0 or 1                                                                                                                                                                     |
| B         | # or *                                                                                                                                                                               |
| H         | A hookflash                                                                                                                                                                          |
| E         | End of dialing; the pattern will not match if any digits are dialed beyond this point                                                                                                |
| +         | Any additional dialing will be accepted, from this point in the string, with no further checking for a match. This also means that no further dialing is required beyond this point. |

**7.83** Unless otherwise noted, each wildcard character represents exactly one character position in the dialed number. For example, 258999X will accept 258999 plus any digit 0–9.

**7.84** A character inside brackets indicates an optional pattern within another pattern. For example, the International Access character “I” could be defined as 01[1]. The 01 is followed by an *optional* 1. To add an optional equal access code to the beginning, the pattern would be [Q]01[1].

**7.85** A range of numbers within parentheses, such as (00–99), indicates a range of digits within a pattern. The digits on either side of the hyphen and all digits that fall within the numerical range are included in the match. The digit strings on either side of the hyphen must be the same length, and the only digits that may appear in the range are 0–9 (#, \*, pauses, and hookflashes are not allowed).

**7.86** Patterns within angle brackets, such as <9>, indicate repeatable patterns within patterns. In other words, no matter how many times the digit string within the brackets is dialed, the system will consider the dialed digits to match the pattern. Note that a repeatable pattern is an entire pattern; no other characters are allowed before or after a repeatable pattern. In other words, a repeatable pattern cannot be included within any other pattern.

### M. AREA/OFFICE CODE NUMBERING PLANS AND LOCAL AREA CODES

**7.87** If any office codes in the local area code have a 0 or 1 as the second or third digit, the local office codes are probably used as area codes elsewhere, and the system requires special programming to allow toll restriction to work properly. During System-Wide Information database programming, the programmer can specify the following non-standard numbering plan information:

- **Office Codes Used as Area Codes:** Area codes in other locations are the same as office codes within the system site's area code.
- **Area Codes Used as Office Codes:** Office codes within the system site's area code are the same as area codes assigned to other areas.
- **Toll Digit Allowed On Toll Local Calls:** This option applies only if the area and office codes overlap. Callers in the site's area code usually dial a 1 when placing a call within the local area code(s).
- **Toll Digit Required On Toll Long Distance Calls:** This option applies only if the area and office codes overlap. Callers in the site's area code must dial a 1 when placing a call outside of the local area code(s).

**7.88** The database requires that the programmer enter a "home" area code for the system site. It also allows up to three additional "local" area codes. The system refers to these area codes for toll restriction and call cost.

### N. EMERGENCY CALL FEATURE

**7.89** The AXXESS System will immediately allow access to local emergency facilities whenever a station user enters the Emergency Call feature code (defaults to 911). When activated, the Emergency Call feature will select a trunk and then automatically dial the necessary digit(s) to call the local emergency services facility (defaults to 911). Because a condition may exist where a critical situation needs to be reported, this feature will override all toll restrictions and trunk access programming.

**7.90** When an emergency must be reported, any station user can lift the handset and dial 911 at intercom dial tone. At this point, the system will select an idle trunk using the trunk access code programmed for this feature (defaults to Trunk Group 1). The system will allow the Dialing Wait After Connect timer to expire and

will then dial the digit string programmed in the database as the emergency number.

**7.91** At the time the call is processed, a minor alarm will be generated by the system and sent to all Administrator stations.

**NOTE:** If an off-premises extension is used for dialing 911, the 911 operators will see the address of the location of the AXXESS System, not the off-premises address. Off-premises personnel should be prepared to give the correct address and other pertinent information.

**7.92** If the system is installed in an area where 911 service is not available, it is suggested that the number for the local police or fire department or the telephone company operator be substituted.

**7.93** If the database programmer renders this feature inoperative by either removing all trunk access and/or by removing the dialed digit string, the database program will present a warning message notifying that the feature has been disabled and requiring the programmer to acknowledge or change this condition before being allowed to continue.

**7.94** Like all other feature codes, the 911 feature code can be changed to another 1- to 5-digit code, if desired.

**7.95** If a user selects an outgoing trunk before dialing 911 (or the programmed Emergency Call feature code), toll restriction is *not* automatically overridden for that call; toll restriction *is* applied. If the user selects ARS to place the call, route group 1 is automatically selected.

**7.96** If the Emergency Call feature is programmed to use ARS, route group 1 (local calls) will be used even if its dial patterns are reprogrammed.

### O. DAY AND NIGHT MODES

**7.97** There are separate lists in the database for class-of-service, outgoing-access, allowed-answer, and ring-in assignments for day and night modes. When an Administrator enters the Night Mode feature code, the system uses the night mode lists. When the system is in day mode, the day lists are used. (Active calls are not affected when the mode is changed.)

**7.98** Night mode also affects the night transfer relays on the Options Card (OPC). The relays are activated when the system is placed in night mode. See page 2-19 in SPECIFICATIONS for details.

## P. DIRECT INWARD SYSTEM ACCESS (DISA)

**7.99** DISA is a programmable feature that allows an outside party to dial into the system from an external DTMF telephone and then dial extension numbers and hunt group pilot numbers.

**7.100** Any of the trunk groups can be programmed to receive incoming DISA calls in day and/or night mode. When not in use for DISA, the trunk group can be used for placing outgoing calls by stations with outgoing access permission.

**NOTE:** Due to the natural characteristics of the trunk, the volume level of DTMF tones transmitted over the trunk may be substantially reduced before reaching the AXCESS System. This natural degradation in tone volume may adversely affect the reliability of the DISA feature. Other factors which can affect DISA performance are trunk noise and the quality and strength of the DTMF tones generated by the off-premises phone itself. If the system cannot recognize a DTMF digit, the call is automatically sent to the primary attendant.

**7.101** When a DISA user calls a station extension number, the call rings as a direct ring-in call, even if the called station is busy or in do-not-disturb. The DISA caller hears music or ringing (determined by a system-wide option in database programming) until the Transfer Available or Transfer Busy timer expires; then if the call is not answered it recalls the called station's attendant. If the called station is forwarded, the call follows the programmed forward.

**7.102** When a hunt group pilot number receives a call through DISA, the call rings or circulates according to how the hunt group is programmed (i.e., linear or distributed).

**7.103** If a caller dials a valid hunt group pilot number that has no members assigned to it, the call automatical-

ly rings at the primary attendant station until the Abandoned Call timer expires. If the call is not answered before the Abandoned Call timer expires, the call is disconnected.

### Security Codes

**7.104** DISA trunks can be assigned security codes (up to eight digits in length) that are required for access to the system. The installer can program separate codes for each DISA trunk group to be used during day and/or night modes.

**7.105** During database programming, the programmer can determine the number of times that a caller may unsuccessfully attempt to enter a security code and/or dial an extension number. If the user does not succeed within the determined number of attempts, the call will be disconnected (if the security code is invalid) or transferred to the primary attendant (if the extension number is invalid).

### Using DISA

**NOTE:** If DTMF decoders are unavailable when a DISA call is received, the incoming DISA call is automatically sent to the primary attendant.

#### **7.106** TO USE DISA:

- (1) From a DTMF telephone, dial the telephone number of the DISA trunk. When the call is answered by the system, you hear system intercom dial tone.
- (2) *If you hear a single progress tone*, enter the appropriate (day or night) DISA security code, followed by pound (#).
- (3) Dial an extension number or a hunt group pilot number. (To call the primary attendant, dial 0.) You hear music or ringing until the call is answered.

## 8. STATION INSTRUMENTS

8.1 To allow system flexibility and cost efficiency, a variety of station instruments can be used on the AXXESS System. They are:

- Basic Digital Keypad (also referred to as Basic Digital Terminal) — non-display only
- Standard Digital Keypad (also referred to as Standard Digital Terminal) — non-display and display
- Executive Digital Keypad (also referred to as Executive Digital Terminal) — display only
- Digital DSS/BLF Unit — single or tandem
- Industry-standard single-line, dual-tone multi-frequency (DTMF) set

8.2 Digital Keypad Cards (DKSC or DKSC-16) are used to support keypad stations. Digital Keypad Card circuits can be programmed to support two single-line stations (instead of a keypad). DSS/BLF Units are connected to Executive or Standard keypads that are equipped with PC Data Port Modules (see page 4-52 for details). The DKSC has eight circuits and the DKSC-16 has 16 circuits.

8.3 System software will support any configuration of station instruments with the limitation that there must be a minimum of one Keypad Card. The actual configuration is defined by the type of cards and the number of circuits in use on the system. There may be a maximum of 15 (combined) keypad and trunk cards in an Expanded system, seven in the Basic system.

### A. KEYSETS

8.4 Three types of keypad are available: Executive, Standard, and Basic. Keypad design features are described in the following paragraphs.

#### Executive Keypad Speakerphones

8.5 Each Executive keypad has a built-in, integrated speakerphone that allows on-hook dialing and hands-free operation on outside calls and inside (intercom) calls. The Executive speakerphone can be used in standard mode or in enhanced mode which allows for full-duplex operation over a limited volume range (the range depends on trunk characteristics). Enhanced speakerphones are explained on the next page.

8.6 The Executive keypad's speaker can also provide background music (if an external music source is installed) and is used to receive pages.

8.7 A programming option can be used to disable the keypad's speakerphone capabilities (see page 6-33 in

PROGRAMMING). Or, the user can disable the speakerphone for intercom calls using the Handsfree On/Off and/or Ring Intercom Always On/Off feature codes as described on page 4-58.

**NOTE:** On certain handsfree-to-handsfree intercom calls, voice volume levels may cause feedback to occur. If this happens; one station user should pick up the handset. Two Executive Keypads cannot be in enhanced mode while on a call together; one keypad must be off hook to allow the other keypad to enter enhanced speakerphone mode. If both keypads are on hook, there is no benefit to having one keypad in enhanced mode.

#### Standard And Basic Keypad Speakerphones

8.8 Standard and Basic keypads have a built-in speaker and microphone that allow the user to answer intercom calls handsfree, dial while on hook, monitor calls, and listen to background music.

8.9 Standard and Basic keypads can be programmed in individual station programming to be allowed to use system resources for standard and enhanced speakerphones. Enhanced mode allows for full-duplex operation over a limited volume range (the range depends on trunk characteristics). Enhanced speakerphones are explained on the next page.

8.10 To provide standard and enhanced speakerphone resources for Standard and Basic keypads, the system must be equipped with DKSC-16 cards and/or an Options Card. Each DKSC-16 provides DSP circuitry for up to 10 switched speakerphones for the Standard and Basic keypads attached to that card. The Options Card DSP circuitry must be designated in database programming for system-wide speakerphone resources. (There are up to four DSPs on each Options Card. Each DSP can be programmed to support up to eight speakerphones. See page 6-243 in PROGRAMMING.) If programmed, the Options Card speakerphone resources are available system-wide to Standard and Basic keypads on a first-come, first-served basis.

8.11 Each time a Standard or Basic keypad user presses the SPKR key while on hook, the standard switched speakerphone function is activated and the DSP resource (DKSC-16 or Options Card) is assigned to that phone for the length of the call. If a Standard or Basic keypad user requests the speakerphone function when DSP speakerphone resources are not available, the user will hear reorder tones and the display will show NO SPKRPHN AVAIL STAY OFF HOOK. If the user attempts to change to the speakerphone and hangs up during a call when speakerphones are unavailable, the user will be forced into a monitor-only mode. The user will be able to hear the other party but will not be allowed to transmit to them. In this mode, the user's MUTE key

will be lit and the display shows NO SPKRPHN AVAIL COME OFF HOOK. Pressing the lit MUTE key will result in a burst of reorder tone; you must lift the handset to speak.

#### Enhanced Speakerphones (All Keypad Types)

8.12 To use an enhanced speakerphone on a keypad, the user establishes a call and presses the SPCL key and then the SPKR key (or presses SPCL and enters the Enhanced Speakerphone feature code — 310). There will be about one second of white noise at this point. (Both parties should avoid speaking during this white noise.) This white noise is used to calibrate the echo-cancelling circuitry. After the white noise there will be a confirmation tone (Executive keypad users will hear the tone, but the other party will not. On a Standard or Basic keypad, both the user and the other party will hear the tone.) Then the user will be connected in an enhanced hands-free call. If the speakerphone cannot be calibrated correctly, due to trunk conditions, the enhanced speakerphone will not be enabled and the display will show CANNOT ENABLE ENHANCED MODE.

**NOTE:** It is normal for an outside party to hear a minimal amount of his or her own echo when speaking to a

keyset in enhanced speakerphone mode. This is usually acceptable to most callers on local calls and on most long-distance calls. However, on some T1 and long-distance calls involving significant delays (for example, cross-country T1 calls, overseas calls or calls via satellite), the amount of echo may be objectionable and the enhanced speakerphone mode should not be used on these types of long-distance calls.

8.13 If an enhanced speakerphone call is placed on hold and then taken off hold on an Executive keypad, it remains an enhanced speakerphone call. If it is placed on hold at a Standard or Basic keypad, the call is returned to standard speakerphone mode.

8.14 A station can only have one enhanced speakerphone call. For example, if an Executive keypad user makes an enhanced speakerphone call, puts it on hold, and establishes another enhanced speakerphone call, the first call will be turned back into a standard speakerphone call.

8.15 A keypad station user can set up a conference and then, once it is established, press SPCL and SPKR (or presses SPCL and enters the Enhanced Speakerphone feature code — 310) to have an enhanced speakerphone call in the conference.

**Executive Keypad Liquid Crystal Display (LCD)**

**8.16** All Executive keysets have a six-line display. Each line has 16 characters. (A picture of the Executive keypad is shown in the Figure below.) The top two lines are for standard call information and show the same displays as Standard display keysets. The remaining four lines are used for displaying feature-related menus that change with the function being performed by the keypad (intercom call, outside call, programming, etc.). These lines have menu selection keys on both sides (eight keys) that are used for menu features. When there are two prompts on a line, like PREVIOUS and NEXT, the key next to the word is the one that will select that feature. When there is only one prompt on a line, like DO NOT DISTURB, then pressing the key on either side of the prompt will select it.

**8.17** Under the display are six display-oriented message manipulation feature keys. PREVIOUS and NEXT are used for scrolling through screens (or voice mail messages). BACKSPACE and FORWARD are used when doing text entry (like custom do-not-disturb messages). CLEAR erases all data that you have entered into a line (for example, an entire line of custom do-not-disturb text). CANCEL terminates whatever you are doing.

**8.18** There is a system-wide flag, called "Alternate Keypad Menu Displays," that determines the display that Executive Keypad users will see during an outside call. In the default state, the display shows the following menu with Transfer-To-Hold on the first menu and Flash on the "More..." menu:

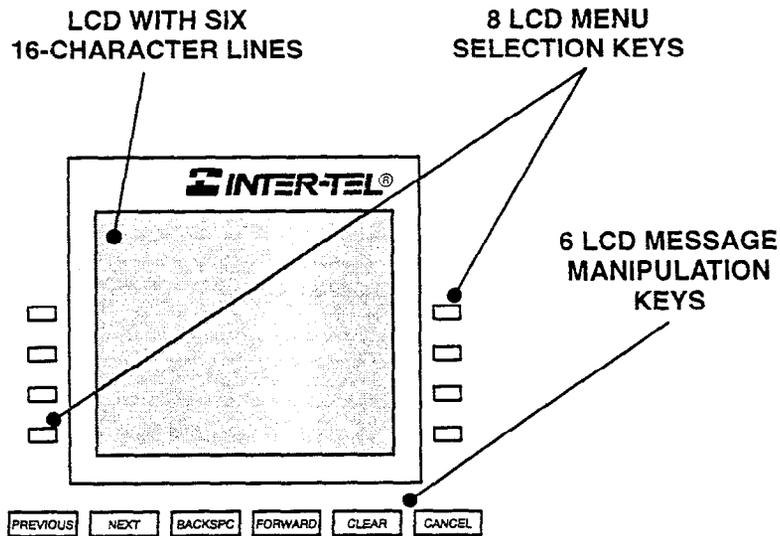
|                  |          |
|------------------|----------|
| HOLD             | SYS HOLD |
| TRANSFER         | CNF      |
| TRANSFER-TO-HOLD |          |
| MUTE             | MORE...  |

**8.19** If the Alternate Keypad Menu Displays flag is enabled, the Executive Keypad users will see the following menu with Flash on the first menu and Transfer-To-Hold on the "More..." menu:

|          |          |
|----------|----------|
| HOLD     | SYS HOLD |
| TRANSFER | CNF      |
| FLASH    |          |
| MUTE     | MORE...  |

**8.20** Enabling the Alternate Keypad Menu flag allows Centrex features to be accessed more easily, using the FLASH menu option.

**FIGURE 4-3. EXECUTIVE KEYPAD DISPLAY**



### Standard Keypad Liquid Crystal Display (LCD)

**8.21** Standard keysets are available in display and non-display models. The Standard display keysets have two-line displays with 16-characters per line. (A picture of the Standard keypad is shown on page 2-36 in SPECIFICATIONS.)

**8.22** Standard non-display keysets can be converted to display keysets by installing LCD Units. (Installation instructions are on page 3-61 in the INSTALLATION section.) The LCD Unit has two 16-character display lines.

**8.23** When the keypad is not in use, the LCD shows the station extension number, user name, time of day, and date. Other displays include: reminder messages, do-not-disturb messages, numbers dialed, call sources, elapsed time of calls, current call costs, error messages, station status, programming messages, etc. The displayed information is described throughout the instructions in this section of the manual.

### Extension Number, Username, Time and Date Display

**8.24** When a display keypad is idle, the extension number, username, time, and date are displayed. While on a call, in do-not-disturb, or unconditionally forwarded, other displays are shown. In these circumstances, use the following procedure to redisplay the date, time, name, and extension number for five seconds.

**8.25** *TO DISPLAY THE DATE, TIME, USER NAME, AND EXTENSION NUMBER:*

Press the SPCL key and enter the Display Time/Date feature code (300). The date, time, user name, and extension number are displayed for five seconds.

### Circuit Number On Power-Up

**8.26** To aid in installation and troubleshooting procedures, display keysets show their station identification for five seconds when power is turned on, when the system is reset, or when the keypad line cord is first plugged in (or removed and replaced). The extension number and assigned user name appear on the top line of the display, and the circuit number appears on the bottom line. After the five-second identification display, the keypad returns to the appropriate display, depending on its current status.

### "All Transient Displays" Station Flag

**8.27** The "All Transient Displays" station flag, when enabled, will allow all transient call handling displays to

appear on the keypad display. If it is disabled, the CALL TRANSFERRED TO XXXX and MESSAGE LEFT FOR XXXX transient displays will not appear. (See page 6-52 in PROGRAMMING.)

**8.28** Each transient display is shown for five seconds before another display can take its place. Disabling the flag allows high-traffic stations (such as attendants) to change displays more quickly after a message is left by the station user or after a call is transferred.

**8.29** This station option cannot be programmed by the user. It is a database-programmable flag.

### "Alternate Transient Display Timer" Station Flag And Timer

**8.30** As an alternative to (or in addition to) disabling the call transfer and message transient displays, as described above, the programmer can use a combination of a station flag and a timer to control *all* of the station's transient displays (not just the call transfer and message displays). The "Alternate Transient Display Timer" station flag, if enabled, allows all transient displays to be controlled by the "DKTS Alternate Transient Display" timer. (See page 6-52 in PROGRAMMING.)

**8.31** The "DKTS Alternate Transient Display" timer can be set to 1-255 tenths of a second (0.1-25.5 seconds). The default value is 10 tenths of a second (1 second). This timer affects only those keypad stations with the "Alternate Transient Display Timer" flag enabled.

### "Transient Call Indication On Call Answer" Station Flag

**8.32** This programmable station flag determines whether the station user will see a call display when answering a call by pressing a secondary extension key or by reverse transferring. If enabled, the display will tell if the call was ringing, recalling, transferred, or holding at the other station.

### "Hot" Keypad Keys

**8.33** The keysets have "hot" keypad keys that allow dialing of feature codes, extension numbers, and trunk access codes without pressing the SPCL key or lifting the handset. As soon as a keypad digit is pressed, the digit is recognized by the AXXESS System.

**8.34** If a keypad user presses the SPCL key while on hook, the display shows ENTER FEATURE CODE and the Executive keypad menu shows a list of feature codes. The user can enter the desired code or press a menu key.

## Key Maps

**8.35** A key map group determines the layout of the keys for all the stations assigned to that group. If any of the keys in the key map group are user-programmable or undefined, they can be changed by the station user. There can be up to 15 different keyset key map groups. Refer to PROGRAMMING, page 6-52, for more details. (There are also three maps for DSS/BLF Units.)

**8.36** Each keyset is assigned a standard key map and can also have an alternate keymap. See page 4-43 for information about switching between standard and alternate keymaps.

**8.37** When the system is in the default state there are two pre-programmed keymaps. Key map #1 is for Standard and Executive Keysets. Key map #15 is for Basic Keysets. When a keyset is plugged in, the system determines which type of keyset it is and assigns the appropriate key map (#1 for Standard/Executive or #15 for Basic). If the keyset type is changed, for example from a Basic to a Standard, the system automatically changes the default key map to match the new keyset type (in the example, it changes from #1 to #15). However, if the station has a key map other than its default map (maps 2-14), the key map will not be changed automatically if the keyset type is changes; you must manually change the key map.

**8.38** The keys in each keymap can be assigned the following functions:

- **Call key:** Up to 10 Call keys can be assigned in each key map. These keys are used for call access. They are not associated with specific trunks. Instead, they are assigned to calls in the order that the calls are placed or received. In the following example, the user has three Call keys.

| ACTION                                   | CALL KEY 1                   | CALL KEY 2                   | CALL KEY 3              |
|------------------------------------------|------------------------------|------------------------------|-------------------------|
| User places call #1                      | Shows status of call #1      |                              |                         |
| Call #2 rings in while call #1 is active | Shows status of call #1      | Shows ring flash for call #2 |                         |
| Calls #1 and #2 on hold, call #3 placed  | Shows hold flash for call #1 | Shows hold flash for call #2 | Shows status of call #3 |

If there are more calls in progress than there are Call keys (e.g., if another call rings in to the keyset in the example), the new call will not have an available call key and will camp on to the station until a Call key becomes available; it will then appear under the

available key. Pressing an idle Call key will enter the programmed Outgoing Call feature for that station. If there is no IC key programmed in the key map, intercom calls will appear under Call keys. **NOTE:** All key maps should have at least one Call key if there is not an individual trunk key for every trunk.

- **DSS/BLF key:** A DSS/BLF key will dial the associated extension number when pressed. If assigned to a key with a lamp, it will also show status of the associated station as described for DSS/BLF Units on page 4-52. DSS/BLF keys cannot be changed by the station user.
- **Feature key:** These are programmed with feature codes. The feature code appears in the same key location on all stations assigned to the key map and cannot be changed by the keyset user.
- **Forward key:** The forward key can be programmed with any of the Call Forwarding feature codes. The forwarding code used by the key can be changed by the keyset user.
- **Hunt Group key:** Like a DSS/BLF key, this key dials a hunt group pilot number when pressed and, if assigned to a key with a lamp, will show the status of that hunt group.
- **Individual Trunk key:** This key is associated with one trunk. It can be used for placing outgoing calls, and for picking up calls on hold and answering incoming calls on that trunk.
- **Intercom (IC) key:** The IC key allows access to intercom channels for placing and answering calls. If an IC key is not assigned, an intercom call will appear under a Call key.
- **Page Zone key:** A page zone key is programmed with one of the page access codes (960-969) for quick access to page zones (0-9 respectively).
- **Programmable key:** Up to 11 user-programmable keys can be designated and given default values in the key map database. They can then be reprogrammed to enter any of the trunk group access codes, extension numbers, or feature codes by the individual keyset users as desired. Or, they can be programmed as system or station speed-dial bins, or as secondary extension keys (see below). The keyset user or programmer can return the keys to default values at any time.
- **Secondary Extension key:** This type of key allows a station user to have one-key access to calls ringing or holding at another station. It should be assigned to a key with a lamp so that the secondary extension key can show the call status. If desired, a station can have several secondary extension keys, each associ-

ated with a different station. For details, see page 4-46.

- **Speed-Dial (SD) keys:** Each key map can have up to 10 SD keys. Each SD key can be programmed by the keyset user to dial one digit string. If assigned to a key with a lamp, the lamp will show the status of an extension number if it is associated with that key.
- **Trunk Group key:** These keys are associated with specific trunk group access codes and are used for placing outgoing calls on trunks in the selected trunk group. If assigned to a key with a lamp, the lamp will be lit if all trunks in the trunk group are in use.
- **Undefined key:** Any key can be left undefined if it will not be needed. It can be programmed, like a user-programmable key, as described above. If the keyset user or programmer returns the keyset to default values, the key will return to being "undefined."

#### Standard/Alternate Keymap Switching

**8.39** In database programming, each keyset is assigned a standard keymap and can also have an alternate keymap. The user can switch between the keymaps by entering a feature code. (The maps can also be switched in the database using the Alternate Keymap station flag; see page 6-30 in PROGRAMMING.)

**8.40** Having two keymaps provides the user with access to more features or trunks. In most situations, the user would have one key programmed with the Switch Keymap feature code (399) in each keymap so that it would be easy to change the keymap. (If the user-pro-

grammed key has a lamp, the lamp is lit when the alternate keymap is active.)

**8.41** When keymaps are switched, any user-programmable keys in the maps retain their user-programmed values; they are not returned to default during the switch. However, if the keymaps do not have the same user-programmable keys in the same positions, the location of individual keys may change when the keymaps change.

**8.42** If a user switches keymaps during an outside call, the call will appear on the appropriate trunk or Call key for that keymap. The key assignment may not be the same for both keymaps. For example, it could appear under a Call key on one map and an individual trunk key on the other.

**8.43** If a key is not available in the currently active keymap when a call rings in, the user will still see the correct display, hear ringing, and can answer as usual.

**8.44** *TO SWITCH BETWEEN KEYMAPS WHEN THE STATION IS IDLE:*

While on hook, enter the Switch Keymap feature code (399). The display shows STANDARD KEYMAP IS ACTIVE or ALTERNATE KEYMAP IS ACTIVE.

**8.45** *TO SWITCH BETWEEN KEYMAPS DURING A CALL:*

While on a call, press SPCL and enter the Switch Keymap feature code (399). The display momentarily shows STANDARD KEYMAP IS ACTIVE or ALTERNATE KEYMAP IS ACTIVE.

**Default Keypad Feature Keys**

**8.46** When the system is in the default state, all keysets are in the same key map group and have the following feature keys. Feature code descriptions start on page 4-5.

**8.47** The default values of the Executive and Standard Keypad programmable keys that can be assigned in the key-map, and their fixed-function keys are as follows:

**EXECUTIVE AND STANDARD KEYMAP (#1) — PROGRAMMABLE KEYS:**

| KEY                   | FUNCTION                                                                                                                                                                                       |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CALL KEYS 1-4         | Selects an outgoing trunk, if idle, or answers a call on the key.                                                                                                                              |
| IC                    | Selects a voice channel or picks up a holding or camped-on intercom call.                                                                                                                      |
| DND                   | Programmable key 1: Do-Not-Disturb On/Off (372)                                                                                                                                                |
| PROGRAMMABLE KEYS 2-6 | Undefined values. Can be programmed with any feature code, trunk access code, or extension number, or can be programmed as a station or system speed-dial bin.                                 |
| CNF                   | Programmable Key 7: Conference (5)                                                                                                                                                             |
| HOLD                  | Programmable Key 8: Individual Hold (336)                                                                                                                                                      |
| TRANSFER              | Programmable Key 9: Transfer to Ring (345)                                                                                                                                                     |
| SYS SPD               | Programmable Key 10: System Speed Dial (381)                                                                                                                                                   |
| REDIAL                | Programmable Key 11: Redial (380)                                                                                                                                                              |
| FWD                   | Call Forward All Calls (355) — This feature key may be reprogrammed with any of the call forward options (however, other feature codes may not be used). Also used for canceling Call Forward. |
| SPCL                  | Signals the system to expect a feature code.                                                                                                                                                   |
| ANSWER                | Answer (351)                                                                                                                                                                                   |
| OUTGOING              | Selects a trunk for placing an outgoing call using the station's Outgoing Call feature (8).                                                                                                    |

**EXECUTIVE AND STANDARD KEYMAP (#1) — FIXED-FUNCTION KEYS:**

| KEY         | FUNCTION                                                                                                       |
|-------------|----------------------------------------------------------------------------------------------------------------|
| SPKR        | Speakerphone On/Off                                                                                            |
| MSG         | Message (365) — Also retrieves messages when the flashing MSG key is pressed.                                  |
| VOL UP/DOWN | Adjusts the keypad volumes and scrolls through displays. When pressed at the same time, acts as an Accept key. |
| MUTE        | Microphone Mute On/Off (314)                                                                                   |

8.48 The default values of the Basic Keypad programmable keys that can be assigned in the keypad, and the fixed-function keys are as follows:

**BASIC KEYPAD (#15) — PROGRAMMABLE KEYS:**

| KEY           | FUNCTION                                                                                                                                                                                       |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CALL KEYS 1-4 | Selects an outgoing trunk, if idle, or answers a call on the key.                                                                                                                              |
| IC            | Selects a voice channel or picks up a holding or camped-on intercom call.                                                                                                                      |
| DND           | Do-Not-Disturb On/Off (372)                                                                                                                                                                    |
| CNF           | Programmable Key 7: Conference (5)                                                                                                                                                             |
| ANSWER        | Answer (351)                                                                                                                                                                                   |
| OUTGOING      | Selects a trunk for placing an outgoing call using the station's Outgoing Call feature (8).                                                                                                    |
| HOLD          | Programmable Key 8: Individual Hold (336)                                                                                                                                                      |
| TRANSFER      | Transfer to Ring (345)                                                                                                                                                                         |
| STN SPDL      | Station Speed Dial (382)                                                                                                                                                                       |
| REDIAL        | Programmable Key: Redial (380)                                                                                                                                                                 |
| SPKR          | Speakerphone On/Off                                                                                                                                                                            |
| MSG           | Message (365) — Also retrieves messages when the flashing MSG key is pressed.                                                                                                                  |
| MUTE          | Microphone Mute On/Off (314)                                                                                                                                                                   |
| FWD           | Call Forward All Calls (355) — This feature key may be reprogrammed with any of the call forward options (however, other feature codes may not be used). Also used for canceling Call Forward. |

**BASIC KEYPAD (#15) — FIXED-FUNCTION KEYS:**

| KEY         | FUNCTION                                                                                                       |
|-------------|----------------------------------------------------------------------------------------------------------------|
| VOL UP/DOWN | Adjusts the keypad volumes and scrolls through displays. When pressed at the same time, acts as an Accept key. |
| SPCL        | Signals the system to expect a feature code.                                                                   |

## Secondary Extension Appearances

**8.49** The Secondary Extension Appearances feature allows calls ringing or on individual hold at one "primary" station to appear on a "secondary extension key" at another station. For example, a secretary or assistant can have a secondary extension key for a supervisor's station, or one station can have several secondary extension keys, each associated with a different primary station.

**8.50** A secondary extension key functions as follows:

- When a call is ringing or holding on any Call key at the primary station, pressing the secondary extension key will answer the call. (This includes recalls, transfers, callbacks, and hunt group calls.)
- If the secondary extension key is unlit, pressing the key places an intercom call to the primary station. If the key is flashing, an intercom call can still be placed without answering the incoming call by pressing the pound (#) key before the secondary extension key, by pressing a DSS key, or by manually dialing the primary station's extension number.

**8.51** There are two programmable options that determine the type of call indications the station user will receive for calls on a secondary extension key:

- **Ring When *n* Calls At Extension:** This programmable option allows the station to receive a burst of ringing when "*n*" number of calls are present at the associated primary station, and at least one call is ringing or camped on. The ring signal will repeat periodically as long as "*n*" number of calls are present at a primary station. (This period is determined by the DKTS Secondary Extension Key Alerting Tone timer.) This option is programmed individually for each secondary extension key, during keymap programming.
- **Transient Call Indication On Call Answer:** This programmable station flag determines whether the station user will see a call display when answering a call by pressing the secondary extension key or reverse-transferring the call. If enabled, the display will tell if the call was ringing, recalling, transferred, or holding at the primary station.

**8.52** The secondary extension key can be located on the keyset or on a DSS/BLF Unit. There are two ways to make a secondary extension key:

- Create a secondary extension key in the keymap and determine which station it will represent. This will be the same for all stations assigned to that keymap.

- Set the default value of a user-programmable key to "secondary extension key" in the keymap. This allows each station user assigned to that keymap to determine the associated station for his or her secondary extension key. (See page 4-54 for key programming procedures.)

**8.53** User-programmable keys cannot be made into secondary extension keys by the station user; they can only be created in the database. Also, the station user cannot change the key into any other *type* of key (such as a speed-dial or feature key), even though it is assigned to a user-programmable key.

**8.54** Any keyset key can be designated as a secondary extension key, but keys with lamps are recommended so that the secondary extension key can show call status. The table on the next page shows the definition for each possible lamp flash rate.

**8.55** The secondary extension key shows only calls that appear under the Call keys at the primary station. Any calls on individual trunk keys at the primary station are considered private calls and will not appear on the secondary extension key.

**8.56** Normally, the secondary extension key will not show intercom calls. However, as explained on page 4-42, if the primary station does not have an IC key, intercom calls will appear under a Call key and, therefore, will appear on the secondary extension key. If the primary station is a single-line set, *all* calls will appear on the secondary extension key.

**8.57** After answering a call on the secondary extension key, the station user can transfer it back to the primary station using one of the following methods:

- **Transfer to hold:** To transfer the call to hold at the primary station, press the secondary extension key, announce the call, if desired, and then hang up.
- **Transfer to ring:** To transfer a call to the primary station, press the TRANSFER key and then the secondary extension key. You can announce the call, if desired, before hanging up to complete the transfer.

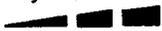
**8.58** Because the calls that appear on the secondary extension key are active only at the primary station, they will not follow call forwarding or system forwarding paths at the station with the secondary extension key.

**Keypad Light-Emitting Diode (LED) Indications**

**8.59** The keypad Call keys, trunk keys, speed-dial (SD) keys, hunt group keys, and some of the feature keys contain light-emitting diodes (LEDs). The LED flash rates, shown below, indicate the status of the stations, trunks, and features. The rates are shown in interruptions per minute (IPM).

|                                                      | STEADY<br>0 IPM                                                              | SLOW<br>30 IPM                   | MEDIUM<br>120 IPM                         | FAST<br>240 IPM                                                             | FLUTTER<br>60/960 IPM                                                                                     |
|------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------|-------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>DATA</b>                                          | Auto-dial modem is dialing and the data port is unavailable                  |                                  |                                           | Ring signal is being sent to the data device.                               | Data call is in progress and accessible. A continuous flutter indicates that the data device is off hook. |
| <b>IC</b>                                            |                                                                              | Intercom call is in progress.    | Recalling intercom call is camped on.     | Intercom call is camped on (waiting).                                       | Intercom call is on hold.                                                                                 |
| <b>SPKR</b>                                          | Speakerphone is on or ready for use. Or, station programming is in progress. |                                  |                                           |                                                                             |                                                                                                           |
| <b>CNF</b>                                           |                                                                              | Conference is in progress.       | Conference is recalling your station.     |                                                                             | Initiating station left the conference, or a conference party is on conference wait hold.                 |
| <b>MUTE</b>                                          | Microphone is muted.                                                         |                                  |                                           |                                                                             |                                                                                                           |
| <b>FWD</b>                                           | Calls are being forwarded.                                                   |                                  |                                           |                                                                             |                                                                                                           |
| <b>MSG</b>                                           | Station is in alphanumeric mode.                                             |                                  | Message is waiting.                       |                                                                             |                                                                                                           |
| <b>DND</b>                                           | Your station is in do-not-disturb.                                           |                                  |                                           |                                                                             |                                                                                                           |
| <b>SPEED DIAL<br/>or<br/>SECONDARY<br/>EXTENSION</b> | Station is busy or unplugged.                                                | Station is in do-not-disturb.    |                                           | Station has a call ringing in.                                              | Continuous flutter indicates that the station was left off hook.                                          |
| <b>HUNT GROUP</b>                                    | All stations in hunt group are unavailable.                                  |                                  |                                           | Hunt group has a call camped on.                                            |                                                                                                           |
| <b>CALL</b>                                          |                                                                              | Call is active at your station.  | Call is recalling from hold or transfer.  | Call or queue call-back is ringing in or camped on (waiting).               | Call is on hold.                                                                                          |
| <b>TRUNK</b>                                         | Trunk is in use at another station or unplugged.                             | Trunk is in use at your station. | Trunk is recalling from hold or transfer. | Trunk is ringing in or camped on (waiting). Or, busy trunk queue call-back. | Trunk is on hold.                                                                                         |

## Volume Controls

**8.60** On all keysets, volume is controlled by pressing one edge of the VOLUME feature key to adjust the volume up or down. On the Executive and Standard keysets there are up and down arrows on the key. On the Basic keyset, an illustration on the key (that looks like this ) represents higher and lower volume levels. Press the lower end in place of the down arrow and the higher end in place of the up arrow.

### 8.61 TO CHANGE VOLUMES ON A KEYSSET:

- (1) Press the VOLUME ▲ key to raise the volume or press the VOLUME ▼ key to lower the volume, while performing one of the following. A confirmation tone will alert you when you have reached the highest or lowest possible volume. On display keysets, the display shows VOLUME LEVEL X. The "X" represents the level and changes as the volume is raised or lowered.
  - a. **To change handset intercom voice volume:** Press the desired arrow while on an off-hook (handset) intercom call.
  - b. **To change handsfree intercom voice and paging volume:** Press the desired arrow while on an on-hook (speakerphone) intercom call.
  - c. **To change handset outside call voice volume:** Press the desired arrow while on an off-hook (handset) outside call.
  - d. **To change handsfree outside call voice volume:** Press the desired arrow while on an on-hook (speakerphone) outside call.
  - e. **To change background music volume:** Press the desired arrow while listening to music through the keyset speaker.

**NOTE:** The selected background music volume level is automatically saved.
  - f. **To change alerting tone (ring tone) volume:** Press the desired arrow while the keyset is ringing or idle. **OR**, while on hook, press both arrows to hear the currently programmed volume, then press the desired arrow to adjust it up or down.

**NOTE:** The selected alert tone volume level is automatically saved.
  - g. **To change handset progress tone volume:** Press the desired arrow while listening to intercom dial tone through the handset.
  - h. **To change speakerphone progress tone volume:** Press the desired arrow while listen-

ing to intercom dial tone through the speakerphone.

- (2) **To save the setting:** Press both VOLUME arrows at the same time. If this step is not performed, the keyset will return to the previous volume level when the call, or tone ends (except for the ringing alert tone or background music volume, which is automatically saved at the most recent volume level). The display shows VOLUME SAVED.

### 8.62 TO RETURN A KEYSSET TO DEFAULT VOLUME LEVELS:

While on or off hook, enter the Default Station feature code (394). *If off hook*, hang up. The display shows STATION DEFAULTED.

**NOTE:** Entering this feature code also cancels do-not-disturb, manual call forwarding, background music, ring intercom always, all calls following account code, headset mode, and queue requests; and restores handsfree mode, pages, hunt group calls, and system forwarding.

## Selectable Ring Tone

**8.63** The tone of the keyset ring signals (all tones except call waiting) can be changed by the user to create distinctive ringing. If stations are placed close together, changing the tone makes each station's ring easier to recognize. On all keysets, the tone is changed by entering a feature code and a code, as described below.

**8.64** There are ten ring tone options (0-9). Selection 0 will turn off the ring signals.

### 8.65 TO CHANGE KEYSSET RING TONE:

- (1) While on hook, enter the Program Ring Tone feature code (398). Displays SELECT RING TYPE (0-9) OR SCROLL.
- (2) **To select a specific ring tone:** Enter a number 1-9 for the desired ring tone. The display shows RING TYPE X SELECTED.

**To scroll through the tones:** Press the VOLUME ▼ or PREVIOUS key to scroll backward through the tones. Press the VOLUME ▲ or NEXT key to scroll forward. (You cannot scroll to selection 0, you must enter it as described below.) The display shows RING TYPE X SELECTED.

**To turn off ringing:** Enter 0 or press the RINGER OFF menu key. The display shows RING TYPE OFF SELECTED.

- (3) Lift and replace the handset or press the pound key (#), both VOLUME arrows, or the ACCEPT key to exit. The selected tone will be heard when the keyset rings (unless ringing was disabled). The display shows RING TYPE X SAVED.

### Connecting A Headset

**8.66** For convenience, an electret headset can be used at any keyset station. The SPKR key is used to connect and disconnect calls when the headset is attached. Refer to SPECIFICATIONS, page 2-21, when selecting a headset for use on the keyset.

#### **8.67** TO CONNECT A HEADSET:

- (1) Disconnect the handset by unplugging the coiled handset cord from the base of the keyset. Leave the handset in the cradle.
- (2) Insert the headset plug into the vacant handset jack.
- (3) While on hook, enter the Headset On feature code (315) or the Headset On/Off feature code (317). The display shows HEADSET MODE ON.

#### **8.68** TO DISCONNECT THE HEADSET:

- (1) Disconnect the headset by unplugging the headset cord from the base of the keyset.
- (2) Plug the coiled handset cord into the base of the keyset.
- (3) While on hook, enter the Headset Off feature code (316) or the Headset On/Off feature code (317). The display shows HEADSET MODE OFF.

### Optional Data Port Modules

**8.69** There are two types of Data Port Modules that can be connected to Executive and Standard keysets:

- **PC Data Port Module (PCDPM):** This is a digital device that is connected to the Executive or Standard keyset which supports data transmission between the keyset and the AXCESS System for DSS/BLF, off-hook voice announce, Desktop Interface, and/or serial port functions. A PCDPM is required if a Mo-

dem Data Port Module or DSS/BLF Unit will be installed, or if the user wishes to receive OHVA calls. (See page 2-21 in SPECIFICATIONS for information about a special PCDPM that provides only OHVA capability.)

**NOTE:** A keyset serial port should not be used as the AXCESSORY Talk communications port.

- **Modem Data Port Module (MDPM):** The MDPM is an analog device that can be connected to a modem for data applications or it can be connected to a single-line set. The port itself has an individual extension number and complete station programming setup including its own trunk access and toll restriction information. (See page 4-101 for data device information.)

**8.70** Special programming is required to enable the Executive or Standard keyset circuit to support some of the PCDPM and MDPM functions. Refer to page 6-238 in PROGRAMMING for details.

**8.71** Station users can adjust the baud rate of the serial port on the PCDPM connected to the keyset, if it is not configured for a DSS/BLF unit. The baud rate can be set to 300, 600, 1200, 2400, or 4800 (1200, 2400, or 4800 if it is a system serial port).

#### **8.72** TO CHANGE THE BAUD RATE OF YOUR PCDPM:

- (1) While on hook, enter the Program Baud Rate feature code (393). If the port is not configured for a DSS/BLF unit, the display shows ENTER BAUD RATE. (If it is configured for DSS/BLF, the display shows CANNOT PROGRAM BAUD RATE.)
- (2) Enter a valid baud rate (300, 600, 1200, 2400, or 4800). Executive keyset users can press the appropriate menu key in the display. The display shows BAUD RATE UPDATED. (If the entered baud rate was already in effect, it shows NO UPDATE PERFORMED.)

### Desktop Interface

**NOTE:** This feature must be enabled in Premium Feature Selection. See page 6-220 in PROGRAMMING.

8.73 Desktop Interface is a *station-level* communications protocol that allows a PC, attached to a PCDPM on an Executive or Standard keyset, to emulate a keyset for call handling. This protocol will allow devices such as PC phones, operators' consoles, ACD supervisors, and integrated contact management tools to be developed for the AXXESS system.

8.74 There can be as many Desktop Interface devices on the system as there are keysets. The only limitation is on Desktop Interface devices that require DSS/BLF status updates (such as operators' consoles). The system can support up to 10 DSS/BLF status requests from external devices at one time. Therefore, if the device requires continuous DSS/BLF status updates, only 10 can

be installed on the system at one time. Devices that require one-time or infrequent DSS/BLF updates (such as The AXXESSORY Connect) are not limited by this capacity, except that only 10 requests for updates can be processed at one time.

8.75 Another Premium feature, System OAI, is a *system-level* communications protocol that allows command-oriented tools to be developed for the AXXESS System. System OAI is available in two levels: Events and Third Party Call Control. System OAI Events provides call status information to an external device. It's primary use is for automatic call distribution products such as the AXXESSORY ACD. System OAI Third Party Call Control is a TSAPI protocol that allows system command-oriented tools to be used on the AXXESS System. Contact Inter-Tel for more information regarding products and development materials for these features.

## B. SINGLE-LINE SETS

**8.76** Industry-standard single-line DTMF sets can be installed on the AXXESS System and/or used as an off-premises extension (OPX). On-premises single-line circuits can be used for installing AC-ringing single-line sets, playback devices, and other single-line devices.

**8.77** The single-line sets are connected to Single-Line Cards (SLCs), or to Single-Line Adapter (SLA) circuits, which are in turn connected to available Digital Keypad Card (DKSC or DKSC16) circuits. Off-premises stations can be connected to SLAs or T1 Cards (T1Cs).

- Each SLC can support up to eight on-premises single-line stations. The SLC will support message lamps on single-line sets if the optional Lamp Option Card is installed on the SLC.
- Each SLA can support any combination of up to two single-line sets or DID devices.
- T1 Card (T1C) circuits can be used for installing off-premises single-line stations.

### Single-Line DTMF Sets

**8.78** Single-line DTMF set users gain access to the features by hookflashing (pressing and releasing the hookswitch quickly) and entering feature codes.

### Single-Line Ring Zones

**8.79** In some installations, where more than one single-line device is connected in series to an SLC circuit, zoned ringing may be necessary. The system can support devices with up to 3 Ringer Equivalences (REs) per circuit. However, the system can only ring 8 REs per board. If the installation exceeds eight REs on any SLC, the system-wide SLC Ring Zones flag must be enabled (see page 6-91 in PROGRAMMING). Also, all circuits on the SLC should have the Extended Ring Cadences station flag enabled (see page 6-30 in PROGRAMMING).

**8.80** With ring zones enabled, the system will ring the first station instantaneously. Any additional ringing will be applied to the remaining circuits in groups (zones). Devices 1-3 on the card will ring first, 4-6 ring next, then 7-8.

### Single-Line Set Message Lamps

**8.81** The optional Lamp Option Card (LOC) for the SLC supports message waiting lamps. To enable a message waiting lamp on a specific single-line station, the station must have the Message Lamp station flag enabled (see page 6-30 in PROGRAMMING). In the default state it is disabled.

**8.82** SLAs and T1C circuits cannot support message waiting lamps.

### Off-Premises Extensions

**8.83** Off-premises extensions are remote single-line DTMF sets that are connected to the AXXESS System through telephone company OPX circuits (or customer-provided circuits).

**8.84** Off-premises station users gain access to the features by hookflashing (pressing and releasing the hookswitch quickly) and entering feature codes.

**8.85** Some telephone company off-premises extension (OPX) networks do not recognize certain single-line set ring cadences used in the AXXESS System. This incompatibility results in an inability to provide certain ring signals to off-premises extensions. Because of this, the system is equipped with a station option which allows the ring cadences be altered for individual single-line circuits. Refer to page 6-30 in PROGRAMMING for details.

**8.86** Another programming option allows the receive and transmit gains to be automatically adjusted to improve OPX communication with the central office. Refer to page 6-30 in PROGRAMMING.

**C. DIRECT STATION SELECTION/BUSY LAMP FIELD (DSS/BLF) UNITS**

**8.87** DSS/BLF Units are programmed to be used with specific Executive or Standard keysets. The keysets are equipped with PC Data Port Modules (PCDPMs) and the DSS/BLF Units are attached to the PCDPMs.

**NOTE:** Executive or Standard keysets with DSS/BLF Units need to be identified in database programming and equipped with PCDPMs (see PROGRAMMING, page 6-238).

**8.88** Each single DSS/BLF Unit provides one-key access to up to 60 extension numbers, pilot numbers, or feature codes, while tandem (two connected) units provide access to up to 120 numbers. The numbers are programmed in up to three different arrangements using the DSS key maps in the database. There can be up to 10

DSS/BLF Units in the system (tandem units count as two units).

**8.89** Together, the lamps in the keys create a busy lamp field that indicates the status of the resource (e.g., station, trunk, hunt group, or feature) assigned to the keys. The LED indicator in the key indications are shown in the table below.

**8.90** In database programming, DSS/BLF keys may also be programmed for direct access to other resources (such as paging zones) or they can be assigned feature codes. Busy lamp indication is provided to show the idle/busy status of the resource or feature. Note that programming a DSS/BLF key as a resource does not always provide a transfer capability. For example, a DSS key programmed for paging will not transfer a party to the paging system.

| INDICATION         | MEANING                                                                                                                                                                                               |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Solidly Lit        | The associated resource is busy or all stations in the associated hunt group are unavailable (in do-not-disturb, busy, or with hunt group remove enabled). Or, the associated feature is on.          |
| Slow Flash         | The station is in do-not-disturb.                                                                                                                                                                     |
| Fast Flash         | The station has a call ringing in or a call is camped on to the hunt group. (This option is programmable. If DSS ring flash is disabled, a call ringing in to a station will show a solidly lit LED.) |
| Continuous Flutter | The station is causing a STATION OFF-HOOK system alarm.                                                                                                                                               |

## 9. USING DSS/BLF KEYS (DSS/BLF UNIT OR KEYSSET DSS/BLF)

**9.1** Direct Station Selection/Busy Lamp Field (DSS/BLF) keys provide one-key access to extension numbers and show the status of the station or hunt group associated with the key. DSS/BLF keys can be programmed on keysets or on DSS/BLF Units.

**9.2** The lamps in DSS/BLF keys (keyset or DSS/BLF unit) indicate the status of the station or hunt group assigned to the key using the flash rates described on page 4-52.

**9.3** DSS/BLF keys that are programmed for feature code access can be used in place of the associated feature code or key in the procedures described in this FEATURES section.

**NOTE:** Executive and Standard keysets with DSS/BLF Units need to be identified in database programming and equipped with PCDPMS (see PROGRAMMING, page 6-238). There can be up to 10 DSS/BLF Units in the system.

### 9.4 PLACING AN INTERCOM CALL USING DSS/BLF KEYS:

- (1) **To use the handset:** Lift the handset. The display shows ENTER EXTENSION NUMBER.

**To use the speakerphone:** While on hook, press the SPKR key or the IC key. The SPKR key lights. The display shows ENTER EXTENSION NUMBER.

- (2) *If you want to place a private (non-handfree) call to a keyset,* press the pound (#) key. The display shows RING EXTENSION NUMBER.
- (3) Press the desired DSS/BLF key.

*If calling a keyset with handsfree answering enabled,* you are immediately connected.

*If placing a private call, calling a hunt group, calling a single-line set, or calling a keyset with the Handsfree feature disabled,* you hear repeating double tones until the call is answered.

*If the called OHVA-enabled station is busy and your station is enabled for immediate OHVA transmit,* do not hang up when calling a busy keyset. Press the DSS/BLF key again. If the keyset's secondary voice path is available, you are immediately connected for an off-hook voice announce call and may speak. (For more information concerning the Off-Hook Voice Announce feature, refer to page 4-65.)

### 9.5 TRANSFERRING CALLS TO STATIONS:

- (1) While on a call, press the desired DSS/BLF key. The call is placed on transfer hold.
  - a. **Transfer to a station that is forwarded to voice mail:** You hear repeating double tones and the display shows DEST FORWARDED TO VOICE MAIL.
  - b. **Transfer to voice mail:** The system waits for you to enter the mailbox number (display shows ENTER MAILBOX). Enter the desired mailbox number. *If you do not enter a mailbox number before you hang up,* the caller will be connected to the voice mail unit and must enter the mailbox number after listening to the introductory voice prompts.
  - c. **Transfer-to-park:** If transferring to a park location, hang up or press HOLD to complete the transfer. Then page the desired party and announce the call. The party must reverse transfer the call. Note that if the call is not answered, it will recall your station if transferred directly or will recall the called transfer-to-park location's attendant if transferred to hold.

- (2) *If desired,* wait for an answer and announce the call. If you are calling a device (such as an automated attendant or transfer-to-park location) that does not accept call announcements, the display shows HANG UP TO FINISH TRANSFER.

- (3) You have the following options:

**To complete the transfer:** Hang up or press another Call key. The display shows CALL TRANSFERRED TO (*username*).

**To transfer the call to hold:** Press the HOLD key, or press SPCL and enter the Individual Hold feature code (336). The call will not ring or send call waiting signals until the Hold timer expires.

**To try another station:** Press another DSS/BLF key.

**To return to the caller:** Press the lit Call key, trunk key, or IC key.

### 9.6 TO REVERSE TRANSFER (PICK UP) A CALL RINGING OR HOLDING AT ANOTHER STATION:

**EITHER,** enter the Reverse Transfer feature code (4) and then press the DSS/BLF key of the station where the call is ringing.

**OR,** press the desired DSS/BLF key and then press SPCL and enter the Reverse Transfer feature code (4).

## 10. USER-PROGRAMMABLE FEATURE KEYS (KEYSETS ONLY)

**10.1** Individual keyset keys can be designated as "user-programmable" in the key maps during database programming. The installer can program the default feature codes (see PROGRAMMING, page 6–52) and the station user can reprogram the feature codes as desired. Default keyset feature codes are shown on page 4–44. Up to 11 user-programmable keyset keys can be programmed to enter any of the general feature codes.

**10.2** The Executive keyset has a FWD key when the keys are in the default state. (However, it can be reprogrammed to use any of the Forward feature codes.) When the default Executive keyset FWD key is pressed, the display shows a menu of call forwarding options. The user must then select the desired option by pressing the corresponding key next to the display. If the FWD key is programmed to use any other Forward feature code (355–358) the forwarding options will not be displayed when the FWD key is pressed; the Executive keyset will operate the same as a Standard or Basic Keyset. Any keyset user can make any user-programmable key a FWD key that uses any one of the forwarding feature codes (355–358).

**10.3** Speed-dial (SD) keys are programmed using the procedure shown on page 4–89. Entering an extension number, using the following instructions, will create a DSS/BLF key for that extension number, not a speed-dial key (even if the key was previously programmed as an SD key).

**10.4** Secondary extension keys (described on page 4–46) can be assigned to user-programmable keys during keymap programming. If so, the keyset user can determine the primary station that is associated with the secondary extension key by using the feature key programming procedures given below.

### 10.5 TO DISPLAY THE CURRENT KEY ENTRIES:

- (1) While on hook, enter the Review Keys code (396). The display shows PRESS THE KEY TO REVIEW.
- (2) Press the feature or speed-dial key(s) to be displayed. The display shows the feature, user name, or speed dial location name and KEY VALUE: (*feature code, extension number, or location code*). If it is a secondary extension key, the display shows SECONDARY: (*station*).

### 10.6 TO RETURN THE KEYS TO DEFAULT VALUES:

While on or off hook, enter the Feature Key Default feature code (395). *If off hook*, hang up. The display shows FEATURE KEYS DEFAULTED.

### 10.7 TO PROGRAM A FEATURE CODE IN A USER-PROGRAMMABLE KEY OR ASSIGN A PRIMARY STATION TO A SECONDARY EXTENSION KEY:

- (1) While on hook, enter the Program Keys feature code (397). (Display keysets show PRESS THE KEY TO PROGRAM.)
- (2) Press the desired feature key or secondary extension key. The display shows the current feature, station, or speed dial location name and KEY VALUE: (*feature, extension, or location code*). If programming a secondary extension key it shows SECONDARY: (*station*) ENTER EXT.
- (3) Enter the feature code or extension number to be stored under that key. (*If programming the FWD key, only Call Forwarding feature codes 355–358 will be accepted.*) You hear a single progress tone when the programming is completed. (Display keysets show the newly programmed feature.) If you attempt to program a non-programmable key or enter an invalid code, you will hear repeating reorder tones and the feature code assigned to the key will remain unchanged. (Display keysets show NON-PROGRAMMABLE KEY or FEATURE CODE INVALID.)

**NOTE:** If you do not enter a feature code, the programming mode times out when the Long Interdigit timer expires; the feature code assigned to the key remains unchanged.

- (4) To program other keys, repeat the procedure.

### 10.8 TO CREATE A SPEED-DIAL BIN IN A USER-PROGRAMMABLE KEY:

- (1) While on hook, enter the Program Keys feature code (397). (Display keysets show PRESS THE KEY TO PROGRAM.)
- (2) Press the desired feature key. The display shows the current feature, user, or speed dial location name and KEY VALUE: (*feature or location code*).
- (3) Enter the Station Speed-Dial feature code (382) or the System Speed-Dial feature code (381). The display shows SELECT STN SPEED or SELECT SYS SPEED.
- (4) Enter the desired speed-dial bin number (0–9 for station, 000–999 for system). The display shows the current contents of that bin.
- (5) To program a new number in a station speed-dial bin, follow the instructions given on page 4–89. Administrators can use the procedures on page 4–106 to program system speed-dial bins.

## 11. AUTOMATIC CALL ACCESS (KEYSETS ONLY)

11.1 This feature allows a keyset user to determine the way incoming calls are answered by entering a feature code to select the type of call access. The four variations are as follows:

- *No Automatic Call Access:* The user hears intercom dial tone when the handset is lifted and must press a call or individual trunk key (or the ANSWER key) to answer an outside call, or press the IC key (or Call key, if there is no IC key) to answer an intercom call.
- *Automatic Intercom Call Access Only:* The user can answer ringing intercom calls by simply lifting the handset, but outside calls must be answered by pressing a Call key, an individual trunk key, or the ANSWER key.
- *Automatic Outside Call Access Only:* The user can answer ringing outside calls by lifting the handset, but ringing intercom calls must be answered by pressing the IC key (or Call key, if there is no IC key).
- *Automatic Access For All Calls:* The user can answer any ringing call by lifting the handset. If no call is ringing, the user hears intercom dial tone when the handset is lifted. (This is the way single-line sets work. When the system is in the default state, all keysets have this type of call access.)

**NOTE:** In any of the above variations, keyset users may still receive handsfree intercom calls (if enabled).

11.2 The selected option determines how all types of ringing intercom or outside calls (direct calls, transferred calls, recalls, etc.) are answered. If more than one call is ringing at the station, the first call received is the first answered.

11.3 When programmed for automatic outside call access, a station user with allowed answer, but without ring in, for a ringing trunk must always press an individual trunk key for that trunk, or enter the Automatic Trunk Answer feature code (350) to answer the incoming call. Transferred calls and recalls can be answered by lifting the handset.

11.4 Camped-on calls cannot be answered by simply lifting the handset or pressing the SPKR key. For example, a station is programmed to automatically answer ringing outside calls, but requires pressing the IC key to answer ringing intercom calls. If a private intercom call rings in and is immediately followed by an outside call ringing in, the display shows the intercom call message and the outside call camps on. The intercom call also camps on when the handset is lifted. The user can then choose between the camped on calls by pressing either the IC key or the Call or individual trunk key (or ANSWER key).

11.5 The automatic call access options outlined below can be programmed at keyset stations only. Single-line sets are designed to automatically answer ringing intercom and outside calls by lifting the handset and cannot be changed.

### 11.6 TO PROGRAM OUTSIDE CALL ACCESS:

To change the current outside call access option to its opposite (toggle on or off), enter the Automatic Trunk Access On/Off feature code (360). You hear a confirmation tone. The display shows AUTO TRNK ACCESS ON (or OFF).

### 11.7 TO PROGRAM INTERCOM CALL ACCESS:

To change the current intercom access option to its opposite (toggle on or off), enter the Automatic Intercom Access On/Off feature code (361). You hear a confirmation tone. The display shows AUTO IC ACCESS ON (or OFF).

## 12. MUSIC-ON-HOLD AND BACKGROUND MUSIC

**12.1** The Music-On-Hold feature not only makes waiting on hold as pleasant as possible, but it assures the holding party that the call is still connected.

**12.2** Keypad users can choose to listen to background music by entering the Background Music feature code (313).

**12.3** The system can be equipped with an optional external music source for the Music-On-Hold and Background Music features. An optional external music source can be a customer-provided radio, tape player, or other device connected to the Central Processing Unit (CPU) card in the KSU. When a music source is installed, music-on-hold is enabled or disabled in database programming. If music is not desired, the system can be programmed for tick-tones or silence on hold.

**12.4** A programmable option determines what callers will hear while being transferred. The transfer audio can

be programmed to use the music-on-hold option (music, tick tones, or silence) or ringback.

**NOTE:** In some circumstances, there may be broadcast restrictions associated with the music heard by callers on hold. Check with the music's original distributor and/or the radio station for copyright and broadcast restrictions concerning music-on-hold.

**12.5** Throughout the instructions in this section of the manual, the term "music" refers to the selected option: music, tick-tones, or silence, depending on what is enabled.

**12.6** Background music is interrupted for calls, pages, keypad programming, and ringing.

**12.7** *TO TURN KEYPAD BACKGROUND MUSIC ON OR OFF:*

While on or off hook, enter the Background Music On/Off feature code (313). *If off hook*, hang up. The display shows BACKGROUND MUSIC ON (or OFF).

### 13. SIGNALS AND TONES

13.1 There are several distinct signals and tones on the AXXESS System.

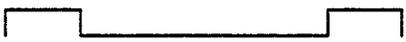
#### A. RING SIGNALS

13.2 The system signals and tones generated by the ringer or keyset speaker are as follows.

| TYPE OF CALL                                                   | SIGNAL                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Outside call or recall                                         | Single long tone every six seconds                                                                                                                                                                                          |
| Intercom call, off-hook voice announce call, or queue callback | Two short tones and a pause (repeats for private calls and callbacks).<br><b>NOTE:</b> If the station option for different IC/CO alerting tones is disabled, this will be the same as the outside call signal shown above.  |
| Reminder message                                               | Eight short tones                                                                                                                                                                                                           |

#### B. CALL PROCESSING SIGNALS

13.3 The following signals and tones are heard through the handset or keyset speaker.

|                                                                                                                                                  | SIGNAL                                                                              | ACTION                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Intercom dial tone                                                                                                                               |    | Handset lifted or SPKR or IC key pressed.                                                                        |
| Double tones (called station receives the same signal)                                                                                           |  | Intercom call — repeats for private call or call to non-handsfree station; one double tone for handsfree call.   |
| Intercom busy signal — slow repeating tones                                                                                                      |  | Called station or selected trunk is busy.                                                                        |
| A repeating signal of four fast tones and a pause                                                                                                |  | Called station is in do-not-disturb.                                                                             |
| Reorder tones — fast tones (may be four or continuous)                                                                                           |  | Entry was not accepted, number is toll restricted, or dialing timer expired.                                     |
| System busy signal — reorder tones followed by music                                                                                             |  | All resources are busy, station is camped on.                                                                    |
| Single progress tone                                                                                                                             |  | Feature procedure completed, or something needs to be entered.                                                   |
| Camp-on tone — single tone every 15 seconds (programmable)                                                                                       |  | Another station has camped on to this single-line station. (This tone is heard through the keyset speaker only.) |
| Single-line message waiting tone — six tones followed by intercom dial tone after lifting the handset or hookflashing                            |  | A message is waiting at this single-line station.                                                                |
| Single-line call forwarding/ do-not-disturb tone — dial tone periodically interrupted by a single tone after lifting the handset or hookflashing |  | This single-line station has call forwarding and/or do-not-disturb enabled.                                      |

**NOTE FOR SINGLE-LINE SET USERS:** When the procedures tell you to hookflash, quickly press and release the hookswitch. If you press the hookswitch to hang up, hold it down until the SL Hookflash Maximum timer expires (default value is 1.2 seconds); otherwise, the system recognizes it as a hookflash.

## 14. INTERCOM CALLS

**14.1** The intercom can be used to place station-to-station calls that can be answered handsfree. Or, it can be used to place private (non-handsfree) calls. A station user that reaches a busy station can camp on, request a callback (queue), leave a message, or use the Off-Hook Voice Announce feature (if enabled). Other features that apply to both outside and intercom calls, as described later in this section of the manual, include placing calls on hold, call waiting, call transfer, reverse transfer, and call forwarding.

### A. PROGRAMMING FOR PRIVATE INTERCOM CALLS

**14.2** A station user can place private (non-handsfree) intercom calls by pressing the pound (#) key before dialing the extension number. Or, the station can be programmed to always send and/or receive private calls using the Ring Intercom Always or Handsfree Disable features.

#### Ring Intercom Always

**14.3** A station user can always place private calls by programming the station with the Ring Intercom Always feature code. While this feature is enabled, the called party hears repeating double tones and must lift the handset (or press the SPKR key, ANSWER key, or IC key) to answer. (If the station does not have an IC key, the call will appear under a Call key.)

**14.4** In the default database, all single-line stations have this feature enabled.

**14.5** *TO TURN RING INTERCOM ALWAYS ON OR OFF:*

**Keyset:** While on hook, enter the Ring Intercom Always On/Off feature code (377). The display shows RING IC ALWAYS ON (or OFF).

**Single-Line Set:** Lift the handset. Enter the Ring Intercom Always On/Off feature code (377).

### Keyset Handsfree Enable/Disable

**14.6** A keyset user can always receive private calls by disabling the keyset Handsfree Answering feature using the Handsfree On/Off feature code, as described in the following paragraph. The keyset user hears repeating double tones when receiving an intercom call and must lift the handset (or press the SPKR, ANSWER, or IC key) to answer while Handsfree Mode is disabled.

**14.7** *TO ENABLE OR DISABLE HANDSFREE MODE:*

While on hook, enter the Handsfree On/Off feature code (319). The display shows HANDSFREE MODE ON (or OFF).

## B. STATION-TO-STATION CALLING

### Receiving Intercom Calls

**14.8** *TO RECEIVE AN INTERCOM CALL ON A KEYSSET:*

If you hear a double tone and a call announcement (handsfree call), and the SPKR key is lit, respond handsfree or lift the handset. (Display keysets show IC TO [username] to identify the source of the call.)

If you hear repeating double tones (private call), lift the handset, or press the SPKR, ANSWER, or IC key to respond handsfree. (Display keysets show INTERCOM CALL FROM [username] to identify the source of the call.)

**Executive Keysets:** Instead of answering the call, you may press one of the following menu keys:

— **SEND TO V-MAIL:** This option appears only if you have an AXXESSORY Talk mailbox. Pressing this key sends the call directly to your mailbox greeting.

— **IC CALL TO DND:** Pressing this key will send do-not-disturb tones to the caller and allow you to program a do-not-disturb message. If using a display keyset, the caller will see DO-NOT-DISTURB. (See page 4-97 for detailed instructions on using Do-Not-Disturb.)

**14.9** *TO RECEIVE AN INTERCOM CALL ON A SINGLE-LINE SET:*

When you hear repeating double tones, lift the handset.

**14.10 TO RECEIVE A TRANSFERRED-TO-HOLD INTERCOM CALL:**

**NOTE:** If the station does not have an IC key, the call will appear under a Call key.

**Keyset:** When the IC key (or Call key) is fluttering and the display shows *[calling station]* TFR FROM *[transferring station]*, lift the handset and press the IC key (or Call key). Or, while on hook, press the IC key (or Call key) to speak handsfree. You are connected to the caller. (Executive keyset users have the same menu key options as described for a ringing intercom call.)

**Single-Line Set:** When you hear a page announcing that a call is holding at your station, lift the handset (at your station) and enter the Individual Hold feature code (336). You are connected to the caller.

**Placing Intercom Calls**

**NOTE:** When placing an intercom call, begin dialing before the Dial Initiation timer expires. If the timer expires, the system drops the connection and sends reorder tones.

**14.11 TO PLACE AN INTERCOM CALL:**

(1) **Keyset:**

**To use the handset:** Lift the handset. The display shows ENTER EXTENSION NUMBER.

**To use the speakerphone:** Skip to step 2 or 3 (begin dialing). The SPKR key lights. The display shows ENTER EXTENSION NUMBER.

**Single-Line Set:** Lift the handset. (If the DTMF decoders are busy, you hear silence. Hang up and try again.)

(2) *If you want to place a private (non-handsfree) call to a keyset, press the pound (#) key. The display shows RING EXTENSION NUMBER.*

**Executive Keysets:** You may press one of the following menu keys:

— **IC DIRECTORY:** Press this key to use the Intercom Directory feature. Refer to page 4-91 for instructions.

— **OUTSIDE CALL:** If you would rather make an outside call, press this key and refer to the instructions on page 4-66.

(3) Dial an extension number. The number can be 0 for the attendant, a station extension number, or a hunt group pilot number. (Display keysets show the number dialed.) If you dial too slowly, the Interdigit timer may expire and you will hear reorder tones. One of the following will occur:

a. *If calling a handsfree keyset station, speak after you hear a double tone. The display shows IC TO [user name].*

b. *If placing a private call or calling a single-line station, a hunt group, or a keyset with handsfree disabled, you hear repeating double tones until the call is answered. The display shows CALL RINGING FOR [user name]. When the call is answered, the display shows IC TO [user name]. Executive keyset users can press one of the following menu keys while the call is ringing:*

— **LEAVE MESSAGE:** This key appears only if you have called a station. Press this key to leave a message waiting indication at the station. Refer to page 4-62 for details.

— **LEAVE VOICE MAIL:** This key appears only if the called station has an AXCESSORY Talk mailbox. Press this key to call the station's AXCESSORY Talk mailbox.

c. *If you dial an invalid number, you hear reorder tones. Display keysets show INVALID NUMBER. If you do not have an assigned attendant and you dialed 0, the display shows NO ATTENDANT PROGRAMMED. If you dialed a hunt group number with no assigned stations, the display shows NO MEMBERS IN HUNT GROUP.*

d. *If the called station is busy, the display shows [username] IS BUSY. You have the following options (in addition to the Executive menu keys described above):*

1. **Disconnect:** Hang up and try later. *If dialing handsfree (keysets only), press the SPKR key to disconnect.*

2. **Camp on:** Do not hang up, your call camps on. When the called station is available, a private call is placed. Refer to paragraph 14.13 on the next page for details.

3. **Request a callback (queue):** This is similar to camping on except that you hang up and wait for the busy station to be available. For more information, refer to paragraph 14.16. Executive keyset users can press the QUEUE menu key.
- e. *If you hear a repeating signal of four fast tones and a pause, the station is in do-not-disturb. You can use the Queue Callback feature or, if enabled on your keyset, use the Do-Not-Disturb Override feature to place a non-handsfree call to the station by pressing SPCL and entering the Do-Not-Disturb Override feature code (373) or pressing the Executive keyset OVERRIDE DND menu key.*
- f. *If the called station is busy, in do-not-disturb, or there is no answer, you can leave a message waiting indication with the station itself or with the station's message center. For details, refer to page 4-62. (Executive keyset users can press the LEAVE MESSAGE or LEAVE VOICE MAIL menu key.)*
- g. *If the called station is a busy keyset, and if all the necessary conditions for OHVA are enabled, you can complete the call using the Off-Hook Voice Announce feature. For a complete explanation of this feature, refer to page 4-65.*

### C. INTERCOM CAMP ON AND QUEUE CALLBACK

**14.12** Camp-on and queue requests allow the caller to wait for an available resource. A station user waiting for a specific resource (a trunk or a station) will be served before a station user waiting for a group that contains that specific resource (trunk group or hunt group). This includes camped on Emergency Call feature (911) calls — if the Emergency Call feature uses a trunk group, requests for specific trunks will be processed ahead of the emergency call.

#### Camp On

**14.13** When a station user calls a busy station or hunt group, the system sends a busy signal. The caller can wait off hook to camp on (after the Camp-On timer expires) and hear music while waiting until the called station is available. The system periodically sends call waiting signals to the busy station(s).

**14.14** If a station enables do-not-disturb while an intercom call is camped on, the camped-on caller is removed from the camped on state and that caller receives do-not-disturb indications (see page 4-74). Intercom callers cannot camp on to a station that is in do-not-disturb.

#### 14.15 TO CAMP ON TO AN EXTENSION NUMBER:

If you hear a busy signal when calling an extension number and wish to camp on, do not hang up. You hear music (if enabled) while camped on. When the station is available, a private call is automatically placed and you hear repeating double tones until the call is answered. The display shows WAITING FOR [username].

**Executive Keysets:** You may press one of the following menu keys:

- LEAVE MESSAGE: This key appears only if you have called a station. Press this key to leave a message waiting indication at the station. Refer to page 4-62 for details.
- LEAVE VOICE MAIL: This key appears only if the called station has an AXXESSORY Talk mailbox. Press this key to call the station's AXXESSORY Talk mailbox.
- QUEUE: Press this key to request a callback when the resource is available, as described below.

#### Busy Station Queue Callback

**14.16** When a called station is busy or in do-not-disturb, the caller can request a callback (queue) and hang up until the station is available. This can be done even if the call camps on. Each station can have only one active queue callback request at a time.

**14.17** The Queue Callback feature can also be used when calling a hunt group if all stations are unavailable.

**14.18** Queue callbacks must be answered before the Queue Callback timer expires. If a callback is not answered, the queue is cancelled. If the station is busy when called back, the queue request is placed behind any other waiting queue requests.

**14.19** Queue callbacks do not follow forwarding and are not blocked by do-not-disturb mode.

**14.20 TO REQUEST A CALLBACK FROM A STATION:**

- (1) **Keypad:** When you hear a busy signal or do-not-disturb signal (a repeating signal of four fast tones and a pause) when calling an extension number, press the QUEUE menu key or press SPCL and enter the Queue Callback feature code (6) and hang up. The display shows QUEUE REGISTERED FOR *[username]*.

**Single-Line Set:** When you hear a busy signal or do-not-disturb signal when calling an extension number, hookflash and enter the Queue Callback feature code (6). Then hang up.

- (2) When the queued station is available, your station will ring. (Display keysets show *[username]* IS NOW AVAILABLE.) Lift the handset or press the ANSWER key. A private call is automatically placed to the queued station.

**Executive Keypads:** You may press one of the following menu keys:

- CANCEL QUEUE: To cancel the queue request, press this key without lifting the handset.
- ANSWER: You may press this key instead of lifting the handset to answer the queue callback using the speakerphone.

**14.21 TO CANCEL A QUEUE REQUEST (BEFORE THE QUEUED STATION BECOMES AVAILABLE):**

**Keypad:** While on hook, enter the Queue Callback feature code (6). The display shows QUEUE REQUEST CANCELED.

**Single-Line Set:** Lift the handset, enter the Queue Callback feature code (6), and hang up.

## 15. INTER-STATION MESSAGES

15.1 Intercom callers may leave a message waiting indication if a called station is busy, if there is no answer, if the station is in do-not-disturb, or when they are connected to or placed on hold by another station. There are two messaging options:

- **Have the called party return your call.** (Display keysets show the source and time of the message.) When the called party responds to the message indication, a call is automatically placed to your station.
- **Leave a message with the called party's message center.** (Display keysets show that a message was left with the keyset user's assigned message center.) When the called party responds to the message indication, a call is automatically placed to his or her message center.

15.2 To signal that a message is waiting, a called keyset's MSG key flashes and the display shows the number of waiting messages. Each time the MSG key is pressed, the display shows the message source for each of the waiting messages in the order they were received. For messages from stations, the display shows MSG: (*station*) and the date and time of the message. For messages from AXXESSORY Talk mailboxes, the display shows XX MESSAGES FROM MBOX XXXX to indicate the number of waiting messages in each mailbox that left a message. (This is especially helpful at stations with multiple mailboxes.) For single-line sets, a system programming option can be enabled that sends six short message waiting tones when the user lifts the handset or presses the hookswitch.

15.3 Any station, AXXESSORY Talk application, or hunt group can be designated as the message center for a station. However, a station cannot be programmed as its own message center.

15.4 If the designated message center is a voice mail hunt group, the voice mail hunt group is called after the Message Wait timer expires. When the voice mail unit answers the call, the called party's "mailbox" is automatically dialed. The caller can then leave a message in the mailbox. The called party's MSG key flashes and the message display will indicate that the message was left by the voice mail hunt group.

15.5 Each station user can leave message waiting indications at more than one station. If more than one message is received from one station, the message display

will show only the first message and all other requests will be ignored.

15.6 When a station is forwarded or has system forwarding, and a caller leaves a message waiting indication after calling the forwarded station, the message indication appears at the original station instead of the station that received the forwarded call.

### A. LEAVING MESSAGES

#### 15.7 TO LEAVE A MESSAGE WAITING INDICATION:

- (1) When calling a station, if you hear a busy signal, do-not-disturb signal (repeating signal of four fast tones and a pause), or the call is not answered:

**Keyset:** Press the MSG key or press SPCL and enter the Message feature code (365). The station will receive a message waiting indication. The display shows HANG UP OR WAIT FOR MESSAGE CENTER.

**Single-Line Set:** Hookflash and enter the Message feature code (365).

- (2) **To have the called party call you:** Hang up or press a trunk key or the IC key to disconnect before the Message Wait timer expires. The display shows MESSAGE LEFT FOR [*username*].

**To leave the message with the called party's message center:** Do not hang up. When the Message Wait timer expires, a private call is automatically placed to the called party's message center. (If the message center is a voice mail hunt group, the called party's mailbox is automatically dialed after the voice mail unit answers the call.) Leave your message with the message center and hang up. The called station receives message waiting indications. If the message center does not answer the call (that is placed after the timer expires), the display will show that the message was from your station and you will be called when the station user responds to the message indications. The display shows MESSAGE LEFT FOR [*username*].

**NOTE:** If the station you are calling does not have a designated message center, you will hear dial tone immediately after pressing the MSG key. The station will receive a message waiting indication.

## Silent Messages

**15.8** Silent messages can be placed while on or off hook without making an intercom call to the station. (This method should be used by analog voice mail units.)

### 15.9 TO LEAVE A SILENT MESSAGE:

**Standard or Basic Keypad:** While on hook, enter the Silent Message feature code (367). Then dial the extension number of the desired station.

**Executive Keypad:** While on hook, press the MSG key. Then press the LEAVE MESSAGE menu key. The display shows LEAVE MESSAGE ON EXTENSION. Enter the desired extension number. The number is shown on the display. (If desired, you can press the IC DIRECTORY menu key to use the intercom directory to look up a number. Refer to page 4-91 for instructions.)

**Single-Line Set:** Lift the handset and enter the Silent Message feature code (367). Then dial the extension number of the desired station and hang up.

## Canceling A Message Waiting Indication That You Left

**15.10** Occasionally, you may wish to cancel a message waiting indication that you left, before the station user responds to the message. If the message was left with the station's message center, you cannot cancel the message waiting indication; only the message center can cancel that message, using the procedure outlined below.

### 15.11 TO CANCEL A MESSAGE YOU LEFT:

- (1) **Standard or Basic Keypad:** While on or off hook at your station, enter the Cancel Message feature code (366). (Display shows CANCEL MESSAGE ON EXT #).

**Executive Keypad:** While on hook, press the MSG key. Then press the CANCEL MESSAGE menu key. The display shows CANCEL MESSAGE ON EXT#. (If desired, you can press the IC DIRECTORY menu key to use the intercom directory to look up a number. Refer to page 4-91 for instructions.)

**Single-Line Set:** Lift the handset and enter the Cancel Message feature code (366).

- (2) Enter the extension number of the station that has the message indication that you wish to cancel.

You hear intercom dial tone if off hook, or confirmation tone if on hook. The display shows MESSAGE CANCELED FOR [username]. (If a message was not present at the called station, you hear reorder tones and the display shows NO MESSAGES TO CANCEL.)

## B. RESPONDING TO MESSAGES

### Viewing Waiting Messages

#### 15.12 TO VIEW RECEIVED MESSAGES AT A DISPLAY KEYPAD:

- (1) If your MSG key is flashing, one or more messages are waiting and the display shows YOU HAVE XX MESSAGES.

**Standard or Basic Keypad:** While on hook, press the MSG key repeatedly to view waiting messages.

**Executive Keypad:** While on hook, press the VIEW MESSAGES menu key. Then press PREVIOUS or NEXT to scroll to the desired message.

- (2) A displayed message will show MESSAGE RECEIVED FROM EXT XXXX. *If desired*, you can answer or cancel a message while it is displayed, as described below.

### Answering Messages

#### 15.13 TO ANSWER MESSAGES AT A DISPLAY KEYPAD:

- (1) When the desired message is displayed (as described above), press the # key or the REPLY menu key while on or off hook. Depending on how the message was left, an intercom call is placed to either the station that left the message or your message center.

**NOTE:** If, when you respond to the message, the called station is unavailable (does not answer a private call, is busy, or is in do-not-disturb), your MSG key continues to flash (and the display indicates a waiting message) unless you immediately leave a message before hanging up or cancel the message after hanging up. The message waiting indications are cancelled automatically only when you have actually connected with the called station.

- (2) If the MSG key continues to flash, there is another message (display shows the next message). Repeat step 1.

**15.14** TO ANSWER MESSAGES AT A NON-DISPLAY KEYSSET OR SINGLE-LINE SET:

- (1) **Keyset:** If you see a flashing keyset MSG key, press the MSG key. Depending on how the message was left, an intercom call is placed to either the station that left the message or your message center.

**Single-Line Set:** If you hear single-line message waiting tones (six tones) after lifting the handset or hookflashing when the station is idle, enter the Message feature code (365). Depending on how the message was left, an intercom call is placed to either the station that left the message or your message center.

**NOTE:** If the called station does not answer, is busy, or is in do-not-disturb, you may hang up or leave a message at that station before hanging up. You will continue to receive message waiting indications (MSG key flash or tones), unless you left a message while attempting to retrieve the message or canceled the message after hanging up. The message waiting indications are canceled when you are actually connected with the called station.

- (2) If message waiting indications continue, there is another message. Repeat this procedure.

**Canceling A Waiting Message**

**15.15** TO CANCEL A DISPLAYED MESSAGE WITHOUT ANSWERING AT A KEYSSET:

- (1) When the message you wish to cancel is displayed (as described on the previous page), remain on hook and press the asterisk (\*) key or the DELETE menu key. The message is cancelled.
- (2) If the MSG key continues to flash, there is another message (display shows the next message). Either respond to it or cancel it.

**15.16** TO CANCEL A MESSAGE WITHOUT ANSWERING AT A SINGLE-LINE SET OR WITHOUT DISPLAYING MESSAGES AT A KEYSSET:

- (1) If you receive message waiting indications, enter the Cancel Current Message feature code (368). The message is cancelled.
- (2) If you continue to receive message waiting indications, there is another message. Either respond to it or cancel it.

**Alternate Message Source**

**15.17** The Alternate Message Source feature was developed to enable a voice mail unit to leave messages through a station or hunt group that is designated as its alternate message source. When a message is left on the voice mail unit for a station user that has an assigned mailbox, the called station receives the message waiting indications. If it is a display keyset, the display shows MESSAGE RECEIVED FROM [alternate message source] rather than from the voice mail circuit. When the station user retrieves the message, an intercom call is placed to the alternate message source.

**15.18** To make efficient use of multi-port *analog* voice mail units (not AXXESSORY Talk voice mail applications), the ports are placed in a voice mail hunt group and the voice mail hunt group's pilot number is assigned as the alternate message source for each of the individual voice mail ports. When a user responds to a message left by one of the voice mail ports, the pilot number is automatically dialed and the call circulates through the hunt group until a voice mail port is available. Without the alternate message source hunt group, the call would return only to the port that left the message and would not circulate through the hunt group.

## 16. OFF-HOOK VOICE ANNOUNCE (OHVA)

**16.1** When an Executive or Standard keyset that is equipped with a PC Data Port Module (PCDPM) is busy, the caller can use the Off-Hook Voice Announce (OHVA) feature (if enabled). This feature allows an intercom caller (either single-line or keyset) to establish voice contact with the called keyset user, even though the user already has a call in progress on the handset. The called keyset user can then talk freely on both connections, using the handset for the original call and the speakerphone for the OHVA intercom call. Note that the caller on the handset call *will* be able to hear the OHVA call.

**16.2** To enable the OHVA, the following must be completed:

- The OHVA system flag must be enabled. (When the system is in the default state, the system flag is enabled.)
- Each data port-equipped keyset can be programmed for *placing* and/or *receiving* OHVA calls. (By default, OHVA is disabled at the station level.) The keyset can be equipped with a PCDPM or a special OHVA Module. (See page 2–21 in SPECIFICATIONS for more information.)
- Other keyset and single-line stations can be programmed for *placing* OHVA calls, as desired. Keysets without PC Data Port Modules and single-line sets cannot receive OHVA calls since they do not have secondary voice path circuitry. (By default, OHVA is disabled at the station level.)
- DSS/BLF-equipped keysets can be programmed to override the Camp-On and OHVA Screening timers and make “immediate” OHVA calls. This is a useful option for attendant stations.

**16.3** Any combination of enabled and disabled OHVA stations is available through database programming. For example, all attendants may be programmed to make, but not receive, OHVA calls, while all other stations are allowed to receive, but not place, OHVA calls.

**16.4** OHVA calls cannot be processed if the PCDPM voice path or the speakerphone of the called keyset is not available. This occurs when the keyset has a different OHVA call in progress, has an active data call in progress, is on an active handsfree intercom or outside call, has handsfree disabled, has a call being changed from handset to speakerphone, has a headset enabled, or is in do-not-disturb. Also, OHVA calls are not possible if the caller is placing a forced private intercom call or has the Ring Intercom Always feature enabled.

### 16.5 TO PLACE AN OFF-HOOK VOICE ANNOUNCE CALL:

- (1) When placing an intercom call to a busy OHVA-enabled keyset, do not hang up. You hear busy signals until the Camp-On and OHVA Screening timers expire. (If you hear music after the Camp-On timer expires, conditions for an OHVA call were not met and you are camped-on. See page 4–60.)
- (2) When the OHVA Screening timer expires (and if the keyset’s secondary voice path is available), you are automatically connected to the called party’s speakerphone.

### 16.6 TO PLACE AN IMMEDIATE OFF-HOOK VOICE ANNOUNCE CALL (KEYSETS WITH DSS/BLF KEYS ONLY):

**NOTE:** This method can only be used if the database has been programmed to allow keysets with DSS/BLF keys to bypass the Camp-On and OHVA Screening timers. See page 6–30 in PROGRAMMING.

- (1) When an intercom call is placed using the DSS/BLF key, to a busy OHVA-enabled keyset, do not hang up.
- (2) Press the DSS/BLF key for that keyset again. If the keyset’s secondary voice path is available, you are immediately connected and may speak.

### 16.7 TO RECEIVE AN OFF-HOOK VOICE ANNOUNCE CALL (OHVA-ENABLED KEYSETS ONLY):

- (1) While on a call using the handset, you hear a camp-on tone (display shows CALL ANNOUNCE FROM [username]). Do nothing. When the OHVA Screening timer expires, you hear a double tone. You are connected with the intercom caller via the speakerphone. Your original call remains connected on the handset.

**NOTE:** If you press the MUTE key while speaking to the caller on the speakerphone, the handset microphone will be muted and the caller on the handset will not hear you or the OHVA caller. Press MUTE again to enable the handset.

- (2) **To terminate the OHVA call:** Press the lit SPKR key or have the OHVA caller hang up. If you terminate the original call by hanging up the handset, you remain connected to the OHVA call in the handsfree intercom mode.

### 16.8 TO BLOCK AN OFF-HOOK VOICE ANNOUNCE CALL (OHVA-ENABLED KEYSETS ONLY):

- (1) While on a call using the handset, you hear a camp-on tone (displays CALL ANNOUNCE FROM [username]). To cause the intercom call to camp on, press the SPKR key. The IC key flashes.
- (2) *If you wish to send do-not-disturb signals to the camped-on call, press the DND key.*

## 17. OUTSIDE CALLS

**17.1** When a trunk is selected for receiving or placing an outside call, the voice channel is seized and cannot be used by any other station (unless the Conference feature is used, see page 4-79). If the desired trunk is busy, the station user can camp on or request a callback (queue). Other features that apply to both outside and intercom calls are discussed later in this section of the manual. They include placing calls on hold, call waiting, call transfer, reverse transfer, conferencing, and call forwarding. Refer to page 4-26 for an explanation of outgoing-access, allowed-answer, and ring-in assignments. Refer also to page 4-26 for an explanation of trunk groups and the use of the automatic trunk answer and selection feature codes.

### A. PLACING OUTSIDE CALLS

**17.2** Keysets can be programmed to select a trunk, a trunk group, or ARS when a Call key is pressed. In the default state, all Call keys are programmed for ARS access. Refer to PROGRAMMING, page 6-33, for details.

**17.3** On display keysets, the dialed number is displayed with hyphens separating the toll field, equal access field, area code, office code, hookflashes, pauses, asterisks, pounds, Centrex codes, and/or absorbed digits. When the system absorbs local trunk digits, the digits are displayed even when they are not dialed. (For example, if 423 is absorbed and 6767 is dialed, 423-6767 is displayed.)

**NOTE:** When placing a call, begin dialing before the Dial Initiation timer expires. If the timer expires, the system drops the trunk connection and sends repeating reorder tones. This prevents a trunk from being tied up accidentally.

#### 17.4 TO PLACE AN OUTSIDE CALL:

- (1) Lift the handset. (Keyset users can dial on hook by skipping this step.)
- (2) Select an outgoing trunk, using one of the methods below. The associated individual trunk or Call key flashes slowly. (If on hook, the SPKR key is lit.) **NOTE:** You must have outgoing access to a trunk to seize it.

**Executive Keyset:** Press the OUTGOING menu key.

**Any Keyset:** Select a trunk using one of the following methods:

- a. Press an individual trunk key for direct access.

- b. Enter a trunk group access code (9201-9299, 93000-93003) or press a trunk group key. This selects a trunk in the chosen trunk group. (If the group has not been programmed, the display shows NO TRUNKS IN TRUNK GROUP.)
- c. If your station is programmed to select a trunk group when a Call key is pressed, press a Call key for outgoing access.
- d. Refer to the Automatic Route Selection (ARS) procedure on the next page.
- e. Enter the Outgoing Call feature code (8). This automatically selects an outgoing trunk according to the programmed outgoing access mode for your station.

**Single-Line Set:** Select a trunk using one of the following methods:

- a. Enter the Outgoing Call feature code (8). This automatically selects an outgoing trunk according to the programmed outgoing access mode for your station.
  - b. Enter a trunk group access code (9201-9299, 93000-93003).
  - c. Refer to the Automatic Route Selection (ARS) procedure on the next page.
- (3) You hear one of the following signals:
- a. **Outside dial tone:** Manually dial, speed dial, or redial the desired telephone number or use the outside directory. (Display keysets show the numbers dialed. When dialing is ended and the call is determined to be valid, the display shows the elapsed time and call cost.) *If you hear repeating reorder tones, you dialed a restricted number. Also, if you dial too slowly and the Interdigit timers expire, the call may be dropped, and you will hear repeating reorder tones. If using a keyset that is on hook, you may lift the handset to speak privately. Go to the next step. On keysets, an individual trunk or Call key flashes slowly and the display shows the call cost and elapsed time.*

Executive Keyset users may press one of the following menu keys:

- OUTSIDE DIR: This key appears only if you are using ARS. Press the key to use the outside directory as described on page 4-91.

- STN SPEED DIAL: Press this key to use a station speed-dial number as described on page 4-89.
- SYS SPEED DIAL: Press this key to use a system speed-dial number as described on page 4-88.
- REDIAL: Press this key to redial the last number dialed (or saved) as described on page 4-94.

b. **Single progress tone:** Enter a forced account code using the keypad keys or a pre-programmed SD key (refer to page 4-70). The display shows ENTER ACCOUNT CODE and the digits as they are entered. You hear outside dial tone when the code is accepted. On keysets, an individual trunk or Call key flashes slowly.

c. **Repeating reorder tones:** You are restricted from the trunk group chosen; choose another trunk group. Or, you are restricted to using ARS only; try again using ARS (see paragraph 17.5). The display shows OUTGOING ACCESS DENIED.

- (4) After dialing the call, you can place it on hold, transfer it, set up a conference, enter optional account codes, etc. as described in this manual. Executive keysets have menu keys for easy use of outside call features.

*If you dialed an invalid or restricted telephone number, you hear reorder tones and the display shows INVALID OUTSIDE NUMBER or RESTRICTED OUTSIDE NUMBER.*

- (5) **To use the speakerphone, if equipped:** *If off hook, speak handsfree when the party answers. If on hook, press SPKR and hang up.*

**To change from speakerphone to handset:** Lift the handset and speak. The SPKR key goes off. You may later transfer back to the speakerphone by pressing the SPKR key and hanging up.

- (6) **To terminate the call:** *If on hook, disconnect by pressing the SPKR key. If off hook, hang up.*

**17.5 TO PLACE A CALL USING AUTOMATIC ROUTE SELECTION:**

- (1) **Keyset:** While on or off hook, enter the Automatic Route Selection feature code (9200), or press the ARS key. You hear dial tone.

**Single-Line Set:** Lift the handset and enter the Automatic Route Selection feature code (9200). You hear a single progress tone followed by dial tone.

**NOTE:** If required, enter a forced account code using the keypad or a pre-programmed SD key (see page 4-70). Display keysets show ENTER ACCOUNT CODE and the digits as they are entered. You hear a progress tone when the code is accepted.

- (2) Dial the telephone number. Use the MUTE key to backspace if you make a mistake. Include the area code, if needed. You hear one of the following signals.

a. **Single progress tone:** Your call is being placed. The associated individual trunk or Call key flashes slowly. Executive keyset users have the same options as described for outgoing calls on the previous page.

b. **Busy signals, then music:** All of the trunks in the route group are busy.

1. **Camp-on and wait for the trunk.**

2. **To request a callback (queue):** The system places your station in a queue for the trunk. When you hear ringing and the display shows TG XXXX [*or group name*] IS NOW AVAILABLE, lift the handset; keyset users may also need to press the fast flashing Call key or individual trunk key (or the ANSWER key). You hear dial tone and digits being dialed. The associated individual trunk or Call key flashes slowly.

c. **Repeating reorder tones:** You are restricted from the number dialed or from using the route selected. The display shows INVALID OUTSIDE NUMBER or RESTRICTED OUTSIDE NUMBER. IF the number that you dialed does not match any of the programmed ARS route group patterns, the display shows UNABLE TO ROUTE CALL.

## B. RECEIVING OUTSIDE CALLS

### 17.6 TO RECEIVE AN OUTSIDE CALL:

#### Keypad:

You will hear one of the following signals when receiving an outside call.

**Repeating long tones and a Call key or individual trunk key is flashing at the fast rate:** A call is ringing in. Lift the handset and/or press the flashing individual trunk key, flashing Call key, or ANSWER key. (Executive keypad users with a programmed voice mail extension can press the SEND TO V-MAIL menu key to transfer the call to voice mail.) The individual trunk or Call key flashes slowly during the call. (Display keypads show *[trunk name]* RINGING IN.)

**Intercom call or page announcing a call and a Call key or individual trunk key is flashing at the fast rate:** A call has been transferred to your station. Lift the handset and/or press the flashing individual trunk key, flashing Call key, or ANSWER key. (Executive keypad users with a programmed voice mail extension can press the SEND TO V-MAIL menu key to transfer the call to voice mail.) The individual trunk or Call key flashes slowly during the call. Display keypads show TG XXXX *[or group name]* TFER FROM EX XXXX *[or user name]*.

**An individual trunk key is flashing at the fast rate, there is no ring signal, and you have allowed answer for the trunk. You may hear ringing on another keypad:** Press the fast-flashing individual trunk key as described above or enter the Automatic Trunk Answer feature code (350). (The ANSWER key cannot be used to answer these calls.)

#### Single-Line Set:

**You hear a page announcing a transfer and/or repeating long tones:** A call is ringing in. Lift the handset; you are connected to the caller.

**You hear a call ringing in on another station and you have allowed answer:** Lift the handset and enter the Automatic Trunk Answer feature code (350). You are connected to the lowest-numbered trunk ringing in for which you have allowed answer.

### 17.7 TO RECEIVE A CALL THAT WAS TRANSFERRED TO HOLD:

When you hear a page announcing that an outside call is holding at your station (a Call key or individual trunk key is fluttering):

**Keypad:** Lift the handset and/or press the fluttering Call key or individual trunk key, or press the ANSWER key. You are connected to the caller.

**Single-Line Set:** Lift the handset and press the HOLD key or enter the Individual Hold feature code (336). You are connected to the caller.

## C. KEYPAD ON-HOOK MONITORING

**17.8** A keypad user with a speakerphone can monitor the call (listen to a recorded message, wait for the call to be answered, or wait on hold), and then speak handsfree when answered.

### 17.9 TO USE ON-HOOK MONITOR:

- (1) While on a call, press the SPKR key and hang up. *If you do not want to be heard and if the MUTE key is not lit*, press the MUTE key or MUTE menu key, or press SPCL and enter the Microphone Mute On/Off feature code (314). You can hear the other party (if the microphone is muted, you cannot be heard). The SPKR key is lit (and the MUTE key is lit if the microphone was muted).
- (2) **To return to the conversation:** You may lift the handset or speak handsfree. (If the microphone was muted, press the lit MUTE key or the UN-MUTE menu key to speak. The MUTE key goes off.)

#### D. TRUNK CAMP ON AND BUSY TRUNK CALLBACK (QUEUE)

**17.10** Camp-on and queue requests allow the caller to wait for an available resource. A station user waiting for a specific resource (a trunk or a station) will be served before a station user waiting for a group that contains that specific resource (trunk group or hunt group). This includes camped on Emergency Call feature (911) calls.

##### Camp On

**17.11** When a station user attempts to select a busy outgoing trunk or trunk group, the system sends a busy signal. The station user can wait off hook to camp on until the trunk is available.

##### **17.12** TO CAMP ON TO AN OUTGOING TRUNK GROUP:

- (1) When you hear a busy signal after selecting an outgoing trunk, do not hang up. You camp on and hear music until a trunk in the trunk group is available. The display shows WAITING FOR [trunk name].
- (2) When you hear a single progress tone and outside dial tone, dial the desired telephone number. The associated Call key or individual trunk key flashes slowly.

##### Busy Trunk Callback (Queue)

**17.13** If you attempt to select a busy outgoing trunk group and hear a busy signal or if you camp on, you can request a callback (queue) and hang up until the system signals your station that a trunk in the trunk group is available. Each station can place only one queue request at a time. If a second request is made, the first request is cancelled and replaced by the second request.

**17.14** Queue callbacks must be answered before the Queue Callback timer expires. If a callback is not answered, the queue is cancelled. If the station is busy when a trunk in the queued trunk group becomes available, the queue request is placed at the end of the queue list.

##### **17.15** TO QUEUE A BUSY OUTGOING TRUNK:

- (1) **Keypad:** When you hear a busy signal while selecting a trunk or if you are camped on, press the QUEUE menu key or press the SPCL key and enter the Queue Callback feature code (6) and hang up. The display shows QUEUE REGISTERED FOR [trunk name].

**Single-Line Set:** When you hear a busy signal while selecting a trunk or if you are camped on, hookflash and enter the Queue Callback feature code (6). Hang up.

- (2) Your station rings when the queued trunk is available. (Display keysets show TG XXXX [or group name] IS NOW AVAILABLE.)

- (3) **Keypad:** Lift the handset and/or press the fast-flashing Call key, individual trunk key, or the ANSWER key. Then dial the desired telephone number. The associated Call key or individual trunk key flashes slowly. If ARS was used when the call was placed originally, the number is dialed automatically.

**Single-Line Set:** Lift the handset and dial the desired number. If all DTMF decoders are busy when your station is called back, the system sends repeating reorder tones instead of dial tone and the queue is cancelled. If ARS was used when the call was placed originally, the number is dialed automatically.

##### **17.16** TO CANCEL A QUEUE BEFORE THE CALLBACK:

**Keypad:** While on hook, press the CANCEL QUEUE key or enter the Queue Callback feature code (6). The display shows QUEUE REQUEST CANCELED.

**Single-Line Set:** Lift the handset and enter the cancel Queue Callback feature code (6). Hang up.

## E. ACCOUNT CODES

17.17 Account codes are 3- to 12-digit codes that can be used in conjunction with the Station Message Detail Recording (SMDR) feature to aid record keeping. Account codes can be assigned to measure telephone use and/or to identify calls for customer billing. There are Standard, Forced, and Optional types of account codes. The account code, when used, is recorded in the SMDR report as soon as the call is completed. If more than one account code is entered during a call, the last account code that was entered is recorded.

### Database-Programmed Account Codes

17.18 Any station can be assigned a standard account code or one of six types of forced account codes (four are ARS dependent). Or, if desired, the station can have no associated account code.

17.19 The account code types are:

- **Standard:** Standard account codes automatically appear in the SMDR printout to identify calls from this station. The station user is not required to enter any digits during the call.
- **Forced — All Calls Validated:** If this type of account code is enabled, the user must enter a forced account code before an outside call can be placed. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked. *Stations with this account code type cannot forward calls to outside telephone numbers.*
- **Forced — All Calls Non-Validated:** With this account code type, the user must enter an account code before placing an outside call. The code is not checked against any lists and the call is allowed as soon as the code is entered. *Stations with this account code type cannot forward calls to outside telephone numbers.*
- **Forced — Local Toll Calls Validated:** This account code type requires the user to enter an account code after dialing a local toll call number (a toll call within the local area codes) or a long distance call when using ARS. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked. *Stations with this account code type cannot forward calls to outside telephone numbers.*
- **Forced — Local Toll Calls Non-Validated:** This account code type requires the user to enter an account code after dialing a local toll call number (a toll call within the local area codes) or a long distance call when using ARS. The code is not checked

against any lists and the call is allowed as soon as the code is entered. *Stations with this account code type cannot forward calls to outside telephone numbers.*

- **Forced — Long-Distance Toll Calls Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call (a toll call outside of the local area codes) has been dialed when ARS is used. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked. *Stations with this account code type cannot forward calls to outside telephone numbers.*
- **Forced — Long-Distance Toll Calls Non-Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call (a toll call outside of the local area codes) has been dialed when the ARS is used. The code is not checked against any lists and the call is allowed as soon as the code is entered. *Stations with this account code type cannot forward calls to outside telephone numbers.*
- **None:** If the user will not be required to enter an account code, this option is selected. The user may still use optional account codes or enable the Account Code For All Calls Following feature, as desired.

17.20 Station account code programming is explained on page 6-27 in PROGRAMMING. The codes are programmed in the Account Code window on page 6-60.

### Optional Account Codes

17.21 Optional account codes can be entered at any time during a call. These user-defined codes are not pre-programmed, but must be within the maximum length set in programming. If entered, optional account codes are printed in the SMDR report for that call in place of standard or forced account codes that may have been used.

17.22 TO ENTER AN OPTIONAL ACCOUNT CODE WHILE ON AN OUTSIDE CALL:

- (1) **Keypad:** Press SPCL and enter the Optional Account Code feature code (390). (Display keysets show ENTER ACCT CODE.) The outside party does not hear you enter the code.

**Single-Line Set:** Hookflash and enter the Optional Account Code feature code (390). The outside party hears music until step 2 is completed.

- (2) Enter the account code using the keypad; keypad users may press an SD key to enter an account code number that has been stored in that speed-

dial number location. (Display keysets show numbers.) You hear a single progress tone when the code is accepted. Single-line users are reconnected when the system accepts the account code. (If an account code is entered that has fewer than the programmed maximum number of digits, press # to return to the call. Pressing \* will cancel the account code entry.)

### Enabling The Account Codes For All Calls Following Feature

**17.23** A user may enable the Account Code For All Calls Following feature to enter an account code once and apply it to all calls placed from that phone until the feature is canceled. The account code is stored in system memory and is used for all calls made by that station. It affects other account code programming as follows:

- **Forced:** If forced account codes are enabled for the station, the "all calls following" account code is used for all calls and the station user will not be prompted to enter an account code until the "all calls following" code is canceled. **NOTE:** If account codes are validated, and the Account Code For All Calls Following is an invalid code, calls will not be allowed at the station until the code is removed or re-programmed.
- **Standard:** If standard account codes are enabled for the station, the "all calls following" account code overrides the standard code.
- **None:** If no forced or standard account codes are enabled for the station, the "all calls following" code will be used as an optional account code.
- **Optional:** In the event that this feature is in effect and an optional account code is also entered, the optional account code will override the "all calls fol-

lowing" account code for that call only. All subsequent calls will be associated with the "all calls following" account code.

**17.24** To cancel this feature, the feature code is entered without an account code (just press # to terminate programming).

**17.25** *TO ENTER AN ACCOUNT CODE AND USE IT FOR ALL FOLLOWING CALLS:*

- (1) **Keyset:** Enter the Account Code For All Calls Following feature code (391). (Display keysets show ENTER ACCT CODE.)

**Single-Line Set:** Lift the handset and enter the Account Code For All Calls Following feature code (391).

- (2) Enter the account code using the keypad; keyset users may press an SD key to enter an account code number that has been stored in that speed-dial number location. *If an account code is entered that has fewer than the programmed maximum number of digits, press # to terminate the code.* (Display keysets show numbers.) You hear a single progress tone when the code is accepted.

**17.26** *TO CANCEL THE ACCOUNT CODE FOR ALL CALLS FOLLOWING FEATURE:*

- (1) **Keyset:** Enter the Account Code For All Calls Following feature code (391). (Display keysets show ENTER ACCT CODE.)

**Single-Line Set:** Lift the handset and enter the Account Code For All Calls Following feature code (391).

- (2) *If on hook, lift and replace the handset or press # to exit. If off hook, hang up.*

## 18. PLACING CALLS ON HOLD

**18.1** There are several ways to place intercom and outside calls on hold. While on hold, the caller hears music (if equipped). There are three hold applications in the AXXESS System:

- **Individual hold** places the call on hold at one station. It can then be picked up directly at that station or it can be picked up at another station using the Reverse Transfer feature.
- **System hold** places the call on hold so that it can then be picked up directly at any keyset station that has an individual trunk key and has allowed-answer and/or outgoing access for the associated trunk, or at the station that placed it on hold. Attempting to place a conference on system hold will place the conference on individual hold. Intercom calls cannot be placed on system hold. Single-line sets cannot place calls on system hold; attempting to do so at a single-line station will place the call on individual hold.
- **Consultation hold** allows a single-line set user to pause during a call, use other system features, and then return to the caller by hookflashing. If a single-line set user attempts to hang up after placing a call on consultation hold, the call recalls the station.

**18.2** If a call remains on hold until the Hold timer expires, it recalls the station where it is on hold and the Recall timer is started. If it is still unanswered when the Recall timer expires, it recalls the station's attendant and the Abandoned Call timer is started. (If the station does not have an attendant, the call continues to recall at the station that placed it on hold.) If the call is not answered before the Abandoned Call timer expires, the call is disconnected by the system.

**18.3** For users' convenience, the system has two Hold timers: *Hold* and *Hold - Alternate*. In the default state, the Alternate timer is set for a longer time period than the Hold timer. However, both timers are programmable. The "Alternate Hold Timer" station flag determines which timer each station will use. If the flag is disabled, the station uses the Hold timer. If it is enabled, the station uses the Alternate timer.

**NOTE:** Keyset users can avoid the Hold timer by muting the microphone during a call instead of placing the call on hold. If this is done, the caller will not hear music-on-hold and will not recall the station.

### A. INDIVIDUAL HOLD

**18.4** TO PLACE AN INTERCOM OR OUTSIDE CALL ON INDIVIDUAL HOLD:

- (1) While on the call:

**Keyset:** Press the HOLD key or press the SPCL key and enter the Individual Hold feature code (336). You hear intercom dial tone and the Call key, individual trunk key, or IC key flutters.

**Single-Line Sets:** Hookflash and enter the Individual Hold feature code (336). You hear intercom dial tone.

- (2) Hang up or place another call.

**18.5** TO RETURN TO THE CALLER ON INDIVIDUAL HOLD:

**Keyset:** Lift the handset and/or press the fluttering IC key for intercom calls, or the Call key or individual trunk key (or the ANSWER key) for outside calls.

**Single-Line Set:** Lift the handset and enter the Individual Hold feature code (336).

### B. SYSTEM HOLD (KEYSETS ONLY)

**NOTE:** Intercom calls and conferences cannot be placed on system hold. If you attempt to do so, the call or conference will actually be placed on individual hold.

**18.6** TO PLACE AN OUTSIDE CALL ON SYSTEM HOLD (KEYSETS ONLY):

- (1) While on a call, press the SPCL key and enter the System Hold feature code (335). You hear intercom dial tone and the associated Call key or individual trunk key flutters.
- (2) Hang up or place another call.

**18.7** TO RETURN TO A CALL ON SYSTEM HOLD (KEYSETS ONLY):

At any keyset that shows a fluttering individual trunk key for the call and has allowed-answer and/or outgoing access for that trunk, lift the handset and/or press the fluttering key.

At the keyset that placed the call on hold, press the fluttering individual trunk or Call key

### C. CONSULTATION HOLD

**18.8** TO USE CONSULTATION HOLD (SINGLE-LINE SETS ONLY):

- (1) While on a call, hookflash to place the call on consultation hold. You hear three short tones followed by dial tone.
- (2) You can place a call or enter a feature code.

**NOTE:** If you hang up while the call is on consultation hold, the call will immediately recall your station. If you hang up after dialing an extension number, the call will transfer to that station.

- (3) Return to the caller on hold by hookflashing.

### D. HOLD RECALL

**18.9** TO ANSWER A HOLD RECALL:

When the recall rings at your station (display shows [station or trunk] RECALLING), lift the handset or press the ANSWER key. (Executive keyset users can press the ANSWER menu key.) Single-line sets are automatically connected; keyset users may need to press the flashing call or individual trunk key.

### E. MICROPHONE MUTE

**18.10** Whether handsfree or using the handset, you can temporarily turn off your microphone while on a call. The call is still connected; you can hear the other party, but they cannot hear you. Since the call is not placed on hold, no timer is activated. The MUTE key is lit when the microphone is muted; the light will go off when you press the MUTE key to re-enable the microphone.

**18.11** If you press the MUTE key while speaking to an off-hook voice announce caller on the speakerphone, the handset microphone will be muted and the caller on the handset will not hear you or the OHVA caller. When you press MUTE again, the handset microphone is re-enabled.

**18.12** You cannot mute the microphone on your keyset while your call is on hold at another station.

**18.13** MUTING THE KEYSSET MICROPHONE:

- (1) To temporarily turn off your microphone while on a call, press the MUTE key or MUTE menu key, or press SPCL and enter the Microphone Mute On/Off feature code (314). The MUTE key is lit and the display shows MICROPHONE MUTE ON. *If off hook*, do not hang up (unless you press the SPKR key first).
- (2) Press the lit MUTE key or UNMUTE menu key, or press SPCL and enter the feature code (314) to turn the microphone on. The MUTE key goes off and the display shows MICROPHONE MUTE OFF.

## 19. CALL WAITING

**19.1** While a station is in use, incoming intercom and outside calls camp on until the busy station is available. The busy party hears a single camp-on tone every 15 seconds (unless the Camp-on Tone timer is changed or camp on tones are disabled at the station).

**19.2** A station programming flag (Camp-On Indications) allows camp-on tones to be enabled or disabled for incoming intercom and outside calls. This flag is programmed on a station-by-station basis (see page 6-30 in PROGRAMMING).

**19.3** The DID/E&M Receive Busy Instead Of Camp-On station flag determines whether E&M and DID callers will receive busy signal or receive ringback and camp on when calling a busy station. In the default state, busy tones are disabled and the callers will hear ringback while camped on to the called station. This flag is programmed on a station-by-station basis (see page 6-30 in PROGRAMMING).

### 19.4 TO RESPOND TO A WAITING CALL USING A KEYSSET:

If, while on a call, you hear a single camp-on tone and/or see the IC key, a Call key, or an individual trunk key flashing fast, you have a call waiting. The display indicates the type of call that is waiting (intercom, outside, recall, etc.). If you are a hunt group member, the display shows the number of calls camped on to the hunt group. Do one of the following:

- (1) *If you wish to end the current call, hang up.* A waiting outside call rings as an incoming call; an intercom call rings as a private call. Answer as usual.

*If you wish to place the current call on hold, press the HOLD key or press the SPCL key and enter the Individual Hold feature code (336). The Call key, individual trunk key, or IC key flutters (unless an intercom call is camped on, in which case the IC key flashes fast until the camped on call is picked up, then the IC key flutters). Answer the waiting call by pressing the flashing Call key, individual trunk key, or IC key.*

**Executive Keysets:** You may press one of the following menu keys:

- **ANSWER:** Press this key to end the current call and answer the ringing call.
- **SEND TO V-MAIL:** This key appears only if you have an AXXESSORY Talk mailbox. Press this key to transfer the call to your mailbox.

— **IC CALL TO DND:** Pressing this key will send do-not-disturb tones to the caller. If using a display keyset, the caller will see DO-NOT-DISTURB.

- (2) **To return to the holding call:** Press the fluttering individual trunk key, Call key, or IC key.

### 19.5 TO RESPOND TO A CALL WAITING USING A SINGLE-LINE SET:

When you hear a single camp-on tone every 15 seconds while you are on a call, another call is waiting. Do one of the following.

- (1) *If you wish to end the current call, hang up.* The call rings at your station. Lift the handset to speak to the waiting caller.

*If you wish to place the current call on hold, hookflash and then enter the Individual Hold feature code (336). You are connected with the waiting caller.*

- (2) **To return to the first call on hold:**

*If you wish to end the current call, hang up.* Return to the holding call by lifting the handset and entering the Individual Hold feature code (336).

*If you wish to place the current call on hold and connect with the original call:* Hookflash and then enter the Individual Hold feature code (336) twice.

### 19.6 TO MOVE A CAMPED-ON INTERCOM CALL TO DO-NOT-DISTURB:

While on a call, you hear call waiting signals:

**Standard or Basic Keyset:** Press the DND key or enter a Do-Not-Disturb feature code (370 or 372). The DND key lights. The intercom caller is no longer camped on and receives do-not-disturb indications.

**Executive Keyset:** Press the DO-NOT-DISTURB or IC CALL TO DND menu key.

**Single-Line Set:** Hookflash and enter a Do-Not-Disturb feature code (370 or 372). The intercom caller is no longer camped on and receives do-not-disturb indications. Hookflash twice to return to the current call.

## 20. CALL TRANSFER

**20.1** There are two feature codes for transferring intercom and outside calls to other stations, AXXESSORY Talk applications, hunt groups, or outside telephone numbers. The call transfer options are as follows:

- **Transfer to ring:** You can transfer intercom or outside calls to another station, an AXXESSORY Talk application, a hunt group, or an outside telephone number.
- **Transfer to hold:** Either intercom or outside calls can be transferred to another station and placed on hold using this feature.

**20.2** In addition, transfer-to-park locations can be set up by the installer. A transfer-to-park location is a station circuit with an extension number that is not equipped with a station instrument. Calls can be transferred to these locations and then reverse transferred by any station user. If all station circuits are equipped, you cannot create a transfer-to-park location.

**20.3** An established conference can be transferred to a station or to an AXXESSORY Talk Voice Mail application. While the transfer is taking place, the parties in the conference remain connected to each other and may converse. The transfer will appear at the destination station in the same manner as any other transferred call along with a CONFERENCE TFR FROM (*username*) display and may be answered by the station user.

**20.4** If a conference is transferred to a Voice Mail application, the system waits for you to enter the mailbox number. If you do not enter a mailbox number before you hang up, the conference will be connected to the voice mail unit and a conference party must enter the mailbox number after listening to the introductory voice prompts. A conference conversation could be recorded as a mailbox message using this technique. (**NOTE:** Federal and State law may prohibit the use of this feature to record in certain circumstances. Inter-Tel does not purport to give any legal advice on this subject, but recommends that you contact your attorney for guidance on the use of this feature.)

**20.5** When a station user transfers a call to the principal station of a system forwarding path, the Handsfree Announce System Forward system-wide flag determines what the caller will hear. If enabled, the caller will place a handsfree call to the principal station and can announce the transfer (the call does not enter the forwarding path). If the option is disabled, the transferring station user will hear ringing and can announce the call only if it is answered by the principal station or one of the forwarding points. See page 6-91 for system flag programming information.

**20.6** If a station user answers another call while a party is waiting on transfer hold, the waiting party will be moved to individual hold at that station. If the Hold timer expires while a call is on transfer hold, the call will recall the station. The station user must return to the call on hold and begin the transfer process again.

**20.7** There may be some reduction in voice volume when an outside call is transferred to an outside telephone number depending on the quality of the trunks being used.

**NOTE:** While this system is designed to be reasonably secure against CO trunk misuse by outside callers, there is no implied warranty that it is invulnerable to unauthorized intrusions. If the central office does not provide supervision and disconnect the call when one party hangs up, it is possible for a caller to remain connected to a CO trunk circuit. If this happens, and the caller begins dialing, the call could be placed through the AXXESS System and would then be billed to the system's owner. The system cannot check this type of call for toll restriction and may not register the call in SMDR. This problem could arise when a call is connected to a station, when a call is in an unsupervised conference, or when a call is forwarded or transferred to the public network.

**20.8** There are five timers that affect the Call Transfer feature. They are as follows:

- **Transfer Attendant:** When an attendant transfers a call, this timer limits the time a transferred call rings unanswered before it recalls the attendant. The default value of this timer is 30 seconds. It can be reprogrammed to any value between 10-255 seconds.
- **Transfer Available:** This timer limits the amount of time a call that is transferred by a station user will ring, unanswered, before it recalls the transferring station. (Does not apply to calls transferred by attendant stations or AXXESSORY Talk.) The default value of this timer is 20 seconds. It can be reprogrammed to any value between 10-255 seconds.
- **Transfer Busy:** This timer limits the amount of time a call that is transferred by a station user will wait at a busy station before recalling the transferring station. (Does not apply to calls transferred by attendant stations or AXXESSORY Talk.) The default value of this timer is 24 seconds. It can be reprogrammed to any value between 10-255 seconds.
- **Transfer AXXESSORY Talk:** When an AXXESSORY Talk port transfers a call, this timer limits the time a transferred call rings unanswered before it recalls the port. The default value of this timer is 20 seconds. It can be reprogrammed to any value between 10-255 seconds. (Outside calls will not recall to AXXESSORY Talk ports if the AXXESS System is un-

able to communicate with the AXXESSORY Talk. The calls will ring at the destination stations until they are answered or the Abandoned Call timer expires.)

- **Unsupervised CO:** The duration of an outside call that is transferred to an outside telephone number is limited by this timer. When it expires, the unsupervised call recalls the primary attendant. If the attendant does not answer the recall before the Abandoned Call timer expires, the call is disconnected by the system. The default value of this timer is 5 minutes. It can be reprogrammed to any value between 1–255 minutes.

## A. TRANSFER TO RING

### 20.9 TO TRANSFER A CALL OR CONFERENCE:

- (1) **Keypad:** While on a call, press the TRANSFER key or press SPCL and enter the Transfer to Ring feature code (345). You hear intercom dial tone. The display shows TRANSFER CALL TO EXTENSION.

**Single-Line Set:** While on a call, hookflash. You hear tones followed by intercom dial tone.

- (2) **EITHER,** Select an outgoing trunk group or press the OUTSIDE PHONE menu key, and dial the desired telephone number. *If all trunks in the trunk group are busy, select another trunk group or camp on and wait for a trunk. If you hear repeating reorder tones, you dialed a restricted telephone number. To return to the caller on transfer hold, press the lit Call key, trunk key, or IC key (keyset) or hookflash twice (single-line set).*

**OR,** Dial the desired extension number or press an SD key, the VOICE MAIL menu key, or the MESSAGE CENTER menu key. (Executive keypad users can use the Directory feature by pressing the IC DIRECTORY menu key.) The number can be a station extension number, 0 for the attendant, a hunt group pilot number, a voice mail extension number, or a transfer-to-park location number.

- a. **Transfer to a station that is forwarded to voice mail:** You hear repeating double tones

and the display shows DEST FORWARDED TO VOICE MAIL.

- b. **Transfer to voice mail:** The system waits for you to enter the mailbox number (display shows ENTER MAILBOX). Enter the desired mailbox number. (Executive keypad users can use the Directory feature by pressing the IC DIRECTORY menu key, if the system is validating mailbox numbers.) *If you do not enter a mailbox number before you hang up, the caller will be connected to the voice mail unit and must enter the mailbox number after listening to the introductory voice prompts.*
- c. **Transfer-to-park:** If transferring to a park location, complete the transfer. Then page the desired party and announce the call. The party must reverse transfer the call. Note that if the call is not answered, it will recall your station if transferred directly or will recall the called park location's attendant if transferred to hold.

- (3) *If desired, wait for an answer and announce the call. If you are calling a device (such as an automated attendant) that does not accept call announcements, the display shows HANG UP TO FINISH TRANSFER.*

- (4) You have the following options:

**To complete the transfer:** Hang up or press another Call key. The display shows CALL TRANSFERRED TO (*username*).

**To return to the caller:** Press the fluttering Call key, trunk key, or IC key (keyset) or hookflash twice (single-line set).

**To try another station:** Press the TRANSFER key or press SPCL and enter the Transfer to Ring feature code (345) and dial another extension number.

**To transfer the call to hold when calling a station (KEYSETS ONLY):** Press the HOLD key or the TRANSFER-TO-HOLD menu key. Or press SPCL and enter the Individual Hold feature code (336). The call will not ring or send call waiting signals until the Hold timer expires.

## B. TRANSFER TO HOLD

**20.10** A call transferred to hold at a station does not ring or send a display message while holding. After the Hold timer expires, the station rings or sends call waiting signals. Also, calls transferred to hold do not recall the transferring party; they recall the receiving party's attendant if unanswered after the Hold and Recall timers expire. Besides the procedure listed below, keyset users have an alternative method for transferring calls to hold; refer to step 4 in the previous procedure.

### **20.11** TO TRANSFER A CALL TO HOLD:

- (1) **Executive Keyset:** While on a call, press the TRANSFER-TO-HOLD menu key. The display shows TRANSFER CALL TO EXTENSION.

**Standard or Basic Keyset:** While on a call, press the SPCL key and enter the Transfer To Hold feature code (346). The display shows TRANSFER CALL TO EXTENSION.

**Single-Line Set:** While on a call, hookflash and enter the Transfer To Hold feature code (346).

- (2) Dial the desired extension number. (Executive keyset users can use the Directory feature by pressing the IC DIRECTORY menu key.)
- (3) Hang up to complete the transfer.

### **20.12** TO PICK UP A CALL THAT WAS TRANSFERRED TO HOLD:

If a call was transferred to hold at your station:

**Keyset:** When your IC key, a Call key, or individual trunk key is fluttering, lift the handset

and/or press the fluttering key (or the ANSWER key for an outside call). You are connected to the caller.

**Single-Line Set:** Lift the handset and enter the Individual Hold feature code (336). You are connected to the call.

## C. TRANSFER RECALLS

**20.13** If a call is transferred to another station and is not answered before the appropriate Transfer timer expires (and if it was not transferred to hold), the call recalls the transferring station's recall destination (defaults to the station) and the Recall timer is started. The call rings until the Recall timer expires. If unanswered, it recalls the transferring party's attendant and the Abandoned Call timer is started. (If the transferring station has no attendant, the call continues to recall at the transferring station.) If the call is not answered before the Abandoned Call timer expires, the call is disconnected by the system.

### **20.14** TO ANSWER A TRANSFER RECALL:

**Keyset:** When the recall rings at your station, the display shows *(username)* RECALLING FROM *(username)*. Lift the handset and/or press the ANSWER key. Press the medium-flashing Call key or individual trunk key, or press the ANSWER key if the call is not automatically connected.

**Single-Line Set:** If you hear a repeating signal of four tones and a pause, lift the handset. You are immediately connected.

## 21. REVERSE TRANSFER

**21.1** Calls ringing or recalling at a station, a hunt group, or a transfer-to-park location can be picked up at any other station, using this feature. Calls on hold can also be picked up from stations and from transfer-to-park locations.

**21.2** If more than one call is ringing or holding at the station or hunt group, a priority list determines which call is reverse transferred. Calls are selected in the following order, and if more than one call of the same type is at the station, the calls are picked up in the order they were received:

1. Ringing calls
2. Camped-on calls
3. Holding outside calls
4. Holding intercom calls

**21.3** If a call is reverse transferred from a hunt group announcement or overflow station, and a station in the hunt group becomes available, the call will be disconnected from your station immediately when answered by the hunt group station.

**21.4** A call cannot be reverse transferred from a station within a hunt group, using the pilot number, if the

call was not a hunt group call. To reverse transfer the call, use the station's extension number, not the pilot number of its hunt group.

**21.5** There is a programmable station flag called "Transient Call Indication On Call Answer" that determines whether the station user will see a call display when reverse transferring a call (or using a secondary extension key). If the flag is enabled, the display will indicate whether the call was ringing, recalling, transferred, or holding at the other station.

### **21.6** TO REVERSE TRANSFER A CALL:

**EITHER**, Lift the handset (keysets can remain on hook) and enter the Reverse Transfer (Call Pick-Up) feature code (4), then dial the extension or pilot number where the call is ringing or holding. You are automatically connected to the caller.

**OR**, Lift the handset (keysets can remain on hook) and dial the extension or pilot number where the call is ringing or holding, then press SPCL or hookflash and enter the Reverse Transfer (Call Pick-Up) feature code (4). You are automatically connected to the caller.

## 22. CONFERENCE CALLS

**22.1** Station users can establish multi-party conference calls without operator assistance. There can be up to four parties in a conference. In addition to the initiating station, the conference can include any combination of up to three intercom and/or outside calls. The CPU provides 12 conference channels. Additional channels can be added, via DSP programming on the Options card, to support conferencing.

**NOTE:** During a conference, some reduction in voice volume may be noticed, depending on CO trunk quality.

**22.2** During a conference, if any station user presses a keypad key, the DTMF tones will be heard by all other parties in the conference. This allows conference callers access to DTMF-controlled devices.

**22.3** An established conference can be transferred to another station, using the call transfer feature described on page 4-75. While the transfer is taking place, the parties in the conference remain connected to each other and may converse. The transfer will appear at the destination station in the same manner as any other transferred call along with a CONFERENCE TFR FROM (*username*) display and may be answered by the party.

**NOTE:** While this system is designed to be reasonably secure against CO trunk misuse by outside callers, there is no implied warranty that it is invulnerable to unauthorized intrusions. If the central office does not provide supervision and disconnect the call when one party hangs up, it is possible for a caller to remain connected to a CO trunk circuit. If this happens, and the caller begins dialing, the call could be placed through the AXXESS System and would then be billed to the system's owner. The system cannot check this type of call for toll restriction and may not register the call in SMDR. This problem could arise when a call is connected to a station, when a call is in an unsupervised conference, or when a call is forwarded or transferred to the public network.

**22.4** A conference can be transferred (as described on page 4-75) to a Voice Mail application to allow the conference parties to use the Voice Mail features. When you transfer the conference to voice mail, the system waits for you to enter the mailbox number. If you do not enter a mailbox number before you hang up, the conference will be connected to the voice mail unit and a conference party must enter the mailbox number after listening to the introductory voice prompts. The conference parties can use their DTMF keypad keys to use the voice mail features. A conference conversation could be recorded as a mailbox message using this technique. (**NOTE:** Federal and State law may prohibit the use of this feature to record in certain circumstances. Inter-Tel does not purport to give any legal advice on this subject, but

recommends that you contact your attorney for guidance on the use of this feature.)

### A. PLACING A CONFERENCE CALL

#### 22.5 TO PLACE A CONFERENCE CALL:

- (1) While on a call:

**Keyset:** Press the CNF key or press SPCL and enter the Conference feature code (5). The party is on conference wait hold (hears music) and the CNF key flutters. The display shows CALL NEXT PARTY TO CNF.

**Single-Line Set:** Hookflash and enter the Conference feature code (5). The party is on conference wait hold (hears music).

- (2) Place an intercom or outside call to another party (or return to a call on hold) to be included in the conference. Executive keysets users can press the IC DIRECTORY or OUTSIDE DIR menu key to look up numbers, if desired.

**NOTE:** An existing conference is not a valid "party" for another conference.

- (3) Place the party on conference wait hold:

**Keyset:** Press the CNF key again. Or press SPCL and enter 5 again.

**Single-Line Set:** Hookflash and enter the Conference feature code (5). The party is on conference wait hold (hears music).

- (4) Repeat steps 2 and 3 until all desired parties are on conference wait hold (or the maximum allowed number has been reached).

- (5) Connect all waiting parties in the conference:

**Standard or Basic Keyset:** Press the CNF key again. Or press SPCL and enter 5 again. All parties are connected. (Display keysets show CNF IN PROGRESS.) The CNF key and a Call key flash slowly.

**Executive Keyset:** Press the CONNECT TO CONFERENCE menu key. All parties are connected. (Display shows CNF IN PROGRESS.) The CNF key and a Call key flash slowly. You can use the following menu keys:

— HOLD: Press this key to place the conference on hold.

— DISCONNECT: Press this key to remove your station from the conference. If there are no other stations in the conference, all parties are disconnected. If there is still another sta-

tion in the conference, the parties remain connected.

- **ADD PARTY:** This key appears only if you have not reached the maximum number of allowed parties. Press this key to leave the conference parties connected while you place another call to be added to the conference.
- **MUTE:** Press this key to turn the keyset microphone on or off during the conference.
- **TRANSFER CNF:** Press this key and enter an extension number to transfer the conference to another station or the Voice Mail application.

**Single-Line Set:** When all parties are on conference wait hold, hookflash and enter the Conference feature code (5). All parties are connected.

**NOTE:** If the number of parties in your conference exceed the capacities of the system resources, you will hear reorder tone and see a display that tells you **MAX NUMBER OF PARTIES EXCEEDED**. To complete the conference setup, return to the parties on conference wait hold one by one (keyset users press the associated Call or IC key, single-line set users enter the Individual Hold feature code twice) and release parties until there are fewer than the maximum. Then repeat step 5 to connect the conference.

## B. ADD PARTIES TO A CONFERENCE

### 22.6 TO ADD PARTIES TO AN EXISTING CONFERENCE (ANY INSIDE PARTY):

**NOTE:** This procedure cannot be performed if the maximum number of conference participants has been reached.

#### Keyset:

- (1) During the conference, press the CNF key. The other parties remain connected. The Call key and CNF key flutter.
- (2) Place an intercom or outside call to the other party (or return to a call on hold) to be included in the conference and press the CNF key.
- (3) **To connect all parties in a conference:** Press the CNF key again.
- (4) **To add another party:** Repeat steps 1–3 again.

#### Single-Line Set:

- (1) During the conference, hookflash. The other parties remain connected.

- (2) Place an intercom or outside call to the other party to be included in the conference (or return to a call on hold). Hookflash and enter the Conference feature code (5).
- (3) **To connect all parties in a conference:** Hookflash and enter the Conference feature code (5) again.
- (4) **To add another party:** Repeat steps 1–3 again.

## C. EXITING A CONFERENCE

### 22.7 There are several options for leaving the conference:

- Exit the conference by hanging up. The other parties remain connected only if at least one is a station (inside party). You cannot return to the conference. If there are no stations remaining in the conference, it is disconnected.
- Leave the conference and allow the outside parties to remain connected by pressing the CNF key or entering the Conference feature code (refer to paragraph 22.8). You can return to the conference at any time.
- End the conference and place all of the parties on individual hold (refer to paragraph 22.9). You can return to the parties one at a time.
- Place the entire conference on hold (refer to paragraph 22.12). The conferenced parties remain connected.

**NOTE:** If a user attempts to place a conference call on system hold, the conference will be placed on individual hold.

### Exiting And Re-Entering The Conference

#### 22.8 TO EXIT THE CONFERENCE AND LEAVE THE OTHER PARTIES CONNECTED (ANY INSIDE PARTY):

#### Keyset:

- (1) During the conference, press the CNF key and hang up. The CNF key and a Call key flutters.

**NOTE:** If all remaining parties are outside parties and the Hold timer expires while you are out of the conference, the conference recalls your station. The recall rings at your station and the CNF key flashes at the medium rate (display shows **CONFERENCE RECALLING**). Press the CNF key to return to the conference. If the recall is not answered before the Recall timer expires, it will recall the attendant.

- (2) **To return to the conference:** Lift the handset and/or press the CNF key again.

**Single-Line Set:**

- (1) During the conference, hookflash and hang up.

**NOTE:** If the Hold timer expires while you are out of the conference, the parties recall your station. When the recall rings at your station, lift the handset to answer the recall. If the recall is not answered before the Recall timer expires, it will recall the attendant.

- (2) **To return to the conference:** Lift the handset and/or enter the Conference feature code (5).

**Ending The Conference And Placing All Parties On Hold**

**22.9** TO END THE CONFERENCE AND PUT ALL PARTIES ON HOLD (ANY INSIDE PARTY):

**Keyset:**

- (1) During the conference, press the CNF key and hang up. The CNF key and a Call key flutters. The parties are still connected in a conference.
- (2) **To place the parties on individual hold:** Press the HOLD key or enter the Individual Hold feature code (336). You can then return to each party individually by pressing the associated Call or IC key.

**Single-Line Set:**

- (1) During the conference, hookflash and hang up. The parties are still connected in a conference.
- (2) **To place the parties on individual hold:** Lift the handset and enter the Individual Hold feature code (336). You can then return to each party individually by entering the Individual Hold feature code again.

**Placing The Entire Conference On Hold**

**22.10** Any inside party involved in a conference can place the conference on hold at his or her station. The other conference parties remain connected and can converse. The station user that placed the conference on hold can then place calls or use system features while the conference is on hold. Then the user can return to the conference on hold. Note, however, that a conference may not be terminated while it is on hold.

**22.11** Once a station user has moved a conference to hold, the user may, if desired, establish another conference. Because each conference is established under a separate Call key, it is possible for the user to have access to any individual conference for further call processing. If the user elects to use the CNF key for conference access, the CNF key will rotate through the conferences in priority order. The CNF key will always reflect the status of the top-priority conference. The priority order for the CNF key when multiple conferences are in effect is:

1. Conference or call on transfer hold
2. Ringing (ring in, recall, or camp on) conference
3. Conference on hold
4. Active conference

**22.12** TO PLACE THE CONFERENCE ON HOLD (ANY INSIDE PARTY):

- (1) During a conference call:

**Keyset:** Press the HOLD key or press the SPCL key and enter the Individual Hold feature code (336). The conferenced parties remain connected. The call and CNF keys flutter.

**Single-Line Set:** Hookflash and then enter the Individual Hold feature code (336). The conferenced parties remain connected.

**NOTE:** If you do not return to the conference before the Hold timer expires, the conference will recall your station. If the recall is not answered, the conference will recall to your attendant's station. At the attendant, the call will be terminated automatically after the Abandoned Recall timer if no inside parties are still in the conference and if it is not answered by the attendant. (If the attendant answers the call, a conference is re-established with the attendant station as one of the conference parties.)

- (2) To return to the conference:

**Keyset:** Press the HOLD key, CNF key, or the fluttering Call key.

**Single-Line Set:** Lift the handset and enter the Conference feature code (5).

## 23. SYSTEM FORWARDING

**NOTE:** This feature must be enabled in Premium Feature Selection. See page 6-220 in PROGRAMMING.

**23.1** System forwarding provides the ability to program the system so that calls ringing at a station will follow a database-programmed "forwarding path" that routes the call based on the type of call and the status of the intended station. (The Call Forwarding station feature can be used to override System Forwarding.) Several terms will be used to describe this feature, including:

- **Principal Station:** Original station being called.
- **Forwarding Point:** A destination (station or hunt group) to which the system-forwarded call is directed. Each forwarding path can contain up to four forwarding points.
- **Forwarding Path:** The sequence of forwarding points to which the call will be sent. Forwarding paths are programmed in the database. Up to 100 unique paths can be programmed. Each station can have up to three forwarding paths.

**23.2** Two system timers are used with this feature:

- **System Forwarding Initiate:** This timer determines how long a call will ring (unanswered) at the principal station before moving to the first forwarding point. The default value is 15 seconds and the range is 2-255 seconds.
- **System Forwarding Advance:** This timer determines how long the call will ring (unanswered) before moving to the next forwarding point. The default value is 15 seconds and the range is 2-255 seconds.

**23.3** For each forwarding path assigned to the station, the system checks the following three criteria to determine if and when a call should be forwarded:

- **Type of incoming call:** Up to six different types of calls can be programmed to be sent to the forwarding path. They are:
  - Outside calls received through a call routing table (including DID and E&M calls, but not including DISA calls)
  - Ringing outside calls
  - Transferred outside calls (including automated attendant and voice mail transfers)
  - Recalling outside calls
  - DISA calls (including DISA calls received through a call routing table)
  - Intercom calls

- **Station status:** The system recognizes four different types of station status.

- *No Answer:* If the call is not answered at the principal station before the System Forwarding Initiate timer expires, the system sends the call to the forwarding path.

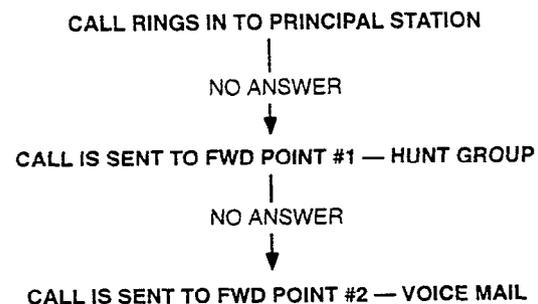
- *Busy:* If the principal station is busy, the system immediately sends the call to the forwarding path. Both "No Answer" and "Busy" can be selected together to form a "Not Available" status.

- *Do Not Disturb:* If the principal station is in do-not-disturb, the system immediately sends the call to the forwarding path.

- *Immediate:* The system immediately sends the call to the forwarding path. The principal station user cannot answer an immediately forwarded call, but can reverse transfer it from the forwarding point.

- **Day-mode/night-mode status:** The system day/night mode is used to determine if a forwarding path is taken. Either day mode, night mode, or both may be specified.

**23.4** For an example, refer to the diagram below. In the example, the "principal" station user wants direct ring-in or transferred calls to ring at his or her station during day mode. The principal station has a forwarding path with two forwarding points: a hunt group and voice mail. If the principal does not answer the call, it follows the forwarding path to forwarding point #1, a hunt group. If the hunt group does not answer the call, it would continue on the forwarding path and go to the principal station's voice mailbox (forwarding point #2).



**23.5** If the principal station is a keyset, the "ring principal once" option can be set that will signal the principal station when a call begins to follow the forwarding path. The signal to the principal station consists of a display (CALL SENT TO FORWARD PATH) and a single burst of ring tone. The call cannot be answered at the principal station, but can be reverse transferred from the system forward point.

**23.6** If a call rings in to multiple stations, and one or more of those stations has system forwarding, the call will not follow any of the forwarding paths.

**23.7** If a principal station or a station forwarding point is a member of a hunt group, calls placed to the hunt group's pilot number are unaffected by system forwarding. The hunt group calls will be received at the station as usual and will not enter the system forwarding path.

**23.8** A call follows only the forwarding path of the principal, even if a forwarding point has a forwarding path of its own. The call that originated at the principal station will follow only the principal station's forwarding path.

#### Handsfree Announce System Forward Option

**23.9** When a call is transferred to the principal station by another station user *and the principal station's system forward is set for the "no answer" station status*, a system-wide option determines what the caller hears. If the "handsfree announce on system forward transfer" option is enabled, the transferring station user will place a handsfree call to the principal station and can announce the transfer; the *System Forwarding Initiate* timer does not start until the transfer is completed.

**23.10** An exception to this is if intercom calls are programmed to be sent to the forwarding path and an intercom call is transferred to the principal station. In this case the handsfree announce option is overridden and the intercom call from the transferring station enters the forwarding path after the System Forwarding Initiate timer expires. The transferring station user hears ringing and can announce the call only if it is answered.

**23.11** If a transferred call follows the system forwarding path to a voice mail station, the transfer is completed when the transferring station hangs up. The principal station's mailbox number is automatically dialed.

#### Individual Station Forwarding Points

**23.12** The ringing duration at each station forwarding point is determined by the System Forwarding Advance timer (defaults to 15 seconds). If the station forwarding point is busy, the call will camp-on until the System Forwarding Advance timer expires and then it moves to the next forwarding point.

**23.13** If the station forwarding point is in do-not-disturb, the forwarding path will bypass that station and immediately send the call to the next forwarding point.

**23.14** If a forwarding point is an AXXESSORY Talk application, and the AXXESS is unable to communicate

with the AXXESSORY Talk PC, the call will bypass the forwarding point.

**23.15** A station forwarding point can place calls or transfer calls to the principal.

#### Hunt Group Forwarding Points

**23.16** If a forwarding point is a hunt group, a call following the forwarding path will be sent to the announcement station or overflow station as usual; it will advance to the next forwarding point if not answered before the System Forwarding Advance timer expires.

**23.17** The call will ring at the hunt group until the System Forwarding Advance timer expires. It will then move to the next forwarding point. The No Answer Advance timer determines how long the call will ring at each hunt group station, as usual.

**23.18** If all stations in a hunt group forwarding point have do-not-disturb or hunt group remove enabled, the call will camp on until the System Forwarding Advance timer expires. The call will then be sent to the next forwarding point.

#### Manual Call Forwarding And System Forwarding

**23.19** If the principal station or a forwarding point has manual call forward enabled (using the FWD key or one of the Call Forwarding feature codes), the Call Forward feature overrides System Forwarding.

**23.20** If a forwarding point has the Call Forward feature enabled, a system-forwarded call will ring at the forward destination until it is answered or the System Forward Advance timer expires; then the call moves on to the next forwarding point. However, system-forwarded calls will follow manual forwarding (at a station forwarding point) to an outside number only when the trunk has answer supervision. If the trunk does not have answer supervision, the call rings at the forwarded station.

**23.21** If a station forwarding point is manually forwarded to voice mail, the call will not follow the manual forward to voice mail; it will ring at the station forwarding point.

**23.22** If the principal station *receives* a manually forwarded call (not a system forward), that call will *not* follow the principal station's system forwarding path.

**23.23** If an infinite forward loop results from the combination of manual forwards and system forwarding paths, the station that was originally intended to receive the call will ring, even if the station is in do-not-disturb.

**System Forward Enable/Disable**

**23.24** The station user has the option of entering feature codes that will disable or enable the use of system forwarding at that station. Note that this flag does not affect the station's appearance on any other station's call forwarding path. The flag merely determines whether the station will have its own calls system forwarded.

**23.25 TO ENABLE OR DISABLE SYSTEM FORWARDING:**

**Keystet:** Enter the System Forward On (352), System Forward Off (353), or System Forward On/Off (354) feature code. The display shows SYSTEM FORWARD ON (or OFF). If disabled, the system will ignore any system forwarding

paths programmed for this phone until you re-enable system forwarding.

**Single-Line Set:** Lift the handset and enter the System Forward On (352), System Forward Off (353), or System Forward On/Off (354) feature code. If disabled, the system will ignore any system forwarding paths programmed for this phone until you re-enable system forwarding.

**Unanswered Calls**

**23.26** If a call that is following a system forwarding path is not answered or all forwarding points are in do-not-disturb or busy, its final destination depends on the type of call as shown below.

| TYPE OF CALL                                               | ALL FWD POINTS ARE BUSY OR DO NOT ANSWER                                                                                                                                                                                                                                             | ALL FWD POINTS ARE IN DO-NOT-DISTURB                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Intercom                                                   | Rings at the last forwarding point until it is answered or the caller hangs up.                                                                                                                                                                                                      | Call never leaves the principal station.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Call routing ring-in (except DISA)                         | Rings at last forwarding point until it is answered or caller hangs up.                                                                                                                                                                                                              | Rings at the principal station until it is answered or the caller hangs up.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Direct ring-in                                             | Rings at last forwarding point until it is answered or caller hangs up.                                                                                                                                                                                                              | Rings at the principal station until it is answered or the caller hangs up.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Transfer from a station, automated attendant or voice mail | Recalls the transferring station's transfer recall destination when the System Forwarding Advance timer expires at the last forwarding point.                                                                                                                                        | <i>If immediate forwarding is enabled, rings the principal station until the applicable Transfer timer expires. Then it recalls the transferring station's transfer recall destination.</i><br><i>If a conditional forwarding is enabled, rings principal station until the System Forward Initiate timer expires. Then it recalls the transferring station's transfer recall destination.</i>                                                                                              |
| DISA (including Call Routing to DISA)                      | Rings at last forwarding point until the Abandoned Call timer expires.                                                                                                                                                                                                               | Rings at the principal station until the Abandoned Call timer expires.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Recalls                                                    | Recalls the principal station's attendant when the System Forwarding Advance timer expires at the last forwarding point.<br><br>If the principal station does not have an attendant, the call continues to ring at the last forwarding point until the Abandoned Call timer expires. | <i>If immediate forwarding is enabled, rings principal station until the Recall timer expires. Then it recalls the principal station's attendant.</i><br><i>If a conditional forwarding is enabled, rings principal station until the System Forward Initiate timer expires. Then it recalls the principal station's attendant.</i><br><br>If the principal station does not have an attendant, the call continues to ring at the principal station until the Abandoned Call timer expires. |

## 24. CALL FORWARDING

**24.1** With call forwarding, a station user can route incoming intercom and outside calls (including direct ring-in calls) to another station, to a hunt group, or to an outside telephone number, if allowed by toll and trunk restrictions. The four forwarding options are:

- **Forward all calls:** All incoming calls are immediately forwarded.
- **Forward if no answer:** Incoming calls are forwarded if they are not answered before the Forward No Answer timer expires.
- **Forward if busy:** Incoming calls are immediately forwarded if the station is busy.
- **Forward if no answer or busy:** Incoming calls are forwarded immediately if the station is busy, or forwarded if calls are not answered before the Forward No Answer timer expires.

**24.2** If forward all calls is enabled, display keysets show the call forwarding status and destination until the request is cancelled. If one of the conditional forwards is enabled (no answer, busy, or no answer/busy), display keysets show the forward status for five seconds and then return to normal. If the station receiving the forward is a display keyset, it shows EXT XXXX FWD FROM EXT XXXX for each forwarded call received.

**24.3** Station users can chain forwards from station to station providing the forwards do not form a loop and the chain does not include more than 10 stations. The conditional forward features (if busy, if no answer, if busy/no answer) may form a loop that the system cannot detect until a call is placed to the forwarding station. For example, if two station users forward their calls to each other using the Forward If Busy feature, the system accepts the requests. However, if a call rings in while both stations are busy, the forwards create an illegal loop. In this case, the call camps on to the called station and that station's display shows INVALID FORWARD PATH.

**24.4** If more than one station has ring in for a trunk group, direct ring-in calls on that trunk group will forward to extension numbers, but not outside numbers or voice mail ports. The display of the keyset receiving the forwarded call will show it as a forwarded call, and the Call key or individual trunk key flashes to show ring in. (The individual trunk key also flashes on the keyset that is being forwarded.)

**24.5** Calls cannot be forwarded to restricted outside telephone numbers or stations in do-not-disturb. If the station that is programmed to receive your forwarded calls is later placed in do-not-disturb and you receive a call, you will momentarily see a display showing that

the destination station is in do-not-disturb; the call will remain at your station.

**24.6** If your station is in do-not-disturb and you have call forwarding programmed the call is still forwarded, unless you enabled Forward No Answer. With Forward No Answer, intercom callers will see the do-not-disturb display that you programmed and the call will not be forwarded.

**24.7** If calls are forwarded to an AXCESSORY Talk application, and the AXCESS is unable to communicate with the AXCESSORY Talk PC, the call will not be forwarded. It will remain at your station.

**24.8** Call forwarding overrides system call forwarding at the principal station.

**24.9** If a station is programmed for Forward No Answer or Forward No Answer/Busy and receives a transferred call, the Forward No Answer timer is started when the intercom call from the transferring station begins ringing. The Forward No Answer timer is restarted if the transferring station completes the transfer before the timer expires (the transferred call will then be forwarded when the timer expires).

**24.10** Queue callbacks and recalls do not forward, except that a recall at an attendant's station will forward to another station.

### FWD Key

**24.11** The Executive keyset has a FWD key when the keys are in the default state. (However, it can be reprogrammed to use any of the Forward feature codes.) When the default Executive keyset FWD key is pressed, the display shows a menu of call forwarding options. The user must then select the desired option by pressing the corresponding key next to the display. If the FWD key is programmed to use any other Forward feature code (355–358) the forwarding options will not be displayed when the FWD key is pressed; the Executive keyset will operate the same as a Standard or Basic Keyset.

**24.12** Any keyset user can make any user-programmable key (including the Executive FWD key) a FWD key that uses one of the forwarding feature codes (355–358). Refer to the procedures on page 4–54 for programming user-programmable keys.

**24.13** A user-programmed FWD key is lit only when the station is programmed for the call forwarding condition enabled by that key. For example, if a user-programmed FWD key is set to forward calls when the station is busy, the key will be lit when the Forward If Busy feature is enabled, but not if the Forward If No Answer feature is enabled.

**24.14** If a keyset user has both a fixed FWD key and a user-programmable FWD key, the fixed key will always light when the station is forwarded. However, the user-programmable FWD key will be lit only when the forwarding option activated by that key has been selected. For example, if the user has the Forward All Calls feature programmed under a user-programmable key, that key will light if either the fixed or programmable FWD key is used to select that feature. However, if the fixed key or a feature code is used to set the Forward If Busy feature, only the fixed key will light.

#### Forward To An Outside Number

**24.15** When programming a station for call forward to an outside telephone number, a trunk access code is programmed before the telephone number. If the station is called while the selected trunk group is busy, the call will not be forwarded. Calls will ring at the forwarded station until the call is answered or the caller hangs up. The forwarded station's display shows FORWARD TO BUSY TRUNK.

**24.16** The forwarded station's (not the intercom caller's) trunk and toll restrictions are checked when an intercom call is forwarded to an outside number.

**NOTE:** While this system is designed to be reasonably secure against CO trunk misuse by outside callers, there is no implied warranty that it is invulnerable to unauthorized intrusions. If the central office does not provide supervision and disconnect the call when one party hangs up, it is possible for a caller to remain connected to a CO trunk circuit. If this happens, and the caller begins dialing, the call could be placed through the AXXESS System and would then be billed to the system's owner. The system cannot check this type of call for toll restriction and may not register the call in SMDR. This problem could arise when a call is connected to a station, when a call is in an unsupervised conference, or when a call is forwarded or transferred to the public network.

**24.17** When an outside call is forwarded to an outside number, the Unsupervised CO timer is activated. When the timer expires, the call recalls the attendant. If the attendant does not answer the recall before the Abandoned Call timer expires, the call is disconnected.

**24.18** Stations with Forced Local Toll Call and Forced Long-Distance Toll Call account codes cannot forward calls to outside numbers when ARS is used. However, forwarding to an outside number is allowed when any other trunk access method is used.

**24.19** If a trunk group is assigned direct ring in to multiple stations, and one of those stations is forwarded to

an outside number, incoming calls on that trunk group are not forwarded to the outside number.

**NOTE:** There may be some reduction in voice volume when an outside call is forwarded to an outside telephone number, depending on central office trunk quality.

#### Forward To The Message Center

**24.20** Station users can forward calls to their message centers. Keyset users can forward calls to their designated message center by pressing the FWD key and then the MSG key or MESSAGE CENTER menu key. Single-line users must use the call forwarding procedure and dial the extension number of the message center.

#### Forward To An Attendant

**24.21** Station users can forward calls to their attendant by pressing the FWD key and then 0, or by entering a Call Forwarding feature code and dialing 0.

#### Forward To Voice Mail Hunt Groups

**24.22** If a station is forwarded to a voice mail hunt group or if the message center is a voice mail hunt group, the user's mailbox number is automatically dialed when the voice mail unit answers the forwarded call.

**24.23** If a chain of forwarded stations ends in voice mail, the mailbox number of the first station in the chain will be selected when the voice mail unit answers the call.

**24.24** If a trunk group is assigned direct ring in to multiple stations, and one of those stations is forwarded to a voice mail unit, incoming calls on that trunk group are not forwarded to the voice mail unit.

#### How To Forward Calls To An Extension Or Outside Number

##### 24.25 TO FORWARD CALLS:

- (1) **Standard or Basic Keyset:** While on or off hook, press the FWD key or enter one of the following feature codes. (Display keysets show ENTER FORWARD DEST.)
  - a. Call Forward All Calls (355)
  - b. Call Forward If No Answer (356)
  - c. Call Forward If Busy (357)
  - d. Call Forward If No Answer Or Busy (358)

**Executive Keyset:** Press the FWD key. The display shows SELECT TYPE OF FORWARD. Press the menu key for the desired forwarding option (ALL, NO ANSWER, BUSY, or NO AN-

SWER/BUSY). The display shows ENTER FORWARD DEST.

**Single-Line Set:** Lift the handset and enter one of the feature codes listed above.

- (2) *If forwarding to an extension number or pilot number, do one of the following:*
- Press a DSS/BLF key.
  - Dial the extension number or pilot number to receive the calls.
  - Dial 0 to forward to your attendant.
  - (Keyset users only)* Press the MSG key or MESSAGE CENTER menu key to forward calls to your message center.
  - (Executive keyset users only)* Press the VOICE MAIL key to forward to your mailbox.
  - (Executive keyset users only)* Press the IC DIRECTORY menu key to look up and select a number.

**NOTE:** If you dialed an invalid extension number, your display shows FORWARD TO INVALID NUMBER, you hear reorder tones, and must try again. If you dialed a station that is in do-not-disturb, the display shows DESTINATION IN DND, you hear reorder tones, and must enter a new destination.

*If forwarding to an outside telephone number, do one of the following:*

- Dial a trunk access code (8, 9200-9299, 93000-93003). The display shows ENTER PHONE #. Dial the desired telephone number.
- (Keyset users only)* Press a trunk access key (OUTGOING, ARS, trunk group key, or trunk key). The display shows ENTER

PHONE #. Dial the desired telephone number.

- (Executive keyset users only)* Press the OUTSIDE PHONE menu key. The display shows ENTER PHONE #. Dial, speed dial, or redial the desired telephone number or press the OUTSIDE DIR menu key to look up and select a number.

**NOTE:** If the forward destination is invalid because of toll restriction, ARS-Only restriction, no outgoing access for the trunk, no ARS or ARS route group for the dialed number, or an invalid dialed number, you hear reorder tones and must enter a new destination. (The display explains why the call was denied.)

- (3) **Keyset:** *If off hook, hang up.* You hear a progress tone and the FWD key is lit (display shows FWD [condition] TO XXXX). If you attempted to forward calls to a station that is unconditionally forwarded to your station or if the forwarding path already has 10 stations, your display shows INVALID FORWARD PATH and you hear reorder tones and must enter a new destination.

**Single-Line Set:** Hang up.

#### 24.26 TO CANCEL ANY CALL FORWARD REQUEST:

**Standard or Basic Keyset:** Press the lit FWD key (the SPKR key lights) then press the SPKR key (both keys go off). You hear a progress tone. (Display keysets show ANY CALL FORWARD CANCELED.)

**Executive Keyset:** Press the FWD key and then press the FWD OFF menu key. You hear a progress tone and the FWD key is unlit. (Display shows ANY CALL FORWARD CANCELED.)

**Single-Line Set:** Lift the handset, enter any Call Forwarding feature code (355-358), and hang up.

## 25. SPEED DIALING

25.1 Three AXXESS System features provide speed-dialing. They are as follows:

- **System Speed Dialing:** Up to 200, 32-digit system speed-dial numbers can be stored in system memory.
- **Station Speed Dialing:** Each station user can program up to 10, 16-digit station speed-dial numbers.
- **System Directory (Intercom and Outside):** The intercom directory enables display keyset users to "look up" intercom extension numbers and user names. The outside directory enables display keyset users to "look up" system speed-dial numbers and associated names. (**NOTE:** This feature must be enabled in Premium Feature Selection. See page 6-220 in PROGRAMMING.)

### A. SYSTEM SPEED DIALING

25.2 Speed dialing allows station users to dial stored telephone numbers quickly. Up to 1000, 32-digit system speed-dial numbers can be stored in system memory. If desired, an identifying name can also be stored with each speed-dial number. (See also the System Directory feature on page 4-91 and Caller ID on page 4-25.)

25.3 To keep system speed-dial numbers confidential, some or all of them can be programmed as non-display numbers (see PROGRAMMING, page 6-97). Non-display numbers can be used by any station user, but can only be displayed on the programming station's keyset. (Non-display numbers cannot be redialed or saved as station speed-dial numbers at a display keyset.) Non-display numbers *will* appear in the SMDR report when dialed.

25.4 System speed-dial numbers are subject to toll restriction unless a system-wide option has been enabled that allows any station to dial any system speed-dial number regardless of toll restriction.

25.5 The system speed-dial numbers are stored using location codes (000-999). When dialed, the numbers appear on a display keyset unless they have been programmed as non-display numbers. Display keyset users can also view system speed-dial numbers and names without dialing; however, with non-display numbers only the name is displayed.

25.6 System speed dial codes 000-999 can be stored in user-programmable keyset keys by following the directions given on page 4-54. These keys would allow the station user one-key dialing of system speed-dial numbers.

25.7 The system speed-dial numbers and names are stored in battery-backed RAM and will not be erased in the event of a power failure.

25.8 The system speed-dial numbers and names are programmed by the installer or at any Administrator station. (Refer to page 4-106 for Administrator programming instructions.)

### Viewing System Speed-Dial Numbers

25.9 TO VIEW SYSTEM SPEED-DIAL NUMBERS AND NAMES:

**NOTE:** If you make a mistake, use the MUTE key to back space.

- (1) While on hook, press the SYS SPD key or enter the System-Speed Dial feature code (381). The display shows REVIEW SYS SPEED # (000-999).
- (2) Enter the desired location code (000-999) or press the SEARCH menu key. The display shows the programmed name and number.
- (3) *If desired*, scroll forward through the speed-dial locations in alphabetical order by pressing the VOLUME ▲ or NEXT key, or scroll backward by pressing the VOLUME ▼ or PREVIOUS key.
- (4) Repeat steps 2 and 3 for each speed-dial location to be viewed. Or, press \* or CANCEL to terminate this feature.
- (5) **To automatically select a trunk and dial the displayed number**, press #.

### Dialing System Speed-Dial Numbers

25.10 TO DIAL SYSTEM SPEED-DIAL NUMBERS AT A KEYSSET:

- (1) *If desired*, lift the handset and select an outgoing trunk. (You may skip this step.)
- (2) Press the SYS SPD key or enter the System Speed-Dial feature code (381). The display shows REVIEW SYS SPEED # (000-999). Non-display keyset users hear a confirmation tone.
- (3) Enter the location code (000-999) for the desired number. *If you have not selected a trunk*, press # or the ACCEPT menu key to accept the number and automatically select a trunk. Or, press the ARS key, a trunk key, a trunk group key, or the OUTGOING key to select a trunk. The number is automatically dialed. (Display keysets show the number dialed unless it is a non-display number.) If you hear reorder tones, your station is restricted from dialing the selected number. If the display shows INVALID BIN NUMBER, you entered an invalid speed-dial location code.

**25.11 TO DIAL SYSTEM SPEED-DIAL NUMBERS AT A SINGLE-LINE SET:**

- (1) Lift the handset and select an outgoing trunk.
- (2) Hookflash and enter the System Speed-Dial feature code (381). You hear a confirmation tone.
- (3) Enter the location code (000–999) for the desired number. The number is automatically dialed. If you hear reorder tones, your station is restricted from dialing the selected number.

**B. STATION SPEED DIALING**

**25.12** For convenience, each station user can program up to 10, 16-digit station speed-dial numbers. Single-line sets use speed-dial location codes (0–9). Keypad sets use speed-dial (SD) keys, if programmed in the keypad's keypad, or location codes 0–9. Together, the lamps in the keypad SD keys create a busy lamp field that indicates the status of the stations programmed under the keys (refer to the lamp status chart on page 4-47). Speed-dial keys can contain outside telephone numbers, feature codes, station extension numbers, or hunt group pilot numbers.

**25.13** Station speed dial codes 0–9 can be stored in user-programmable keypad keys to create SD keys.

**Programming Station Speed-Dial Numbers**

**25.14** When entering the outside telephone numbers, use one of the following methods:

- Use the keypad to manually dial the number.
- On a keypad, press the REDIAL key to enter the last number (up to the first 16 digits) dialed or saved at the station.
- On a keypad, press the SYS SPD key and enter the system speed-dial location code (000–999) to store one of the system speed-dial numbers in a station speed-dial location. (If the number is over 16 digits, only the first 16 digits are stored.) Non-display system speed-dial numbers cannot be stored in keypad station speed-dial locations.

**25.15** If desired, outside telephone numbers can be preceded with a trunk access code to allow one-key dialing of outside telephone numbers. For example, a key programmed with "89619000" would select a trunk using the Outgoing Call feature code (8) then dial 961-9000.

**25.16** A station extension number can be preceded with a pound (#) to always speed dial private intercom calls to the station. Or, a "4" may be entered before a sta-

tion extension number or hunt group pilot number to quickly reverse transfer (pick up) calls from that station or hunt group. If either of these options is used, normal handsfree intercom calls cannot be placed using that station speed-dial location or SD key and the SD key will not show the station's status.

**25.17** An outside telephone number can be preceded by a trunk access code for easier trunk selection and number dialing. Station users can also program pauses and/or hookflashes into the stored outside telephone numbers. For example, the number can contain an SCC local number, a pause, and an access code. When programming speed-dial numbers, each hookflash and each pause is considered one digit. The durations of the hookflash and the pause are determined by the programmable CO Hookflash and Pause Digit timers.

**25.18 TO PROGRAM STATION SPEED-DIAL NUMBERS:**

**NOTE:** If you make a mistake, press \* or CANCEL; then start over. The number in memory remains unchanged. Or, use the MUTE key to backspace.

- (1) **Keypad:** While on hook, enter the Program Station Speed Dial feature code (383). The display shows PROGRAM STN SPEED # (0–9).

**Single-Line Set:** Lift the handset and enter the Program Station Speed-Dial feature code (383). You hear a confirmation tone.

- (2) Press the SD key to be programmed or dial the desired speed-dial location code (0–9). The display shows the number that is programmed in that speed-dial location and ENTER NUMBER. If the display shows INVALID BIN NUMBER, you entered an invalid speed dial location code; try again.

- (3) **To enter or change a number:** Dial the extension number or telephone number (up to 16 digits, including pauses and hookflashes) to be stored. Refer to paragraph 25.14. (Display keysets show the number.)

*To include \*, #, a hookflash, or a pause in the number, keysets press the SPCL key and single-line sets hookflash — once for an asterisk (\*), twice for a pound (#), three times for a hookflash, or four times for a pause. A keypad user can enter more than one \*, #, or hookflash in a row by pressing the FWD key to move to the next character (not necessary after pauses).*

*If you make a mistake, press MUTE to back up and erase, or press \* or CANCEL to leave the number unchanged; then start over at step 1.*

**To erase an existing number and leave it blank:** Keypad users can press MUTE until the

number is erased. Single-line set users can overwrite the existing number by entering only a hookflash as the new number.

- (4) Keysets press # to exit; single-line sets hang up. The display shows STN SPD BIN #X UPDATED. Repeat these steps for each additional number to be stored.

### Viewing Station Speed-Dial Numbers

**25.19** TO VIEW THE STORED NUMBERS (ON A DISPLAY KEYSSET):

- (1) **EITHER**, While on hook, enter the Review Keys feature code (396). The display shows PRESS THE KEY TO REVIEW. Press the desired SD key. The display shows the currently stored number.  
  
**OR**, While on hook, enter the Program Station Speed Dial feature code (383). The display shows PROGRAM STN SPD # (0-9). Enter the location code or press the desired SD key. The display shows the currently stored number.
- (2) After viewing the number, press SPKR, \*, or # to exit, or wait for the display to return to date and time.

### Dialing Station Speed-Dial Numbers

**25.20** TO DIAL A STATION SPEED-DIAL NUMBER:

- (1) Lift the handset. (Keysets can remain on hook.)
- (2) *If placing an outside call, select an outgoing trunk or use ARS. If placing an intercom call or if the outside number contains a trunk access code, skip this step.*
- (3) **Keypad with an SD key:** Press the SD key of the desired number. The number is dialed. (Display keysets show the number.)

**Keypad without an SD key:** Enter the Station Speed-Dial feature code (382). If using a non-display keypad, you hear a confirmation tone. Then enter the location code (0-9). The number is dialed.

**Single-Line Set:** Hookflash and enter the Station Speed-Dial feature code (382). You hear a confirmation tone. Then dial the location code (0-9). The number is dialed.

## 26. INTERCOM, SPEED-DIAL, AND FEATURE CODE DIRECTORY (KEYSETS ONLY)

**NOTE:** The Directories feature must be enabled in Premium Feature Selection. See page 6-220 in PROGRAMMING.

**26.1** The Directory feature enables display keyset users to "look up" intercom extension numbers and user names, system speed-dial numbers and names, or system feature codes. Once the desired information has been displayed, the user may automatically dial the number, store the number in a station speed-dial location, select a different number/name, terminate the directory routine, or switch to the other directory. A directory search can be performed when a call is waiting on conference or transfer hold at the station.

**26.2** To use the directory, the user enters a letter, a string of letters, a valid extension number, or a valid feature code. If searching for a name, the full name need not be entered. The system will find the closest match and show the number and its associated name on the keyset display. Or, the user can scroll alphabetically through the stored list of names. (It is not possible to scroll through the extension numbers or feature codes numerically; extensions and features scroll alphabetically.)

**26.3** Keypad keys are used to enter the desired letters, numbers, and punctuation. The station user can switch between numeric and alphanumeric modes. (Numeric mode = MSG key unlit; alphanumeric mode = MSG key lit.) In alphanumeric mode, the number of times a key is pressed determines which character is entered. For example, 77776444844 would enter "SMITH." When adjoining characters are located under the same key, press the FWD key once to advance to the next character. For example, 5666 FWD 66337777 would enter "JONES." Refer to the following chart. The letters correspond to the letters printed on the keypad keys.

| KEY | NUMBER OF TIMES KEY IS PRESSED |   |   |   |   |
|-----|--------------------------------|---|---|---|---|
|     | 1                              | 2 | 3 | 4 | 5 |
| 1   | -                              | & | ( | ) | 1 |
| 2   | A                              | B | C | ' | 2 |
| 3   | D                              | E | F | ! | 3 |
| 4   | G                              | H | I | * | 4 |
| 5   | J                              | K | L | / | 5 |
| 6   | M                              | N | O | # | 6 |
| 7   | P                              | Q | R | S | 7 |
| 8   | T                              | U | V | ? | 8 |
| 9   | W                              | X | Y | Z | 9 |
| 0   | @                              | : | . | , | 0 |

**26.4** The intercom directory is automatically updated whenever user names and/or extension number information is reprogrammed. The outside directory is updated whenever a system speed-dial number or name is reprogrammed.

**26.5** Only Administrator stations will be able to view Administrator feature codes using the directory. If the Diagnostics Mode feature is enabled, the Administrator will also be able to see the diagnostic feature codes.

### 26.6 TO PERFORM A DIRECTORY SEARCH:

(1) While on or off hook, enter the Directory feature code (307). The MSG key lights (and the SPKR key lights if on hook) and the display shows DIR TYPE: (IC=1 OUT=2 FEAT=3).

(2) Press one of the following:

**For Intercom Directory:** Press 1 or the IC DIRECTORY menu key to select the intercom directory. The display shows INTERCOM NAME.

**For Outside Directory:** Press 2 or the OUTSIDE DIR menu key to select the outside number directory. The display shows OUTSIDE NAME.

**For Feature Directory:** Press 3 or the FEATURE DIR menu key to select the feature code directory. The display shows FEATURE NAME.

(3) Enter alpha and/or numeric characters for the number, code, or user/feature name (up to 10 characters for intercom directory, 16 for outside or feature directory). If searching for a name, the whole name does not have to be entered. You may switch between modes by pressing the MSG key or the USE NUMERIC MODE/USE ALPHA MODE menu key. If necessary, press \* to cancel the search.

a. *In numeric mode (MSG key unlit):* Press the keypad keys to enter a valid feature, extension, or speed-dial location number. Press MUTE to backspace, if necessary. Press the SEARCH menu key or press MSG to change to alphanumeric mode and then press # to begin the search.

b. *In alphanumeric mode (MSG key lit):* Press the keypad keys to enter the desired characters. Refer to the chart at left. Press FWD once to advance or twice to leave a space. Press MUTE to backspace. Press # or the SEARCH menu key to begin the search. The closest match will be displayed. Executive keyset users can return to the initial entry by pressing the START OVER menu key.

- (4) *If desired*, press the VOLUME ▲ or NEXT key to scroll forward alphabetically through the directory or press the VOLUME ▼ or PREVIOUS key to scroll backward.
- (5) **To store the selected number in a station speed-dial location:** Press the desired SD key. You hear confirmation tone when the number is accepted.
- To automatically dial a displayed extension number:** Press #, the IC key, or the ACCEPT key. (If an intercom call is camped on and the IC

key is lit, pressing the IC key answers the waiting call and terminates the Directory feature.)

**To dial a displayed outside number:** Press #, the CALL menu key, or a Call key. The system automatically dials the number using your programmed outgoing access code.

**To dial a displayed feature code:** Press # or the ACCEPT key. The system automatically dials the feature code.

**To search for another name or number:** Repeat the procedure beginning at step 3.

## 27. HOUSE PHONE

**27.1** This feature provides users with the ability to place a pre-designated intercom or outside call simply by lifting the handset (or pressing the SPKR key, if using a keyset) on a designated house phone. There are several applications for this feature, such as:

- **Courtesy paging phone:** Visitors hear pages instructing them to pick up the house phone (such as the paging phones used in airport terminals). When they lift the handset, they are connected to a pre-programmed station user who can give them a message or connect them to a call.
- **Emergency phone:** The house phone can be programmed to automatically dial the Emergency Call feature code (default is 911). This could save time in an emergency.
- **Service phone:** Customers can use the house phone(s) to place orders or receive special services from the lobby. For example, the house phone would automatically dial the extension number of a service representative (or hunt group number of the service department).
- **Intercom network:** House phones could be placed in specific locations throughout a building (such as examination rooms in a doctor's office) and could be

programmed to call a specific station or group of stations (such as a nurses' station).

**27.2** Any station may be designated as a house phone in database programming (see PROGRAMMING, page 6-37), however this feature is usually assigned to single-line sets. The primary attendant should not be a house phone.

**27.3** The number dialed by the house phone is determined by the station's speed-dial programming. The number programmed through the database or in station speed-dial location 0 is automatically dialed during day mode, and the number in location 1 is dialed during night mode. This number can be either an extension number or an outside telephone number. If it is an outside number, it must be preceded with a trunk access code (and a pause if necessary).

**27.4** Once the house phone status has been programmed, the speed-dial number can only be changed while on hook (if it is a keyset) or through individual station information (special purpose station) programming because lifting the handset will cause the station to dial the designated number.

**27.5** Incoming calls take precedence over outgoing calls. If using a single-line set or a keyset that is programmed for automatic trunk access (see page 4-55), any ringing call is automatically answered when the handset is lifted or the SPKR key is pressed.

## 28. REDIALING

**28.1** The Redial feature can store one telephone number in redial memory at the station (manually dialed or speed-dialed numbers up to 32 digits). If the station user reaches a busy number, is disconnected, or if there is no answer, the number can be redialed easily. The station user simply lifts the handset and presses the REDIAL key or enters the Redial feature code. A trunk access code is automatically entered and the telephone number is redialed. (If redialing while still connected to an outside call, the connection is dropped and the trunk is re-seized before the number is dialed.)

**28.2** Only one telephone number can be stored in the station's redial memory at a time. This number can be stored in one of two ways, depending on station programming:

- **Last number saved:** The desired number is manually stored in redial memory by the station user. Dialing other numbers does not change the stored

number. It only changes when a new number is stored.

- **Last number dialed:** The last number manually dialed or speed dialed is automatically stored. It changes every time the user dials a telephone number. (This is the default value of the Redial feature.)

**28.3** The Last Number Saved and Last Number Dialed features work differently depending on the station status when it is used, as shown in the table below.

**28.4** Individual station programming determines the mode of the Redial feature (Last Number Dialed or Last Number Saved). Refer to page 6-30 in PROGRAMMING for more information. The Redial feature code (380) performs the redial function (programmed under the REDIAL key).

**28.5** Non-display system speed-dial numbers cannot be redialed at a display keyset station.

**28.6** If using a PBX trunk, the Redial feature remembers the other system's trunk access code and automatically inserts a pause after the code when it is redialed.

| STATION STATUS WHEN REDIAL FEATURE IS USED                      | STATION HAS "LAST NUMBER SAVED"                                                                                                              | STATION HAS "LAST NUMBER DIALED"                                                                                                                       |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Idle station                                                    | Saves the last trunk access code and telephone number that was dialed.                                                                       | Trunk is selected using the same trunk access code as used to place last outside call, last telephone number is dialed.                                |
| Intercom dial tone (on or off hook)                             | Saves the last trunk access code and telephone number that was dialed.                                                                       | Trunk is selected using the same trunk access code as used to place last outside call, last telephone number is dialed.                                |
| On an intercom call                                             | Releases the current call, seizes a trunk using the saved trunk access code and dials the saved telephone number.                            | Releases the current call, seizes a trunk using the access code used on the last outside call and dials the last telephone number dialed.              |
| After selecting a trunk but <i>before</i> dialing               | Redials the saved telephone number on the currently selected trunk. (Note that the current trunk is used instead of the saved trunk access.) | Redials the last telephone number dialed, using the currently selected trunk.                                                                          |
| After selecting a trunk <i>and dialing</i> one or more digits * | Releases the current call, seizes a trunk using the saved trunk access code and dials the saved telephone number.                            | Releases the current call, reseizes the trunk (using the access code used on that call) and redials the digits that were dialed.                       |
| On an incoming outside call                                     | Releases the current call, seizes a trunk using the saved trunk access code and dials the saved telephone number.                            | Releases the current trunk, seizes a trunk using the same trunk access code used on the last outgoing call and dials the last telephone number dialed. |

### Using The Last Number Saved Feature

**28.7** Use the following procedures to save and redial numbers at stations that are programmed to use the Last Number *Saved* feature.

**28.8** *TO SAVE A NUMBER ON A STATION PROGRAMMED FOR LAST NUMBER SAVED:*

**NOTE:** The saved number is replaced each time you repeat this procedure.

**Keyset:** While the keyset is idle or while listening to intercom dial tone, press the REDIAL key or press SPCL and enter the Redial feature code (380). You hear a confirmation tone and the display shows LAST OUTSIDE NUMBER SAVED.

**Single-Line Set:** Lift the handset and enter the Redial feature code (380). When you hear the confirmation tone, hang up.

**28.9** *TO REDIAL A NUMBER (LAST NUMBER SAVED):*

**Keyset:** While on a call or after selecting a trunk, press the REDIAL key or press SPCL and enter the Redial feature code (380). Refer to the chart

on the previous page to determine which trunk is selected. The saved telephone number is dialed.

**Single-Line Set:** While on a call or after selecting a trunk, hookflash and then enter the Redial feature code (380). Refer to the chart on the previous page to determine which trunk is selected. The saved telephone number is dialed.

### Using The Last Number Dialed Feature

**28.10** Use the following procedure to redial numbers at stations that are programmed to use the Last Number *Dialed* feature.

**28.11** *TO REDIAL A NUMBER (LAST NUMBER DIALED):*

**Keyset:** While on or off hook, press the REDIAL key or press SPCL and enter the Redial feature code (380). Refer to the chart on the previous page to determine which trunk is selected and which digits are dialed.

**Single-Line Set:** Lift the handset or hookflash. Then enter the Redial feature code (380). Refer to the chart on the previous page to determine which trunk is selected and which digits are dialed.

## 29. PAGING

**29.1** The Paging feature allows announcements to be made through keyset internal speakers. Optional external paging equipment (amplifiers and paging speakers) may also be installed three ways:

- Using the external paging port on the CPU020/PCM-D card (see INSTALLATION page 3-89)
- Using internal speaker leads in the keyset (see INSTALLATION, page 3-89)
- Using non-T1, analog loop start trunk circuits (see INSTALLATION page 3-89).

**29.2** There can be up to 10 paging zones. When the system is in the default state, all keysets are assigned to paging zone 1 to provide an all-page zone. Keysets, trunks, and the external paging port can be assigned to any, all, or none of the paging zones, as desired.

**NOTE:** Because the external paging port has an intercom number (91000), stations can place an intercom call to the external paging port, instead of using the Page feature, to make a page over the external paging speakers.

**29.3** Pages are not heard on keysets that have been removed from paging (using the feature code as described in paragraph 30.2), are in do-not-disturb, are ringing, or are in use. Also, background music on keysets and on external speakers connected to keyset speaker leads is interrupted for pages. If a trunk in a paging zone is unplugged, the page cannot be completed.

**29.4** If desired, keyset users can program feature keys to select the paging zones 0-9 using paging access codes 960-969 (respectively).

**29.5** The Page timer limits the length of pages. If it is set to 0, pages are unlimited in length.

### 29.6 TO MAKE A PAGE:

- (1) Lift the handset.
- (2) **Keyset:** Press the PAGE key, or enter the Page feature code (7). The display shows SELECT PAGE ZONE # (0-9).

**Single-Line Set:** Enter the Page feature code (7).

- (3) Enter the zone code (0-9) for the desired zone.
- (4) After the single progress tone, make your page before the Page timer expires. If you hear reorder tones and the display shows PAGE ZONE NOT PROGRAMMED, there are no stations in the selected page zone. If the display shows PAGE ZONE BUSY TRY AGAIN LATER, the necessary system resources are busy or the paging zone is being used by another station. Users cannot camp on to or queue the paging system.
- (5) Hang up.

## 30. REMOVE FROM PAGING

**30.1** A keyset user can prevent the keyset from receiving pages or allow it to receive pages again using these feature codes. If the keyset is assigned to more than one page zone, all zones are removed or replaced; the user cannot toggle individual zones.

### 30.2 TO HALT OR ENABLE ZONE PAGES:

- (1) While on or off hook, enter the Page Receive On/Off feature code (325) to prevent the keyset from receiving pages. You hear a confirmation tone and the display shows PAGE RECEIVE ON (or OFF).
- (2) *If off hook, hang up.*

### 31. DO-NOT-DISTURB

**31.1** Placing a station in do-not-disturb halts all pages, incoming intercom calls, camped-on calls, and transferred calls to that station. Queue callbacks, recalls, and direct ring-in calls are not blocked. Another user calling the station while it is in do-not-disturb hears a repeating signal of four fast tones and a pause (display keysets show the do-not-disturb message); the user cannot camp on, but can queue or leave a message at the station.

**31.2** If desired, individual stations can be prevented from using do-not-disturb by disabling the do-not-disturb option in the database (see PROGRAMMING, page 6-30.)

**31.3** If a hunt group station is in do-not-disturb, calls to the user's hunt group do not cause the keyset to ring, but the individual trunk key will flash if all other stations in the hunt group are busy, forwarded, have hunt group remove enabled, or are in do-not-disturb. Hunt group announcement stations and overflow stations can use do-not-disturb to block hunt group calls by using do-not-disturb.

**31.4** Keyset stations may be given do-not-disturb override permission. These stations, when reaching a station in do-not-disturb, can enter the Do-Not-Disturb Override feature code (373) to place a non-handsfree intercom call to the station. Single-line stations cannot be enabled to use the Do-Not-Disturb Override feature.

**31.5** When a station is placed in do-not-disturb, the user may select one of 20 system-stored messages that will appear on the top line of the display (unless do-not-disturb is enabled while the user is on a call or off hook, in which case message 1 is automatically selected). When a station in do-not-disturb is called by a display keyset user, the caller sees the selected message.

**31.6** Default do-not-disturb messages are programmed as follows:

- |                     |                     |
|---------------------|---------------------|
| 01 DO-NOT-DISTURB   | 11 OUT OF TOWN 'TIL |
| 02 LEAVE A MESSAGE  | 12 OUT OF OFFICE    |
| 03 IN MEETING UNTIL | 13 OUT UNTIL        |
| 04 IN MEETING       | 14 WITH A CLIENT    |
| 05 ON VACATION 'TIL | 15 WITH A GUEST     |
| 06 ON VACATION      | 16 UNAVAILABLE      |
| 07 CALL ME AT       | 17 IN CONFERENCE    |
| 08 AT THE DOCTOR    | 18 AWAY FROM DESK   |
| 09 ON A TRIP        | 19 GONE HOME        |
| 10 ON BREAK         | 20 OUT TO LUNCH     |

**31.7** The second line of the message can be customized with a numeric/alphanumeric message of up to 16 characters. The customized message is entered as described in the following paragraphs.

**31.8** When programming a customized do-not-disturb message, the station is automatically in numeric mode.

The keypad keys are used to enter numbers 0-9, the pound (#) key is used for entering a hyphen (-), and the asterisk (\*) key is used for entering a colon (:). For example, 1\*00 would enter "1:00" in numeric mode.

**31.9** Keyset users can enter alphanumeric mode by pressing the MSG key (the key lights). Keypad keys are used to enter the desired letters, numbers, and punctuation. (The # is used to accept the text and \* is used to cancel/erase the text.) The number of times a key is pressed determines which character is entered. For example, 33377744432999 would enter "FRIDAY." When adjoining characters are located under the same key, press the FWD key once to advance to the next character. For example, 6 FWD 666 FWD 6632999 would enter "MONDAY." Refer to the chart below to program messages in alphanumeric mode. (Note that letters correspond to the letters printed on keypad keys 1-9.)

| KEY | NUMBER OF TIMES KEY IS PRESSED |   |   |   |   |
|-----|--------------------------------|---|---|---|---|
|     | 1                              | 2 | 3 | 4 | 5 |
| 1   | -                              | & | ( | ) | 1 |
| 2   | A                              | B | C | ' | 2 |
| 3   | D                              | E | F | ! | 3 |
| 4   | G                              | H | I | * | 4 |
| 5   | J                              | K | L | / | 5 |
| 6   | M                              | N | O | # | 6 |
| 7   | P                              | Q | R | S | 7 |
| 8   | T                              | U | V | ? | 8 |
| 9   | W                              | X | Y | Z | 9 |
| 0   | @                              | : | . | , | 0 |

**31.10** When using either mode, keyset users may use the SD keys and/or the REDIAL key to enter stored numbers or messages. Speed-dial numbers can be chained together when entering messages that require more than 16 keystrokes to create the desired message. When programming a message in speed-dial memory, you can use the SPCL key to enter a hookflash (F) in place of the FWD key to advance or insert spaces, or to enter a pause (P) to change numeric/alphanumeric modes within the message. The SPCL key can also be used to enter \* or # in the speed-dial number.

**31.11 TO ENABLE DO-NOT-DISTURB MODE:**

- (1) **Keyset:** While on hook, press the DND key or enter the Do-Not-Disturb feature code (370) or Do-Not-Disturb On/Off feature code (372). Display keysets show SELECT DND MESSAGE # (01-20).

**Single-Line Set:** Lift the handset and enter the Do-Not-Disturb feature code (370) or the Do-Not-Disturb On/Off feature code (372). You hear a progress tone.

(2) To select message 01 (DO-NOT-DISTURB):

**Keypad:** Press SPKR or lift and replace the handset. The DND key lights.

**Single-Line Set:** Hang up.

**To select any of the 20 pre-programmed messages:** Enter the desired number (01–20) or press the SCROLL menu key to begin scrolling. Display keypad users may scroll through the messages by pressing the VOLUME ▲ or NEXT key or menu key to go forward or the VOLUME ▼ or PREVIOUS key to go backward (the display shows the selected message). If you enter an invalid message number, you will hear reorder tones and the display shows INVALID DND MESSAGE NUMBER; try again.

(3) To terminate programming:

**Keypad:** Press SPKR or ACCEPT. Or lift and replace the handset. The DND key lights.

**Single-Line Set:** Hang up.

**To customize the second line of the message:** Use any combination of the following methods.

- a. *Remain in numeric mode:* Press the keypad keys to enter the desired number. Use the pound key (#) for a hyphen (–) and the asterisk key (\*) for a colon (:). Keypad users can press the FWD key once to leave a space, or press the MUTE key to backspace.
- b. *Change to alphanumeric mode (keypads only):* Press the MSG key (the key lights) or the USE ALPHA MODE menu key, then enter the desired characters. Refer to the chart on the previous page. Keypad users can press the FWD key once to advance or twice to leave a space, or press the MUTE key to backspace.
- c. *Use speed-dial and/or redial numbers (keypads only):* In either numeric or alphanumeric mode, you can speed dial a number (using the SD key or feature code). In numeric mode you can press the REDIAL key to enter the stored characters. You may chain speed-dial and/or redial numbers together.

(4) Terminate programming:

**Keypad:** Press SPKR or lift and replace the handset. The DND key lights. (Display keypads show selected message. Date and time appear on the second line if there is no customized message.)

**Single-Line Set:** Hang up.

31.12 TO CANCEL DO-NOT-DISTURB:

**Standard or Basic Keypad:** While on hook, press the lit DND key or enter the Cancel Do-Not-Disturb feature code (371) or Do-Not-Disturb On/Off feature code (372). The key goes off and the display shows DO NOT DISTURB OFF.

**Executive Keypad:** While on hook press the lit DND key. The key goes off and the display shows DO NOT DISTURB OFF.

**Single-Line Set:** Lift the handset, enter the Cancel Do-Not-Disturb feature code (371) or Do-Not-Disturb On/Off feature code (372), and hang up.

31.13 TO PLACE YOUR BUSY STATION IN DO-NOT-DISTURB WHILE A CALL IS CAMPED ON:

If, while on a call, you hear call waiting signals and you wish to let the caller know you do not want to be disturbed:

**Keypad:** Press the DND key or enter a Do-Not-Disturb feature code (370 or 372). The key lights. The display shows DO-NOT-DISTURB ON. The intercom caller is no longer camped on and receives do-not-disturb indications.

**Single-Line Set:** (*This procedure will interrupt your call in progress.*) Hookflash and enter the a Do-Not-Disturb feature code (370 or 372). The intercom caller is no longer camped on and receives do-not-disturb indications. Hookflash twice to return to the current call.

### Do-Not-Disturb Override

31.14 If your keypad is enabled for do-not-disturb override and you hear do-not-disturb tones when placing an intercom call, you may use the following procedure to break through do-not-disturb and complete the call.

31.15 DO-NOT-DISTURB OVERRIDE (KEYSETS WITH THIS FEATURE ENABLED ONLY):

When you hear do-not-disturb tones while placing an intercom call, press the SPCL key and enter the Do-Not-Disturb Override feature code (373). If the called station is idle, the call rings as a private intercom call. If the called station is busy, your call camps on.

## 32. DEFAULT STATION

32.1 A station user can enter one feature code that will return the following features to their default states.

- Cancels the following features, if in effect:
  - Do-Not-Disturb
  - Manual Call Forwarding
  - Queue Request
  - Account Code For All Calls Following
  - Background Music
  - Ring Intercom Always
  - Headset Mode
- Restores the following features, if disabled:
  - Handsfree
  - Page Receive
  - Hunt Group Replace
  - System Forwarding
- Returns keyset volumes to default levels
- Returns keyset to standard keymap
- If the keyset is a member of one or more ACD hunt groups, logs into the hunt group(s)
- Does not affect PCDDPM baud rate

32.2 This feature is especially useful for installers and troubleshooters who need to know exactly how a given station is programmed.

### 32.3 TO RETURN THE STATION TO DEFAULT:

**Keyset:** While on or off hook, enter the Default Station feature code (394). You hear a confirmation tone and the display shows STATION DEFAULTED. *If off hook, hang up.*

**Single-Line Set:** Lift the handset, enter the Default Station feature code (394). You hear a confirmation tone followed by dial tone. Hang up.

## 33. HOOKFLASH

33.1 A timed hookflash may be required for keyset and single-line users to use certain telephone company or PBX features. The CO Hookflash feature code sends a timed hookflash over the trunk when entered. A hookflash will restart the call cost display and toll restriction, plus it will start a new line in the SMDR printout. However, the call will remain under the same Call key.

33.2 The Hookflash feature can be enabled or disabled on a trunk group-by-trunk group basis.

33.3 The duration of the hookflash can be changed by reprogramming the Hookflash timer (default value is 0.6 seconds). If the system is not installed behind a PBX, the Hookflash timer must be programmed to be compatible with the system's trunks.

### 33.4 TO SEND A TIMED HOOKFLASH WHILE ON A TRUNK:

**Keyset:** Press the SPCL key and enter the Hookflash feature code (330).

**Single-Line Set:** Hookflash and then enter the Hookflash feature code (330).

### 34. REMINDER MESSAGES (KEYSETS ONLY)

**34.1** Reminder messages are set, like an alarm clock, to signal a keyset station at a specified time. The user can select the message and time up to 24 hours in advance. Twenty different reminder messages are available. These messages can be reprogrammed by the installer. Up to 112 reminder messages can be requested per system.

**34.2** At the programmed time, the reminder message signals the station with eight short tones. A display keyset shows the message until it is cancelled; a non-display keyset receives tones only. If the station is busy, the user still hears the tones and the message displays for 10 seconds during the call, then the display returns after the user hangs up. (Reminder displays interrupt, but do not affect, programming.)

**34.3** Messages can be changed by the installer, if desired. They are limited to 16 characters. The default messages are:

|                   |                     |
|-------------------|---------------------|
| 01 MEETING        | 11 CALL ENGINEERING |
| 02 STAFF MEETING  | 12 CALL MARKETING   |
| 03 SALES MEETING  | 13 CALL ACCOUNTING  |
| 04 CANCEL MEETING | 14 CANCEL DND       |
| 05 APPOINTMENT    | 15 CANCEL CALL FWD  |
| 06 PLACE CALL     | 16 TAKE MEDICATION  |
| 07 CALL CLIENT    | 17 MAKE RESERVATION |
| 08 CALL CUSTOMER  | 18 REVIEW SCHEDULE  |
| 09 CALL HOME      | 19 LUNCH            |
| 10 CALL CORPORATE | 20 REMINDER         |

#### 34.4 TO REQUEST REMINDER MESSAGES:

**NOTE:** Lift and replace the handset to stop the process without selecting a message.

- (1) While on hook, enter the Reminder Message feature code (305). Display keysets show SELECT REMINDER MSG # (01-20).
- (2) **To select a specific message:** Enter the two-digit message code (01-20). (Display keysets show selected message and SCROLL OR ACCEPT.)

**To scroll through the messages:** View the available messages by pressing the VOLUME ▲ or NEXT key to scroll forward or pressing the VOLUME ▼ or PREVIOUS key to scroll back-

ward. Each message displays for 0.5 seconds before another can be selected. When the desired message is displayed, press # or ACCEPT.

- (3) Enter the time that you wish to receive the message:
  - a. Enter the hour and minutes using four digits (e.g., 0900 for 9:00).
  - b. *If the system is set for 12-hour display format, the display shows SELECT AM OR PM. Press 1 or the AM key for AM or press 2 or the PM key for PM. You hear a progress tone when it is accepted and the display momentarily shows the select reminder message and time.*

**NOTE:** If an invalid time is entered, you hear reorder tones and must enter the time again. (Display keysets show INVALID TIME.)

#### 34.5 TO RECEIVE A REMINDER MESSAGE:

- (1) At the selected time, you hear eight short tones and the message displays. Do one of the following:

*If your station is idle, go to the next step.*

*If you are on a call, the message will display for 10 seconds. After you hang up, the reminder message returns and must be cleared.*

*If you are programming your keyset, the programming function is interrupted. The message will display, but will not interrupt programming; you can continue. After programming is completed, the reminder message will return and must be cleared.*

- (2) **To clear the message:** Remain on hook and press the asterisk (\*) key. The display shows EXPIRED REMINDER MESSAGE CLEARED.

#### 34.6 TO CANCEL ALL OF YOUR REMINDER MESSAGE REQUESTS:

While on hook, enter the Cancel Reminder Message feature code (306). The display shows REMINDER MSGS CANCELED. You cannot view or cancel individual messages.

### 35. OPTIONAL DATA DEVICE ATTACHMENTS (EXECUTIVE AND STANDARD KEYSETS ONLY)

**35.1** A customer-provided, modem-equipped data device (such as a data terminal or a personal computer) may be attached to an Executive or Standard keyset that has an optional PC Data Port Module (PCDPM) and a Modem Data Port Module (MDPM) installed (see SPECIFICATIONS, page 2-21, INSTALLATION, page 3-70, for more information).

**35.2** Special programming is required to enable the keyset circuit to support the MDPM data device function. Refer to page 6-237 in PROGRAMMING for details.

**35.3** Station users can adjust the baud rate of the PCDPM connected to the keyset. The baud rate can be set to 300, 600, 1200, 2400, or 4800 (1200, 2400, or 4800 if it is a system serial port). To adjust the baud rate of your PCDPM, refer to the instructions on page 4-49.

**35.4** The circuit with the Modem Data Port Module can be programmed to be associated with one or more other keysets. (The associated keyset does not need to have an attached MDPM to use the data device.) The associated keyset(s) should have a DATA key that will show the status of the data device and will allow easy transfers between the keyset and the data device.

**35.5** The MDPM circuit has an individual extension number and complete station programming setup including its own trunk access and toll restriction information.

**35.6** Data calls are transmitted over the MDPM's voice path. This leaves the attached keyset's voice path available for normal keyset operation. However, receiving off-hook voice announce (OHVA) calls at the keyset attached to the MDPM is not possible during a data call since the data call is using the secondary voice path.

**35.7** Calls can be transferred back and forth between an associated keyset's primary voice path and data port as often as needed provided that the data port is on hook at the time of the transfer attempt. For example, a call can be placed using the data device, then transferred to the keyset's primary voice path to announce the call, and then transferred back to the data device so that it can communicate with the called device. (Note that transferring to the keyset's primary voice path disconnects the data device from the call. During that time, the call cost display for the data call is shown on the keyset.)

**35.8** Operation of the data device begins with the initiation of a call in one of four ways:

- The user may initiate a call using the keyset, while on or off hook, and then transfer it to the data device.
- The user may lift the handset to answer a ringing call and then transfer it to the data device.
- The user may initiate a call using the data device, without touching the keyset.
- The data device may receive a call directly, without using the keyset.

#### Initiating Or Answering A Call Using The Keyset

**35.9** The keyset user can place or receive a data call using the keyset and then transfer it to the data device. It can be an intercom or outside call and the keyset can be on or off hook. The call is placed to or received from another modem-equipped data device.

**35.10** Once the connection is established, the keyset user presses the DATA key, or presses SPCL and enters the Data feature code (340) to transfer the call to the data device. If the data device does not answer before the Transfer Available timer expires, the call recalls the keyset station.

**35.11** Transferring a call to the data device using the DATA key places the call without providing ring voltage to the data device. The user must manually cause the data device to answer the call. (Note that if the keyset user wishes to cause ring voltage to be applied to the data device, the Transfer feature must be used to send the call to the data device.)

**35.12** While the user is establishing the call using the keyset, the DATA key is unlit. From the time that the user presses the DATA key, until the data device answers, the DATA key will flash. While the data device is on an active call, the DATA key flutters on the associated keyset(s) (indicating that the data call may be retrieved by the keyset). If the keyset is off hook, the user will hear dial tone.

#### **35.13** TO PLACE A DATA CALL USING THE KEYSET:

- (1) Place or receive an intercom or outside call.
- (2) When you hear modem tone, press the DATA key, or press SPCL and enter the Data feature code (340). The DATA key flashes slowly.
- (3) Hang up or press the SPKR key. The DATA key begins to flutter when the data device answers, and the display returns to date and time. The keyset can now be used as usual.
- (4) Operate the data device according to the manufacturer's instructions. The device must be

able to come off hook and answer the incoming call.

*If you wish to return the active data call to your primary voice path, press the fluttering DATA key. The call cost and elapsed time of the data call are displayed.*

### **Initiating A Call Using The Data Device**

**35.14** The data device can be used for initiating a data call, without the use of a keyset. The user causes the modem to select a trunk or intercom channel and dial the desired number.

**35.15** The data device can dial an extension number or a trunk access code followed by a pause and then a telephone number. As soon as the data device comes off hook, the DATA key is lit at the associated keyset(s) to indicate that the data port is busy. The key remains lit until the data device finishes dialing (outside call) or the station user answers (intercom call). This protects the call during dialing to ensure that the dialing is not interrupted. A keyset user who attempts to transfer another data call to the data device or pick up the data call while the key is lit will hear a burst of reorder tone.

**35.16** When a data device places an intercom call, the call is placed in the non-handsfree mode. (This can be changed in database programming, if desired. Refer to page 6-30 in PROGRAMMING.) The incoming intercom call to the destination station from the data device appears as a normal intercom call with the usual displays and tones.

**35.17** If an extension number is dialed and that station is in do-not-disturb, the user will hear do-not-disturb tone through the data device's speaker (if it has one). Whenever continuous busy, reorder, or do-not-disturb tone is sent by the system, the Inactivity Alarm timer is registered. The DATA key is lit while the tones are present. If the timer expires before the data device hangs up, off-hook alarm tone is sent, and the DATA key flutters fast until the device hangs up. Note that once the DATA key begins fluttering, the voice path on the keyset attached to the MDPM is released and can be used for other call processing applications. (Note that the absence of a lamp, or of a DATA key, will not interfere with these timing parameters, but the user will not have a visual indication of them.)

**35.18** If the data port places an outside call, the system performs toll restriction using the data port's class-of-service. If an illegal extension number or access code is dialed, the user will hear reorder tone through the data device's speaker. (Call cost information for a data call is

displayed on an associated keyset only when the data call is connected to a keyset's primary voice path.)

**35.19** If an attempt is made to initiate a data call from the data device when the required voice path is not available (the secondary voice path of the attached keyset is busy), the MDPM will not receive dial tone. The activity on the keyset's secondary voice path continues uninterrupted.

### **35.20 TO PLACE A DATA CALL USING THE DATA DEVICE:**

- (1) Following the procedures of your data device's communications software, instruct the device to come off hook and dial the extension number, or a trunk access code and the telephone number, of the data device to be called. The call will be processed and will be automatically connected when answered. The DATA key is lit until dialing is completed, then it flutters.
- (2) Operate the data device according to the manufacturer's instructions.

### **Answering A Call Using The Data Device**

**35.21** The data device can be called directly (intercom or outside calls) and receive transferred calls via its extension number.

**35.22** When a call is placed directly or transferred to the device's intercom number, the data device will receive ring signal. If the data device does not have auto-answer capability, the user must manually answer the call using the data device. (Transferring a call to the data device using the DATA key places the call without providing ring voltage to the data device. The user must manually cause the data device to answer the call.)

**35.23** While ring signal is being sent to the data device, the DATA key flashes. As soon as the data device answers, the DATA key flutters. The key continues to flutter for the duration of the call, indicating that the data path is in use but may be picked up by associated keysets.

### **35.24 TO ANSWER A DATA CALL USING THE DATA DEVICE:**

- (1) When the data device receives a call, the DATA key flashes on the associated keyset(s). If the data device does not have an auto-answer modem, follow the procedures for the data device's communications software and instruct the device to answer the incoming call. The DATA key flutters while the call is in progress.
- (2) Operate the data device according to the manufacturer's instructions.

### Terminating A Data Call

35.25 Termination of a data call may be accomplished in one of three ways:

- Your data device can hang up. This causes the trunk or intercom channel to be released, terminating the call to the other data device.
- The other data device may hang up. When the call is disconnected, the DATA key is unlit. Depending on the type of device used, the data device may detect the loss of carrier and automatically terminate the entire connection. If the data device does not have this capability, you must manually cause the data device to hang up.
- The data call can be transferred to an associated keyset's primary voice path (releasing the data device) and then disconnected by the keyset. Note however that the DATA key will flutter fast if the data device does not hang up before the Inactivity timer expires.

### 35.26 TO TERMINATE DATA DEVICE CONNECTION:

**To have the data device disconnect the call:**

Use the appropriate commands for the data device to instruct it to hang up. When the call is disconnected, the DATA key is unlit.

**To transfer the data call back to an associated keyset before disconnecting the call:** While on or off hook:

- a. Press the fluttering DATA key. The DATA key goes off. *If desired*, speak to the party at the site of the remote data device. This can only be done if the modem at the site of the remote data device can be turned off without disconnecting the trunk.
- b. **To disconnect:** *If off hook*, hang up. *If on hook*, press the SPKR key. The DATA key will flutter fast until the data device hangs up.

## 36. ADMINISTRATOR FEATURES

**36.1** Any display keyset station (attendant or non-attendant) can be assigned as a system Administrator. Administrator stations provide the following services:

- Place the entire system in night mode or day mode
- Set the system date and time
- Program specific station information
- Program system speed-dial numbers
- Clear displayed system alarms
- Using diagnostic mode features: freeze/unfreeze system history, print system error message and reset information, and seize devices

**36.2** Any keyset station can be programmed to be an Administrator station during database programming.

**36.3** If a non-Administrator station user attempts to use the Administrator features, the user will hear reorder tones and the display will show CANNOT ACCESS RESERVED FEATURE.

### A. PLACING THE SYSTEM IN NIGHT MODE

**36.4** An Administrator station can place the system in day or night mode. The day/night mode determines which lists the system will use for trunk access, toll restriction, etc.

**36.5** Night mode also affects the night transfer relays on the Options Card (OPC). The relays are activated when the system is placed in night mode. See page 2-19 in SPECIFICATIONS for details.

#### **36.6** TO TURN NIGHT MODE ON OR OFF:

While on hook, enter the Night Ring On/Off feature code (9860). You hear a single confirmation tone. The display shows NIGHT MODE IS ON (or OFF). Then, if night mode was turned on, the display shows THE SYSTEM IS IN NIGHT MODE until day mode is turned on.

### B. SETTING SYSTEM DATE AND TIME

**36.7** Occasionally, the system time or date needs to be reset (for example, when the system is defaulted or for daylight-saving time). Any Administrator can change the date and time that appears on all display keysets and in the SMDR reports. The day of the week is automatically calculated and set by the system when the date is entered. When the system is in the default state, the date and time are January 1, 1993 and 12:34.

#### **36.8** TO SET THE SYSTEM DATE AND TIME:

**NOTE:** You may backspace to correct entries by pressing the MUTE key or you may press \* or CANCEL to leave it unchanged and start over.

- (1) While on hook, enter the Set Date/Time feature code (9800). Your display shows DATE (*current date*).

*If you do not need to change the date, press # or ACCEPT to skip to the TIME XX:XX prompt.*

- (2) Use the keypad keys to enter the month, day, and year. For example, press 010196 for January 1, 1996. When finished, the display shows TIME (*current time*). If you entered the date incorrectly, the display shows INVALID DATE and you are prompted to enter a new date.

*If you do not need to change the time, press # or ACCEPT twice to exit. The display shows SYSTEM DATE AND TIME UPDATED.*

- (3) Use the keypad keys to enter the time in hours and minutes. (For example, enter 0900 for 9:00.) If you entered the time incorrectly, the display shows INVALID TIME and you are prompted to enter a new time.
- (4) *If the system is set for 12-hour display format, the display shows SELECT AM OR PM (AM=1 PM=2). Press 1 for AM (or the AM menu key) or press 2 for PM (or the PM menu key). The display shows SYSTEM DATE AND TIME UPDATED. If you press any key other than 1 or 2, the display shows INVALID TIME and you are prompted to enter a new time.*

**C. PROGRAMMING SPECIFIC STATION INFORMATION**

**36.9** Due to employee movement, turnover, etc., station information (user name and serving attendant) may need to be changed. This can be done from any Administrator station.

**36.10** Press the MSG key or USE ALPHA MODE/USE NUMERIC MODE menu key to switch back and forth between alphanumeric and numeric mode.

- In numeric mode, the keypad keys are used to enter numbers 0–9, the pound (#) key is used for entering a hyphen (–), and the asterisk (\*) key is used for entering a colon (:). For example, 1\*00 would enter “1:00” in numeric mode.
- In alphanumeric mode, keypad keys are used to enter the desired letters, numbers, and punctuation. The number of times a key is pressed determines which character is entered. For example, 533266 would enter “JEAN.” When adjoining characters are located under the same key, press the FWD key to advance to the next character. For example, 66FWD6667776 would enter “NORM.” Refer to the chart below to program information in alphanumeric mode. (Note that letters correspond to the letters printed on the keypad keys.)

| KEY | NUMBER OF TIMES KEY IS PRESSED |   |   |   |   |
|-----|--------------------------------|---|---|---|---|
|     | 1                              | 2 | 3 | 4 | 5 |
| 1   | –                              | & | ( | ) | 1 |
| 2   | A                              | B | C | ' | 2 |
| 3   | D                              | E | F | ! | 3 |
| 4   | G                              | H | I | * | 4 |
| 5   | J                              | K | L | / | 5 |
| 6   | M                              | N | O | # | 6 |
| 7   | P                              | Q | R | S | 7 |
| 8   | T                              | U | V | ? | 8 |
| 9   | W                              | X | Y | Z | 9 |
| 0   | @                              | : | . | . | 0 |

**36.11 TO PROGRAM SPECIFIC STATION INFORMATION:**

**NOTE:** If you make a mistake, use the MUTE key to backspace. Or, press \* or CANCEL at any time to cancel the operation (the name and number in memory remains unchanged and the display shows NO UPDATE PERFORMED); then start over.

- (1) While on hook, enter the Program Station Data feature code (9802). (Display keysets show ENTER EXT TO PROGRAM.)

- (2) Enter the extension number (or use the DSS/BLF key) of the station that is to be reprogrammed. (Executive keyset users can press the IC DIRECTORY menu key to look up the number.) The display shows USERNAME: (current user name).

- (3) **To enter a new user name:** Use one of the following methods.

- a. *Alphanumeric mode (MSG key lit):* Press the keypad keys to enter the desired characters. (Refer to the chart.) You may press the FWD key once to advance or twice to leave a space. Press the MUTE key to backspace.
- b. *Numeric mode (MSG key unlit):* Press the keypad keys to enter the desired number. Use the pound key (#) for a hyphen (–) and the asterisk key (\*) for a colon (:). Press the FWD key once to leave a space, or press the MUTE key to backspace.

**To erase the current name and leave it blank:** Press CLEAR or press MUTE repeatedly until the name is erased.

**To leave the information the same:** Proceed to the next step.

- (4) Press the # or ACCEPT key to update the database and advance to the next prompt. You will hear a confirmation tone and the display shows ATTENDANT EXTENSION.

- (5) **To enter a new serving attendant number:** Press MSG to change to numeric mode and then enter the number using the keypad.

**To erase the current attendant and leave it blank:** Press CLEAR or press MUTE repeatedly until the number is erased.

**To leave the information the same:** Press # or ACCEPT and proceed to the next step.

- (6) Press the # or ACCEPT key to update the database and advance to the next prompt. You will hear a confirmation tone and the display shows EXT (number) UPDATED.

- (7) **To program another station:** Repeat the process with another extension number.

**To terminate the programming sequence:** Lift and replace the handset or press SPKR. The display will return to date and time.

**D. PROGRAMMING SYSTEM SPEED DIAL NUMBERS**

**36.12** System speed-dial numbers and names can be programmed by the installer or at any Administrator station.

**36.13** The system speed-dial numbers can contain up to 32 digits each and can include hookflashes and/or pauses for dialing a series of numbers. For example, the speed-dial number can contain an SCC local number, a pause, an access code, and the telephone number. For using PBX trunks, the other system's trunk access codes, followed by a pause, may be included in speed-dial numbers. The lengths of the hookflash and the pause are determined by the programmable CO Hookflash and Pause Digit timers.

**36.14** To program system speed-dial numbers, use one of the following methods:

- Use the keypad to manually dial the number. If you make a mistake, press the MUTE key to backspace.
- Press the REDIAL key to enter the last number dialed or saved at the station (up to 32 digits).
- Press one of the SD keys on the keyset to enter the outside telephone number (up to 16 digits) programmed under that key.

**36.15** To program speed-dial names, keypad keys are used to enter the desired letters, numbers, and punctuation. The number of times a key is pressed determines which character is entered. For example, 77776444844 would enter "SMITH." When adjoining characters are located under the same key, press the FWD key once to advance to the next character. For example, 5666 FWD 66337777 would enter "JONES." Refer to the chart below to program speed-dial names. (Note that letters correspond to the letters printed on the keypad keys.)

| KEY | NUMBER OF TIMES KEY IS PRESSED |   |   |   |   |
|-----|--------------------------------|---|---|---|---|
|     | 1                              | 2 | 3 | 4 | 5 |
| 1   | -                              | & | ( | ) | 1 |
| 2   | A                              | B | C | ' | 2 |
| 3   | D                              | E | F | ! | 3 |
| 4   | G                              | H | I | * | 4 |
| 5   | J                              | K | L | / | 5 |
| 6   | M                              | N | O | # | 6 |
| 7   | P                              | Q | R | S | 7 |
| 8   | T                              | U | V | ? | 8 |
| 9   | W                              | X | Y | Z | 9 |
| 0   | @                              | : | . | , | 0 |

**36.16 TO PROGRAM OR CHANGE SYSTEM SPEED-DIAL NUMBERS AND NAMES:**

**NOTE:** If you make a mistake, use the MUTE key to backspace. Or, press \* or CANCEL at any time to cancel the operation (the name and number in memory remains unchanged and the display shows FEATURE CANCELED); then start over.

- (1) While on hook, enter the Program System Speed-Dial feature code (9801). Display keysets show PROGRAM SYS SPD # (000-999).
- (2) Enter the speed-dial location code (000-999). The display shows ENTER NAME: (*current name*). If you do not continue to the next step, the display times out after the Long Interdigit timer expires and you must start over.
- (3) **To change or program the name:** Enter the desired name for the speed-dial number using your keypad then press # or ACCEPT. Refer to the chart on this page. *If you make a mistake*, use the MUTE key to back up and erase existing characters or the CLEAR key to erase the whole entry.

**To erase the current name and leave it blank:** Press CLEAR or press MUTE repeatedly until the name is erased. Then press # or ACCEPT.

**To leave the name the same:** Press # or ACCEPT.

- (4) When the display shows ENTER NUMBER, enter the number (up to 32 digits) to be stored using the keypad, one of the SD keys, or the REDIAL key. *If necessary*, use the MUTE key to back up and erase existing numbers. (Display keysets show the number as it is entered.) *To include \*, #, pause, or hookflash in the number*, press the SPCL key once for an asterisk (\*), twice for a pound (#), three time for a hookflash (F), or four times for a pause (P). Executive keyset users can press the \*, #, FLASH, or PAUSE menu keys to enter special characters. You cannot exceed 32 digits.
- (5) Press # or ACCEPT to save the number. You hear a single progress tone when the number is accepted. Your display shows SYS SPD BIN #XXX UPDATED.

**36.17 TO ERASE SYSTEM SPEED-DIAL NAMES OR NUMBERS:**

- (1) While on hook, enter the Program System Speed-Dial feature code (9801). Display keysets show PROGRAM SYS SPD # (000-999).
- (2) Enter the speed-dial location code (000-999). The display shows ENTER NAME: (*current name*).

- (3) You may erase the name and/or number:  
**To erase the name:** Press the MUTE key repeatedly until the name is erased or press CLEAR.  
**To erase the number:** Press # or ACCEPT to display the ENTER NUMBER prompt, then press the MUTE key repeatedly until the number is erased or press CLEAR.
- (4) Press # or ACCEPT to exit. You hear a single progress tone when accepted. Your display shows SYS SPD BIN #XXX UPDATED.

## E. SYSTEM ALARM REPORTING

**36.18** The system's Alarm Reporting feature detects equipment failures. If there is a system failure that affects service, a major alarm is displayed at all affected keysets. If all keysets in the system are inoperative, any alarm messages are sent to the system's primary serial port (on the CPU).

**36.19** When a minor equipment failure occurs, a minor alarm is generated and appears on the primary attendant's display and, if enabled, at Administrators' stations. If enabled in the Message Print programming, the also appear in the error/message report.

**36.20** Alarms 1-99 indicate problems that can be corrected without calling service personnel. Alarms 100-199 (AXXESS) and 200-299 (AXXESSORY Talk) require attention from service personnel. Note that when an AXXESSORY Talk alarm is in effect, the AXXESS System may be functioning properly, but the AXXESSORY Talk may be inoperative. Refer to page 7-7 in TROUBLESHOOTING for a listing of the possible alarms and their meanings.

**36.21** *TO RESPOND TO A MINOR SYSTEM ALARM FROM ANY ALARM DISPLAY STATION:*

- (1) When a minor alarm indication appears (ALARM #XXX and description), write down the alarm information.
- (2) While on hook, clear the alarm by entering the Clear System Alarm feature code (9850) or pressing the CLEAR ALARM menu key. The display shows SYSTEM ALARM CLEARED. (Executive keyset users can display the default menu by pressing the IDLE MENU key.)
- (3) Take action on the alarm as follows:
  - a. **#10 XXXXX OFF-HOOK:** A station remained off hook and inactive until the Inac-

tivity Alarm timer expired. The display and the SMDR indicate which station is off hook. The station's key on DSS/BLF Units and on other stations' SD keypads flutters continuously. Locate the station and replace the handset in the cradle. The station's display shows STATION OFF HOOK.

**NOTE:** Calls being transmitted over the secondary voice path are not affected or interrupted by an off-hook alarm condition.

- b. **#11 XXXXX EMERGENCY:** A user has dialed the Emergency Call feature code (911) and the system has selected a trunk and dialed the programmed emergency number.
- c. **#12-13 & 20 CHECK PRINTER:** The printer is not functioning properly. Check that the cable and the power cord are connected and that it has paper and ribbon.
- d. **#14 SET DATE/TIME:** The system real-time clock has not been initialized or has been corrupted. Set the system time and date as described in paragraph 36.8.
- e. **#21 V-MAIL 80% FULL/#22 V-MAIL 100% FULL:** The Voice Mail disk space is either 80% or completely full. If it reaches 100%, Voice Mail cannot accept any messages until disk space is made available.
- f. **#23 SMDR 80% FULL/#24 SMDR 100% FULL:** The SMDR disk space is either 80% or completely full. If it reaches 100% before the SMDR information is cleared, no further SMDR recording will be possible.
- g. **#100-199 & 200-299 CALL TECHNICIAN:** These alarms indicate that an equipment failure has occurred that requires the attention of service personnel. When calling for service be prepared to provide them with the alarm information as well as what was taking place when the alarm occurred, if anything.

**36.22** A major alarm message, MAJOR ALARM, appears on all display keysets in the event of a system-wide failure. If the major alarm appears on a group of keysets, the associated Keyset Card may have failed. The warning might also appear on a single keyset if the keyset or its cabling may be defective. Because they indicate that all or part of the system is inoperative, major alarms require immediate attention from service personnel.

## F. FREEZING/UNFREEZING THE SYSTEM HISTORY

**36.23** When certain system failures occur, service personnel might request a "system history freeze." This allows them access to the system database so that they can analyze system activity for the time period preceding the alarm.

### **36.24** TO FREEZE OR UNFREEZE SYSTEM HISTORY:

**NOTE:** Do not perform this procedure unless directed to do so by service personnel.

- (1) While on hook, enter the Diagnostics Mode feature code (9900) to turn on diagnostics mode. The display shows DIAGNOSTICS ON.
- (2) Enter the Freeze System History feature code (9993) or Unfreeze System History feature code (9998). The display shows HISTORY FROZEN (or UNFROZEN). *If you attempt change the state of the system history to its current status, the display shows HISTORY ALREADY FROZEN (or UNFROZEN).*
- (3) Enter the Diagnostics Mode feature code (9900) to turn off diagnostics mode. The display shows DIAGNOSTICS OFF.

## G. PRINTING SYSTEM ERROR MESSAGE AND RESET INFORMATION

**36.25** System troubleshooting information can be printed on demand by entering feature codes at an Administrator station. Service personnel can use the information to determine what has been happening at a site and if any warnings or critical errors were detected by the system. This feature is particularly useful when a site does not have a printer connected to the message print port on a continuous basis. (Automatic error message printing to an attached output device is explained on page 4-113.)

**36.26** When a technician arrives at a site, he or she can do one of the following before entering the codes:

- Connect a printer to the designated message print port.
- Connect a PC to the message print port and run a communications program. This allows the technician to store the information in a file for later examination.

**36.27** The information generated using these feature codes can also be obtained using the Get CP Error Information option from the Database Save/Restore screen (see page 6-214 in PROGRAMMING). The error message log information is in the err\*.log file and the auxiliary and reset information is in the err\*.dmp file.

**36.28** The contents of the message log can be determined using the Message Print Programming screen shown on page 6-217 in PROGRAMMING.

### **36.29** TO PRINT THE TROUBLESHOOTING INFORMATION:

**NOTE:** Do not perform this procedure unless directed to do so by service personnel.

- (1) While on hook, enter the Diagnostics Mode feature code (9900) to turn on diagnostics mode. The display shows DIAGNOSTICS ON.
- (2) **To print the message log:** Enter the Print Message Log feature code (9975). The number of lines printed will vary, but reports are generally more than 10 pages in length.

**To print the auxiliary information/reset history:** Enter the Print Reset Log feature code (9972). The system prints auxiliary information for approximately eight resets and the causes of the last 37 resets. This is useful to determine if resets are due to power outages or system failures.

- (3) Enter the Diagnostics Mode feature code (9900) to turn off diagnostics mode. The display shows DIAGNOSTICS OFF.

## H. SEIZING A DEVICE

**36.30** For troubleshooting purposes, the Seize Device feature code allows an Administrator to enable diagnostics mode and then seize a specific trunk or extension by entering the board, circuit, and device number.

**36.31** The Seize Device is affected by trunk restriction. The Administrator's station must have outgoing access permission for the trunk to seize it. Toll restriction is applied to any calls placed after the seizure of the trunk.

### **36.32** TO SEIZE A DEVICE:

- (1) While on hook, enter the Diagnostics Mode feature code (9900) to turn on diagnostics mode. The display shows DIAGNOSTICS ON.
- (2) Press SPCL and enter the Seize Device feature code (9973). The display shows ENTER BOARD.
- (3) Enter the board number on which the device to be seized is located (if you enter a single digit, press # after the digit to continue). (If you enter an invalid board number, the display shows INVALID BOARD NUMBER.) Do not enter the CPU board number (0). The display shows ENTER PORT.
- (4) Enter the port (circuit) number of the device to be seized (if you enter a single digit, press # after the digit to continue). Valid numbers depend on the type of board. (If you enter an invalid board num-

ber, the display shows INVALID BOARD NUMBER.)

*If there is only one device on the selected port, the selected device is seized as if the user had directly entered the extension or trunk number.*

*If there is more than one device on the selected port, the display shows ENTER DEVICE. Enter the number of the device to be seized. Valid numbers depend on the type of devices installed. (If you enter an invalid board number, the display shows INVALID BOARD NUMBER.) When the device has been selected, it is seized as if the user had directly entered the extension or trunk access number.*

- (5) Enter the Diagnostics Mode feature code (9900) to turn off diagnostics mode. The display shows DIAGNOSTICS OFF.

**36.33** For example, if the Administrator wanted to seize the T1 trunk on the tenth circuit of the TIC in cardslot 3 (circuit 3.10.0), the entries would be as follows:

```
ENTER BOARD: 3  
ENTER PORT: 10  
(Device number not required.)
```

However, to select the first single-line device connected to the second circuit of the KSC in cardslot 5 (circuit 5.2.1), the entries would be as follows:

```
ENTER BOARD: 5  
ENTER PORT: 2  
ENTER DEVICE: 1
```

### 37. RECORD KEEPING AND MAINTENANCE FEATURES

#### A. CALL COST ACCOUNTING

37.1 The Call Cost Accounting feature estimates the cost of outgoing and incoming calls, displays it on the keysets, and prints it in the SMDR reports. The cost is based on the type of call, telephone number dialed, the elapsed time of the call, the day of the week, and the time of day. A table in the database supplies the rates for all types of calls, including multiplicative factors for evening and weekend rate changes on outgoing calls. The equation for calculating call cost is:

*Daytime Rate X Multiplicative Factor X Connect Time.*

37.2 The multiplicative factor adjusts the daytime per-minute call cost for evening and weekend rates of outgoing calls. For example, the evening call cost multiplier is 0.65 if calls are 35% less expensive after 5:00PM. The daytime rate (D), evening (E) multiplicative factor, and night/weekend (N/W) multiplicative factors are used on the following schedule:

|               | SUN | MON | TUE | WED | THU | FRI | SAT |
|---------------|-----|-----|-----|-----|-----|-----|-----|
| 8 AM TO 5 PM  | N/W | D   | D   | D   | D   | D   | N/W |
| 5 PM TO 11 PM | E   | E   | E   | E   | E   | E   | N/W |
| 11 PM TO 8 AM | N/W |

**NOTE:** The AXXESS System's Call Cost Accounting feature is intended to provide a *cost estimate* that is applied to the various classes of calls. Due to the wide variation in charges among network carriers, the system's call cost calculation cannot be used as a prediction of actual charges. This feature can only be used as a management tool to *estimate* call cost.

37.3 If call cost is set to zero, call cost will not display during the call and the SMDR printout will show \$00.00.

37.4 All outgoing calls using a trunk that is not subject to toll restriction are classified as one of the following

call types for call cost calculation (call cost type is programmed in the database).

- Free
- Local
- Toll Local
- Toll Long Distance
- Operator/International

37.5 When a trunk that is subject to toll restriction is used, call cost type is determined according to the digits dialed, as follows:

- *Free:* Any call within a PBX (a trunk access code is not dialed) is a free call.
- *Local:* The following calls are classified as local calls:
  - Calls to N11 or 1N11 (where N is 2-9), except 411 or 1411
  - Any call to area code 800
  - All 7-digit or 10-digit calls within a home area code to office codes that are allowed in User Group 1
  - Any call that does not begin with 1, and does not fall into any of the other call cost categories
- *Toll Local:* The following calls are classified as toll local calls:
  - Any calls to 411 or 1411
  - All 7-digit or 10-digit calls within a home area code to office codes that are restricted in User Group 1
  - Any call that begins with 1, that does not fall into any of the other call cost categories
- *Toll Long Distance:* Any call to an area code other than a home area code is classified as a toll long distance call.
- *Operator/International:* Any call starting with 0 or containing only 0 is classified as operator/international (0, 0+, 01+, 011+).

**B. STATION MESSAGE DETAIL  
RECORDING (SMDR)**

**37.6** Station Message Detail Recording (SMDR) is a system feature that provides a detailed record of outgoing and incoming calls. The system records only valid calls. Outgoing calls become valid when the Valid Call timer expires or polarity reversal is detected (depending on system programming). Outgoing calls become valid immediately if placed on hold or transferred. Incoming calls are always valid immediately.

**37.7** Station call data can be recorded on a customer-provided printer or an alternate device, such as a magnetic tape or floppy disk. This output device is connected to the CPU, MEM or Options card. Refer to SPECIFICATIONS, page 2-28, for details. Only one output port for SMDR can be active at any time.

**37.8** The AXCESSORY Talk PC can be used to capture Station Message Detail Recording (SMDR) information via its RS-232-C connection with the AXCESS System. The SMDR information is stored in a file on the AXCESSORY Talk PC hard disk for later retrieval.

**37.9** Selectable SMDR options include any combination of the following. (See page 4-110 for an definition of call cost types. See page 6-149 in PROGRAMMING for programming information.)

- **Record All Incoming Calls:** Records all incoming calls that are answered.
- **Record All Local Calls:** Records all calls that use the "local" call cost.
- **Record All Free Calls:** Records all calls that use the "free" call cost.
- **Record All Ring-in Diagnostics:** A ring-in message is recorded for every incoming call (whether answered or unanswered) to indicate how long it rang.
- **Record All Toll Local Calls:** Records all calls that use the "toll local" call cost.
- **Record All Toll Long Distance Calls:** Records all calls that use the "toll long distance" call cost.
- **Record All Operator/International Calls:** Records all calls that use the "operator/international" call cost.
- **Record All DISA Calls:** Records all DISA calls.
- **Record All Conference Calls:** Records all conference calls. If all conference parties exit except one station and one outside party, the call is no longer considered a conference and when completed it will be recorded using the appropriate call cost for that outside call.

- **Record All DID/DNIS Calls:** Records all calls received through DID and DNIS.

**37.10** The programmer can determine whether absorbed digits, equal access digits, and/or toll field digits appear in the SMDR printout. As an example, assume the following number was dialed: 89 (other system's trunk access code) - 10288 (equal access code) - 1 (toll field) - 602 (area code) - 961-9000 (seven-digit number). The following programming options can be used:

- The absorbed digits (the other system's trunk access code) can be suppressed so that only 10288-1-602-961-9000 appears.
- The equal access code field can be suppressed to print only 89-1-602-961-9000.
- The toll field can be suppressed so that only 89-10288-602-961-9000 is printed.
- Any combination of the above can be used. If all three fields are suppressed, only 602-961-9000 will print.

**37.11** The programmer can also suppress or allow caller information (Caller ID and ANI digits) in the SMDR report "Dialed Digits" field. (Note that DID and DNIS are always included in the reports and cannot be suppressed.)

**37.12** The programmer can determine which equipped station(s) will be included in the report. However, for incoming calls, DISA calls, conference calls, and/or ring-in diagnostics, all calls are recorded even when they involve stations not in the programmed station list.

**37.13** SMDR can be programmed to record the elapsed time of calls in seconds (S=XXXXXX) or hours and minutes (HH:MM). If programmed to record elapsed time in seconds, the ELAPSED TIME field will show "S=XXXXXX" (XXXXXX represents the number of seconds) for calls up to 999999 seconds long. For calls lasting longer than 999999 seconds, ELAPSED TIME will show "HH:MM" (hours and minutes rounded up to the nearest minute).

**37.14** The SMDR output report is printed as shown in Figure 4-4 on the following page. A page heading (with the day of the week, date, month, year and column headings) is generated just after midnight to show the change in date. A header is also printed after output from another system source (alarm, informative message, etc.), using the same output device, interrupted the SMDR output.

FIGURE 4-4. SMDR REPORT FORMAT

| TYP | EXT#  | TRUNK | DIALED DIGITS   | START | ELAPSED  | COST    | ACCOUNT CODE   |
|-----|-------|-------|-----------------|-------|----------|---------|----------------|
| XXX | XXXXX | XXXXX | <28 characters> | HH:MM | HH:MM:SS | \$XX.XX | XXXXXXXXXXXXX* |

**TYP** Call type abbreviations for:

|                                  |     |
|----------------------------------|-----|
| Free                             | 000 |
| Local                            | LOC |
| Toll Local                       | TLC |
| Toll Long Distance               | TLD |
| Operator/International           | O/I |
| DISA                             | DSA |
| Conference                       | CNF |
| DID/DNIS (non-DISA)              | DID |
| Incoming Caller ID, ANI, or None | IN  |

**EXT** The extension number (XXXXXX) of the last station to handle the call is shown. For a CO-to-CO call, this field shows the extension number of the second trunk involved. For a conference call, it shows the station that initiated or answered the call. For an unanswered ring-in, it shows \*\*\*\*\*.

**TRUNK** The extension number of the trunk used during the call is shown.

**DIALED DIGITS** **For an outgoing call:** The first 28 digits of the telephone number dialed are shown. A ">" at the end of the number indicates that more than 28 digits were dialed. Some digits may be suppressed (see the previous page for an explanation). For a conference call, this field shows the station that brought the trunk into the conference unless the conference ends as a call with only one station and one trunk or if all conference parties are put on individual hold (in which case the field shows the last party to handle the call). **For an incoming call:** This field is determined by the service type of the trunk that was used for the call, as follows:

| SERVICE TYPE                | CALL RECORD SHOWS:                              | RING-IN RECORD* SHOWS:                      |
|-----------------------------|-------------------------------------------------|---------------------------------------------|
| DID/DNIS (not DISA ring-in) | Blank                                           | Ring.....<DID digits>                       |
| DID/DNIS with DISA ring-in  | Blank if answered;<br>DISA digits if unanswered | DISA calls do not generate a ring-in record |
| Caller ID or ANI            | Blank                                           | Ring.....<Caller ID or ANI digits>          |
| None                        | Blank                                           | Blank                                       |

\*Ring-in records appear only if ring-in diagnostic records are enabled as described on page 4-111.

**START** This shows the time that the call became valid (see paragraph 37.6 on the previous page for an explanation). For an unanswered ring-in, it shows the time the call began ringing. It is shown in 24-hour time (00:00 – 23:59).

**ELAPSED** This shows the call length from the START time (above) until disconnect or the length of time an unanswered call was ringing. If the option is enabled that shows call duration in seconds, calls up to 999999 seconds long appears as S=XXXXXX (XXXXXX represents the number of seconds) and calls lasting longer than 999999 seconds appear as HH:MM (hours and minutes).

**COST** This is the approximate cost of the call (\$XX.XX), based on the database information. If cost exceeds \$99.99, it is printed without the decimal point (\$XXXXX). If it exceeds \$99999, \$\$\$\$\$\$ is shown instead. If there is no cost, the field is blank.

**ACCOUNT CODE** This is a standard, forced, or optional account code (up to 12 digits). An optional account code overrides standard or forced account codes. The field is blank if no account code was used.

**NOTE:** If an asterisk (\*) appears at the end of the record, as shown above, it indicates that the call was terminated because the system detected a disconnect signal from the trunk (that is, the caller hung up before the station user on the call).

C. SYSTEM ERROR/MESSAGE PRINTING

37.15 The system has a self-diagnostic feature that monitors the system. When a system fault or other noteworthy condition is detected, the software determines the impact of the condition and classifies it as an alarm (major or minor) or other message type. If the Message Print option is enabled, as described on page 6-217 in PROGRAMMING, the messages are sent to the designated output port.

37.16 The programmer may enable any combination of the error message types. The available message types are:

- **Information Messages:** These messages give information concerning system operation.
- **Warning Messages:** The warnings in these messages indicate that a condition exists which may affect system performance.
- **Alarm Messages:** Alarm messages indicate that a minor alarm has occurred, but that general system operation was not affected.
- **Severe Messages:** These messages indicate that a severe error has occurred in the system.

37.17 The messages can be programmed to be sent to any output device attached to the system. This includes devices attached to the CPU card, the CPU memory (daughter) card, Options cards, and keyset data ports. Messages can be printed through only one AXXESS port at a time. The print width is adjustable (64, 80, or 132 characters) to accommodate different output devices. When a line of information is longer than the programmed width, the information is printed on subsequent lines and preceded with "+" to indicate the continuation.

37.18 The system database also has a reserved area for recording the history of messages to allow service personnel to request a report at any time (see page 6-217 in PROGRAMMING). The message history area has enough memory to maintain a record of at least 50 of the most recently generated messages. When the reserved area is full, the more recent messages begin to replace the older ones so that the most recent messages are available.

37.19 In addition to the messages, the following error indications will occur in the event of a system alarm:

- If a major system alarm occurs, MAJOR ALARM appears on all display keysets. If the major alarm appears on a group of keysets, the associated Keyset Card has failed. The warning might also appear on a single keyset if the keyset is defective. If all keysets

on the system are inoperative, the alarm message is sent to the system's primary serial port on the CPU.

- A minor alarm sends a message to the primary attendant and to system Administrators, if programmed to receive alarms.

37.20 Each message record includes the following fields:

- **Sequence Number:** This field shows the order in which the faults occurred. If there is a skip in a series of sequence numbers, it indicates that a message was logged that is not programmed to be printed.
- **Time:** The Time field shows the time that the fault occurred. This field shows the hours and minutes in 24-hour format as HH:MM.
- **Date:** The Date field shows the date that the indicated fault occurred. The date shows the month and date as MM-DD.
- **Fault Code:** The Code field holds the associated number of the indicated fault. This field is four characters in length and the first character is an "M" for messages or "A" for minor alarms. Each of the different system faults that the system is capable of detecting is assigned a unique number (M001-M999 or A001-A299) in the system database. Fault codes are listed on page 7-6 in TROUBLESHOOTING.
- **Type:** This field indicates the following:
  - *Alarms:* The field shows "ALARM" for system faults that have not stopped system operation.
  - *Information Messages:* The field shows "INF." The condition requires no attention.
  - *Warning Messages:* The field shows "WRN." The condition requires attention because it may affect system performance.
  - *Severe Messages:* The field shows "SVR." The condition requires attention because it has affected or will affect system performance.
- **Realm:** This field does not appear for Alarm messages. This two-character field indicates the realm responsible for the message. The field will contain one of the following abbreviations:
  - *DB* indicates that the message applies to the system database. These problems can often be fixed with appropriate database programming.
  - *HW* indicates the messages concerns the system hardware. Typically these problems are corrected by adjusting or replacing the affected hardware.

- *EG* is indicative of a software error which will, most likely, require the intervention or attention of an Inter-Tel software engineer.
- **Source:** *This field does not appear for Alarm messages.* This two-character field indicates the software source responsible for the message.
  - *CP* indicates that Call Processing is the source.
  - *OS* refers to the Operating System.
  - *SS* refers to the System Software
  - *AL* refers to AXXESSORY Talk link.
- **Text:** The Text field holds a text message that identifies the particular fault indicated by the record. This field is at least 40 characters in length and may extend onto subsequent lines if necessary to present adequate information about the fault. The information printed on an additional line is preceded with the character "+" to indicate the continuation.
- **Auxiliary:** When necessary, additional information may be printed as part of a message on separate lines. This additional information is referred to as "auxiliary text." To identify this text as pertaining to the previous message, each line is preceded with the "<" character.

#### D. POWER FAILURE CAPABILITIES

**37.21** The Central Processor (CPU) Card contains relay contacts that can be used for power failure transfer which allows one or more single-line sets to select predetermined trunks in the event of a processor board failure or a power failure. Additional equipment is required. Refer to SPECIFICATIONS, page 2-9, for more information.

#### E. CUSTOMIZED SYSTEM PROGRAMMING REPORTS

**37.22** Customized system programming reports can be created through the database (see page 6-221 in PROGRAMMING). The programmer can select the programming area to be reported and then select the information that will be included. When extension numbers are listed in a report, they can be sorted by name, extension number or circuit number. Reports can also be titled. The report types and their options include the following. Sample reports (with all options enabled) begin on page 4-115. Reports can be sent to files on the PC or to a printer port.

- **ARS Route Group Report:** This route group list can include dial patterns, dial rules, and/or trunk groups.
- **Call Routing Report:** This report shows each of the call routing tables and their patterns.
- **CO Trunk Groups Report:** This trunk group list can include day/night answer access, day/night outgoing access, day/night ring in, toll restriction, and/or trunk lists.
- **Detailed Station Report:** Selected stations are listed with account codes, mailboxes, miscellaneous flags, miscellaneous information, programmable keys, keymaps, special purpose station status, system forwarding, and/or toll restriction.
- **General Station Report:** Selected stations can be listed by attendant, class of service, equipment, and/or special purpose station status.
- **Hunt Group Report:** Selected hunt groups are listed with their station lists, flags, and/or timers.
- **Individual Trunk Reports:** Selected trunks are listed with their type, circuit number, trunk group, and flags.
- **Keymap Report:** Selected keyset and DSS map groups and map diagrams are listed with their key assignments and/or station list.
- **Phone List:** Selected stations, hunt groups and page zones are listed.
- **Station Flags:** Stations are listed for selected station flags.
- **System Speed Dial Report:** Selected system speed-dial numbers are listed.
- **System Timers Report:** Selected system timers are listed.
- **T1 Report:** this report shows information for selected T1 Cards, including flags, error statistics, reference clock information, and/or error thresholds.
- **Toll Restriction Report:** Selected classes of service and/or user groups are listed with day/night lists of stations, dialing patterns, allowed area and office codes, restricted area and office codes, and extended area codes.

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**FIGURE 4-5. CUSTOMIZED PROGRAMMING REPORT SAMPLES**

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**ARS ROUTE GROUP REPORT**

PROGRAMMING REPORTS - ARS ROUTE GROUP X

Page 1

Route Group X (Name)

Trunk Groups

| <u>DESCRIPTION</u> | <u>EXT#</u> | <u>CIRCUIT</u> | <u>USERNAME</u> |
|--------------------|-------------|----------------|-----------------|
| Trunk Group 001    | 9201        | T001           |                 |

Dial Rules

- 02. ECHO Toll Field
- 03. ECHO 3 Digits After Toll Field
- 04. ECHO Local Address

Dial Patterns

1NXXXXXXXXX

**CALL ROUTING REPORT**

PROGRAMMING REPORTS - CALL ROUTING

Page 1

Call Routing Table X (Name)

| <u>PATTERN</u> | <u>NAME</u> | <u>DESTINATION</u> |
|----------------|-------------|--------------------|
| 602+           | ARIZONA     | DISA               |

FIGURE 4-5. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

CO TRUNK GROUP REPORT:

PROGRAMMING REPORTS - CO TRUNK GROUP X

Page 1

Extension: 9201

Description: Trunk Group 001  
 Circuit: T001  
 Username:  
 Search Algorithm: Linear  
 Music-On-Hold: Music  
 Audio On Transfer: Ringback  
 One-Way Incoming Only: False  
 Enable Hookflash: True  
 Day Ring-In: Single Ring-In  
     Single Ring-In: 1000 01.01.01 Description  
 Day Answer Access  
     None  
 Night Ring-In: Single Ring-In  
     Single Ring-In: 1000 01.01.01 Description  
 Night Answer Access  
     None

Day Outgoing Access

| EXT# | CIRCUIT # | DESCRIPTION          | USERNAME |
|------|-----------|----------------------|----------|
| P001 |           | Def DB: All Stations |          |

Night Outgoing Access

| EXT# | CIRCUIT # | DESCRIPTION          | USERNAME |
|------|-----------|----------------------|----------|
| P001 |           | Def DB: All Stations |          |

Toll Restriction

| Class of Service      | Day | Night |
|-----------------------|-----|-------|
| 2. Deny Area/Office   |     |       |
| 3. Deny Operator      |     |       |
| 4. Deny Toll Access   |     |       |
| 5. Deny International |     |       |
| 6. Deny Equal Access  |     |       |
| 7. Deny Local Calls   |     |       |
| 8. Denied Numbers     |     |       |
| 9. Allowed Numbers    |     |       |
| 10.                   |     |       |
| 11.                   |     |       |
| 12.                   |     |       |
| 13.                   |     |       |
| 14.                   |     |       |
| 15.                   |     |       |
| 16.                   |     |       |

Subject to Toll Restrict: True  
 Exempt from ARS Only: False  
 Absorbed Digits: False

Trunk List

| EXT#           | CIRCUIT # | DESCRIPTION | USERNAME |
|----------------|-----------|-------------|----------|
| XXXXX XX.XX.XX |           | Loop Start  | XXXXXXXX |

FIGURE 4-5. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

DETAILED STATION REPORT:

PROGRAMMING REPORTS - DETAILED STATION REPORT

Page 1

Extension: XXXX

|              |             |
|--------------|-------------|
| Description: | Last, First |
| Circuit:     | XX.XX.XX    |
| Username:    | XXXXXXXX    |

|                    |          |
|--------------------|----------|
| Account Codes      |          |
| Account Code Type: | Standard |
| Account Code:      |          |

Miscellaneous Flags:

|                                           |          |
|-------------------------------------------|----------|
| All Transient Displays:                   | Enabled  |
| Alternate Hold Timer:                     | Disabled |
| Alternate Keymap:                         | Disabled |
| Alternate Transient Display Timer:        | Disabled |
| Automatic Answer CO:                      | Enabled  |
| Automatic Answer IC:                      | Enabled  |
| Camp-On Indications:                      | Enabled  |
| Camp-On to ARS:                           | Enabled  |
| CO/IC Reseize:                            | Enabled  |
| DID/E&M Receive Busy Instead Of Camp-On:  | Disabled |
| Different Alerting Cadence - IC/CO:       | Enabled  |
| Different Ringback Cadence - IC/CO:       | Enabled  |
| Do-Not-Disturb Allowed:                   | Enabled  |
| Do-Not-Disturb Override:                  | Disabled |
| Extended Ring Cadence:                    | Disabled |
| Handsfree:                                | Enabled  |
| Headset:                                  | Disabled |
| Hunt Group:                               | Replace  |
| Hunt Group Camp-On Audio Indications:     | Enabled  |
| Immediate OHVA Transmit:                  | Disabled |
| OHVA Receive:                             | Disabled |
| OHVA Transmit:                            | Disabled |
| OPX Gain Levels:                          | Disabled |
| Page Mode:                                | Enabled  |
| Receive Busy Instead of DND:              | Disabled |
| Redial Mode:                              | Dialed   |
| Ring Intercom Always:                     | Disabled |
| Standard Tone Frequencies:                | Enabled  |
| System Forwarding:                        | Disabled |
| Transient Call Indication On Call Answer: | Enabled  |

(Continued on the next page)

FIGURE 4-5. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

DETAILED STATION REPORT (Continued):

Miscellaneous Information

Attendant: None  
 Message Center: None  
 Outgoing: 9201 T001 Trunk Group 1  
 Transfer Recall Dest: 1000 01.01.01 Station Undefined  
 Alternate Message Source: None  
 Voice Mail Extension: None  
 Data Port Extension: None  
 Speakerphone Type: Standard  
 Attached Devices: DSS  
 Baud Rate: 2400

Programmable Keys

1. Feature Key 372 (Do-Not-Disturb On/Off)  
 2. Undefined Key  
 ...  
 10. Feature Key 381 (System Speed Dial)  
 11. Feature Key 380 (Redial)

Standard Keyset Keymap: 1 (Keyset Keymap 1)  
 Alternate Keyset Keymap: 2 (Keyset Keymap 2)  
 DSS Keymap: 1 (DSS Keymap 1)

Special Purpose Station

Attendant Stations

| EXT#                                               | CIRCUIT# | DESCRIPTION | USERNAME |
|----------------------------------------------------|----------|-------------|----------|
| <i>(List of stations served by this attendant)</i> |          |             |          |

Message Center Stations

| EXT#                                               | CIRCUIT# | DESCRIPTION | USERNAME |
|----------------------------------------------------|----------|-------------|----------|
| <i>(List of stations served by this attendant)</i> |          |             |          |

Administrator: True

House Phone: False

Toll Restriction

| Class of Service      | Day | Night |
|-----------------------|-----|-------|
| 1. ARS Only           |     | x     |
| 2. Deny Area/Office   |     | x     |
| 3. Deny Operator      |     |       |
| 4. Deny Toll Access   |     |       |
| 5. Deny International |     |       |
| 6. Deny Equal Access  |     |       |
| 7. Deny Local Calls   |     |       |
| 8. Denied Numbers     |     |       |
| 9. Allowed Numbers    |     |       |
| ...                   |     |       |
| 16.                   |     |       |

FIGURE 4-5. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

GENERAL STATION REPORT:

PROGRAMMING REPORTS - GENERAL STATION REPORT Page 1

| EXT# | CIRCUIT# | DESCRIPTION | USERNAME | EOP | ATT  | TMAH | 1234567890123456 |
|------|----------|-------------|----------|-----|------|------|------------------|
| XXXX | XX.XX.XX | Description | Name     | KEY | XXXX | TMA  | B                |

- EQP - Equipment Type
- KEY - Keypad
- S/L - Single-Line
- OPX - Off-Premises Extension
- + - Headset
- ATT - Station's Attendant
- T - Attendant
- M - Message Center
- H - House Phone
- 1 - ARS Only
- 2 - Deny Area/Office
- 3 - Deny Operator
- 4 - Deny Toll Access
- 5 - Deny International
- 6 - Deny Equal Access
- 7 - Deny Local Calls
- 8 - Denied Numbers
- 9 - Allowed Numbers
- 0 -
- 1 -
- 2 -
- 3 -
- 4 -
- 5 -
- 6 -
- D - Day
- N - Night
- B - Both Day and Night

**FIGURE 4-5. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)**

**HUNT GROUP REPORT:**

PROGRAMMING REPORTS - HUNT GROUP REPORT Page 1

Extension: XXXX

|                                |               |                   |      |
|--------------------------------|---------------|-------------------|------|
| Description:                   | Hunt Group XX |                   |      |
| Circuit:                       | HXX           |                   |      |
| Username:                      | HG1           |                   |      |
| Analog Voice Mail:             | False         |                   |      |
| ACD:                           | True          |                   |      |
| Priority Level:                | 10            |                   |      |
| Search Type:                   | Longest-Idle  |                   |      |
| Announcement:                  | None          |                   |      |
| Overflow:                      | None          |                   |      |
| Recall:                        | XX.XX.XX XXXX | Description       | Name |
| No Answer Timer:               | 18 Second(s)  | Range = 1 - 255   |      |
| Announcement Timer:            | 18 Second(s)  | Range = 1 - 255   |      |
| Overflow Timer:                | 72 Second(s)  | Range = 1 - 255   |      |
| Recall Timer:                  | 3 Second(s)   | Range = 1 - 65535 |      |
| Wrap-Up Duration:              | 15 Second(s)  | Range = 0 - 65535 |      |
| Average Connect Time Per Call: | 60 Second(s)  | Range = 1 - 10000 |      |

List of Hunt Groups

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | -Station Undefined |                 |

**INDIVIDUAL TRUNK REPORT:**

PROGRAMMING REPORTS - INDIVIDUAL TRUNK REPORT Page 1

Extension: XXXX

|                          |                         |
|--------------------------|-------------------------|
| Type:                    | Loop Start              |
| Circuit:                 | XX.XX.XX                |
| Trunk Group:             | 9201 T001 Trunk Group 1 |
| DTMF Signaling:          | True                    |
| Service Type:            | Caller ID               |
| Answer Supervision Type: | Valid Call Timer        |
| Hybrid Balance:          | Normal                  |

**FIGURE 4-5. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)**

**KEY MAP REPORT:**

PROGRAMMING REPORTS - KEYMAPS REPORT Page 1

Keyset Key Map Group: 1(Keyset Keymap 1)

Station List

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

Key Assignments

- 1.
- 2.
- ...
- 12.
- 13. Programmable Key 2
- ...
- 51.
- 52.

DSS Key Map Group: 1(DSS Keymap 1)

Station List

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

Key Assignments

- 1. DSS/BLF Key 1000 01.01.01 ~Station Undefined
- 2. DSS/BLF Key 1001 01.02.01 ~Station Undefined
- ...
- 119. Undefined Key
- 120. Undefined Key

**PHONE LIST REPORT:**

PROGRAMMING REPORTS - PHONE LIST REPORT Page 1

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

*(List of selected stations)*

FIGURE 4-5. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

STATION FLAGS REPORTS:

PROGRAMMING REPORTS - STATION FLAGS REPORT Page 1

All Transient Displays - Enabled

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

Alternate Hold Timer - Disabled

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

System Forwarding - Enabled

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

Transient Call Indication Display On Call Answer - Enabled

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

**FIGURE 4-5. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)**

**SYSTEM SPEED DIAL REPORT:**

PROGRAMMING REPORTS - SYSTEM SPEED DIAL REPORT Page 1

| #   | NAME     | NUMBER           | DISPLAY |
|-----|----------|------------------|---------|
| 0   | Bin Name | XXXXXXXXXXXXXXXX | True    |
| 1   |          |                  | True    |
| 2   |          |                  | True    |
| 3   |          |                  | True    |
| 4   |          |                  | True    |
| 5   |          |                  | True    |
| 6   |          |                  | True    |
| 7   |          |                  | True    |
| 8   |          |                  | True    |
| 9   |          |                  | True    |
| 10  |          |                  | True    |
| 11  |          |                  | True    |
| .   | .        | .                | .       |
| 999 |          |                  | True    |

**SYSTEM TIMERS REPORT:**

PROGRAMMING REPORTS - TIMER REPORT Page 1

| DESCRIPTION           | VALUE UNITS | RANGE  |
|-----------------------|-------------|--------|
| Abandoned Call        | 10 Minutes  | 1- 255 |
| Camp-On               | 3 Minutes   | 1- 255 |
| ...                   |             |        |
| Valid-Call            | 15 Seconds  | 0- 60  |
| Voice Mail Dial Delay | 5 Tenths    | 1- 250 |

**FIGURE 4-5. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)**

**T1 REPORT:**

PROGRAMMING REPORTS - T1 REPORT Page 1

Slot: XX (T1 Card description)

Framing Type: D4 Superframe  
Zero Code Suppression: AMI (Jam Bit 7)  
Line Build-Out: Auto

Hourly Error Statistics

|      | BPV | CRC-6 | OOF/COFA | CS | ES | SES | UAS |
|------|-----|-------|----------|----|----|-----|-----|
| Cur  | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| 12am | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| 11am | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| ...  |     |       |          |    |    |     |     |
| 3am  | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| 2am  | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| 1am  | 0   | 0     | 0        | 0  | 0  | 0   | 0   |

Daily Error Statistics

|      | BPV | CRC-6 | OOF/COFA | CS | ES | SES | UAS |
|------|-----|-------|----------|----|----|-----|-----|
| Cur  | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| Mon  | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| Sun  | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| Sat  | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| Fri  | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| Thu  | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| Wed  | 0   | 0     | 0        | 0  | 0  | 0   | 0   |
| Tues | 0   | 0     | 0        | 0  | 0  | 0   | 0   |

T1 Slaves From Public Network

Slot: XX (T1 Card description)

T1 Slaves From Private Network

None

T1 Masters To Private Network

None

Hourly Error Thresholds

| BPV | CRC-6 | OOF/COFA | CS | ES | SES | UAS |
|-----|-------|----------|----|----|-----|-----|
| 0   | 0     | 0        | 0  | 0  | 0   | 0   |

Daily Error Thresholds

| BPV | CRC-6 | OOF/COFA | CS | ES | SES | UAS |
|-----|-------|----------|----|----|-----|-----|
| 0   | 0     | 0        | 0  | 0  | 0   | 0   |

FIGURE 4-5. CUSTOMIZED PROGRAMMING REPORT SAMPLES (Continued)

TOLL RESTRICTION REPORT:

PROGRAMMING REPORTS - TOLL RESTRICTION REPORT

Page 1

Class Of Service: 1(ARS)

Day List

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

Night List

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

...

Class Of Service: 16( )

Dialing Patterns

None

Day List

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

Night List

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

User Group 1( )

Allowed Area Codes

2xx:None  
3xx:None  
4xx:None  
5xx:None  
6xx:None  
7xx:None  
8xx:None  
9xx:None

Restricted Area Codes

2xx:200-299  
3xx:300-399  
4xx:400-499  
5xx:500-599  
6xx:600-699  
7xx:700-799  
8xx:800-899  
9xx:900-999

Extended Area Codes: None

Day List

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |

Night List

| <u>EXT#</u> | <u>CIRCUIT#</u> | <u>DESCRIPTION</u> | <u>USERNAME</u> |
|-------------|-----------------|--------------------|-----------------|
| 1000        | 01.01.01        | ~Station Undefined |                 |



## AXCESSORY TALK FEATURES

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## 1. INTRODUCTION

### A. AXXESSORY TALK APPLICATIONS

**1.1** AXXESSORY Talk can be used for any of the following applications. Each application is described in detail in this chapter.

- **Automated Attendant:** The automated attendant is a programmable feature that can be used to provide automated call answering service. Calls can transfer, forward, or directly ring in to an automated attendant. When an automated attendant answers a call, it plays a recording that gives dialing instructions. After hearing the recording (or at any time while it is playing), the caller may then dial an extension or mailbox number.
- **Automated Attendant Recall Destination:** If a call that is transferred by the automated attendant is not answered before the Transfer AXXESSORY Talk timer expires, the call recalls the Automated Attendant Recall Destination. The Recall Destination recording announces that the station is unavailable and allows the caller to leave a message (if the station has an associated mailbox) or dial another extension.
- **Call Routing Announcement:** Call Routing Announcements can be used two ways:
  - A Call Routing Announcement application can be used in place of a playback device. The playback device function is especially useful for programming hunt group announcement and overflow stations. When called, the Call Routing Announcement application will play a recording and then hang up.
  - The Call Routing Announcement application can use Digit Translation which allows the caller to press a single digit for access to a mailbox, a Fax On Demand function, or to a station or hunt group that has an associated mailbox or extension ID. Digit translation can be programmed for each digit 0-9, #, and \*, plus a Timeout that is used when the caller does not enter a digit. Each digit can lead to a "node" that has its own digit translation values. This layered Call Routing Announcement digit translation creates a "tree" of programmable nodes.
- **Message Notification/Retrieval:** Only one Message Notification/Retrieval application may be created and it *must* be created in order to allow voice mail message notification and quick mailbox access.
- **Voice Mail:** This application handles all calls that are directed to voice mail (other than through the Message notification/Retrieval application) by subscribers and non-subscribers. Callers will hear the

main company greeting, followed by a menu of available options. Stations can forward or transfer calls directly to their mailbox using this application's extension number.

- **Directory Services:** Directory services provide callers with a list of mailboxes and extension IDs.
- **Station Message Detail Recording (SMDR) Information Storage:** SMDR information can be stored on the AXXESSORY Talk PC hard disk and then processed using call record sorting software.

**1.2** Up to 150 applications can be assigned per AXXESSORY Talk system. The applications are given extension numbers in database programming (refer to page 6-152 in PROGRAMMING). AXXESSORY Talk application extension numbers are 2500-2649 at default, but may be reprogrammed.

### B. TIME SLOT GROUPS

**1.3** Each application is assigned to a "Time Slot Group" which determines the maximum number of voice channels that will be used by the applications in that group. Voice channels are used for processing calls between the AXXESS System and the AXXESSORY Talk applications. The voice channel limit for the time slot group may exceed the number of voice channels actually provided by the hardware, due to programmed limits set higher than the hardware limits and/or heavy system traffic. For example, if an Automated Attendant application is assigned to a time slot group that has a programmed limit of five voice channels, it can normally support five simultaneous transfers of outside calls to extensions. However, if only four voice channels are available (because all other channels are in use by other applications or the hardware only supports four channels), a fifth call cannot be completed to that (or any other) application. When all voice channels are busy, intercom callers will hear reorder tone and see a CALL CANNOT BE COMPLETED display and outside callers will hear ringing but their calls will not be answered.

**1.4** Because multiple voice channels can be made available to the applications, callers are unlikely to encounter busy resources. In addition, the use of applications as recall destinations and attendants make it even less likely that a caller will not reach an available resource. For example, an Automated Attendant application can have one Automated Attendant Recall Destination with several voice channels as its recall destination and another Automated Attendant Recall Destination application (with several voice channels) as its attendant. Recalls from that Automated Attendant application would be very likely to reach an available voice channel at one of the Recall Destination applications.

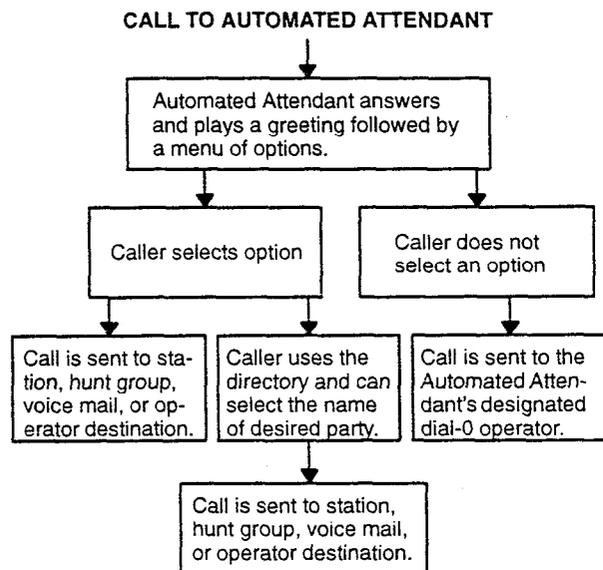
### C. COMMUNICATION BETWEEN AXCESS AND AXXESSORY TALK

1.5 The software and hardware that controls the AXCESSORY Talk applications is located in the AXCESSORY Talk PC. The AXCESS System must be able to communicate with the AXCESSORY Talk PC through the AXCESSORY Talk communications port for the applications to function. If the AXCESS System is unable to communicate with the AXCESSORY Talk PC, the applications cannot be used and the following will occur:

- Direct ring-in calls to an application will be sent to the primary attendant.
- Intercom callers to applications will receive reorder tone. Display keysets show (*Application name*) IS UNPLUGGED.
- Calls will not recall to an application. Instead a (re-calling) call will remain at the station or hunt group and ring until it is answered or the Abandoned Call timer expires.
- If an application is used as a hunt group overflow or announcement station, calls will not be sent to the application, but will remain camped on to the hunt group.
- A transfer to an application will camp on until the Recall timer expires. Then it will follow the usual recall path.
- Calls cannot be forwarded or system forwarded to an application.
- SMDR information will not be recorded in the buffer on the AXCESSORY Talk PC hard drive.
- Database programming for the AXCESSORY Talk features is not allowed.

## 2. AUTOMATED ATTENDANT

**2.1** The automated attendant is a programmable feature that can be used to provide automated call answering service. Calls can transfer, forward, or directly ring in to an automated attendant. AXXESSORY Talk is required for the Automated Attendant feature on the AXXESS System. Calls to the automated attendant application are processed as follows.



**2.2** When an automated attendant answers a call, it plays a recording that gives dialing instructions. During or after the recording, the caller may then directly dial a station extension number, voice mail access number (if there is no associated mailbox), or hunt group pilot number. Or, the caller may use the directory to look up the desired extension.

**2.3** When the automated attendant answers a call, the caller will hear the company greeting, followed by instructions and a list of available options. The caller then has the following options:

- **Dial a station extension number:** If an extension number is dialed, the call is transferred to the selected station. If ringback tones are enabled, the caller hears ringing while the call is being transferred. If ringback is not enabled, the caller hears music (refer to PROGRAMMING, page 6-138). If the called station is forwarded, the call follows the programmed forward.
- **Dial a hunt group pilot number:** When a pilot number is dialed, the call is transferred to the selected hunt group. The call rings or circulates according to how the hunt group is programmed (linear

or distributed). If ringback tones are enabled, the caller hears ringing while the call is being transferred.

- **Dial the Voice Mail application's extension number:** The caller can reach the Voice Mail main greeting by dialing the application's extension number (access number) assigned to the Voice Mail feature. The caller can then leave a message as a non-subscriber or access any of the voice mail subscriber features. (See page 5-11 for Voice Mail information.)
- **Use the directory:** If the caller does not know the extension or mailbox number of the desired party, he or she can spell the name using the keypad keys and "look up" the number in the directory. (This option can be disabled in the database. Or, if there are no names recorded for the individual mailboxes or for the system's extension IDs, this option will not be provided.) Refer to page 5-27 for directory information.
- **Dial the operator access destination:** If the caller needs further assistance, dialing 0 will access the AXXESSORY Talk's programmed operator destination. Or, if the caller is on a rotary telephone and cannot enter a digit, the call will be automatically transferred to the operator destination. (The operator access destination is programmed as described on page 6-211. There can be separate destinations for day and night modes.)

**NOTE:** Due to the natural characteristics of the trunk, the volume level of DTMF tones transmitted over the trunk may be substantially reduced before reaching the AXXESS System and AXXESSORY Talk. This natural degradation in tone volume may adversely affect the reliability of the Automated Attendant feature. Other factors which can affect automated attendant performance are trunk noise and the quality and strength of the DTMF tones generated by the off-premises phone itself.

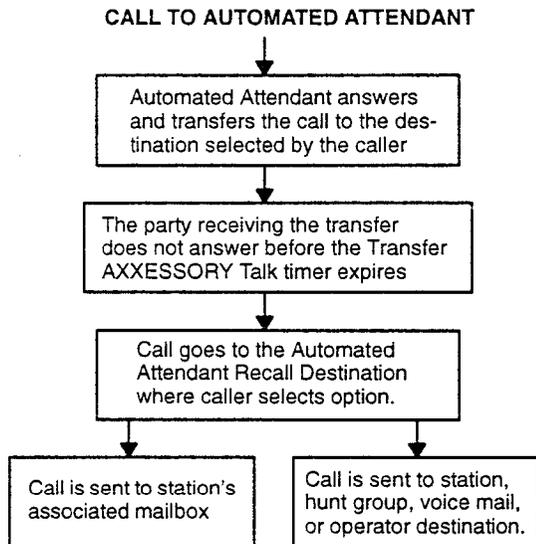
### A. AUTOMATED ATTENDANT APPLICATIONS

**2.4** There are a number of different uses for this feature. Here are two examples:

- Direct ring-in calls to a busy attendant could be forwarded to an automated attendant (using the Call Forward If Busy feature or system forwarding).
- Calls could ring in directly to an automated attendant application's extension number when the system is in day and/or night mode.

**B. AUTOMATED ATTENDANT RECALL DESTINATION**

2.5 When a station receives a call that has been routed through the automated attendant, the call is handled as a transferred call and the display shows TFR FROM (*description*). If the call is not answered before the Transfer AXCESSORY Talk timer expires, the call recalls the automated attendant's recall destination. The recall destination is usually the Automated Attendant Recall Destination application which announces that the called station is unavailable and allows the caller to choose to leave a message (if the station has an associated mailbox) or dial another extension number.



2.6 If the Recall Destination fails to answer a call, it is automatically sent to the recall destination's programmed attendant. If the call is not answered there, it is disconnected after the Abandoned Call timer expires.

2.7 If an invalid number is dialed, the caller is prompted to enter another number. If a caller fails to make an entry before the Inactivity timer expires, the caller is prompted again to make an entry.

2.8 The caller cannot access trunks or enter feature codes through the Automated Attendant application. Trunk access codes and feature codes are considered invalid numbers.

**C. AUTOMATED ATTENDANT CUSTOM AUDIOTEX RECORDINGS**

2.9 Custom audiotex recordings are made using the System Administrator's mailbox as described on page 5-24. Each recording is associated with a recording number and assigned to the application(s) in database programming or using the System Administrator's mailbox. (Refer to page 5-25 in this section and pages 6-157 and 6-197 in PROGRAMMING.)

**D. EXTENSION ID**

2.10 Extension IDs are used in conjunction with transferring calls through the Automated Attendant or using the Extension Directory. The extension ID allows callers to be transferred to stations and applications that do not have mailboxes. It also allows the station or application to have a recorded name in the directory. This feature is set up and initialized using database programming and Voice Mail features.

2.11 If an Extension ID has been created in database programming for a station extension number, either the principal owner of the extension or the System Administrator must set up (initialize) the ID with a new password and record a name for use in the Extension Directory. At default, the extension ID password is the same as the extension number. (If the Extension ID has not been "initialized" calls can still be transferred to the associated extension number, however, they cannot be accessed from the directory. If the Extension ID's user name has not been recorded it cannot be heard when callers access Extension Directory. The name must be recorded in order to fully initialize the Extension ID.) See page 5-17 for more information on initializing Extension IDs.

2.12 Once a password has been set up and the name recorded, the extension owner may access Extension ID Options which allows the associated directory name and password to be modified.

2.13 If an Extension ID has not been created for a station, callers using the automated attendant cannot be transferred to that destination. Instead, these callers will receive a system recording notifying them of an invalid entry and are routed back to the automated attendant's main menu.

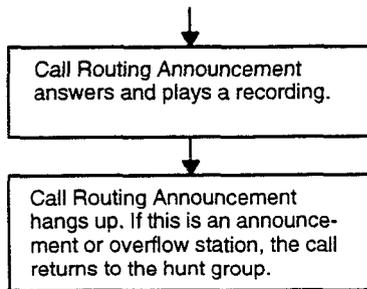
2.14 Individual extension IDs can be programmed as "Private" in database programming. A Private number is included in the directory and can be dialed if the caller knows the number, but the extension number information is not available to the caller; only the name is played.

2.15 Extension IDs can also be programmed as "Unlisted." That means that the number will not be included in the directory, but can be dialed if the caller knows the extension number.

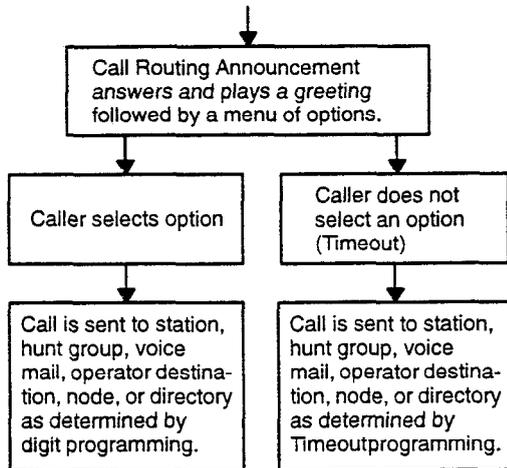
### 3. CALL ROUTING ANNOUNCEMENT

3.1 The Call Routing Announcement application can be used as a playback device that plays a message and then hangs up to disconnect the call. This is especially useful for programming hunt group announcement and overflow stations. As an option, the Call Routing Announcement application can use digit translation which allows the caller to press a single digit for access to a station, hunt group, or mailbox.

#### CALL TO CALL ROUTING ANNOUNCEMENT WITHOUT DIGIT TRANSLATION



#### CALL TO CALL ROUTING ANNOUNCEMENT WITH DIGIT TRANSLATION



3.2 When an AXXESSORY Talk application is used as an announcement or overflow station, calls to the application automatically stop circulating through the hunt group if the caller selects a valid digit translation option (such as pressing a digit to select an extension from a Call Routing Announcement menu). This allows the application to send the call to other stations without the call being “pulled back” into the hunt group when a hunt group station answers the call. However, if the caller does not dial a valid digit translation option, the call will be pulled back if a hunt group member answers.

### A. CALL ROUTING CUSTOM AUDIOTEX RECORDINGS

3.3 When accessed, the Call Routing Announcement application will play a custom audiotex recording and then hang up.

3.4 Call routing announcements are recorded using the System Administrator’s mailbox as described on page 5–24. Each announcement is assigned to use a “custom greeting” number in database programming. (Refer to page 6–197 in PROGRAMMING.)

3.5 An AXXESSORY Talk Call Routing Announcement application message can be programmed to include the caller’s queue position and/or estimated wait time. The queue position announcement tells the caller how many calls are ahead of his or her call. This includes calls being served and waiting calls. See pages 4–13, 6–81, 6–86, and 6–158 for details.

3.6 Recordings for fax documents should include all dialing instructions. The recording should state whether documents can be selected by number and/or list all options. If fax delivery times are set to specific days or times, the recording should also include this information.

### B. DIGIT TRANSLATION

3.7 Digit translation allows callers to dial a single digit to access a designated extension number, mailbox, or hunt group pilot number. Up to 12 digit translation storage locations (#, \*, 0–9) are available for each Call Routing Announcement application (refer to PROGRAMMING, page 6–157).

3.8 To use digit translation, the Call Routing Announcement application must have special programming. Digit translation is programmed by assigning specific “Actions” for each digit and determining what will happen if the caller does not enter a digit (Timeout). The length of time the application will wait for input from the caller (0–60 seconds) is also programmable. The Actions that can be selected are as follows:

- *Transfer To Operator:* This action transfers the call to the Dial-0 Destination that is programmed in the System Maintenance window, shown on page 6–211.
- *Company Directory – First Name:* This sends the caller to the directory prompt that asks the caller to enter the first name of the desired party.
- *Company Directory – Last Name:* This sends the caller to the directory prompt that asks the caller to enter the last name of the desired party.
- *Subscriber Access:* This sends the caller to the mailbox prompt that requests a mailbox number.

- *Invalid:* (Not used for the Timeout.) The digit will not be used. Callers who press this digit will hear a recording that tells them that it is invalid.
- *Select Fax Document:* (Not used for Timeout and not available if there are no fax documents in the system.) This Action selects a specific document for faxing. Callers should be prompted to select this digit with a recording that tells them the name of the document. For example, "Press 2 for a price list." This Action must be accompanied by an End Fax Selection Action and should also be accompanied by a Cancel Fax Selection Action.
- *Select Fax By Document Number:* (Not available for Timeout or digits \* and #.) This Action is like the Transfer to Collected Extension Action described below. It allows the caller to enter the exact four-digit number(s) of the desired document(s). Assign this Action to the digit(s) that correspond to the first digits of the document numbers. For example, if you have documents numbered 0001–1000, digits 0 and 1 should have a Select Fax By Document Number Action. Callers can then dial four-digit document numbers that begin with 0 or 1. **NOTE:** When document numbers begin with 0, the caller can select documents by entering the number without 0 and pressing #. For example, the caller can enter 99# for document number 0099. This Action must be accompanied by an End Fax Selection Action and should also be accompanied by a Cancel Fax Selection Action.
- *End Fax Selections:* This Action is usually assigned to the digit #. It is used for signaling the system that the caller has entered all desired fax document selections (either through a Select Fax Document By Number Action or a Select Fax Document Action). When the caller presses this digit, the system checks to see if any documents have been requested. If not, it issues a warning to the caller and returns to the greeting. If documents were selected, the system requests fax dialing information from the caller.
- *Cancel Fax Selections:* This Action is usually assigned to the digit \*. It is used for canceling fax document selections that a caller has entered. If the caller has not made any entries, the system notifies the caller that no selections were made and returns to the greeting.
- *Transfer To Node:* (Not available for Timeout and not available if there are no programmed nodes.) This Action sends the call to a node that allows ac-

cess to further digit translation options as described in paragraph 3.10.

- *Transfer To Extension:* This Action will send the call to the designated extension (station, hunt group, trunk, trunk group, or application).
- *Transfer To Mailbox:* (This will not appear if there are no programmed mailboxes.) This will send the call to the designated mailbox.
- *Transfer To Collected Extension:* (Cannot be used for Timeout, #, \*, or 0) This allows callers to dial extension numbers of stations and hunt groups that have a mailbox or extension ID. Assign this Action to digits that correspond to the first digits of extension numbers. For example, if digit 1 is "Transfer To Collected Extension," callers can dial extension numbers that begin with 1. However, if digit 1 is "Transfer To Extension 2000," a caller attempting to dial a station extension number that begins with 1 will instead be transferred to 2000.
- *Hang Up:* (This action is used for Timeout only.) This disconnects from the call if the user does not enter a digit.

**3.9** After the application is created and programmed, the System Administrator's mailbox is used to make a custom audiotex recording that explains the options to callers, as described on page 5–24. The custom audiotex recording is assigned to the Call Routing Announcement application as described on page 6–157. A caller who listens to the Call Routing Announcement recording can then dial the single-digit location number to reach the designated destination. For example, if the hunt group extension for a customer support group is programmed for digit 3, the recording should say something like, "Dial 3 for customer support."

### C. DIGIT TRANSLATION NODES

**3.10** A "node" is a digit translation destination that allows further digit translation options. Unlike extension and mailbox destinations, a node does not move the call to a specific location. Instead, it offers additional digit translation options. A node can use any of the digit translation Actions, including transfers to other nodes.

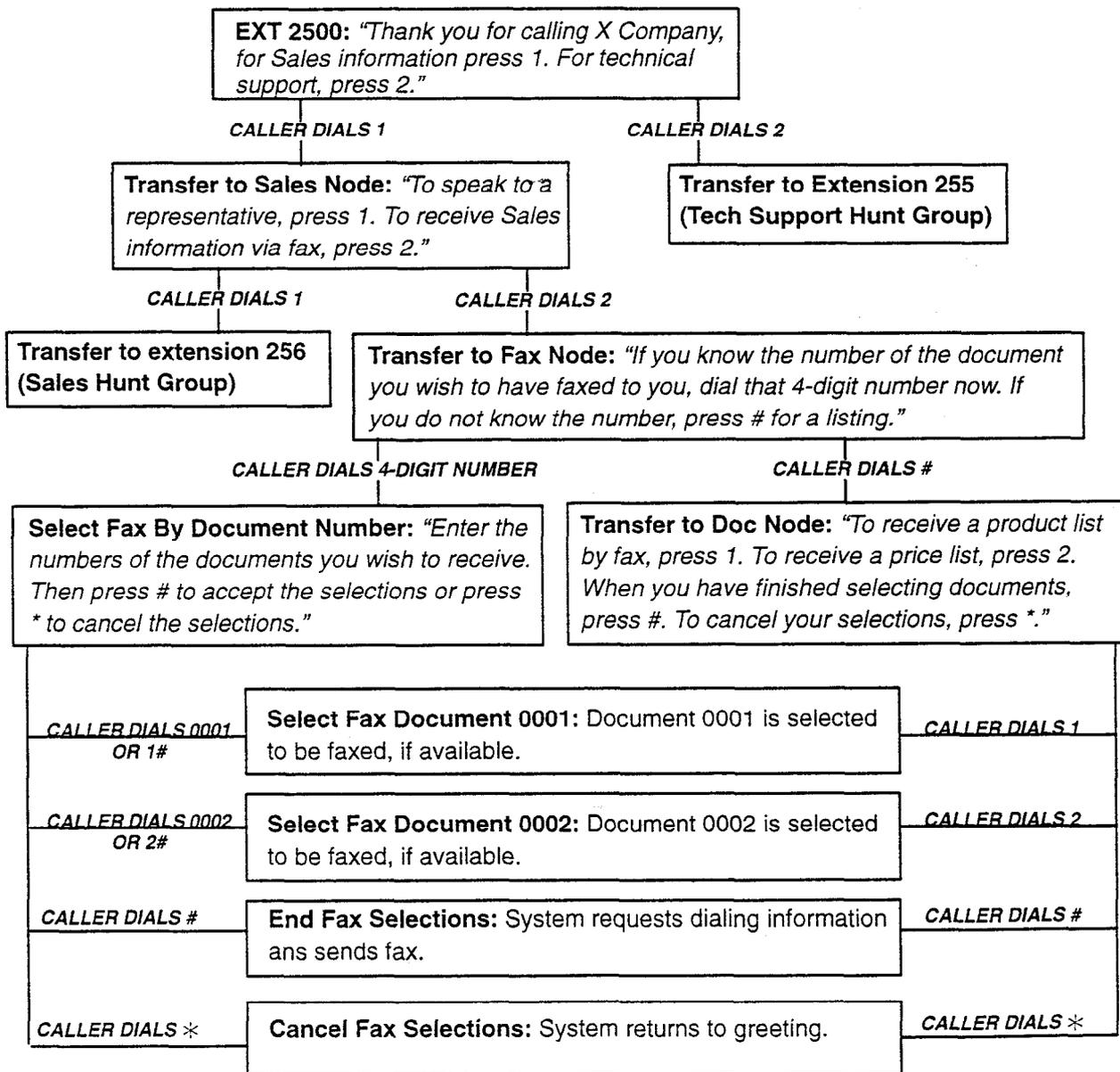
**3.11** The use of nodes allows the programmer to create a Call Routing Announcement with several layers to form a digit translation "tree." The tree can be made up of digits with destinations and/or nodes with additional digit translations. An example of a Call Routing Announcement application with a multi-layered tree is shown on the next page.

3.12 The Call Routing Announcement tree for the sample below would appear as follows in the database programming screen, if expanded:

- 2500 A2500 Call Routing Announcement
  - 1 Transfer to Node – Sales
    - 1 Transfer to Extension – 256
  - 2 Transfer to Node – Fax
    - 0 Select Fax by Document Number
      - # Transfer to Node – Doc
        - # End Fax Selection
        - \* Cancel Fax Selection
          - 1 Select Fax Document – 0001 Products
          - 2 Select Fax Document – 0002 Prices
- 2 Transfer to Extension 255

3.13 Once node is created, it can be assigned to more than one Call Routing Announcement application. This allows entire node hierarchies to be shared or moved without reprogramming. A node can only be deleted if it is not associated with a Call Routing Announcement application.

3.14 Refer to page 6–152 in PROGRAMMING for information on creating the Call Routing Announcement applications and programming digit translation nodes.



#### 4. AXCESSORY TALK FAX ON DEMAND

4.1 The Fax On Demand feature provides fax services to callers. It is a specially programmed Call Routing Announcement application that uses digit translation to allow callers to select the documents they wish to have faxed to them.

4.2 With Fax On Demand, callers can use a DTMF telephone to request one or more documents from the company's fax library. When the request is completed, the AXCESSORY Talk places a call to the caller's fax machine to deliver the requested documents.

4.3 The Fax On Demand process is shown in the following steps:

- (1) The caller reaches the Call Routing Announcement application either through direct ring-in or transfer.
- (2) After listening to the introductory recording, the caller selects a document by entering a document number or using digit translation, depending on node programming. If the document is selected by number, the system will ask the caller to verify the entry by pressing #. If the number is invalid, the system alerts the caller and returns to the introductory recording.
- (3) The system checks the availability of the document and one of the following occurs:  
  
*If the document is available*, the system tells the caller how many documents have been selected and how many more documents can be requested (as determined by the Maximum Selections Allowed value in the database). It then returns to the recording to allow the caller to select more documents or end the selection process.  
  
*If the document has been deleted or is being updated*, the caller is told that the document is unavailable and returns to the recording.
- (4) If desired, the caller selects additional documents and the system checks for their availability as described above. If the maximum number of allowed documents has been reached, the system informs the caller and gives the option of returning to the greeting or ending the selection process. If a caller selects the same document more than once, the system informs the caller of the error and allows another selection.
- (5) If desired, the caller can cancel the document selections at this point by pressing the Cancel

Fax Selections digit (usually \*). However, once the next steps are completed, the faxes will be delivered.

- (6) When the caller ends the selection process by pressing the End Fax Selections digit (usually #), or reaches the allowed maximum number of documents, the system requests fax dialing information from the caller.
- (7) The caller enters and verifies his or her extension number (to be printed on the cover sheet) and the caller's fax machine telephone number.
- (8) The system checks the entered number and one of the following occurs:

*If the number is valid*, the system tells the caller when the document will be delivered (this depends on the programmed fax delivery times in the AXCESSORY Talk database), and returns to the recording.

*If the number cannot be dialed by the Message Notification/Retrieval application due to toll restrictions*, the system tells the caller that the number cannot be dialed and asks for a new number.

*If the caller enters an invalid number*, the system tells the caller the number is invalid and asks for a new number.

- (9) The caller hangs up or returns to step 2 to select more documents. (If more documents are selected and canceled, the documents that were selected and accepted previously will still be sent. Each time the caller accepts the documents and enters the dialing information, the documents are prepared for transmittal. They cannot be canceled after that point.)
- (10) The AXCESSORY Talk Message Notification/Retrieval application places a call to the caller's fax machine as soon as a fax port is available, unless one of the following occurs:

*If the fax was requested outside of the programmed fax delivery times*, the system will wait until the Fax Delivery Start Time on an allowed day of the week before it attempts to send the document. The Fax Delivery Start and Stop times determine when faxes can be sent. They can be set to any time period, up to 24 hours. The programmer can also determine which days of the week faxes will be sent.

*If other calls are going out and the programmed Maximum Number of Outgoing Calls has been met, the system waits for an available outgoing call to send the fax.*

*If a fax port or trunk is not available or if a requested document is not available, the system delays delivery until the resource or document is available.*

*If a requested document has been deleted, the system will complete the delivery, but will indicate on the cover sheet that the document is no longer available.*

*If a fax delivery fails after one or more pages have been transmitted, the system remembers which pages were not sent and tries again to send only those pages. For example, if the transmission failed in the middle of page 3 of 5, the system would attempt to send only pages 3, 4, and 5 on the retry. The cover sheet on the retry will say, "This fax is the continuation of..." and the description for the fax will include "continued" in the title.*

**4.4** Documents are stored in the fax library using the System Administrator's mailbox. To do so, a fax machine places a call to the System Administrator's mailbox and sends the document. (See page 5-26 for instructions.)

**4.5** Fax On Demand transmits a cover sheet with each faxed document that includes the recipient's extension number, your company name (as programmed in the database), the date, the number of pages to be sent, and a list of included documents. If you wish, you can store a

company logo to be used on the cover sheet. The logo can be up to 5.5 inches tall; if it is larger, the system automatically cuts it off at the 5.5 inch mark. The logo document is stored, like other fax documents, using the System Administrator's mailbox.

**4.6** If you have several fax documents, you may want to create and store a "catalog" document that callers can request before continuing their selections. For example, the catalog can include the document number, title, description of the contents, number of pages, and last revision date for each document.

**4.7** Fax documents can be saved and restored using the AXXESSORY Talk Save And Restore database program. The AXXESS System Save And Restore operation has no effect on fax documents. However, if the system database is defaulted, all fax documents are deleted.

**4.8** The node used for fax document selection should have a greeting that explains how to select documents. For example, it can say something like, "Welcome to Fax On Demand. For a product list, press 1. For a price list, press 2. When you have made your selections, press # to continue. Or, to cancel your selections, press \*." Or, you can use a series of nodes that break the document selection into categories and/or allow callers to dial individual document numbers. If fax delivery times are set to specific days or times, the introductory recording should also include this information.

**4.9** Note that the Fax On Demand feature uses User Group 1 and the Home Area Code for toll restriction information. Ensure that these are programmed correctly for outgoing fax delivery calls. Also ensure that the Message Notification/Retrieval application has the appropriate trunk access for placing outside calls.

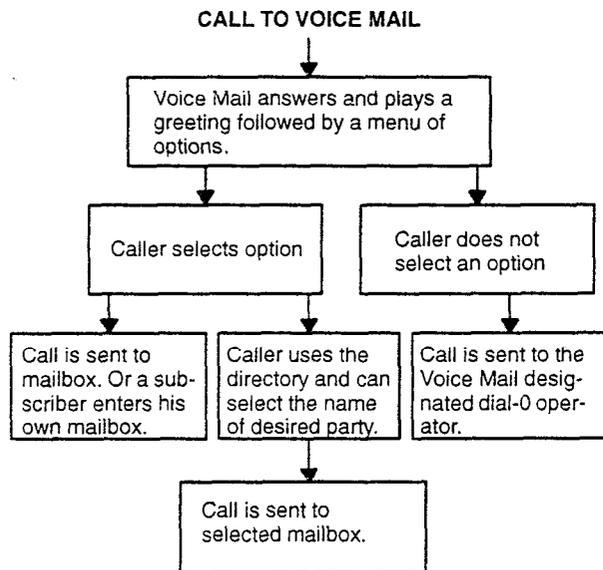
## 5. VOICE MAIL

5.1 The Voice Mail feature allows callers to send and receive recorded messages from any station or DTMF telephone. (Dial-pulse signaling is not recognized by AXCESSORY Talk. Callers using dial-pulse phones will be routed to the Voice Mail application's Operator Access Destination for assistance.)

### A. VOICE MAIL AND MESSAGE NOTIFICATION/RETRIEVAL APPLICATIONS

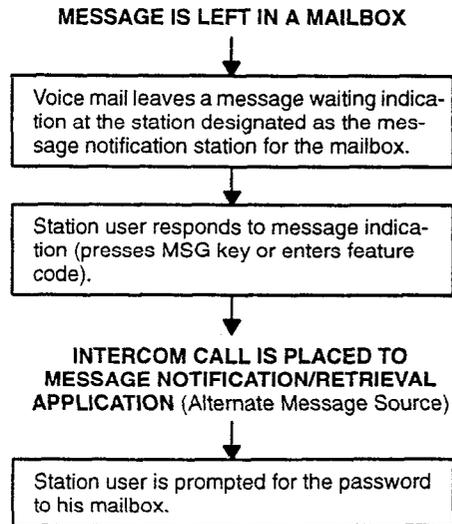
5.2 Two types of applications are combined to provide the Voice Mail feature: Voice Mail and Message Notification/Retrieval.

- **Voice Mail:** This application handles all calls that are directed to voice mail (other than the Message Notification/Retrieval application) placed by subscribers and non-subscribers. Callers will hear the main company greeting, followed by a menu of available options. Stations can forward or transfer calls directly to their mailbox using this application's extension number. This application can also be the message center for the subscribers' stations.



- **Message Notification/Retrieval:** Only one Message Notification/Retrieval application may be created for the system. It is usually programmed as the alternate message source for the Voice Mail application. If so, when station users respond to mes-

sage indications by left voice mail, they are prompted only for their password.



5.3 Station users and outside callers gain access to the Voice Mail application in the following ways:

- By dialing the telephone number or extension number assigned to the Voice Mail application
- By being transferred to the Voice Mail by the automated attendant
- By being forwarded to the Voice Mail when a called station is unavailable (via the Call Forwarding or System Forwarding features)
- By responding to message waiting indications
- By transferring a conference call to a mailbox in order to record the call (**NOTE:** Federal and State law may prohibit the use of this feature to record in certain circumstances. Inter-Tel does not purport to give any legal advice on this subject, but recommends that you contact your attorney for guidance on the use of this feature.)

5.4 Callers will hear the Voice Mail company greeting and recorded instructions that tell them what to do next. Users simply listen to the prompts and press the keypad key that corresponds to the desired choice. If the user does not respond immediately, a second set of prompts is played.

5.5 Most prompts are interruptible, and users can press the desired key at any time during the prompt. The prompt will then stop and the system will act on the requested choice.

## B. MAILBOXES

**5.6** A mailbox is a storage location on the AXXESSORY Talk PC hard disk which stores all messages that have been directed to it. (The hard disk also stores prompts, greetings, and special programming.) Each "Subscriber" (member of the voice message system) is assigned a unique mailbox number. At system default, the passwords are the same as the mailbox numbers. (For example, the default password for mailbox 101 is "101.")

**5.7** There are three types of mailboxes on the voice mail system: Standard, Receive-Only and System Administrator. There can also be Extension IDs which are stations that do not have mailboxes, but that are included in the recorded directory.

- The Standard mailbox owner receives all of the available subscriber options as authorized through database programming. Standard mailbox features include:
  - Listening to new messages
  - Recording and sending messages
  - Deleting messages
  - Saving messages
  - Personal options (greeting, password, etc.)
  - Remote messaging (if authorized through database programming)
- A Receive-Only mailbox type may only listen to new messages, save or delete them and access personal options. This type of mailbox is restricted from recording and sending messages and has no access to remote messaging.
- The System Administrator has all of the options a Standard mailbox subscriber has, plus these features:
  - Record and send broadcast messages to all subscribers of the voice mail system
  - Provide mailbox and group list maintenance
  - Record and select Custom Audiotex Recordings

- Extension IDs are used in conjunction with transferring calls through the Automated Attendant or using the Extension Directory. The extension ID allows callers to be transferred to station extensions which do not have mailboxes and allows the station user to record a directory name and set up a password.

**5.8** Multiple mailboxes and extension IDs may be created. However, there can be only one System Administrator. There can be up to 500 total mailboxes (any type) and/or extension IDs in the voice mail system. (If a mailbox is created for an extension with an extension ID number, the extension ID number is replaced with the mailbox.)

**5.9** During database programming, each mailbox is assigned an operator destination. When a caller presses  while listening to the mailbox's personal greeting or recording instructions, or while recording a non-subscriber message, the operator destination is called. The operator can be one of the following types:

- **Mailbox:** If the operator is a mailbox, the caller will hear the operator destination's personal greeting after pressing .
- **Station extension number:** If the operator destination is an extension number, the caller will hear the Automated Attendant transfer prompt while the call is placed to the extension number ("Please hold while I transfer your call to..."), unless it has been disabled at the mailbox. If the station user does not answer, the caller will be asked if he wants to leave a message if the operator's extension has an associated mailbox. If the caller chooses not to leave a message, the call returns to the mail menu of the application being used (Call Routing Announcement, Voice Mail, or Auto Attendant).
- **Application extension number:** If the operator destination is an application's extension number, the call is transferred to that application's main menu.
- **Operator:** If the operator destination is set to "Operator," the caller will be transferred to the operator destination programmed in the AXXESSORY Talk System-Wide Information (see page 6-211 in PROGRAMMING).
- **None:** If the operator destination is set to "None," the  will be ignored.

## C. GROUP LISTS

**5.10** Group lists are programmed in the database (see page 6-176). They are lists of mailboxes that can be used by any Subscriber for sending messages to several mailboxes simultaneously. The information that is programmed for group lists include the following:

- Group list description
- Group list number
- Mailboxes included in the list

**5.11** Group Lists are not included in the Automated Attendant or Voice Mail of directories.

**5.12** The System Administrator can record the name for a group list.

**5.13** Instructions for using group lists are given on page 5-19.

## D. MESSAGE NOTIFICATION TO STATIONS

**5.14** Each mailbox has a programmed Message Notification Station. This is usually the extension number that matches the mailbox number (associated mailbox). However, a different number can be used for the mailbox's message notification station (non-associated mailbox).

- **Associated:** When the extension number, message notification number, and mailbox number for a station all match, that station user can forward calls to voice mail and have the call go directly to the associated mailbox's personal greeting. (Even if other mailboxes use that extension number as their message notification extension.)
- **Non-Associated:** Non-associated mailboxes have a Message Notification Station assignment that is an extension number that does not match the mailbox

number. (For example, a hunt group pilot number can have a mailbox, but the message notification must be sent to a specific station so that a message lamp can be lit or message notification signal can be sent.) If a station user's extension number does not match a mailbox number, and the station user forwards calls to voice mail, the caller will hear the main voice mail greeting and must enter a mailbox number.

**NOTE:** If there are non-associated mailboxes in AXXESSORY Talk, the AXXESS must have the Validate Voice Mailbox feature disabled. When enabled, this feature prevents users from dialing mailbox numbers that do not match valid extension numbers.

**5.15** When a mailbox receives a message, the message notification station is signaled. If it is a keyset, the MSG key is lit and the display shows that a message has been received. A single-line set will receive message waiting signals, if enabled system-wide.

**5.16** If a message notification station has more than one associated mailbox, the message indications (MSG key lamp, display, and/or message waiting tones) will continue until all messages from all associated and un-associated mailboxes have been heard. However, the display does not show which mailbox(es) received the message(s), only that the message waiting indications were received from voice mail. When the Message Notification station user responds to the message (using the feature code or key), he or she will automatically enter the associated mailbox for the extension being used and hear the password prompt. To retrieve a message from an unassociated mailbox, the user must bypass the associated mailbox (press  ) and enter the correct unassociated mailbox number and password. Or, the user may dial the Voice Mail access number directly, instead of responding to the message using a feature code or key, to bypass the associated mailbox.

## E. CASCADING REMOTE MESSAGE NOTIFICATION

**5.17** Remote Messaging is a subscriber feature that is enabled through database programming. Subscribers may program a series of specific telephone numbers (a "cascade") for the voice mail system to call when new messages are received by their mailboxes. See page 5-15 for a sample notification cascade setup. Refer to page 5-21 for subscriber instructions on setting up remote messaging.

### Primary And Alternate Notification

**5.18** Each mailbox can have a Primary and/or an Alternate notification cascade of numbers. The notification numbers are programmed to be accessed during specific days and times.

**5.19** The voice mail system monitors subscriber mailboxes continuously. During monitoring, if new messages have been received, the system will check to see if Primary notification is turned on. If it is, the system will check the day and time programming. If the current time is within the programmed notification day and time, the voice mail system will make the notification call(s) to the numbers in the Primary Notification cascade. If Primary Notification is turned off or if the day or time does not match, the voice mail system will immediately make the same check for Alternate Notification and possibly place calls to the numbers in the Alternate Notification cascade.

**5.20** When the AXXESSORY Talk makes a notification call, it moves through the appropriate notification cascade level by level as determined by the notification and retry programming described below. When the system reaches the last level in the cascade, it will return to level 1 and begin again, if necessary.

**5.21** If the system is not able to place the call within the parameters of the programmed notification day and time (due to busy facilities or invalid programming), the mailbox will receive a message stating that notification could not be completed (the mailbox owner will hear the message next time he or she accesses the mailbox.)

**5.22** The number of calls that the AXXESSORY Talk can process simultaneously is determined by the Maximum Number of Outgoing Calls flag. It defaults to 2, but can be programmed to use all of the enabled AXXESSORY Talk voice channels. See page 6-201 in PROGRAMMING for details.

### "All Messages," "Priority Only," And "Each New Message" Flags

**5.23** When the mailbox is being programmed for remote notification, message notification can be set to place the notification call when any message is received or only when priority messages are received. (This defaults to "All Messages.") Another mailbox flag, called "Call For Each New Message" determines when the AXXESSORY Talk will attempt to make the notification call when more than one message is waiting to be heard:

- If the Call For Each New Message flag is *enabled*, the AXXESSORY Talk will attempt *immediate* notification each time a new message (or priority message, depending on the option selected) is received, regardless of the status of the applicable retry timer. It will place the call to the number on the cascade table that would have received the retry call, as described below. (For example, if the AXXESSORY Talk was on level 3 of a cascade, attempting retries, it will not start over again at level 1. It will place the call to level 3.)
- If the Call For Each New Message flag is *disabled*, new messages will not generate a remote notification attempt until the Subscriber has logged on and listened to the waiting message(s). (However, retry calls will be attempted if the applicable retry timer expires, as described below.)

### Retry Call Attempts

**5.24** The mailbox can be programmed to retry notification calls when it encounters a busy trunk or trunk group. Each cascade level can be programmed with a Number of Call Attempts value of 1-1000 calls.

**5.25** If the mailbox user accesses the mailbox between the time the message is received and when remote notification is successful, the system will stop attempting remote notification. It is assumed that the mailbox user listened to the message when the mailbox was accessed. However, the MSG key at the station will remain lit if there are any messages that have not been heard.

**5.26** Each level also has a Number Called Busy timer, and a Pager Notification Retry timer or Personal Number No Answer timer. These timers determine how long the AXXESSORY Talk will wait before making the next notification attempt when messages are waiting to be heard (unless it is overridden by the Each New Message flag). These timers can be set to a value of 0-255 minutes. If set to 0, it retries the cascade level immediately, for as many attempts as allowed by the Number of Call Attempts field. If the message(s) have not been picked up by then, the system moves to the next cascade level. The default setting for the Pager Notification Retry tim-

er is 20 minutes. The Number Called Busy and Personal Number No Answer timers default to 5 minutes.

**NOTE:** The 0-minute timer value should be used cautiously. If the system is forced to make several calls in quick succession, it will impair the AXCESSORY Talk's ability to place other outgoing calls. It should be used primarily with cascades in which all of the members wish to receive notification at approximately the same time. In this case, all levels except the last could be set to 0-minute retries with 1 allowed call attempt. However, the last level in the cascade should be programmed with a longer Pager Notification Retry timer so that the system does not continuously cycle through the cascade levels. (Continuous cycling is also prevented somewhat by a per-mailbox 15-call limit. Due to FCC regulations, the AXCESSORY Talk can allow a mailbox to make only 15 calls in rapid succession without a 10 minute pause.)

#### Notification Numbers

**5.27** Each cascade level has a programmed notification number that can be an extension number or an outside telephone number.

**5.28** When an outside telephone number is used, the system will access an outgoing trunk using the code programmed for that level that contains a pre-programmed trunk access code and followed by an outgoing access termination feature code, if needed.

**5.29** Notification calls to outside telephone numbers can be sent to a pager or to a number where a person will answer (personal number).

- If the call goes to a pager, the system will dial the programmed Pager Dial String, then disconnect the call. The dial string should include any digits that the paging company requires when the call is answered, the pager LCD number, and the pager termination code, if needed. Also, if desired, the pager string can be programmed to show the number of the mailbox that placed the call and/or the number of waiting messages in the mailbox.
- If the call goes to a personal number, the system will play a prompt announcing that the call is from voice mail, play the directory name or mailbox number that originated the call, and user instructions. The listener can then enter the mailbox number's password to gain access to the mailbox and hear the message. The listener has three chances to enter a correct password. If the system receives an incorrect password three times, the voice mail system will disconnect the call immediately and the attempt is considered unsuccessful.

#### Sample Notification Cascade

**5.30** The example on the next page shows how each level in a Primary and Alternate cascade is programmed to meet a customer's needs. In the example, the pager dial string (9619000\*MN#) includes the AXCESSORY Talk's telephone number (961-9000), an asterisk to separate digits, the mailbox number (M), the number of messages in the mailbox (N), and a pager termination digit (#).

| CUSTOMER WANTS:                                                                                                                       | CASCADE LEVEL:         | PROGRAM THESE PARAMETERS:                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| During business hours (8-5) during the week he wants to be notified for all messages, each time a message is received...              | Primary Notification   | Notification Category: All Messages<br>Call For Each New Message: Enabled<br>Start Time/Stop Time: 8:00 AM/5:00 PM<br>Days of Week: Monday-Friday                                                                                                                                                                                |
| First, call his desk (extension 1234) for up to 3 attempts, 1 minute apart...                                                         | Primary — Level 1      | Enable Notification: Yes<br>Notification Destination: IC<br>Notification Number: 1234<br>Notification Type: Personal<br>Number of Call Attempts: 3 calls<br>Number Called Busy: 1 minute<br>Personal Number No Answer: 1 minute                                                                                                  |
| Then he wants to try his car phone (555-1000) up to 5 time, every three minutes...                                                    | Primary — Level 2      | Enable Notification: Yes<br>Notification Destination: CO<br>Notification Number: 5551000<br>Notification Type: Personal<br>Outgoing Access: 9201 (trunk group 1)<br>Outgoing Access Termination: #<br>Number of Call Attempts: 5 calls<br>Number Called Busy: 3 minutes<br>Personal Number No Answer: 3 minutes                  |
| Then he wants his pager (555-2000) to be called...                                                                                    | Primary — Level 3      | Enable Notification: Yes<br>Notification Destination: CO<br>Notification Number: 5552000<br>Notification Type: Pager<br>Pager Dial String: 9619000*MN#<br>Outgoing Access: 9201<br>Outgoing Access Termination: #<br>Number of Call Attempts: 1 call<br>Number Called Busy: 0 minutes<br>Pager Notification Retry: 0 minutes     |
| And his assistant's pager (555-3000) right away.                                                                                      | Primary — Level 4      | Enable Notification: Yes<br>Notification Destination: CO<br>Notification Number: 5553000<br>Notification Type: Pager<br>Pager Dial String: 9619000*MN#<br>Outgoing Access: 9201<br>Outgoing Access Termination: #<br>Number of Call Attempts: 1 call<br>Number Called Busy: 255 minutes<br>Pager Notification Retry: 255 minutes |
| After business hours during the week, he wants to be notified for only priority messages, each time a priority message is received... | Alternate Notification | Notification Category: Priority Only<br>Call For Each New Message: Enabled<br>Start Time/Stop Time: 5:00 PM/8:00 AM<br>Days of Week: Monday-Friday                                                                                                                                                                               |
| He wants his pager called (555-2000) for all priority messages...                                                                     | Alternate — Level 1    | Enable Notification: Yes<br>Notification Destination: CO<br>Notification Number: 5552000<br>Notification Type: Pager<br>Pager Dial String: 9619000*MN#<br>Outgoing Access: 9201<br>Outgoing Access Termination: #<br>Number of Call Attempts: 1 call<br>Number Called Busy: 0 minutes<br>Pager Notification Retry: 0 minutes     |
| And call his assistant's pager (555-3000) right away.                                                                                 | Alternate — Level 2    | Enable Notification: Yes<br>Notification Destination: CO<br>Notification Number: 5553000<br>Notification Type: Pager<br>Pager Dial String: 9619000*MN#<br>Outgoing Access: 9201<br>Outgoing Access Termination: #<br>Number of Call Attempts: 1 call<br>Number Called Busy: 255 minutes<br>Pager Notification Retry: 255 minutes |

## F. SUBSCRIBER USE OF VOICE MAIL

5.31 Voice Mail subscriber features include the following:

- Listen to new messages, if any
- Send a message
- Listen to saved messages, if any
- Set personal options
- Set up remote messaging, if enabled

5.32 When a subscriber enters the mailbox, the Voice Mail application may play one of the following messages:

- **Mailbox almost full or full:** If a mailbox is full, no new messages can be received at that mailbox until the subscriber deletes waiting or saved messages.
- **Message count:** A prompt tells the subscriber how many messages are waiting to be heard, if any, and how many are priority messages.
- **Remote messaging:** A prompt will indicate whether primary or alternate remote messaging is selected when remote messaging is enabled. It will also alert the subscriber if a programming error has been detected and/or whether the system encountered busy resources when attempting to place a remote messaging call.

### Access To A Mailbox

5.33 A subscriber can access his or her mailbox by following these steps:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press **\*** to identify yourself as a subscriber.
- (3) Enter your mailbox number and personal password.

### Initializing A Subscriber Mailbox or Extension ID

5.34 The first time a subscriber uses Voice Mail, he or she must customize the mailbox. System prompts will instruct the subscriber to:

- Change the default password number (same as the mailbox number) to a personal password.
- Record a name to identify the mailbox owner in the company directory. (Directory names can be up to 1 minute in length.)
- Listen to the Voice Mail application introduction. (You can skip this introduction by pressing #, if desired.)

### 5.35 TO INITIALIZE A MAILBOX OR EXTENSION ID:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) Press **\*** to identify yourself as a subscriber.
- (3) Enter your mailbox number and default password. (Your default password is your mailbox number.)
- (4) Choose and enter a new password using digits 0-9 (up to 12 digits). Then press **#**. Your password is played back.

*If you do not want to use a password, press **#**.*

- (5) Press the **#** key to accept the entry. (Or press **3** if you wish to re-enter your password, and go back to step 4.) The system prompts you to record your directory name.
- (6) After the tone, record your first and last name. When finished, press **#**.
- (7) Press **#** again to accept the name. (Or, press **1** to replay the name you just recorded, **2** to add to your message, or **3** to erase and re-record it.)
- (8) A prompt plays that introduces you to basic Voice Mail features. (You can skip this introduction by pressing **#**, if desired.)

5.36 Once your mailbox is initialized, you may use any of the mailbox features provided. To record a personal greeting, or to change your password or directory name, refer to paragraph 5.40 on page 5-20.

## Listening To Messages

5.37 There are two types of voice mail messages:

- **New Messages** are messages that you have not yet heard, including Broadcast Messages from the System Administrator and system-sent messages. They are played in the order they were received, except that messages marked "priority" are played first. Some special messages that may be played include the following:

- *Message receipt:* If you send a certified message, a system message will be played when the recipient has listened to the message.
- *Caller Information:* If a call was placed to your mailbox on a trunk that supports the Caller ID feature, and the caller hung up without leaving a message, a system message will be played informing you that the calling party did not leave a message. It will also include, within the corresponding message envelope, the number of the calling party as the message source.
- *Security violation:* The voice mail system has an extra security measure built in which informs you subscriber, after you have logged into your mailbox, whenever three invalid attempts have been made to access your mailbox within a single call. This announcement message will be sent to your mailbox each time this situation occurs. It is received as a new message and is accompanied by a message envelope.

- **Saved Messages** are messages that you previously listened to and saved. You can play them back, as necessary, in the order they were saved.

5.38 Whenever you access Voice Mail as a subscriber, you are told how many new and saved messages you have. From the Main Menu:

- (1) Press **[1]** to listen to your new messages.

OR, Press **[3]** to listen to your saved messages.

- (2) The system plays each message in the queue selected, preceded by an "envelope" that tells you the information you have enabled in Personal Options. While you are listening to a message, you can use the following options:

Press **[1]** to back up while listening to a message. (The amount of time is determined by the Replay/Forward/Rewind Increment timer.)

Press **[2]** to pause (for the length of the database-programmed Pause Voice Mail timer). To continue listening, press any key. To exit without completing the message, press **[\*]**.

Press **[3]** to skip ahead while listening to a message, or skip to the next message if a message is not playing. (The amount of time is determined by the Replay/Forward/Rewind Increment timer.)

Press **[4]** to lower the volume.

Press **[5]** to play the message envelope again.

Press **[6]** to raise the volume.

Press **[#]** to skip to the end of the recording.

Press **[7]** to save the new message in your mailbox for future action.

Press **[9]** to delete the message from your mailbox. (If you want to reply to or forward a message, do this before you delete it. Deleting a message completely removes it from your mailbox.)

- (3) When the message has finished playing, you have the following options:
  - a. Press **[1]** to replay the message from the beginning.
  - b. Press **[2]** to reply to the message (unless it was a system-sent message or from an outside telephone number). *This option is not provided for receive-only mailboxes.*
  - c. Press **[3]** to forward a copy of the message to another subscriber, along with your introductory comments. (If the message was marked "private" when it was sent, you cannot forward it.) *Receive-only mailboxes cannot use this option.*
  - d. Press **[4]** to listen to the previous message.
  - e. Press **[5]** to play the message envelope again.
  - f. Press **[6]** to listen to the next message.
  - g. Press **[7]** to save the new message in your mailbox for future action.
  - h. Press **[9]** to delete the message from your mailbox. (If you want to reply to or forward a message, do this before you delete it. Deleting a message completely removes it from your mailbox.)

## Sending A Message

**5.39** As a subscriber, you can record and send voice messages to other users from the subscriber Main Menu. Follow these steps:

- (1) Dial the Voice Mail application access number. (You hear the main menu.)
- (2) During or after the greeting, press **\*** to identify yourself as a subscriber.
- (3) Enter your mailbox number and personal password.
- (4) When you hear the Subscriber Menu, press **2** to send a message.
- (5) Dial the desired mailbox number or group list number. *If you do not know the mailbox number, you can press pound (#) to access the company directory to locate and select the mailbox. See page 5-27 for directory instructions. Group lists are not included in the directory.*

*If the mailbox is full, a prompt will notify you that the mailbox cannot receive messages. However, it will allow you to leave a message at another mailbox. Leave your message with another subscriber or try again later.*

- (6) After hearing the subscriber's name, press **#** to accept it.
- (7) When you hear the tone, record your message.

**NOTE:** If the system detects silence for longer than 5 seconds, it will prompt you to speak up. The recording, if any, will remain unchanged.

*To pause while recording, press **2**. To continue, press any key. (The pause length is determined by the Pause Voice Mail timer.)*

*To erase your message, press **3**.*

*If you exceed the maximum allotted time for message length, a prompt will notify you and allow*

you to re-record the message or send the message as it is.

*If Voice Mail is full, a message will notify you that it cannot accept your message. Hang up and try again later.*

- (8) When you have completed your message, you have the following options:

*If you are satisfied with your message, hang up. OR press **#** and go to the next step.*

*If you wish to hear your message, press **1**.*

*If you wish to add to your message, press **2** and continue your message as described in step 3.*

*To erase and re-record your message, press **3**.*

*To use the special delivery options, press **9**. You can perform **one or more** of the following steps:*

Press **1** to mark the message "private." (This prevents the recipient from forwarding it to other subscribers.)

Press **2** to mark the message "certified." (When a certified message is heard by the recipient, you will receive a receipt notice.)

Press **3** to mark the message "priority." (This will place your message ahead of all other waiting messages in the receiving mailbox.)

Press **\*** to cancel delivery options.

Press **#** to deliver the message. (If you wish to mark the message certified, private, and/or priority, do so before completing this step.)

- (9) After the message has been sent, you may choose either of the following options:

Press **#** and enter another mailbox number to send the message to another destination.

Press **\*** to exit.

## Personal Options

**5.40** Personal Options allow you to customize your mailbox. Each subscriber's mailbox has the following personal options:

- **Greetings:** Your primary or alternate greeting is played to callers when they reach your mailbox. You can change your primary greeting at any time to reflect a change in status and/or record and enable an alternate greeting. If you elect not to record a personal greeting, the default system greeting will be used.

**NOTE:** There is a database option called "Play Recording Instructions" that affects mailbox greetings. If this option is enabled, the system prompt that tells the caller to leave a message after the beep will play after the primary or alternate greeting. If disabled, the beep will occur as soon as the primary or alternate greeting ends. In the default state, this option is enabled. For programming information, refer to page 6-185 in PROGRAMMING.

- **Directory Name:** Your recorded name is used to identify you in the directory and to verify your mailbox number when messages are addressed to you by non-subscribers and other subscribers. Although your name is recorded when you first set up your mailbox, you can change it at any time.
- **Password:** Your password is used to prevent unauthorized access to your mailbox. Although you create a personal password when you first set up your mailbox, you can change it at any time.
- **Message Envelope Contents:** Each message is preceded by an "envelope" message that can include the time and date the message was left, the source of the message, and the length of the message. You can choose the contents of the envelope or disable the envelope completely. (Even if the envelope is disabled, the subscriber can still enter the code to play the envelope when listening to the message.)

### 5.41 TO PROGRAM PERSONAL OPTIONS:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press **\*** to identify yourself as a subscriber.
- (3) Enter your mailbox number and password.
- (4) When you hear the Main Menu list of options, press **4** to select the Personal Options Menu. You may then do any or all of the following steps.

- (5) **To change your personal greeting**, press **1**. You have the following options:
  - a. Press **1** to record and/or enable your primary personal greeting or **2** to record and/or enable your alternate greeting. The system plays your current greeting, if one exists. To replay the greeting, you can press **1**. Press **3** to erase and re-record your greeting as follows:
    1. Record your greeting after the tone, then press **#**.
    2. Press **#** again to accept your greeting. (Or, you can press **1** to replay your greeting, **2** to add to your greeting, or **3** to erase and re-record your greeting.)
  - b. Press **3** to enable the system default mailbox greeting. The system greeting is automatically enabled.
  - c. Press **\*** to exit without changing your greeting.
- (6) **To change your recorded directory name**, press **2**.
  - a. After the tone, record your first and last name, then press **#**.
  - b. Press **#** again to accept your recorded name. (Or, press **1** to replay your recorded name, **2** to add to your name, or press **3** to erase and re-record your name.)
- (7) **To change your password**, press **3**.
  - a. Choose and enter a new password using digits 0-9 (up to 12 digits). *If you do not want to use a password*, skip this step.
  - b. Press **#**. Your password is played back.
  - c. Press **#** to accept the password as entered. (Or, press **3** if you wish to re-enter your password.)
- (8) **To change your envelope contents**, press **4**. A prompt plays to tell you the current status of your envelope contents.
  - a. To enable or disable the time/date option, press **1**. A prompt plays to tell you the current status of the time/date option.
  - b. To enable or disable the message source option, press **2**. A prompt plays to tell you the current status of the message source option.

- c. To enable or disable the message length option, press **[3]**. A prompt plays to tell you the current status of the message length option.
- d. To enable all options, press **[4]**. A prompt tells you that all options are enabled.
- e. To disable all options, press **[5]**. A prompt tells you that all options are disabled.
- f. To return to the Personal Options menu, press **[\*]**.
- g. Press **[#]** to accept the personal options as entered.

### Setting Up Remote Messaging

**5.42** Remote messaging is described in detail on page 5-14. To set up the remote messaging parameters, follow the procedure given below. Executive keyset users can use the menu keys next to their displays instead of pressing the digits on the keypad.

#### **5.43** TO SET UP REMOTE MESSAGING:

**NOTE:** In the following procedure, Executive keyset users can use the menu keys next to their displays instead of pressing the digits on the keypad.

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press **[\*]** to identify yourself as a subscriber.
- (3) Enter your mailbox number and personal password. (If message forwarding is enabled, the prompt will remind you.)
- (4) When you hear the Main Menu list of options, press **[5]** to select the Remote Messaging Menu.
- (5) Press **[1]** to set up a Primary cascade, or press **[2]** to set up an Alternate cascade. A prompt tells you what the cascade's current status is. (If desired, press **[\*]** to return to the Personal Options Menu.) Then perform one of the following steps.
  - (6) **To program a cascade level:** Press **[1]** then program the following:
    - a. Enter the number of the level you wish to program (1-9). A prompt tells you the current status of the level.
    - b. You have the following options:
      1. Press **[1]** to enable or disable this level. (You cannot enable the level until a notification number is programmed.)
      2. Press **[2]** to set up or change the personal telephone number. If it is an extension number, press **[1]**. Or, if it is an outside number, press **[2]**. Then enter the number. (Executive keyset users can enter the special characters for pause, mailbox, and new message count by pressing their menu keys.) a prompt will play back the number for your verification. If you entered an invalid or toll-restricted number, you will hear a warning and must enter the number again.
      3. Press **[3]** to set up or change the pager telephone number. Then enter the number. (Executive keyset users can enter the special characters for pause, mailbox, and new message count by pressing their menu keys.) a prompt will play back the number for your verification. If you entered an invalid or toll-restricted number, you will hear a warning and must enter the number again.
  - (7) **To set up time of day for notification:** Press **[2]**. Then, when prompted, enter the time at which you wish to have the message notification start and stop. Enter the times with two digits for the hour and two digits for the minutes. If entering the time in 12-hour format, you will be prompted to press **[1]** for AM or press **[2]** for PM. **NOTE:** If you wish to have 24-hour notification, program the starting and ending times to be the same.
  - (8) **To set up the days of the week for notification:** Press **[3]**. Then press **[1]** for messaging Monday-Friday, **[2]** for all days, or **[3]** to select individual days. If you selected individual days, you will be prompted to press digits 1-7 which correspond to the days Sunday through Saturday. Your selection will be played back.
  - (9) **To select all or priority-only message notification:** Press **[4]**. Then press **[1]** for all messages or **[2]** for priority messages only.
  - (10) The options prompt returns. Either select another option, as described above, or press **[#]** to save the settings and exit.

## G. NON-SUBSCRIBER USE OF VOICE MAIL

**5.44** Callers who do not have a subscriber mailbox can leave messages for subscribers. Also, Subscribers can use this method for leaving messages without accessing their mailboxes. If a non-subscriber message is left using a station with an associated mailbox, the receiving mailbox Subscriber can reply to the message, if desired, and the reply will be sent to the caller's associated mailbox.

**5.45** Non-subscribers can gain access to the voice mail system through the automated attendant (by dialing the Voice Mail application extension number), through a call transfer, by placing an intercom call to the Voice Mail application extension number, or by being forward to voice mail.

### Leaving A Message

#### **5.46** TO LEAVE A MESSAGE AS A NON-SUBSCRIBER:

- (1) *If you hear the voice mail greeting or menu, dial the desired mailbox number. (If you do not know the number, you can press pound (#) to access the mailbox directory to locate and select the mailbox. See page 5-27 for directory instructions.)*

*If you hear a subscriber's personal mailbox greeting, skip this step.*

- (2) *If the mailbox is full, a prompt will notify you that it cannot receive messages. However, it will allow you to leave a message at another mailbox. Leave your message with another subscriber or try again later.*

- (3) *After hearing the subscriber's greeting and a tone, record your message. You have the following options while recording your message:*

**NOTE:** *If the system detects silence for longer than 5 seconds, it will prompt you to speak up. The recording, if any, will remain unchanged.*

*To pause while recording, press [2]. To continue, press any key except [0].*

*To erase and re-record your message, press [3].*

*To call the mailbox user's attendant, press [0].*

*To cancel the recording and return to the main menu, press [\*].*

*If you exceed the maximum allotted time for message length, a prompt will notify you and allow you to re-record the message or send the message as it is.*

*If Voice Mail is full, a message will notify you that it cannot accept your message. Hang up and try again later.*

- (4) *When you have completed your message, you have the following options:*

*If you are satisfied with your message, hang up. OR press [#] and go to the next step.*

*If you wish to hear your message, press [1].*

*If you wish to add to your message, press [2] and continue your message as described in step 3.*

*To erase and re-record your message, press [3].*

*To use the special delivery options, press [9]. You can perform **one or more** of the following steps:*

*Press [1] to mark the message "private." (This prevents the recipient from forwarding it to other subscribers.)*

*Press [3] to mark the message "priority." (This will place your message ahead of all other waiting messages in the receiving mailbox.)*

*Press [\*] to cancel delivery options.*

*Press [#] to deliver the message. (If you wish to mark the message certified, private, and/or priority, do so before completing this step.)*

- (5) *After the message has been sent, you may choose either of the following options:*

*Press [#] and enter another mailbox number to send the message to another destination.*

*Press [\*] to exit.*

## H. SYSTEM ADMINISTRATOR FEATURES

**5.47** The voice mail System Administrator can use special features that are not provided to Subscribers. The System Administrator mailbox has all standard subscriber features plus the ability to do the following:

- Record a broadcast message
- Perform mailbox and group list maintenance
- Create and select custom audiotex recordings (voice mail company greetings, auto attendant recordings, call routing announcements, and hunt group overflow and announcement station recordings)
- Import fax documents

**5.48** To enter the System Administrator's mailbox, the System Administrator dials the Voice Mail access number, presses **\*** to access the main menu, enters the System Administrator's mailbox number, then presses **9** to reach the System Administrator Menu. (There is not a prompt for entering the **9**.)

### Broadcast Messages

**5.49** The System Administrator has the ability to make a single recorded message and send it to all Standard and Receive-Only subscriber mailboxes. (Extension IDs do not receive Broadcast Messages.)

#### **5.50** TO RECORD A BROADCAST MESSAGE:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press **\*** to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press **9** to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu list of options, press **1** to send a broadcast message.
- (6) Record your message.

*To pause while recording, press **2**. To continue, press any key except **0**.*

*To erase and re-record your message, press **3**.*

*If you exceed the maximum allotted time for message length, a prompt will notify you and allow you to re-record the message or send it.*

*If Voice Mail is full, a message will notify you that it cannot accept your message. Hang up and try again later.*

- (7) When you have completed your message, you have the following options:

*If you are satisfied with your message, hang up. OR press **#** for more options.*

*If you wish to hear your message, press **1**.*

*If you wish to add to your message, press **2** and continue your message as described in step 6.*

*To erase and re-record your message, press **3**.*

### Mailbox/Group List Maintenance

**5.51** Using the System Administrator's mailbox, the administrator may provide basic voice mail mailbox and group list system maintenance. This maintenance includes the following:

- Record the name of a standard subscriber mailbox, extension ID, or a group list
- Record the mailbox greeting and set personal options for a subscriber mailbox
- Set the password for a subscriber mailbox or extension ID

**5.52** The System Administrator does not need to know the Subscriber's password to perform maintenance on a subscriber mailbox.

#### **5.53** TO PERFORM MAILBOX/GROUP LIST MAINTENANCE:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press **\*** to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press **9** to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu list of options, press **2** to access the Mailbox/Group List Maintenance option.
- (6) Dial the mailbox, extension ID, or group list number to be accessed.

*If programming a mailbox or extension ID, you hear the Personal Options menu. Follow the instructions on page 5-20 to program the personal options (name, password, message envelope, or greeting) for the selected mailbox.*

*If programming a group list, the current name is played. You are prompted to enter a name. After the tone, record the name for the selected list. When you are finished, press **#**. Then press **#** again to accept the name. (Or, press **1** to replay the name you just recorded, **3** to erase and re-record it.)*

### ■ Custom Audiotex Recordings

**5.54** The System Administrator can create and select up to 500 custom audiotex recordings (voice mail company greetings, auto attendant greetings, call routing announcements, and hunt group announcement/overflow recordings). Each recording has an assigned number. Numbers are then assigned to specific applications using the System Administrator's mailbox or through database programming.

**5.55** Any recording number (001–500) can be assigned to any AXXESSORY Talk application. In the default state, Recording 001 is automatically defaulted to play the system-provided Voice Mail main greeting and Recording 002 is reserved for the Automated Attendant main greeting. The default recordings can be changed, but will be returned to system-provided values if the AXXESSORY Talk system is defaulted. A single recording may be used for multiple applications.

**5.56** After making the required recordings, the System Administrator must determine which ones play during the telephone system's day and night modes of operation. This can be done from either the System Administrator's mailbox or through database programming.

**5.57** The System Administrator must enter a valid two digit recording number (or a single digit followed by # for recordings 1–9) before a custom audiotex recording can be made. If a valid number has been entered and a previous recording exists, AXXESSORY Talk will play it. (This includes the two standard default greetings.) When no recording is associated with recording number, the System Administrator will be prompted to create a recording.

**5.58** Once the recording is installed it replaces any previous recording. The only recordings that can be retrieved are system default recordings 001 and 002. They can be retrieved by defaulting the AXXESSORY Talk database. If a recording has been previously made but the System Administrator chooses to make a change to it, AXXESSORY Talk will play the current recording before offering the option of accepting it as it is, replaying it or erasing and re-recording it.

**5.59** The maximum recording time for each custom audiotex recording is determined in database programming when the maximum greeting lengths are established for all subscribers.

**5.60** In database programming, several greetings can be linked together for one application and/or use the special UCD/ACD hunt group characters that tell the caller how many calls are ahead and how long the wait should be. Refer to page 6–158 in PROGRAMMING for

information on this option. If you use the System Administrator's mailbox to record or assign a recording to an application with a list of several recordings, your input will change only the first entry in the list. You cannot change the other entries through the System Administrator's mailbox.

### **5.61** TO RECORD CUSTOM AUDIOTEX RECORDINGS:

- (1) Dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press \* to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press 9 to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu, press 3 to select the Custom Recordings option.
- (6) The next prompt asks if you wish to make a custom recording or select a custom recording. Press 1 (make a recording).
- (7) When prompted, enter the desired recording number (001–500). If a recording exists, it is played. If not, go to the next step.

*To hear the recording again, press 1.*

*If you wish to leave the recording unchanged, press #*

*If you wish to re-record the recording, press 3 and continue to the next step.*

- (8) When prompted, record the greeting or message.  
*To pause while recording, press 2. To continue, press any key.*

*If you exceed the maximum allotted time for recording length, a prompt will notify you and allow you to re-record or save it.*

*If the AXXESSORY Talk PC disk is full, a prompt will notify you that it cannot accept your recording. Hang up and try again later.*

- (9) When you have completed your recording, you have the following options:

*If you are satisfied with your recording, hang up. OR press # for more options.*

*If you wish to hear your recording, press 1.*

*If you wish to add to your recording, press 2 and continue your recording as described in step 3.*

*To erase and re-record your recording, press 3.*

**5.62 TO ASSIGN CUSTOM AUDIOTEX RECORDINGS TO SPECIFIC APPLICATION EXTENSION NUMBERS:**

- (1) Dial the Voice Mail access number. You hear the main menu.
- (2) During or after the greeting, press  to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press  to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu list of options, press  to select the Custom Recordings options.
- (6) The next prompt asks if you wish to make a custom recording or select a custom recording. Press  (select a recording).
- (7) When prompted, enter the extension number of the application to be programmed. (For example, if users dial 299 to reach Voice Mail, enter 299 to program the Voice Mail greeting.) Or, press  to exit to the System Administrator menu.
- (8) When prompted, select whether the recording will be played during day mode (by pressing ) or during night mode (by pressing )
- (9) When prompted, enter the desired recording number (01-50). If a recording exists, it is played. (If not, you hear a warning that the recording has not yet been made.)
- (10) If it is the correct recording, press . Return to step 7.

### Importing Fax Documents

**5.63** If Fax On Demand is enabled on your AXXESSORY Talk system, you can use the System Administrator's mailbox to import fax documents. Imported documents can then be requested by callers who use the Call Routing Announcement application that is programmed to provide the Fax On Demand service.

#### **5.64** TO IMPORT A FAX DOCUMENT:

- (1) Using a fax machine, dial the Voice Mail application access number. You hear the main menu.
- (2) During or after the greeting, press  to identify yourself as a subscriber.
- (3) Enter the System Administrator mailbox number and password.
- (4) Press  to access the System Administrator's Menu.
- (5) When you hear the System Administrator Menu list of options, press  to select the Import Fax option. (Note that, if the Fax On Demand feature is not enabled, the system will not accept this digit). The system may inform you of one of the following, if not, continue to the next step.

*All system fax ports are busy:* Hang up and try again later.

*The system already contains the maximum number of fax documents allowed:* Until one or more fax documents are deleted from the system, there is no room for additional documents.

*The system does not have enough disk space to import any more documents:* Until one or more fax documents are deleted from the system, there is no room for additional documents.

*The system currently is at or above the Maximum Fax Library Size:* Until one or more fax documents are deleted from the system, there is no room for additional documents.

- (6) When prompted, enter the fax document number. (Or, to exit to the System Administrator's Menu, press .) One of the following occurs when you enter the number:

*If the document number does not already exist, the system asks you to verify the number. Press  if the number is correct and go to the next step. Or press  if you wish to re-enter the number.*

*If the document number already exists, the system asks if you wish to replace it. Press  if you wish to replace the document and go to the next step. Or press  if you wish to re-enter the number.*

*If the document is currently being sent, updated, or deleted, that document number cannot be used right now. You are prompted to enter a new number. Repeat step 6.*

*If you did not enter a valid number, you are prompted to enter a new number. Repeat step 6.*

- (7) When prompted, press the START button on your fax machine. One of the following may occur:

*If the system cannot communicate with your fax machine, check that it is working properly and press  to try again.*

*If the system runs out of disk space while importing the document or if the document will cause the system to exceed the Maximum Fax Library Size, you cannot import this document until one or more fax documents have been deleted from the system to create disk space. Press  to return to step 6.*

- (8) When the fax transmission is complete, the system tells you that the document was received. Press  to continue importing documents, or press  to exit.

## 6. DIRECTORIES (AUTOMATED ATTENDANT, CALL ROUTING ANNOUNCEMENT, AND VOICE MAIL)

6.1 There are two types of AXCESSORY Talk directories that can be enabled (or disabled) in the system: Mailbox and Extension.

- **The Voice Mailbox Directory** is a list of mailbox subscribers, their recorded names, and mailbox numbers.
- **The Automated Attendant Directory**, provided to all Auto Attendant callers, is a list of all mailbox subscribers and extension ID owners and their recorded names.

6.2 The directories can be selected in the following ways:

- **From the Voice Mail or Automated Attendant main menu:** Press the **[#]** key.
- **Using a Call Routing Announcement application:** Press the Digit Translation digit designated for directory access. (See page 5-6 for a detailed explanation of digit translation.)
- **As a Voice Mail Subscriber:** Subscribers can access the directory by pressing **[#]** whenever they are prompted to enter a mailbox number.

6.3 If a directory is disabled or empty because no names are recorded for any of the system's mailboxes and extension IDs, callers will not hear the prompt that allows access to the directory. However, if the caller does press **[#]** or a Directory menu key the user will be instructed that the selection is invalid and returned to the initial instructions.

6.4 Recorded names are added to the directories when the owner of the mailbox or extension ID has initialized the name. If the mailbox or ID is not initialized, the directory will include only the mailbox number or extension ID number. (Group Lists are not included in either type of directory.)

6.5 The caller uses the keypad keys to enter the name. The application then plays the closest matching directory name that corresponds to the digits entered by a caller. Once the name has been played the system will return a menu of options, including the following:

- Listening to the previous or next name in the directory
- Listening to additional information (This option is not available if the mailbox or extension ID number

has been classified in the database as a "Private" number.)

- Spelling a new name
- Toggling from a last to first name search mode
- Accepting the name

### A. LOCATING A NAME

#### Entering A Name

6.6 There are two methods used for entering a name: Quick Spell and Exact Spell. Outside callers and station users with non-display keysets and single-line sets use Quick Spell. Display keyset stations use the Exact Spell method.

- Quick Spell callers press a single digit (or key) from their digital telephone dial pad for each letter or character entered. For example, keypad key **[2]** shows ABC, key **[3]** shows DEF, etc. To enter JONES, you would press **[5][6][6][3][7]**. Some characters are not shown on the keys: for "Q" press **[7]**, for "Z" press **[9]**, for punctuation marks press the **[1]** key.
- Exact Spell callers press the keypad keys to enter the name. The number of times a key is pressed determines which character is entered, as shown on the chart below. When adjoining characters are located under the same key, press **[FWD]** once to advance to the next character. For example, 5666 FWD 66337777 would enter JONES.

| KEY | NUMBER OF TIMES KEY IS PRESSED |   |     |   |   |
|-----|--------------------------------|---|-----|---|---|
|     | 1                              | 2 | 3   | 4 | 5 |
| 1   | -                              | & | ( ) |   | 1 |
| 2   | A                              | B | C   | . | 2 |
| 3   | D                              | E | F   | ! | 3 |
| 4   | G                              | H | I   | * | 4 |
| 5   | J                              | K | L   | / | 5 |
| 6   | M                              | N | O   | # | 6 |
| 7   | P                              | Q | R   | S | 7 |
| 8   | T                              | U | V   | ? | 8 |
| 9   | W                              | X | Y   | Z | 9 |

6.7 After the digits have been entered, the caller presses **[#]** to begin the search. The Automated Attendant application plays the name that most closely matches the digit(s) that were entered. If **[#]** is pressed without entering any digits, the caller will hear the first name in the directory.

6.8 If a user presses **[0]** at any time while spelling a name, the system will play a helpful prompt instructing the caller how to enter a name. (Display keyset users will receive Exact Spell instructions; all other users will hear Quick Spell instructions.)

### Changing The First/Last Name Search

6.9 Each directory can be programmed to be organized by last name or by first name. Callers accessing a directory receive system voice prompts that ask them to enter the first or last name of the person for whom they wish to leave a message.

6.10 If an Executive keyset is used to access a directory, the caller may switch back and forth from looking up a last name, to a first name simply by pressing the corresponding menu key. Callers using Standard keysets or single-line sets can press **[5]** to toggle between last and first name.

### Listening To The Next/Previous Name

6.11 After a name has been played, the caller can listen to the previous name in the directory by pressing **[1]**. To listen to the next name, the caller can press **[3]**.

6.12 The directory lists are circular. That is, when the end of the list is reached, the next name played will be the first name in the directory. Or, if the caller scrolls to the beginning of the list, the "previous" name played will be the last name in the directory.

## B. ACCEPTING A NAME

6.13 When the caller is using the Voice Mail feature, and accepts a name, the caller is transferred to the corresponding mailbox. There the caller will hear either the subscriber's recorded greeting, recorded directory name, or, if no recording has been made, the "mailbox number XXX is not available" prompt. The caller can then record a message.

6.14 If the caller is using the Automated Attendant feature, and accepts the name, the caller is transferred to the selected destination (station or mailbox) if it is available. If a station extension is dialed and the destination is not available, the caller is sent to the associated mailbox, if one exists.

## C. REQUESTING ADDITIONAL INFORMATION

6.15 After a name is selected from the directory, the caller has the option of requesting additional information. When requested, the mailbox number, extension number, and name are played (if they have not been disallowed).

6.16 Individual mailboxes and extension IDs can be programmed as "Private" in database programming. A Private number is included in the directory and can be dialed by a caller who knows the number, but the associated mailbox and extension number information are not available to the caller; only the name is played.

6.17 Mailboxes and extension IDs can also be programmed as "Unlisted." That means that the number will not be included in the directory, but can be dialed if the caller knows the extension number.

## D. USING THE DIRECTORIES

### 6.18 TO USE A DIRECTORY:

- (1) Dial the Voice Mail access number. You hear the recorded system greeting.
- (2) Press **[#]** to access the Directory Services application.
- (3) The keys on your telephone are labeled with letters. Use Quick Spell (non-display keyset or single-line) or Exact Spell (display keyset) to enter the desired name, as described on page 5-27, then press **[#]**. (If you wish to exit from the directory without selecting a name, press **[\*]** or hang up.)
- (4) The Voice Mail application will play the selected name. Do one of the following:

*To accept the name, press **[#]**.*

*To hear the previous name in the directory, press **[1]**.*

*To hear additional information for the selected name (if allowed), press **[2]**.*

*To hear the next name in the directory, press **[3]**.*

*To spell a different name, press **[4]** and repeat step 3.*

*To switch the first/last name sort order, press **[5]**.*

## 7. SMDR INFORMATION STORAGE AND RETRIEVAL

7.1 The AXXESSORY Talk PC can be used to capture Station Message Detail Recording (SMDR) information via its RS-232-C connection with the AXCESS System. The SMDR information is stored in a file on the AXXESSORY Talk PC's hard disk for later retrieval.

7.2 Every time a call is completed, the AXCESS SMDR feature records the call, formats it according to SMDR programming (see pages 4-111 and page 6-149), and sends the record to the SMDR output device, if enabled. The formatted record is also sent to the AXXESSORY Talk PC if SMDR buffering is enabled.

7.3 The AXXESSORY Talk PC adds each call record to the SMDR buffer file as it is received. The amount of disk space allocated for SMDR storage is determined in database programming. The default value is zero megabytes of memory. If the call records use disk space exceeding 80% of the allotment, the system generates an

alarm and displays it at the primary attendant station and all administrator stations. Another alarm message is generated if the allotted space is 100% filled. If the maximum buffer capacity is exceeded, the oldest call record(s) are discarded as new ones arrive.

**NOTE:** Since each SMDR call record takes up approximately 81 bytes on the AXXESSORY Talk PC, nearly 13,000 calls can be stored in each megabyte of hard disk space.

7.4 The SMDR records, which are stored in ASCII/binary format, are buffered until they are cleared by the programmer. If desired, the programmer may save and/or restore SMDR data (along with the system database) to floppy disks using the AXXESSORY Talk Save and Restore feature.

7.5 If desired, the SMDR records can be retrieved and processed using a separate call accounting software package (such as the Inter-Tel Inside Track) to create customized reports.

# PROGRAMMING

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## 1. INTRODUCTION

1.1 This section of the Inter-Tel AXXESS manual explains how to program the system. The AXXESS System is functional when defaulted and only requires programming to enable premium features and make changes to meet the customer's special needs. Programming functions are divided among several "windows" so that specific features can be programmed easily.

**NOTE:** Programmers must be properly certified on the AXXESS System to receive technical support.

### A. SYSTEM SOFTWARE PACKAGES AND PREMIUM FEATURE SELECTION

1.2 The AXXESS System software is available in several variations, depending on the PAL that is installed. The PAL ordered with the software determines whether the software is MF or KF rated and how many "premium features" can be enabled on the system. The premium features are assigned "unit" values (shown in the following chart). The PALs provide either 15, 25, 50, 75, or 100 units that may be used for enabling the premium features.

| FEATURE                                 | UNITS REQUIRED |
|-----------------------------------------|----------------|
| Advanced CO Interfaces                  | 7              |
| Analog Voice Mail Hunt Groups           | 5              |
| Automatic Call Distribution Hunt Groups | 5              |
| Automatic Route Selection               | 3              |
| Desktop Interface                       | 10             |
| Directories                             | 2              |
| System OAI Events                       | 30             |
| System OAI Third Party Call Control     | 30             |
| System Forwarding                       | 3              |
| Uniform Call Distribution Hunt Groups   | 5              |

1.3 Through Premium Feature Selection (see page 6-220), the installer/programmer selects features up to the total number of units allowed by the PAL. (A 75-unit system could have all premium features enabled.) The premium features are as follows.

- **Advanced CO Interfaces:** The advanced trunk features in this premium feature include: T1 trunks (including E&M and DID), DID trunks; Caller ID, ANI, and DNIS; and call routing tables.
- **Analog Voice Mail Hunt Groups:** A hunt group can be designated as an analog voice mail hunt group to

enable it to contain the multiple ports of an analog voice mail unit (not AXXESSORY Talk).

- **Automatic Call Distribution (ACD) Hunt Groups:** Automatic Call Distribution (ACD) can be programmed to distribute hunt group calls to equalize call time or call count among the available members. ACD can also provide call information records that can be processed by an external device connected to a system serial port.
- **Automatic Route Selection (ARS):** ARS is a money-saving feature that allows the system to be programmed to select the least expensive route for placing outgoing calls.
- **Desktop Interface:** Desktop Interface is a station-level communications protocol that allows a PC, attached to a PCDPM on an Executive or Standard keyset, to emulate a keyset for call handling. This protocol will allow devices such as PC phones (Like the AXXESSORY Connect), operators' consoles, ACD supervisors, and integrated contact management tools to be developed for the AXXESS system.
- **Directories:** The Directory feature enables display keyset users to "look up" intercom extension numbers and user names, system speed-dial numbers and names, or system feature codes.
- **System Open Architecture Interface (OAI) Events (Level 1 OAI):** System OAI Events is a system-level communications protocol that allows call management tools to be developed for the AXXESS system, such as the AXXESSORY ACD. Contact Inter-Tel for more information regarding these products.
- **System Open Architecture Interface (OAI) Third Party Call Control (Level 2 OAI):** System OAI Third Party Call Control is a system-level communications TSAPI protocol that allows command oriented tools to be developed for the AXXESS System, in addition to the call management tools allowed in System OAI Events. Contact Inter-Tel for more information regarding these products.
- **System Forwarding:** System forwarding provides the ability to program the system so that calls ringing at a station will follow a database-programmed "forwarding path" that routes the call based on the type of call and the status of the intended station.
- **Uniform Call Distribution (UCD) Hunt Groups:** Uniform Call Distribution (UCD) hunt groups provide additional features to improve hunt group efficiency. The features added when UCD is enabled are: announcement and overflow stations, hunt group priority ranking, and hunt group supervisors.

1.4 In all default databases, all premium features are disabled.

1.5 Stand-alone software is always configured to allow all features. However, when attempting to upload the database into a system with fewer allowed units, an error message will be generated and the system will be inoperative.

1.6 The part numbers for the software are as follows:

| SOFTWARE                           | PART NO. |
|------------------------------------|----------|
| AXCESS Software — EPROM version    | 827.8346 |
| AXCESS Software — Diskette version | 827.8347 |
| AXCESS Applications Software       | 827.8348 |
| AXCESSORY Talk Software            | 827.8349 |

1.7 The following PALs can be used for changing the MF-rated system unit values.

| PAL                   | PART NO. |
|-----------------------|----------|
| MF-Rated 15-Unit PAL  | 827.8350 |
| MF-Rated 25-Unit PAL  | 827.8351 |
| MF-Rated 50-Unit PAL  | 827.8352 |
| MF-Rated 75-Unit PAL  | 827.8353 |
| MF-Rated 100-Unit PAL | 827.8354 |

1.8 The following PALs can be used for changing the KF-rated system unit values.

|                       |          |
|-----------------------|----------|
| KF-Rated 15-Unit PAL  | 827.8356 |
| KF-Rated 25-Unit PAL  | 827.8357 |
| KF-Rated 50-Unit PAL  | 827.8358 |
| KF-Rated 75-Unit PAL  | 827.8359 |
| KF-Rated 100-Unit PAL | 827.8360 |

1.9 Lower-unit PALs can be replaced with higher-unit PALs to increase the feature level. (For example, replacing a 15-unit PAL with a 50-unit PAL.). However, if a higher-unit PAL is replaced with a lower-unit PAL, an error message will be generated and the system will be inoperative.

**B. PLAN THE PROGRAMMING SESSION**

1.10 Determine the features that need to be programmed to meet the customer's needs. Then refer to the specific programs and program planning sheets. For example, if the customer wants to use the hunt group feature, refer to the programming information on page 6-80 and the program planning sheet on page 6-274.

## 2. DEFAULT VALUES

2.1 The default values of the features are specified throughout this section of the manual. They are also specified on the program planning sheets that begin on page 6-251. A summary of the default system values is as follows:

### A. CONFIGURATION

- There are 40 keyset stations and 16 trunks in a one-cabinet system. There are 80 keysets and 32 trunks in a two-cabinet system. There are no single-line stations or AXCESSORY Talk applications.
- Intercom numbers are assigned in order beginning with circuit 01.01.01 (intercom number 1000).
- Only station circuit 01.01.01 has a DSS/BLF Unit enabled (the DSS/BLF is circuit 01.01.02).
- Circuit 01.08.01 is configured as a keyset with an RS232 port. (A PCDDPM must be added to an Executive or Standard keyset to use this feature.)
- Passwords are not required to gain access to the database programs or the on-line monitor.
- All premium features are disabled.

### B. ATTENDANT/ADMINISTRATOR

- Circuit 01.01.01 serves as the primary attendant. The circuit is equipped and configured for a keyset.
- Circuit 01.01.01 is the only administrator. It receives all system alarm messages.

### C. STATION FEATURES

- Account Code Type is "none" for all stations.
- No stations have assigned mailboxes.
- The following station features are enabled for all stations:
  - All transient displays
  - Automatic Answer for intercom and outside calls
  - Camp-on indications
  - Camp on to ARS
  - Different alerting and ringback cadences for intercom and outside calls
  - Do-not-disturb
  - Handsfree mode

- Hunt group replace
- Paging receive
- Standard tone frequencies
- System forwarding
- Transient call indication on call answer

- Off-hook voice announce receive, transmit, and immediate transmit are disabled at all stations.
- No keysets have do-not-disturb override enabled.
- All stations receive do-not-disturb tones, instead of busy signal.
- Redial mode is "last number dialed" at all stations.
- There is not an automated attendant, message center, voice mail extension, alternate message source, or data port extension programmed for any station.
- The Outgoing access number for all stations is trunk group 1.
- The transfer recall destination for each station is the station's extension number.
- All Basic and Standard keysets are programmed for "standard" speakerphone use.
- No usernames are assigned.
- No stations are assigned to hunt groups.
- There are two pre-programmed keymaps. Key map #1 is for Standard and Executive Keysets. Key map #15 is for Basic Keysets. When a keyset is plugged in, the system determines which type of keyset it is and assigns the appropriate key map (#1 for Standard/Executive or #15 for Basic).
- There are no DSS/BLF Units or other devices attached to keysets.

### D. SYSTEM FEATURES

- The following system-wide features are enabled:
  - Broadcast alarms to all administrators
  - Broadcast station off-hook alarms
  - Caller ID on keyset displays (if the premium feature is enabled)
  - Drop incomplete outgoing calls
  - Music-on-hold for intercom calls
  - Off-hook voice announce
  - Ring flash on DSS/BLF keys
  - Station monitoring tones
  - Validate voice mailbox numbers

- The following system-wide features are disabled:
  - Audible message indications for single-line sets
  - Handsfree announce on system forward transfer
  - System speed-dial override of toll restriction
  - SLC ring zones
  - Message lamps for single-line sets
- DISA and automated attendant callers, as well as intercom callers, hear ringback while being transferred.
- System time is displayed in 12-hour format
- The system is in day mode.
- All keysets are in paging zone 1. No trunks or external paging ports are assigned to paging zones.
- No system forwarding paths are programmed.
- No system or station speed-dial numbers are programmed.
- None of the system speed-dial locations are identified as non-display numbers.
- Stations and trunks have "Unrestricted" class of service.
- All area and office codes are unrestricted.
- No home/local area codes are programmed.
- Account code default length is four digits.
- SMDR output is enabled.
- The Emergency Call feature is programmed to select trunk group 1 and dial 911.

#### E. TRUNKS

- All trunks use the Valid Call timer answer supervision and normal hybrid balance.
- All trunks are programmed for DTMF signaling.
- Caller information display is disabled on all trunks.
- All trunks are assigned to trunk group 1.
- All trunk groups search in linear order.
- Circuit 01.01.01 receives ring-in and can answer all trunks during day mode and night mode. There are no call routing tables programmed.
- Stations on DKSCs 1 and 2 have ring-in assignment and can answer all trunks when the system is in night mode. All stations have outgoing access on all trunks.
- All trunk groups are subject to toll restriction. None absorb digits.
- Automatic Route Selection (ARS) is not enabled.
- No home/local area codes are programmed.

#### F. AXCESSORY TALK

- There is no AXCESSORY Talk communications port.
- There are no default applications, extension IDs, group lists, or mailboxes.
- All time slot groups are programmed for 8 channels. All applications are assigned to time slot group 1.
- The attendant for all applications is circuit 01.01.01.
- Custom recording 01 is the default voice mail greeting. Custom greeting 02 is the default automated attendant greeting.

### 3. MICROSOFT WINDOWS

**NOTE:** The following information is provided by Microsoft, regarding their licensing policies.

**3.1** AXXESS Database Programming operates in a graphics environment called *Microsoft Windows*, created by Microsoft Corporation. An extension of the MS-DOS operating system, *Microsoft Windows* gives a standard look and feel to AXXESS Database Programming and all other *Windows* applications.

**3.2** The AXXESS Database Programming package contains all the software necessary to run AXXESS Database Programming. You must run AXXESS Database Programming under *Microsoft Windows* version 3.1 or higher.

**3.3** With *Microsoft Windows*, you can take advantage of these additional features of the *Windows* environment:

- **Running multiple applications:** You can run several applications under *Windows* at one time and easily switch between them, creating an integrated work environment.
- **Data exchange between applications:** You can transfer data between AXXESS Database Programming and other standard DOS applications as well as other *Windows* applications.
- **Windows control of the DOS environment:** From the *Windows* environment you have easy access to all *Windows* and non-*Windows* applications, files, directories, and disks, and control all DOS-related tasks such as directory or file management and formatting disks.

**3.4** To run AXXESS Database Programming with other applications under *Microsoft Windows*, you need to license and install *Microsoft Windows* version 3.1 or higher.

### 4. HOW TO USE THE PROGRAMMING WINDOWS

**4.1** The database is divided up into "windows" that permit the programmer to view and change the system programming one section at a time. Each of the programming windows contains boxes and/or buttons for selecting and entering specific information. These include: Text Boxes, List Boxes, Drop-Down List Boxes,

Command Buttons, Option Buttons, and Check Boxes. Samples of each are shown in the following paragraphs.

**4.2** To move among items in a window, you may use the TAB key, ALT key, or mouse, as follows:

- **Using the TAB key:** Press the TAB key repeatedly until the desired area is highlighted by a gray box and a dark outline or filler. To move in reverse, press the SHIFT and TAB keys at the same time.
- **Using the ALT key:** Pressing a combination of the ALT key and the underlined character allows you to move directly to the desired area. (For example, in the following sample Text Box, you would use ALT-D because the "D" in Description is underlined).
- **Using a mouse:** To select an item, simply place the mouse cursor on the desired item and click the left button.

#### A. TEXT BOX

**EXAMPLE:**

Description:

**4.3** A text box is used when the requested information requires typing. The vertical line is the cursor that indicates where text will be inserted. As you type, the line moves to the right, pushing any existing text to the right. The line can be moved right or left using the arrow keys on the keyboard or by pointing the mouse cursor at the desired place and clicking the left button once.

**4.4** If the contents of the box are highlighted (in reverse video) when you begin typing, the contents are replaced with the new information. You can erase the entire contents of a text box by highlighting the text and then pressing the backspace or delete key. To overwrite the current information, start entering new information.

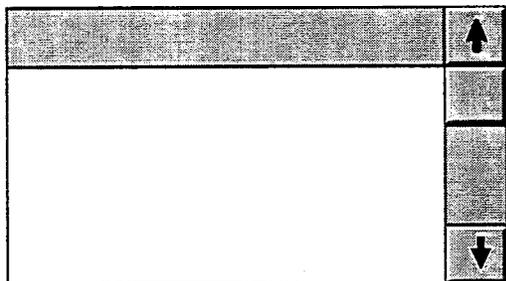
**4.5** To correct mistakes made while entering information or to erase existing information, use the backspace or delete key and retype the entry.

**4.6** To select a text box, follow the instructions in paragraph 4.2. When the cursor appears in the box, you can begin typing.

**4.7** The system recognizes both upper- and lower-case characters. When typing, you may use either case or a combination. In some cases, such as username entries, the entry will appear in upper-case letters, even when lower-case letters are typed.

**B. LIST BOX**

EXAMPLE:



4.8 The list box is used for several purposes, as follows:

- **Typed information:** When programming items such as do-not-disturb and reminder messages, the list box shows the current values. Whenever an item in the list is (re)programmed, the list box shows the new information.
- **Enable/Disable and Yes/No lists:** Items such as system features have only two states (enabled/disabled, on/off, etc.). When these appear in a list box, toggling the feature changes the display in the list box.
- **Include/Exclude lists:** Some programs require you to list the stations or trunks that are on “include” or “exclude” lists. To move an item from one list to the other, highlight the desired item and select the appropriate command button. It is automatically moved or copied to the other list.

4.9 There are several methods for highlighting a line in a list box. They are as follows:

- **Arrow keys:** Use the up or down arrow key to move the highlight bar.
- **HOME, END, PAGE UP and PAGE DOWN keys:** You can use the HOME key to move directly to the top of the list, or the END key to move directly to the bottom. The PAGE UP and PAGE DOWN keys move up or down the list one screen at a time.
- **First letter or digit of desired item:** When a list is presented in alphabetical or numerical order, you can quickly move to the first item beginning with a specific letter or number by entering that character. For example, for a list of stations by name, you can move to names that begin with “C” by pressing the C key. You can then scroll through those entries by pressing the selected letter repeatedly. That is, each time you press the C key, the highlight bar scrolls to the next entry that begins with “C.”

- **Scroll bar:** When the list contains more items than can be shown in the list box, there will be a scroll bar along the right edge of the list box. It is made up of a band with an arrow at each end and a small box (as shown in the List Box example). The box shows the current position in the list. The band is a scroll bar and it is used, with the mouse cursor, to move through the list. Point the cursor at either of the arrows and click the left button to move one line at a time, or point the cursor at the box and hold down the left button. Moving the mouse “drags” the box up or down and scrolls through the list.

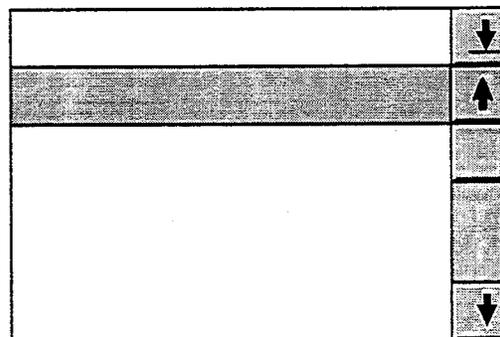
4.10 To program a highlighted item in the list box, select an appropriate command button in the window. Or, if using a mouse, double-click on the list box item to gain access to the programming window.

**C. DROP-DOWN LIST BOX**

EXAMPLE:



4.11 When selected, a drop-down list box becomes a list box as shown below. To select an item, use the up or down arrow key to move the highlight bar. When deselected (closed) the list box will show the chosen option.



4.12 To open a drop-down list box with a mouse, point the cursor at the arrow and click the left mouse button. To close the box, point to the arrow and click again.

4.13 To open a drop-down list box without a mouse, highlight it and press ALT-▼. To close the box, press ALT-▲. To scroll through the list without opening the drop-down box, highlight the box and press ▼ and ▲.

4.14 When scrolling through the list, you cannot “wrap” to the beginning of the list after reaching the end (or wrap to the end from the beginning). The list is linear and will stop when you reach the beginning or ending entry.

#### D. COMMAND BUTTON

EXAMPLE:



4.15 Selecting a command button executes a single command or allows access to another window. If the command is followed by an ellipsis (...), it will call up a window. To select a command button, do one of the following:

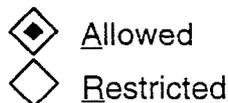
- **TAB key:** Use the TAB key to advance to the command button and to *highlight* it. Then press the SPACE BAR or RETURN to *select* it.
- **ALT key:** Press the ALT key plus the underlined character. (In the sample above, you would use ALT-P to execute the Program command).

**NOTE:** The OK and Cancel command buttons do not have underlined letters. To quickly select Cancel, you may press ESC. For OK, you may press ALT-ENTER.

4.16 Frequently, a command button is highlighted by a dark border while you are programming in a window. If so, pressing the RETURN key will execute that command automatically. You do not need to TAB to the button first.

#### E. OPTION BUTTON

EXAMPLE:



4.17 Option buttons are used when there are two or more options for a feature and you can choose only one. The options are shown in a list and the buttons are located along the left. Selecting the desired button places a dot in it to show which option was chosen.

4.18 Option buttons can be selected using one of the following methods:

- **TAB key:** Use the TAB key to advance to the list of options. Then use the up or down arrow key to move the dot to the desired button.
- **ALT key:** Press the ALT key plus the underlined character to move the dot to the desired option. (In the sample above, you would use ALT-A or ALT-R.)

#### F. CHECK BOX

EXAMPLE:



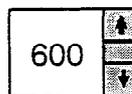
4.19 Check boxes are used when an option is available that has only two states (on/off, enabled/disabled, or yes/no). When the box is selected, a check mark is placed inside it to indicate an affirmative state (on, enabled, or yes). Selecting a box that already contains a check mark, removes the check mark (off, disabled, or no).

4.20 Check boxes can be selected using one of the following methods:

- **TAB key:** Use the TAB key to advance to the check box to *highlight* it. Then press the SPACE BAR to *select* it.
- **ALT key:** Press the ALT key plus the underlined character to place the check mark in the box or remove it. (In the sample above, you would use ALT-D.)

#### G. SCROLLING EDIT BOX

EXAMPLE:



4.21 Scrolling edit boxes are used when a list of entries can be selected or edited. To use one, select it and enter a new value in the edit box (a warning will tell you if the entry is invalid). Or, scroll up or down through the values using the arrow keys or by selecting the arrows on the box with a mouse.

#### H. ITEMS THAT CANNOT BE SELECTED — DIMMED ITEMS

4.22 If an item in a window appears in a dimmed color, it cannot be selected unless an associated item is selected. For example, in the account code programming window shown on page 6-27, the Standard Account Code drop-down list box is dimmed and cannot be selected unless the Standard option is selected.

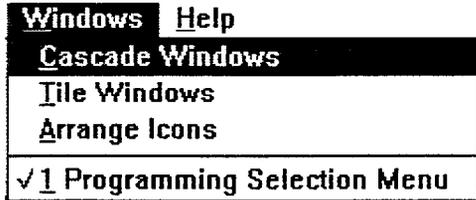
#### I. HOURGLASS SYMBOL CURSOR

4.23 Occasionally, the system will change the cursor to an "hourglass" shape. This indicates that the system is performing an internal operation and cannot respond to input. Wait for the cursor to return to normal before entering more information.

## J. MANAGING MULTIPLE WINDOWS

4.24 One of the most useful Windows features is the ability to have several windows open simultaneously. Refer to your Windows user manual for detailed information on running multiple applications, minimizing windows, arranging icons, and arranging windows.

4.25 The window shown on page 6-22 has a drop-down list box, labeled "Windows," that includes the following options:



- **Cascade Windows:** This option is used when you have several windows open. Selecting this option reduces the size of the windows and arranges them in

layers so that each title bar is visible. The active window is in front and fully visible.

- **Tile Windows:** This option is also used for multiple windows. Selecting it reduces the size of the windows and arranges them side by side. The mouse cursor indicates the active window.
- **Arrange Icons:** If you have one or more windows reduced to icons, selecting this option will arrange them in a row along the bottom of the screen.
- **List of Open Windows:** (Shown here as "Programming Selection Menu") At the bottom of the drop-down menu, any open database windows are listed. A check mark next to a window name indicates the currently active window. To change windows, scroll to the desired name. Note that you cannot select a window that contains information that is affected by a window already in use; you will receive an error message if you attempt to open two windows that affect the same programming information.

## 5. SYSTEM SET-UP FOR PROGRAMMING

5.1 There are three methods that can be used for programming the AXXESS System.

- On-site programming with an attached PC
- Programming using a stand-alone PC
- Remote programming using a modem connection

5.2 Each is described separately in the following pages. Only one programming session should be in operation at a time.

5.3 For on-site, remote, or stand-alone programming, the computer must be an IBM AT-compatible personal computer (PC) with a minimum of:

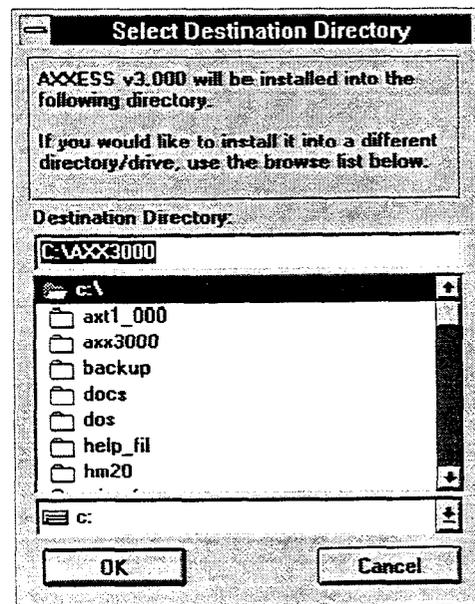
- 80286 or higher microprocessor (80386 recommended)
- Windows 3.1
- MS-DOS 3.3 or higher (MS-DOS 5.0 recommended)
- 13 megabytes memory available on the hard disk drive (17 megabytes recommended)
- 1 megabyte RAM (2 megabytes recommended)
- 1.2-megabyte, 5¼-inch or 1.44-megabyte, 3.5-inch floppy disk drive (double sided/high density)
- EGA or better graphics monitor (VGA recommended)
- A mouse is optional but recommended (if a serial mouse is used, install on an unassigned COM port)

### A. INSTALLING THE PROGRAMMING SOFTWARE

5.4 The following instructions assume that Windows 3.1 software is installed on the PC and the user is familiar with Windows procedures. To install the programming software, follow these steps:

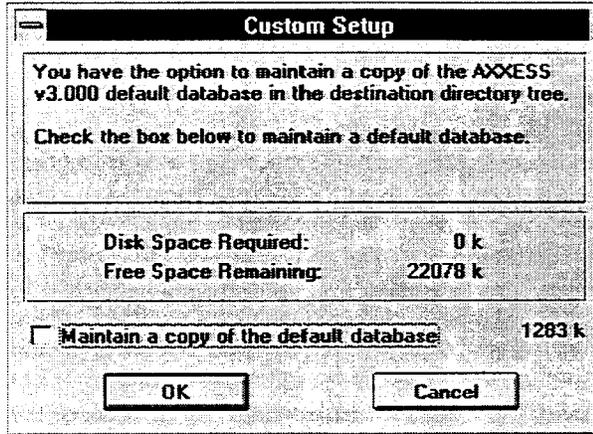
- (1) Ensure that Windows is running.

- (2) Insert Database Programming Disk 1 into the PC floppy disk drive (A or B).
- (3) Open the Program Manager. Ensure that the Program Manager Option for "Minimize on use" is not enabled.
- (4) Select the "File" drop-down menu in Program Manager. Then select "Run..." from that menu. A window with a text box appears. In the Command Line text box, enter A:SETUP (or B:SETUP if the B drive is used). Then select the OK command button.
- (5) A "Welcome" screen appears. After reading the information in the screen, press RETURN to select the OK command button. The following window appears.



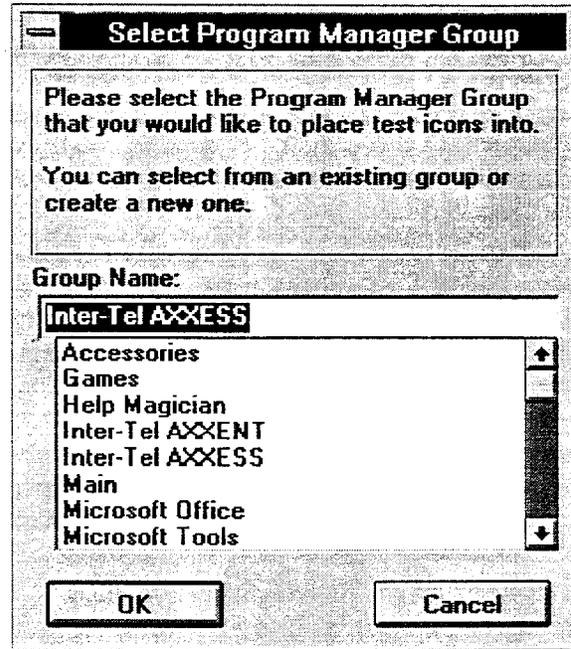
- (6) Select the OK command button to accept the C:\AXX3000 directory. Or, to select another directory enter a name in the text box or select a name from the list box. If the directory you selected already exists, another window will verify that you want to use that directory. Select Yes to use the directory and continue or No to select another directory.

- (7) The next window, shown below, asks if you want back-up copies of any files the installation may replace. Select the desired Yes or No response to continue, or select Cancel to end the installation. The following window appears next.



- (8) If you want to maintain a default copy of the database, which would be used if you selected the Default Database option in the Database Save/Restore programming area during a stand-alone session, place a check mark in the box. Select the OK command button to continue or the Cancel command button to stop the installation.
- (9) If you have an existing AXXESS database in the selected directory, a window will appear that warns you that the database will be overwritten. If you want to make a back-up copy of that database before completing the installation, select Cancel.
- (10) During the installation, a window displays the percentage of the files that have been copied. When prompted, insert Disk 2 and select OK to continue.
- (11) When the Select Program Manager Group window appears, as shown below, select the OK command button to place the AXXESS icon in the Inter-Tel AXXESS programming group. Or, if you want to place the icon in an existing group, select a name from the list box. To create a new programming group, enter the desired name in

the text box. The installation software creates and/or places AXXESS in the selected programming group. The AXXESS software is loaded on your PC and ready to use.



- (12) The last installation window gives you the opportunity to view a "read me" file that explains the enhancements that have been made to the AXXESS System. If you would like to view it now, select Yes. If not, select No (you can still view it later by selecting the Readme icon in the programming group).
- (13) To use the application, you must have Program Manager running. Select the Inter-Tel AXXESS programming group and then select the AXXESS Database Programming application. The Inter-Tel logo screen displays and you may begin programming. Also included in the programming group is an "Uninstall" program. If you ever wish to remove AXXESS from the PC, select this icon. The Uninstall program will step you through the process. You can allow it to automatically remove all of the files, or you can control the uninstall process by selecting the files to delete.

## B. ON-SITE PROGRAMMING

**5.5** For on-site programming, the PC is connected directly to the AXXESS System. An RS-232-C cable from COM 1 or COM 2 on the PC is connected to one of the RS-232-C connectors on the CPU, MEM, or Options card.

**NOTE:** *Do not* connect the programming terminal to an RS-232-C port that has been programmed for System OAI output (SMDR or error report output is allowed). In the default state, the RS-232-C ports are *not* programmed for output.

**5.6** To begin a direct-connection programming session, press F5 (or press ALT-S and then select "Connect to Remote System" from the pull-down menu) while the Inter-Tel logo is displayed. The window shown on the page 6-16 is displayed. You can then set the correct session information.

**5.7** If you attempt to establish a direct-connect programming session using a PC COM port that is connected to a modem, the connection will not be allowed and a warning will appear.

## C. STAND-ALONE PROGRAMMING

**5.8** To use a PC for stand-alone programming, the system software must be loaded on the hard drive. The system database information can then be stored on double-sided/high density floppy disks for later transfer to the AXXESS and AXXESSORY Talk using Save/Restore.

**5.9** When the Inter-Tel logo screen is displayed, press the F3 key. Or, press ALT-P to view the System Programming pull-down menu and then select Database Programming by highlighting it (use the up or down arrow key, if necessary) and pressing RETURN. The AXXESS Database Programming Menu appears, as shown on page 6-22. All programming can then be completed as described in this chapter.

**5.10** The AXXESS System may prompt you for a password; enter the password, if one is required. When the AXXESS Database Programming Menu displays on the PC monitor screen, programming can then be completed as described in this chapter.

## D. REMOTE PROGRAMMING VIA MODEM

**5.11** A programmer can use modem access to the system database for the purpose of customer programming

or maintenance/diagnostics from a location other than the customer site. This allows the service personnel flexibility in making database changes without visiting the site and, in system trouble situations, the service personnel may perform preliminary investigations before going on site.

**5.12** The AXXESS System at the remote location must be equipped with an auto-answer modem connected to a system RS-232 port.

**5.13** To use the remote programming feature, the user dials the telephone number that directly rings in to the modem, is transferred to the modem, or dials the modem extension number using DISA or a station. When the modem circuit rings, the auto-answer modem will automatically answer the call and generate modem tone. The calling party may then connect the programming computer's modem and proceed with the programming session. When the session is completed, the calling party hangs up or disconnects the call from the modem. When this happens the system modem will no longer hear modem tone and will disconnect.

**5.14** Executive or Standard Keysets with PC Data Port Modules that are enabled for RS-232 communication (see page 6-237) may dial up the modem directly and, using the attached PC, can generate programming reports or monitor SMDR (they cannot perform database programming). However, the MDPM circuit should be programmed with camp-on tones disabled, extended ring cadence enabled, different alerting cadence disabled, and different ringback cadence disabled (see page 6-30).

**5.15** To set up or check the modem parameters, run the Inter-Tel AXXESS System application and display the logo screen. Then select the "System Programming" drop-down menu (shown on page 6-18) and choose the Modem Programming option from the menu. A window appears as shown on the next page.

**5.16** To connect a remote programming session while the Inter-Tel logo screen is displayed, press F5 (or press ALT-S and then select "Connect to Remote System" from the pull-down menu). The window shown on page 6-16 is displayed. You can then set the correct session information.

**5.17** If a remote programming session is active on a system with an AXXESSORY Talk, and the communications connection fails, the remote programming session will be terminated.

**Programming Modem Parameters**

**5.18** The window shown below is used for setting up the modem parameters. It can be chosen by selecting Modem Programming from the System Programming drop-down menu in the Inter-Tel logo screen header (shown on page 6-18). Enter the necessary information as follows. The default values are shown in the screen below. Refer to the user manual for your modem to determine the necessary parameters.

**5.19 INITIALIZATION:** Enter the desired command strings in the text boxes for initializing the modem for incoming and outgoing calls.

**5.20 DIALING:** To determine the signals that will be sent before dialing, enter the desired information in the Prefix text box. To determine the after-dialing signals, enter the information in the Suffix text box.

**5.21 RESPONSES:** To determine the messages that will appear when the modem makes a connection or reaches a busy number, enter the desired text in the appropriate boxes.

**5.22 PERFORM AUTOMATIC BAUD RATE DETECTION:** This option is used for high-speed mo-

dem only. The DTE baud rate controls the communication between the CO line and the modem. Allowing automatic baud rate detection keeps the CO-to-modem rate stable while adjusting the PC-to-modem baud rate. To automatically adjust the baud rate, select the check box to place a check mark in it. To remove the check mark, select the box again.

**5.23 USE DTR TO HANG UP MODEM:** If this option is enabled, the DTR signal is dropped for 0.5 seconds when the programmer disconnects the remote modem connection (by pressing F6 or pressing ALT-S and then selecting "Disconnect From Remote System" from the pull-down menu). This disconnects the modem on the programming PC, not the system modem. It should be used only if the modem is having trouble disconnecting from the call and only on modems that are designed to disconnect in this manner.

**5.24 DEFAULT:** To return all values to default (as shown below), select the Default command button.

**5.25 OK/CANCEL:** When modem programming is complete, select the OK command button to save the changes. Or, to exit without saving changes, select the Cancel command button.

**Outgoing Remote Session Information**

Modem Connection     Direct Connection

COM Port: COM1:    Baud Rate: 9600

Description: Inter-Tel Integrated Systems

Phone: 602-961-9000

Connect    Save    Cancel

### Connecting A Modem Session

**5.26** This window is used for making the modem connection. It can be reached by selecting Connect To Remote System from the System Services drop-down menu in the Inter-Tel logo screen header (shown on page 6-18).

**5.27 MODEM/DIRECT CONNECTION:** Indicate whether this is a modem connection or a direct connection by selecting the appropriate option button. The black dot appears in the selected option.

**5.28 COM PORT:** Indicate which COM port your PC is using by scrolling the highlight bar in the drop-down list box to the correct COM port.

**5.29 BAUD RATE:** Indicate the baud rate at which your PC will be operating by selecting the Baud Rate drop-down list box and scrolling the highlight bar to the desired baud rate.

- *If using a modem,* select the rate that matches the baud rate of the modem extension that will be used.
- *If using a direct connection,* select the rate that matches the RS232 port.

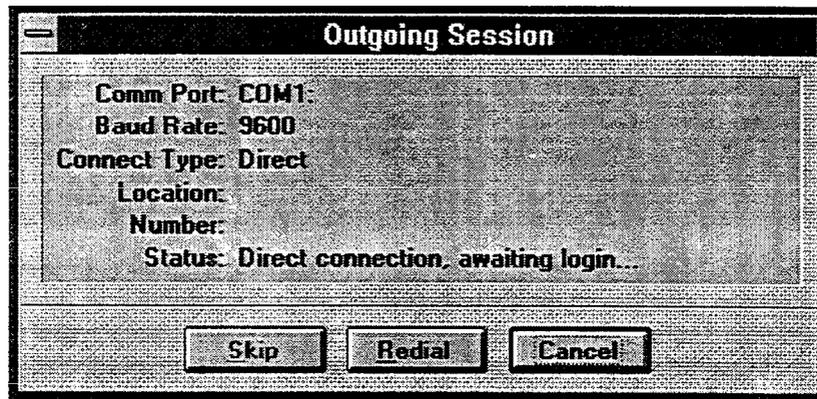
**5.30 DESCRIPTION:** For a modem connection, enter a name for the remote modem site in the Description text box.

**5.31 PHONE:** For a modem connection, enter the telephone number of the remote modem site in the Phone text box. Special characters can be included in the number if they are accepted by the modem. Refer to the user manual for your modem to determine the necessary characters.

**5.32 SAVE:** When the information appears as desired, select the Save command button. This replaces the default values with the new information so that you do not have to repeat this procedure each time you call this customer.

**5.33 CANCEL:** To exit without connecting a programming session, select the Cancel command button.

**5.34 CONNECT:** When the session information is correct, begin the programming session by selecting the Connect command button. A window appears as shown on the next page. The session information is automatically saved when you select Connect.



**5.35** This window shows the information as it was programmed in the window on the previous page, including the COM port, baud rate, modem/direct connection type, site description, and telephone number. The "Status" line changes to indicate that the PC is configuring the modem, dialing, waiting for a connection, and setting up a connection.

**5.36** The command buttons allow the options of canceling the connection or redialing the number if problems arise (the Skip button is used for Inter-Tel engineering purposes only). If the software is unable to communicate with the modem, select the Cancel command button and check the connection between the modem and the PC. Also verify that the modem is connected to the proper port. To try again, select the Redial command button.

**5.37** When the connection is completed, the Inter-Tel logo screen appears. To begin the programming session, press the F3 key. Or, press ALT-P to view the System Programming pull-down menu and then select Database Programming by highlighting it (use the up or down ar-

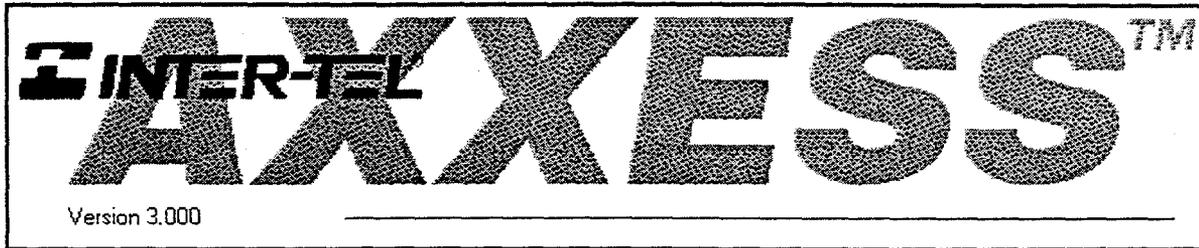
row key, if necessary) and pressing RETURN. The AXXESS Database Programming Menu appears.

**5.38** The AXXESS System may prompt you for a password; enter the password, if one is required. When the AXXESS Database Programming Menu displays on the PC monitor screen, programming can then be completed as described in the following pages.

**NOTE:** If used, Save/Restore will take longer to perform via modem than with a direct connection due to the slower baud rate. If the Restore function is used, the associated system reset, when completed, will disconnect all calls including the modem connection.

**5.39** If the modem connection is lost during the programming session, allow a minute for the AXXESS modem to reset, then re-establish the call using the procedure given on page 6-16. All changes that were saved by a system update before the connection was lost will be retained in AXXESS System memory.

**5.40** To disconnect from the remote programming session when the Inter-Tel logo screen is displayed, press F6 or press ALT-S and then select "Disconnect From Remote System" from the pull-down menu.



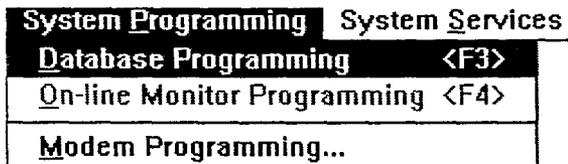
## 6. INTER-TEL LOGO WINDOW

6.1 The logo window is the first window that is displayed in any programming session.

6.2 The information at the bottom of the screen shows the following:

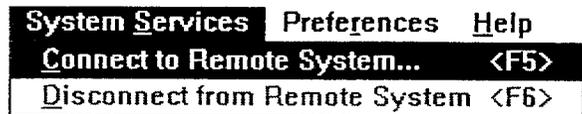
- Current time
- Type of programming session (Local or Remote). When on a direct-connection or remote session, be sure that this shows "Remote." When "Local" is shown, only the database on the PC hard disk is updated, and nothing is communicated through the modem.
- The "%" box shows the percentage complete when a selected programming area is being loaded. When it reaches 100%, the programming screen is displayed.
- The box in the lower left corner will show "LOG" if any Database Programming errors have been logged during the programming session. If so, the messages are logged in the SYSHIST subdirectory in the file apperrXX.txt (XX = 01-20).

6.3 The window header contains these options: Exit, System Programming, System Service, Preferences, and Help. Selecting the Exit option or pressing ALT-E ends the programming session. The other options allow access to drop-down menus and can be selected by pressing ALT and the underlined letter (P, S, R, or H). The drop-down menus and their uses are described in the following paragraphs.



6.4 **System Programming:** This drop-down menu includes:

- Database Programming for beginning a programming session (described on page 6-14)
- On-Line Monitor Programming (used by Inter-Tel Engineering personnel)
- Modem Programming (described on page 6-15).

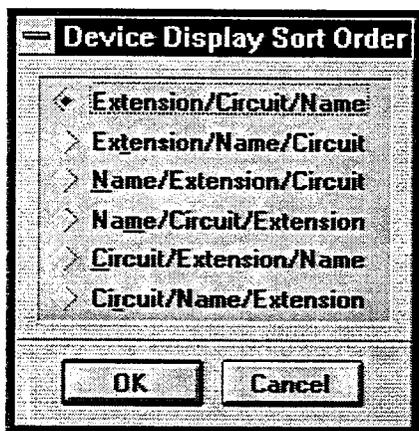


**6.5 System Services:** This drop-down menu includes Connect To Remote System and Disconnect From Remote System which are used for remote programming, as described on page 6-14.

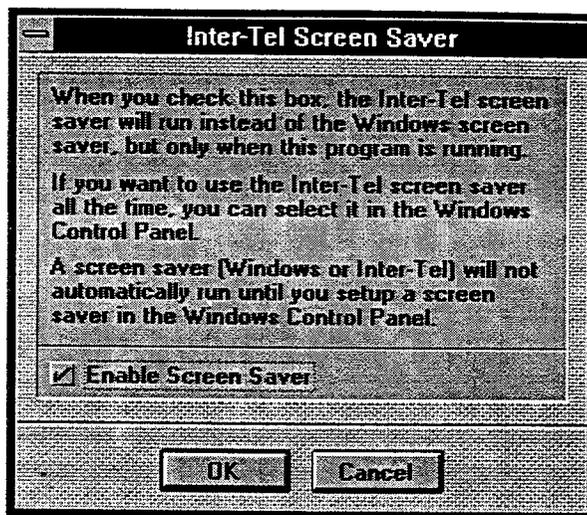


**6.6 Preferences:** This drop-down menu includes the following options:

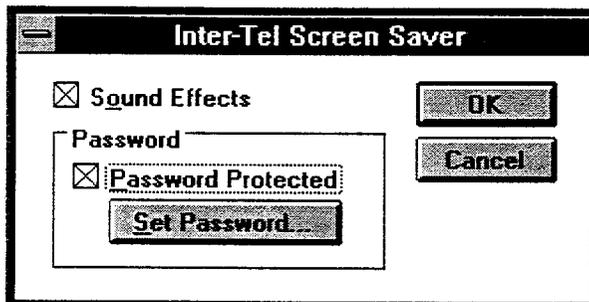
- **Device Display Sort Order (Ctrl+D):** This allows you to change the order in which devices (stations, trunk groups, etc.) are sorted. The following window appears when this option is selected. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



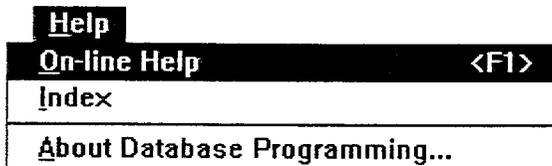
- **Enable Screen Saver:** When this option is selected, the following window appears. It explains that the Inter-Tel screen saver will run instead of the Windows screen saver when the option is enabled.



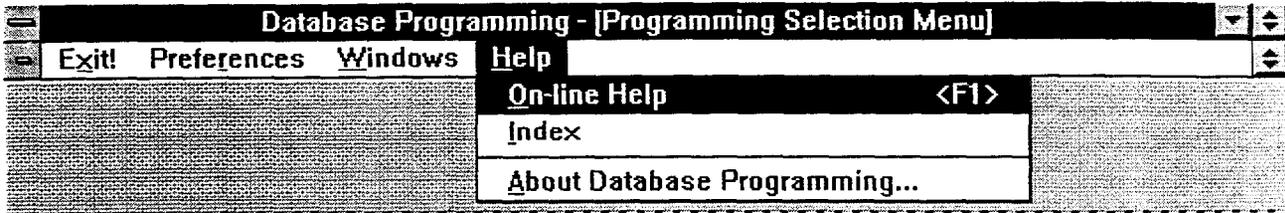
- **Setup Screen Saver:** When you select this option, a window appears as shown below. It allows you to enable sound effects (the “blip” when the logo changes direction) and set a password for clearing the screen saver.



- **Run Screen Saver (Ctrl+S):** This option immediately enables the screen saver.



**6.7 Help:** The Help drop-down menu allows access to the on-line Help files, as described on page 6-20. This drop-down menu also includes an entry titled “About Database Programming” that, when selected, displays the software part number and generation date. If viewed after a remote programming session is started, it will also show the software version numbers.



## 7. USING THE HELP UTILITY

7.1 The AXXESS System has an on-line Help feature that provides general and context-related information. You can easily find information on features, programming entries, and parameters. And, you can move among the topics to read information on related subjects.

7.2 Help is available from any programming window. To read the Help files, use one of the following methods:

- Select the Help drop-down menu from a window header (like the one shown above) by pressing ALT-H or selecting it with a mouse. When the menu is displayed, press O or F1, or use the mouse, to select On-Line Help to enter the Help utility. To see an index of Help files, press I or select Index.
- Press the F1 key on your keyboard. This gives you access to the Help file that is related to the active window in your programming session. (The programming area where your cursor is located is the active window.)

7.3 The AXXESS Help Utility is used as you would any Windows application help utility. (You may wish to refer to your Windows manual if you are unfamiliar with Help.)

7.4 The AXXESS Help Utility window has a top banner as shown below and the selected text is shown in the lower portion of the screen. The four commands along the top of the AXXESS Help screen are used for access

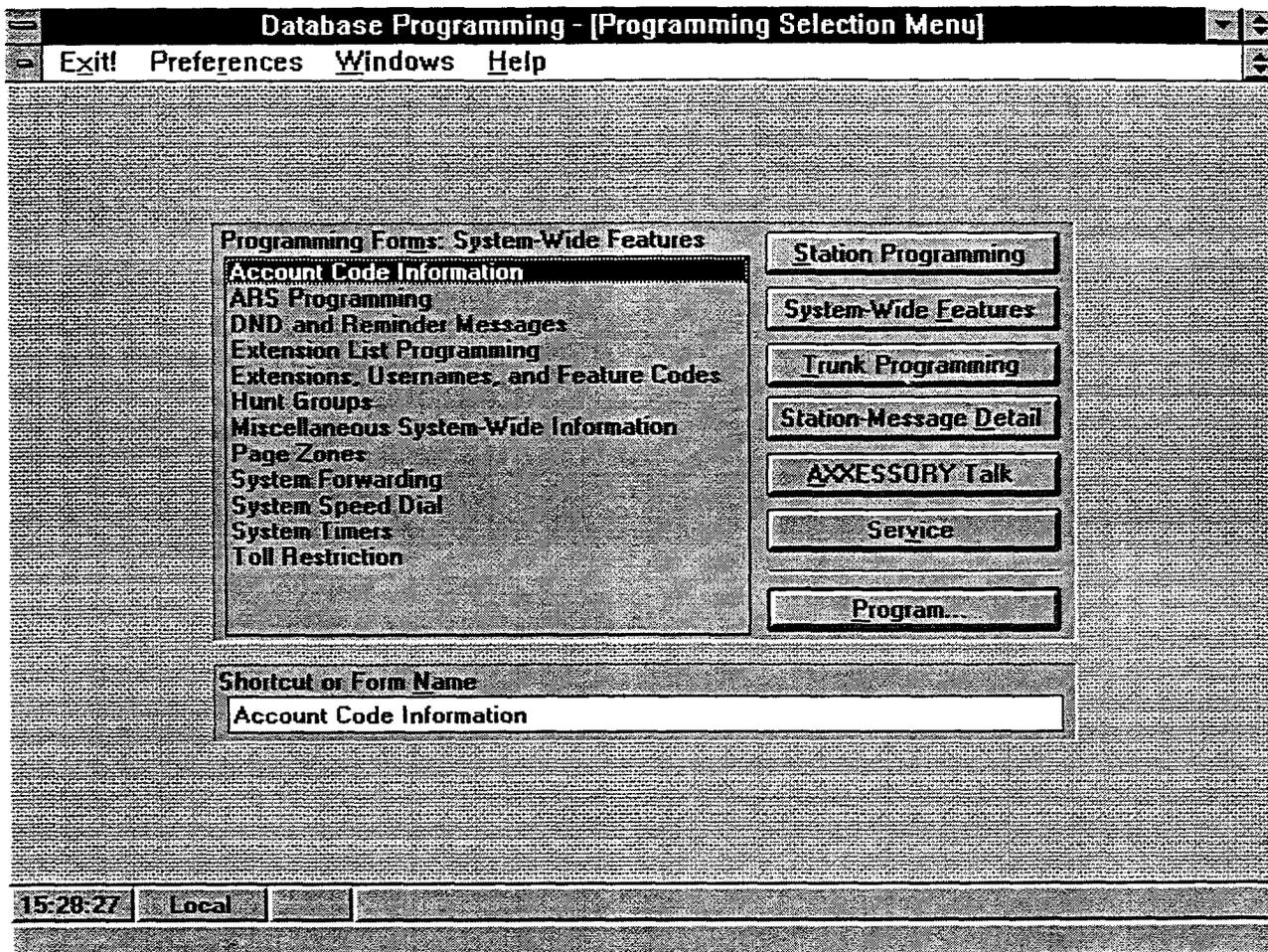
to the drop-down menu topics, as shown in the following table:

| COMMAND  | DROP-DOWN MENU OPTIONS                                                                                                                                                                                                                                                       |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| File     | <p><i>Open:</i> This allows you to open other files.</p> <p><i>Print Topic:</i> This option prints the displayed topic.</p> <p><i>Print Setup:</i> This allows you to set your printer parameters.</p> <p><i>Exit:</i> Select this option to exit from the Help Utility.</p> |
| Edit     | <p><i>Copy:</i> Use this option to copy the displayed topic to your Windows clipboard.</p> <p><i>Annotate:</i> This allows you to make notes about the Help topic and store them in the Help utility for later reference.</p>                                                |
| Bookmark | <p><i>Define:</i> This allows you to place a "bookmark" on a Help topic so that you can return to it quickly. You can also delete bookmarks from this menu.</p> <p><i>List of Marks:</i> Existing bookmarks are listed and can be selected.</p>                              |
| Help     | <p><i>How to Use Help:</i> Select this option for complete instructions on using Help.</p> <p><i>Always on Top:</i> Select this option to keep the Help window positioned in front of all others.</p> <p><i>About Help:</i> This option displays licensing information.</p>  |



7.5 There are also six command buttons along the top edge of the Help Utility window. The functions of these buttons are as follows:

| COMMAND  | FUNCTION                                                                                                                                                                |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Contents | This displays the Table of Contents for the AXXESS On-Line Help topics.                                                                                                 |
| Search   | This button displays a text box window that allows you to type in a key word or phrase that you would like to locate.                                                   |
| Back     | After you have moved from topic to topic, this allows you to back up one topic at a time each time it is selected.                                                      |
| History  | This displays a window that shows a sequential list of the topics you have looked at. You can scroll through the list and select the topic that you would like to view. |
| <<       | Selecting this button displays the previous topic in a series. If there is no previous topic, the button is dimmed and cannot be selected.                              |
| >>       | Selecting this button displays the next topic in a series. If you are in the last topic of the series, the button is dimmed and cannot be selected.                     |



## 8. DATABASE PROGRAMMING MENU WINDOW

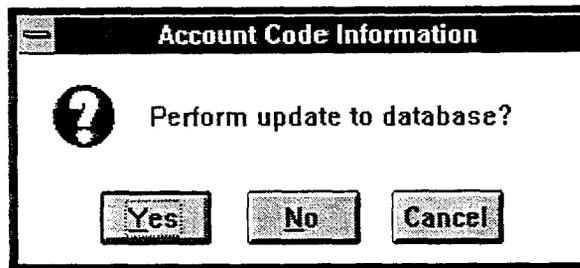
8.1 The Database Programming Menu window shown above contains window header command that provide access to drop-down menus and it allows access to all other programming areas.

### A. WINDOW HEADER COMMANDS

8.2 The window header contains four options: Windows, Preferences, Exit, and Help. The options can be selected by pressing ALT and the underlined letter (X, R, W, or H). The processes performed by these options are as follows.

8.3 **Exit:** If any programming changes have been made, the following screen appears when Exit is selected from an application window header. It offers the options of saving the changes that were made in the associated window and exiting to the Database Programming Menu (select Yes), exiting to the Database Programming Menu without saving the changes (select

No), or returning to the programming window to continue making changes (select Cancel).



**NOTE:** If, during the programming session, any cards or devices were equipped or unequipped, or an extension list, trunk group, or extension number was changed, the system will tell you that a system reset is required. The window shown on page 6-215 is displayed. If desired, you can delay the reset to occur during a low-use time period or reset the system immediately. (Follow the instructions given on page 6-215.) That window will also appear if a delayed reset is still pending from a previous programming session. You can leave the scheduled reset unchanged or reprogram it as desired.

**8.4 Preferences:** This drop-down window is identical to the one shown on page 6-19.

**8.5 Windows:** This drop-down menu is used for managing multiple windows and icons (refer to page 6-11).

**8.6 Help:** This drop-down menu is identical to the one shown on page 6-19

## B. ACCESS TO PROGRAMMING AREAS

**8.7** This window also provides access to all of the programming areas. The areas are divided into six sections: Station Programming, System-wide Features, Trunk Programming, Station Message Detail, AXXESSORY Talk, and Service.

**8.8** The programming areas can be selected in two ways:

- **Command buttons:** There are six command buttons (one for each programming area). Selecting one of these buttons causes the Programming Form list box to reflect the windows that can be selected in that programming area. When a line in the list box is highlighted, that programming window can be viewed by selecting the Program command button or by selecting the highlighted line using the mouse.
- **Form Name:** Each of the programming windows can be selected directly by entering an abbreviated command in the Form Name text box. To select a programming window, enter the appropriate command (listed on the next page), or enter any portion of the words in the window name. For example, to reach the "Key Assignments — DSS" window, you can enter "DSS," "k a d," "key a d," etc.

## C. COMMUNICATION WITH THE AXXESSORY TALK PC

**8.9** AXXESSORY Talk programming cannot be performed until an AXXESSORY Talk communications

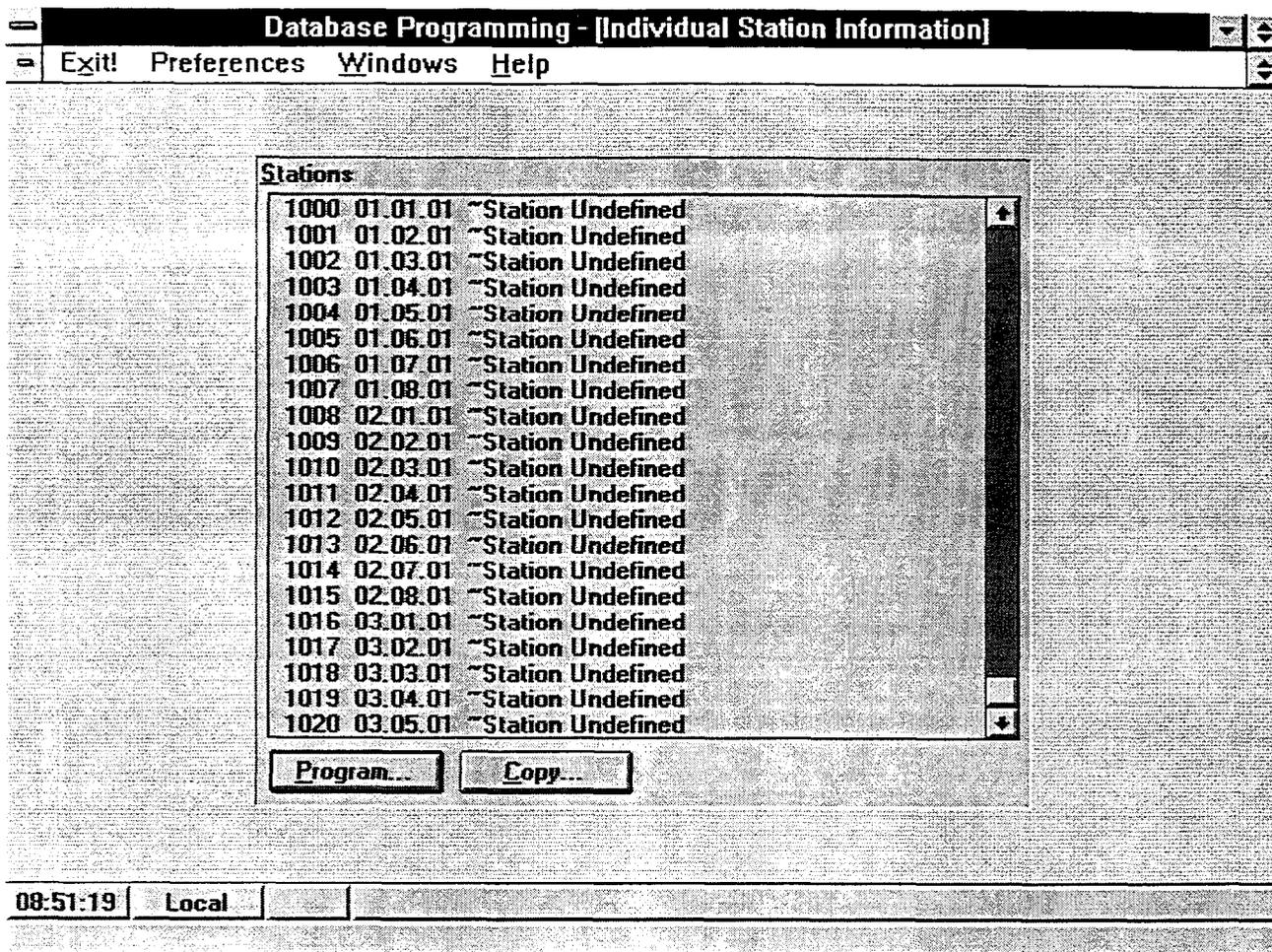
port has been established in the Miscellaneous System-Wide Information programming window (shown on page 6-87).

**8.10** If you select the Service command button at a time when the AXXESS System is unable to communicate with the AXXESSORY Talk PC or if the AXXESS and AXXESSORY Talk software versions do not match, a warning appears that tells you that changes cannot be made or programming areas cannot be selected because Database Programming is unable to communicate with the AXXESSORY Talk PC. The system will not allow you to update the database through the Service options until the AXXESS and AXXESSORY Talk are communicating again and have the same software version.

**8.11** If the AXXESS and AXXESSORY Talk database contain conflicting information, a warning window will appear that states, "Database Programming has detected some inconsistencies between the AXXESSORY Talk and the system databases. These inconsistencies could result in unpredictable system operation. Do you want Database Programming to correct these inconsistencies?" If you select Yes, the AXXESSORY Talk database will be updated to match the AXXESS database. If you select No, the information will not be changed, but you will have access to the programming screens so that you may change the conflicting usernames and/or descriptions. The following programming areas are affected by this warning message:

- Extensions, Usernames, and Feature Codes
- Database Save and Restore
- System Configuration
- All AXXESSORY Talk programming areas *except* Report Programming and SMDR Buffer Programming

| PROGRAMMING AREA                              | ABBREVIATED CODE(S)  |
|-----------------------------------------------|----------------------|
| <b>Station Programming:</b>                   |                      |
| Individual Station Information                | STN                  |
| Key Assignments — DSS                         | DSS                  |
| Key Assignments — Stations                    | KEY                  |
| Station Miscellaneous Flags                   | SFEA                 |
| <b>System-Wide Features:</b>                  |                      |
| Account Code Information                      | ACCT                 |
| ARS Programming                               | ARS                  |
| DND and Reminder Messages                     | DND or REM or MMSG   |
| Extension List Programming                    | EXTL or LIST         |
| Extensions, Usernames, And Feature Codes      | EXT or FEAT or NAME  |
| Hunt Groups                                   | HUNT                 |
| Miscellaneous System-Wide Information         | MISC or SYS          |
| Page Zones                                    | PAGE                 |
| System Forwarding                             | SFWD                 |
| System Speed Dial                             | SSPD                 |
| System Timers                                 | TIMR                 |
| Toll Restriction                              | TOLL                 |
| <b>Trunk Programming:</b>                     |                      |
| Call Routing                                  | CALL                 |
| Individual Trunk                              | INDT                 |
| T1 Programming                                | T1                   |
| Trunk Groups                                  | TRNK                 |
| <b>Station Message Detail:</b>                |                      |
| Call Cost                                     | COST                 |
| SMDR                                          | SMDR                 |
| <b>AXCESSORY Talk:</b>                        |                      |
| AXCESSORY Talk Application Programming        | APPL or AAPP         |
| AXCESSORY Talk Extension ID Programming       | EXID or EXTID or AEX |
| AXCESSORY Talk Fax Back Programming           | FAX or AFAX          |
| AXCESSORY Talk Group List Programming         | GROUP or AGL         |
| AXCESSORY Talk Mailbox Programming            | MAIL or AMAIL or AMB |
| AXCESSORY Talk Miscellaneous Information      | AMSC or AMISC        |
| AXCESSORY Talk Report Programming             | AREP                 |
| AXCESSORY Talk SMDR Report Buffer Programming | ASMDR                |
| AXCESSORY Talk System-Wide Information        | ASYS                 |
| <b>Service:</b>                               |                      |
| Database Save And Restore                     | REST or SAVE         |
| Message Print Programming                     | MPP                  |
| Passwords                                     | PASS                 |
| Premium Feature Selection                     | PREM                 |
| Report Programming [Customized]               | CREP                 |
| System Configuration                          | CNFG or CONF         |
| System Serial Port Configuration              | SPP or PORT          |
| System Serial Port Assignment                 | SPA                  |
| T1 Diagnostics                                | TID or DIAG          |



## 9. STATION PROGRAMMING — INDIVIDUAL STATION INFORMATION

9.1 When the Station Programming command button is selected from the Database Programming Menu window, the list box shows the following options:

- Individual Station Information
- Key Assignments — DSS
- Key Assignments — Station
- Station Miscellaneous Flags

9.2 Individual Station Information programming is described in the following pages. The remaining three menu options apply to batch programming and are described beginning on page 6-47.

9.3 The first window in the Individual Station programming area is shown above. It can be reached by se-

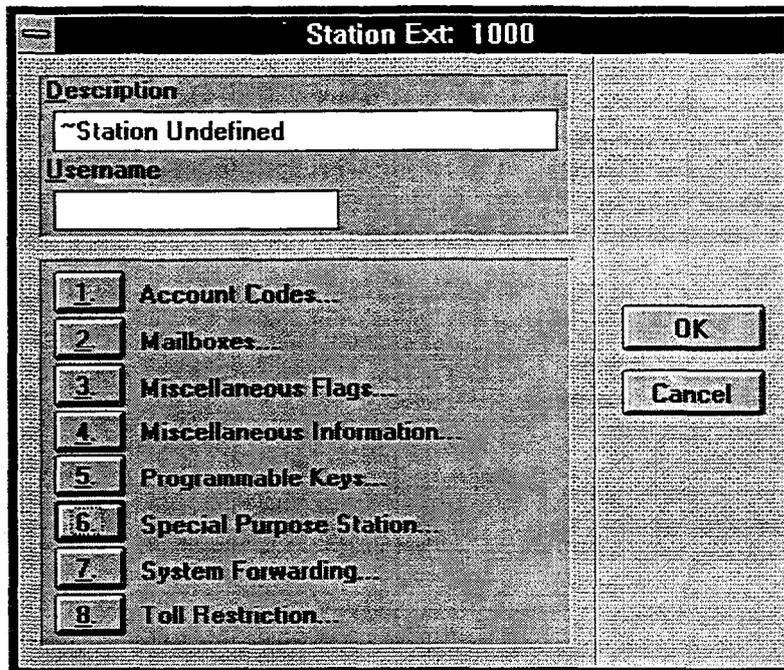
lecting Individual Station from the Database Programming Menu list box or entering STN in the Form Name text box.

9.4 The program planning sheet for station programming in Figure 6-6, on page 6-251, may be helpful.

9.5 **STATIONS:** To select a station for programming or as the source station for copying information, scroll through the list box shown in the window above until the desired station is highlighted. Then select the desired command button and refer to the appropriate page for programming or copying instructions.

9.6 **PROGRAM:** When you select this command button, a window appears as shown on the next page.

9.7 **COPY:** Information that has been programmed for one station can be copied to one or more additional stations. The areas to be copied can be selected as needed. See page 6-45 for further details.



**9.8** The window shown above is displayed when the PROGRAM command button is selected from the window shown on page 6-25.

**9.9 DESCRIPTION/USERNAME:** The description of the station user that appears in all station lists in the database can be up to 20 characters long. The username, that will appear on display keysets in the "idle" display and in several call processing displays, can have up to 10 characters. To program the names, select the desired text box and type the entry. **NOTE:** To insure proper operation of AXXESSORY Talk directories, the full name should be entered in the form: *Last name, First name*. Do not use backslash (\), vertical bar (|), or tilde (~) characters in usernames. Do not use Control characters in descriptions or usernames. The AXXESSORY Connect displays the *description* and not the username for stations when placing and receiving calls.

**9.10 ACCOUNT CODES:** This option can be selected for programming account codes for the station. The associated window is explained on page 6-27.

**9.11 MAILBOXES:** (*This prompt does not appear if AXXESSORY Talk is not enabled. See page 6-23.*) To assign a mailbox to this station, select the Mailboxes option. The window shown on page 6-29 appears.

**9.12 MISCELLANEOUS FLAGS:** The window that appears when this option is selected is shown on page 6-30. It is used for programming several station-specific features. A complete list of the flags is also given on page 6-30.

**9.13 MISCELLANEOUS INFORMATION:** Selecting this option causes another programming window to appear (as shown on page 6-33). That window is used for programming the station's attendant, message center, outgoing access number, transfer recall destination, voice mail extension, alternate message source, data port extension, speakerphone type, attached devices, and PCDDPM baud rate.

**9.14 PROGRAMMABLE KEYS:** Select this option to choose the key maps that will be used by the station and to assign the values for the station programmable keys. The window appears as shown on page 6-35.

**9.15 SPECIAL PURPOSE STATION:** This option is selected to program the station as a message center, attendant, administrator, or house phone. The window for this option is shown on page 6-37.

**9.16 SYSTEM FORWARDING:** If this feature has been enabled (see page 6-220), you can select this option to assign the system forwarding path(s) and forwarding conditions for the station. The window for this option appears on page 6-39.

**9.17 TOLL RESTRICTION:** This line is selected to program the station's toll restriction class of service for day and night modes. A window appears as shown on page 6-42.

**9.18 OK/CANCEL:** When all programming is completed, select the OK command button to save your changes and exit to the Individual Station Information window. Or, to exit without saving any information, select the Cancel command button.

## A. ACCOUNT CODES

9.19 The station can be assigned a standard account code or one of six types of forced account codes (four are ARS dependent). Or, if desired, the station can have no associated account code. When a standard account code is assigned, a specific code must be designated (001–256). (The codes are programmed in the Account Code window on page 6–60.)

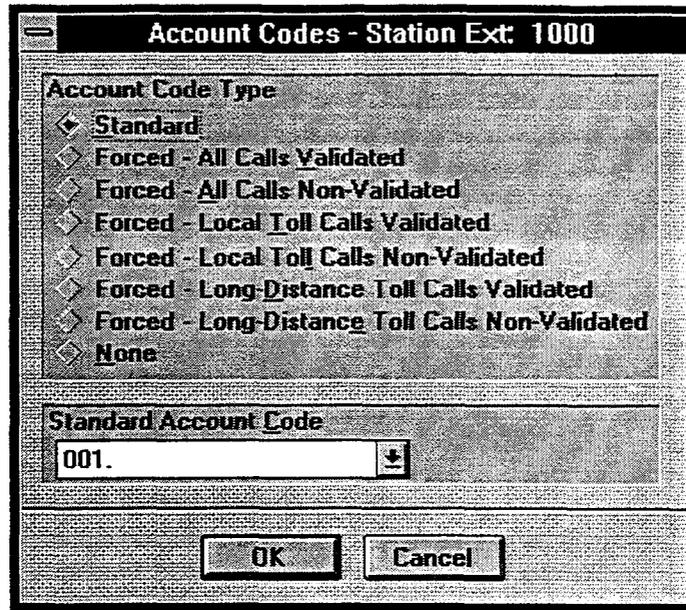
9.20 The account code types are:

- **Standard:** Standard account codes automatically appear in the SMDR printout to identify calls from this station. The station user is not required to enter any digits during the call.
- **Forced — All Calls Validated:** If this type of account code is enabled, the user must enter a forced account code before an outside call can be placed. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked.
- **Forced — All Calls Non-Validated:** With this account code type, the user must enter an account code before placing any outside call. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **Forced — Local Toll Calls Validated:** This account code type requires the user to enter an account code after dialing a local toll call number when using ARS. If the code matches one of the pre-programmed forced account codes in the database, the

call is allowed. If the code does not match, the call is blocked.

- **Forced — Local Toll Calls Non-Validated:** This account code type requires the user to enter an account code after dialing a local toll call or long distance number when ARS is used. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **Forced — Long-Distance Toll Calls Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call has been dialed when ARS is used. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked.
- **Forced — Long-Distance Toll Calls Non-Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call has been dialed when ARS is used. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **None:** If the user will not be required to enter an account code, select None. The user may still use optional account codes or enable the Account Code For All Calls Following feature, as desired.

9.21 The window shown on the next page appears when the Account Code is selected from the window shown on page 6–26.

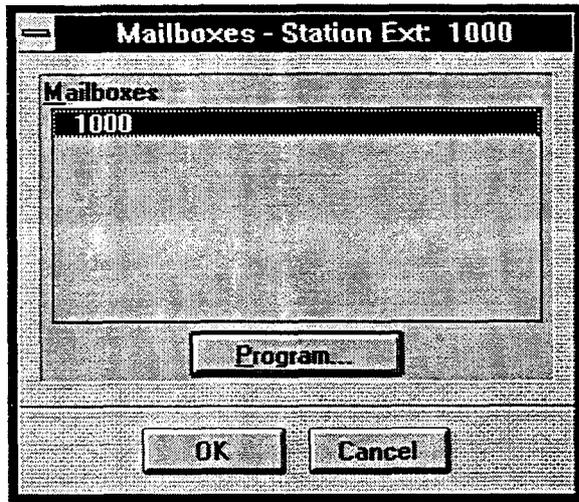


**9.22 ACCOUNT CODE TYPE:** To assign an account code type for the station, place a dot in the desired option button. If Standard is selected, the Standard Account Code drop-down list box changes from dimmed to dark.

**9.23 STANDARD ACCOUNT CODE:** *(This box is dimmed unless the Standard account code type is selected.)* To assign the standard account code that will be associated with the station, select the Standard Account

Code drop-down list box. Then scroll the highlight bar to the desired account code and select it. The selected account code will appear in the closed drop-down box.

**9.24 OK/CANCEL:** When account code programming is completed, select the OK command button to exit to the window shown on page 6-26. Or, to exit without saving any information, select the Cancel command button.



## B. MAILBOXES

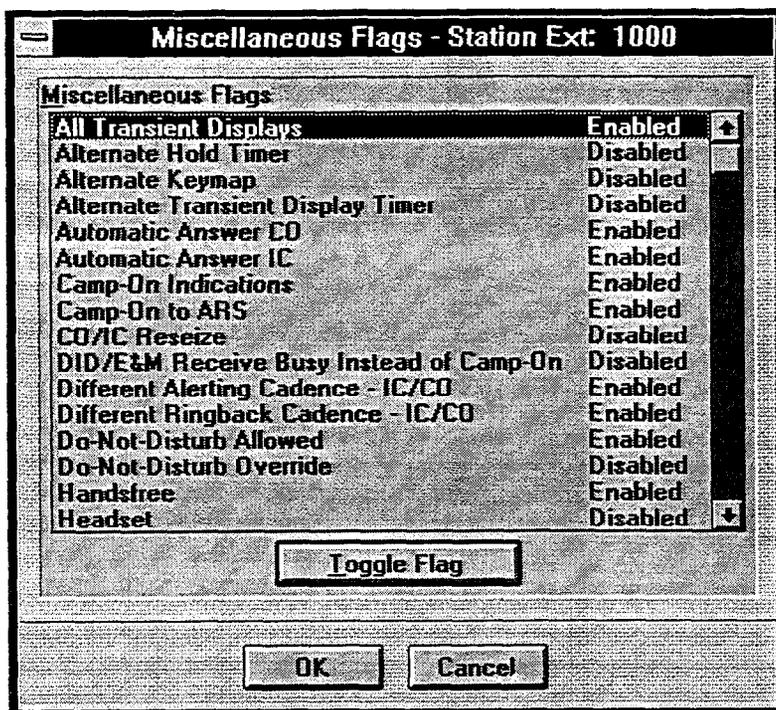
9.25 The window shown above appears when Mailboxes is selected in the window shown on page 6-26.

9.26 If the station being programmed serves as the message notification station for one or more mailboxes (programmed using the programming procedure shown on page 6-188), the mailbox(es) will appear in the Mailboxes list box.

9.27 The mailbox programming procedure is identical to the procedure shown on page 6-185, but is performed on a station-by-station basis rather than mailbox-by-mailbox.

9.28 **MAILBOXES/PROGRAM:** To program the parameters of this station's mailbox(es), highlight the desired mailbox in the list box and then select the Program command button. The window that appears is the same as the one shown on page 6-188 except that the Description, Username, and Message Notification Station cannot be changed. Refer to that page for programming instructions.

9.29 **OK/CANCEL:** When mailbox programming is completed, select the OK command button to exit to the window shown on page 6-26. Or, to exit without saving any information, select the Cancel command button.



### C. MISCELLANEOUS FLAGS

**9.30** The window shown above appears when Miscellaneous Flags is selected in the window shown on page 6-26. Determine the desired status for each of the station flags. (Refer to FEATURES for more information on each of these options.)

**9.31 MISC. FLAGS/TOGGLE FLAG:** Each of the items in the list box has only two states (enabled/disabled, on/off, etc.). Scroll through the list to verify that they are programmed as desired. To change the status of a flag, highlight it and then select the Toggle Flag command button.

**9.32 OK/CANCEL:** When the Miscellaneous Flags list appears as desired, select the OK command button. Or, to exit without changing the status of the flags, select the Cancel command button.

**9.33** The station flags that can be programmed in this window include the following:

- **All Transient Displays:** When this flag is enabled, it will allow all transient call handling displays to appear on the keyset display. If it is disabled, the CALL TRANSFERRED TO XXX and MESSAGE LEFT FOR XXX displays will not appear. In the default state it is *enabled*.
- **Alternate Hold Timer:** For users' convenience, the system has two Hold timers: *Hold* and *Hold - Alternate*. In the default state, the Alternate timer is set for a longer time period than the Hold timer. However, both timers are programmable. The "Alternate Hold Timer" station flag determines which timer each station will use. If the flag is disabled, the station uses the Hold timer. If it is enabled, the station uses the Alternate timer. In the default state, the flag is *disabled*.
- **Alternate Keymap: (Keyset only)** If an alternate keymap will be used on the keyset, it can be enabled through programming or by the keyset user. This flag shows the current state of the alternate keymap (enabled or disabled). In the default state, the alternate keymap is *disabled* and the standard keymap is used. (The keyset user can switch keymaps at any time by entering a feature code.)
- **Alternate Transient Display Timer: (Keyset only)** This flag, if enabled, allows the length of time that transient displays will remain visible to be controlled by the new "DKTS Alternate Transient Display" timer. If this flag is disabled, transient displays will remain visible for 5 seconds. In the default state, it is *disabled*.
- **Automatic Answer CO or Intercom: (Keyset only)** The Automatic Answer features can be enabled so that ringing outside and/or intercom calls are answered by simply lifting the handset. If automatic answer is disabled, the user must press a key to answer the call. (This can also be programmed by the station user.) In the default state, automatic access for both IC and CO are *enabled*.

- **Camp-On Indications:** The tone and display that signal a user when a call has camped on can be enabled or disabled. (However, the lamp in the Call or trunk keys cannot be disabled.) In the default state, the tones are *enabled*. **NOTE:** Hunt group camp-on tones can be disabled without disabling station camp-on tones. See the Hunt Group Camp-On Audio Indications flag on the next page.
- **Camp-On to ARS:** The station can be permitted to camp on to a trunk when using Automatic Route Selection (ARS), or camp on to ARS can be disabled. In the default state, camp on to ARS is *enabled*.
- **CO/IC Reseize:** (*Keyset only*) The ability to immediately reseize a trunk or intercom channel, after disconnecting from a call, can be enabled. In the default state, it is *disabled*.
- **DID/E&M Receive Busy Instead Of Camp-On:** E&M and DID callers can receive busy signal, or receive ringback and camp on, when calling a busy station. If this feature is enabled, the caller will hear busy signals when the called station is busy, and will not camp on. In the default state, busy tones are *disabled* and the callers will hear ringback while camped on to the called station.
- **Different Alerting Cadence Intercom/CO Call:** To allow users to easily differentiate between ringing intercom and outside calls, separate cadences can be enabled. In the default state, the different cadences are *enabled*.
- **Different Ringback Cadence Intercom/CO Call:** The ringback heard when a user places a call can be different for intercom and outside calls, or both types of calls can use the CO ringback cadence. In the default state, the different cadences are *enabled*.
- **Do-Not-Disturb Allowed:** This option designates whether the station can be placed in do-not-disturb. In the default state, it is *enabled*.
- **Do-Not-Disturb Override:** (*Keyset only*) The station can be given do-not-disturb override privilege that allows the user to place an intercom call to a station in do-not-disturb. In the default state, it is *disabled*.
- **Extended Ring Cadence:** (*Single-line station only*) Extended ring cadence can be enabled or disabled. The extended setting lengthens the duration of the ring signal to meet the requirements of OPX and/or repeater applications. The default setting is *disabled*.
- **Handsfree:** (*Keyset only*) The station can be programmed to receive intercom calls handsfree, or handsfree answering can be disabled. (This can also be programmed at the keyset.) In the default state, handsfree answering is *enabled*.
- **Headset:** (*Keyset only*) If a headset will be used on the keyset, it can be enabled through programming or by the keyset user. In the default state, it is *disabled*.
- **Hunt Group:** The station Hunt Group Remove/Replace feature can be programmed using this window or using the feature code at the station. In the default state, this feature is set for *replace* which allows the station to receive hunt group calls.
- **Hunt Group Camp-On Audio Indications:** The tone that signals a hunt group member when a call has camped on to the hunt group can be enabled or disabled. (However, the camp-on display and lamp in the Call or trunk keys cannot be disabled.) In the default state, the tones are *enabled*. **NOTE:** If all station camp-on tones are disabled using the Camp-On Indications flag, described on the previous page, hunt group camp-on tone will be disabled regardless of the Hunt Group Camp-On Audio Indications flag setting.
- **Immediate OHVA Transmit:** (*This prompt appears only if OHVA is enabled and only for keysets.*) Determine if the station will have immediate off-hook voice announce capability enabled. If it is not enabled, the OHVA call does not go through until the Off-Hook Voice Announce Screening timer expires. In the default state, this option is *disabled*.
- **OHVA Receive/Transmit:** (*These prompts appear only if OHVA is enabled. The OHVA Receive prompt appears for keysets only.*) Any station can be programmed to place off-hook voice announcements. Keysets can also be programmed to receive off-hook voice announce calls. In the default state, receive and transmit are *disabled*. Note that the system-wide flag must also be enabled to allow the feature to be used.
- **OPX Gain Levels:** (*Single-line station only*) When a single-line circuit is used as an off-premises extension, this option can be enabled to set receive and transmit gain levels to better suit the OPX application. In the default state, OPX gain levels are *disabled* (the gain levels are set for on-premises use).
- **Page Mode:** (*Keyset only*) If desired, pages to the station can be enabled or disabled through programming or by the keyset user (page remove/replace). In the default state, pages are *enabled*.

- **Receive Busy Instead Of Do-Not-Disturb:** The tone that a caller hears when a station is in do-not-disturb can be a busy signal or a do-not-disturb signal. If this feature is enabled, the caller will hear busy signals when the station is in do-not-disturb, but the caller cannot camp on. In the default state, busy tones are *disabled*.
- **Redial Mode:** Station users can use *last number dialed* or *last number saved* redial modes. This option can be programmed using this window only, it cannot be changed by the station user. In the default state, the stations are set for *diald* mode.
- **Ring Intercom Always:** When this feature is enabled, all calls placed to keysets from this station are received as private calls. The feature can be enabled or disabled through programming or by the keyset user. In the default state, this feature is *disabled*.
- **Standard Tone Frequencies:** The busy tones and dial tones can be pure system tones (as described in FEATURES, page 4-57) or they can be changed to more closely match the telephone company's standard tones. In the default state, standard tones are *enabled* (allowing standard telephone company type tones).
- **System Forwarding:** When this option is enabled, calls to the station follow the system forwarding path that is programmed for the station (if any). This option can be enabled in the database or at the station. In the default state, it is *enabled*.
- **Transient Call Indication On Call Answer:** This flag determines whether the station user will see a call indication display when answering a call by pressing a secondary extension key or by reverse transferring. If enabled, the display will tell if the call was ringing, recalling, transferred, or holding at the other station. In the default state, it is *enabled*.

## D. MISCELLANEOUS INFORMATION

**9.34** The Miscellaneous Information window is shown on the next page. It appears when you select Miscellaneous Information from the window shown on page 6–26. To prepare to program this information, determine the following for each station. (Refer to FEATURES for more information on each of these features.)

- **Attendant:** Determine which station, AXXESSORY Talk application, or hunt group (if any) will serve as the attendant for this station. (If a hunt group is selected, the hunt group stations are not required to be programmed individually as attendant stations. Also, the database will not reflect that the individual stations serve as attendants for any other stations.)
- **Message Center:** Determine which station, AXXESSORY Talk application, or hunt group (if any) will be assigned as message center for the station. The message center will receive messages after the Message Wait timer expires.
- **Outgoing:** Determine which trunk access (trunk, trunk group, or ARS) this station will use when an idle Call key or the OUTGOING key is pressed or when a system speed-dial number is selected for dialing before a trunk is selected. Defaults to Trunk Group 1 (9201).
- **Transfer Recall Destination:** Determine which station, hunt group, or AXXESSORY Talk application (if any) will be the transfer recall destination that will receive this station's transfer recalls.
- **Voice Mail Extension:** Determine the station, AXXESSORY Talk application, or hunt group that will be the voice mail destination that this station will use for forwarding calls to voice mail. If this field is not programmed for an Executive Keyset, the keyset will not have the voice mail-related options on the feature key menu display.
- **Alternate Message Source:** Determine which extension number (if any) will be assigned as the alternate message source for this station. If a station or AXXESSORY Talk application has an alternate message source and leaves a message at another sta-

tion, the alternate message source will be called (instead of the station or application) when the message recipient responds to the message waiting indications. The alternate message source can be a hunt group, station, or AXXESSORY Talk application.

- **Data Port Extension:** The data port extension determines which data port the keyset will use. This is the extension number of the data port itself, not the keyset to which it is attached. The data port may be attached to one station and used by several other station. If the station has a DATA key, it shows the status of its associated data port. (Note that the keyset does not have a DATA key by default. DATA keys must be programmed in the database or by the user.) Refer to page 4–101 in FEATURES for details.
- **Speakerphone Type:** This flag affects Standard and Executive keysets differently:
  - *Standard Keyset:* If the station will have access to shared *standard* speakerphone resources, select Standard. For access to *enhanced and standard* speakerphone resources, select Enhanced. To prevent a Standard keyset station from using shared speakerphone resources, select Disabled.
  - *Executive Keyset:* To enable the keyset's integrated speakerphone, to be used in standard and/or enhanced mode, select either of the speakerphone options (Enhanced or Standard). (Selecting Standard does not prevent the Executive Keyset user from using the enhanced speakerphone). To disable the Executive Keyset's speakerphone, select None.
- **Attached Device:** Indicate the type of attached device if a DSS or Desktop Interface is connected to the keyset. If nothing is connected, select None.
- **Baud Rate:** Select the baud rate of the PCDDPM of the Executive or Standard keyset. (If connected to a DSS/BLF Unit, this cannot be changed.) Valid rates are 300, 600, 1200, 2400, and 4800 (1200, 2400, and 4800 for a system serial port). This can be re-programmed by the keyset user.

**9.35 ATTENDANT:** Select the Attendant drop-down list box and scroll to the desired attendant station, AXCESSORY Talk application, or hunt group.

**9.36 MESSAGE CENTER:** Select the Message Center drop-down list box and scroll to the station, AXCESSORY Talk application, or hunt group that will serve as this station's message center.

**9.37 OUTGOING:** To select the trunk access code that will be used for Outgoing Call feature code and automatic outgoing trunk access, select the Outgoing Extension drop-down list box and scroll to the desired trunk group, trunk, or ARS.

**9.38 TRANSFER RECALL DESTINATION:** Select the Transfer Recall Destination drop-down list box and scroll to the station, AXCESSORY Talk application, or hunt group that will serve as this station's recall destination.

**9.39 VOICE MAIL EXTENSION:** Select the Voice Mail Extension drop-down list box and scroll to the extension number that this station will dial when forwarding to voice mail.

**9.40 ALTERNATE MESSAGE SOURCE:** Select the Alternate Message Source drop-down list box and scroll to the station, AXCESSORY Talk application, or

hunt group that will serve as this station's alternate message source.

**9.41 DATA PORT EXTENSION:** (*Keysets only*) Select the Data Port Extension drop-down list box and scroll to the desired extension number.

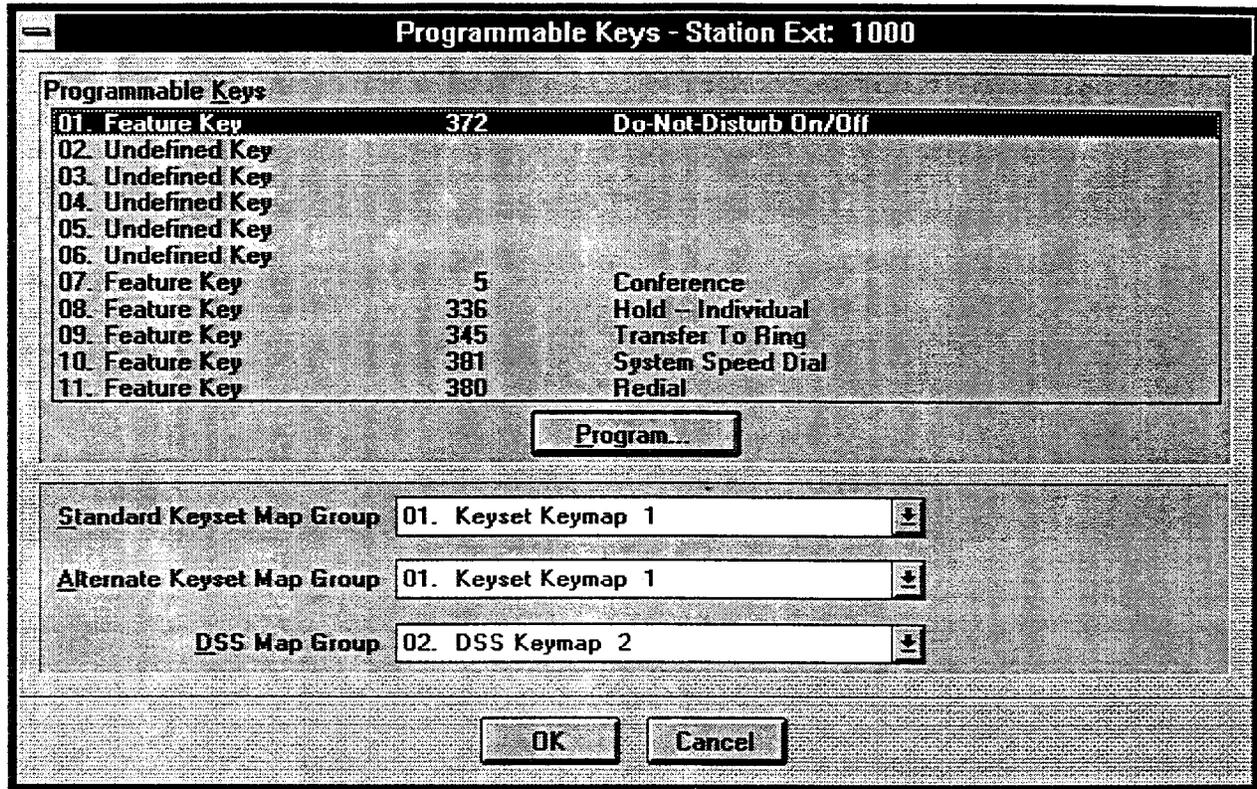
**9.42 SPEAKERPHONE TYPE:** (*Keysets only*) Select the Speakerphone Type drop-down list box and select the speakerphone option (disabled, enhanced, or standard) that is appropriate for this station.

**9.43 ATTACHED DEVICE:** (*Keysets only*) Select the type of device (DSS or Desktop Interface) attached to the keyset, or None, by selecting the drop-down list box and scrolling to the correct entry.

**9.44 BAUD RATE:** (*Keysets only*) This is not available if the attached device is set to DSS. Select the baud rate for the PCDDPM attached to the keyset by selecting the drop-down list box and scrolling to the desired entry.

**9.45 LANGUAGE:** This field is not used in this software version. It is used in international versions to select the language used on the keyset displays.

**9.46 OK/CANCEL:** When the Miscellaneous Information window appears as desired, select the OK command button. Or, to exit without changing the information for the station, select the Cancel command button.



**E. PROGRAMMABLE KEY PROGRAMMING**

9.47 The database contains maps of default values for key layouts. (These maps are programmed on page 6-52.) Determine the preferred key map for each keyset (maps 1-15) and each DSS/BLF-equipped station (maps 1-3). Also determine the default values of the user-programmable keys for each station. To reach this window, select Programmable Keys in the window shown on page 6-26.

9.48 The default values for the programmable keys are shown in the window above.

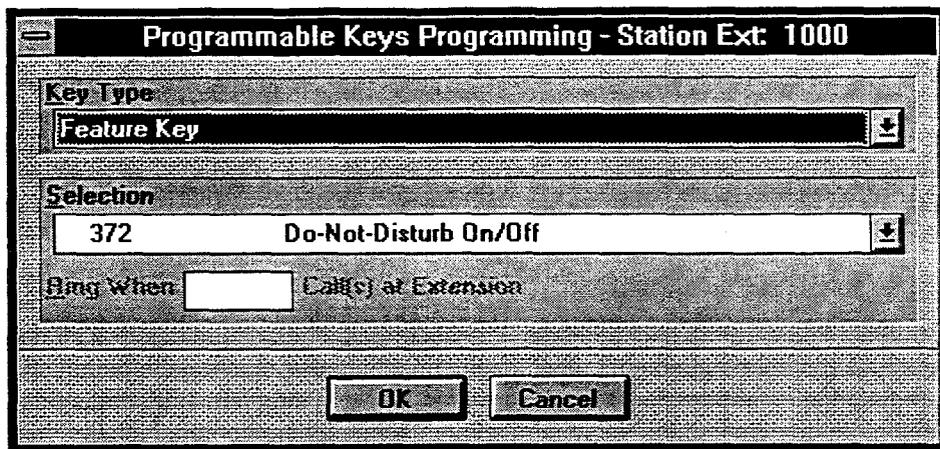
9.49 **PROGRAMMABLE KEYS:** To determine the function of a programmable key at this station, scroll to the desired key (01-11) and then select the Program command button. A window appears as shown on the next page.

**NOTE:** These keys will have the same value in both the Standard and Alternate keymaps for the keyset, regard-

less of the user-programmable key's location in the maps. That is, if user-programmable key #1 is located in the upper left on one map and the upper right on the other map, the *value* remains the same in both maps even though the *location* changes.

9.50 **MAP GROUPS:** (The DSS Map Group box cannot be selected if the keyset does not have an attached DSS/BLF Unit or Desktop Interface.) To determine the Standard, Alternate, and DSS keymaps that will be used by this station, select the appropriate drop-down list box, and scroll to the desired map number (1-15 for keyset maps, 1-3 for DSS maps). The selected map is shown in the closed drop-down list box.

9.51 **OK/CANCEL:** When finished with station programmable key programming, select the OK command button to return to the window shown on page 6-26. Or, to exit without changing the key programming, select the Cancel command button.



**9.52 KEY TYPE/SELECTION:** Each station programmable key can be assigned one of the following Key Types by scrolling through the drop-down list box until the desired key type is highlighted. When the Key Type is selected, the Selection drop-down list box is then used to indicate any necessary additional information (secondary extension keys also have an additional field, as described below):

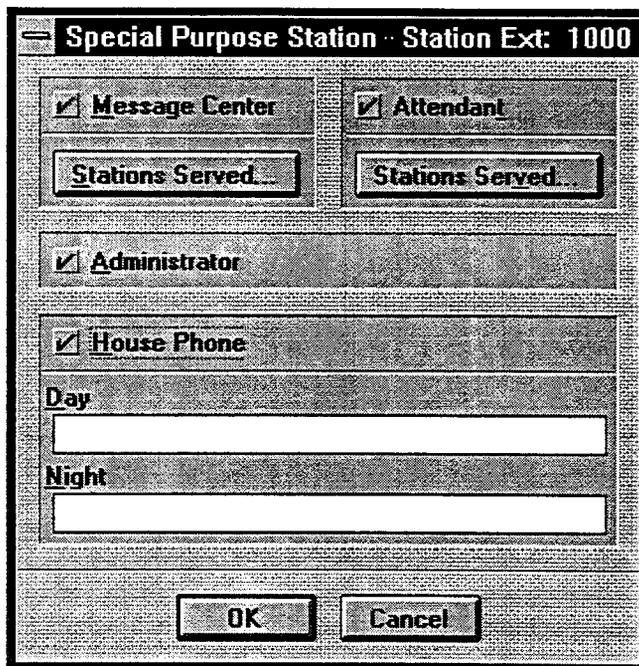
- **DSS/BLF Key:** Select the circuit or extension number of the station that will appear under the selected DSS/BLF key.
- **Feature Key:** Select the feature code that will be entered when this key is pressed.
- **Hunt Group Key:** Select the pilot number of the desired hunt group.
- **Individual Trunk Key:** Select the individual trunk that will be selected when this key is pressed.
- **Intercom (IC) Key:** No further programming is necessary. This key will be used for seizing an intercom channel or answering a waiting intercom call.
- **Page Zone Key:** Select the page zone 0-9 that will be used by selecting the page zone access code 960-969 (respectively).
- **Secondary Extension Key:** Two fields are programmed for this type of key:

— *Selection:* Select the primary station that will be associated with this secondary extension key.

— *Ring When \_\_ Calls At Extension:* This field allows the station to receive a burst of ringing when “n” number of calls are present at a primary station, and at least one call is ringing or camped on. The ring burst will repeat periodically as long as “n” number of calls are present at a primary station. (This period is determined by the DKTS Secondary Extension Key Alerting Tone timer.)

- **Station Speed Dial Key:** Select the station speed-dial location (0-9) that will be assigned.
- **System Speed Dial Key:** Select the system speed-dial location (000-999) that will be assigned.
- **Trunk Group Key:** Select the trunk group (1-104) that will be selected when this key is pressed.
- **Undefined Key:** No further programming is necessary. This key can be programmed by the user.

**9.53 OK/CANCEL:** When finished with programmable key programming, select the OK command button to return to the Programmable Key window. Or select the Cancel command button to exit without changing the key assignments.



**F. SPECIAL PURPOSE STATION**

**9.54** To reach this window, select Special Purpose Station in the window shown on page 6-26. Stations can be programmed to serve the following functions. Refer to FEATURES for more details on these special purpose stations.

- **Message center:** A station can be designated as a message center and assigned a list of stations that it will serve.
- **Attendant:** A station can be designated as an attendant and assigned a list of stations that it will serve.
- **Administrator:** (*Keysets only*) A keyset station can be assigned as an administrator to permit use of the administrator feature codes at that station.
- **House phone:** The station can be designated as a house phone that automatically dials a predetermined number when the handset is lifted. The assigned day number is dialed when the system is in day mode and the assigned night number is dialed when the system is in night mode. The day/night house phone numbers can also be programmed using the house phone station speed-dial locations.

**9.55 MESSAGE CENTER/STATIONS SERVED:** To assign the station as a message center, select the check box to place a check in it. You can then select the

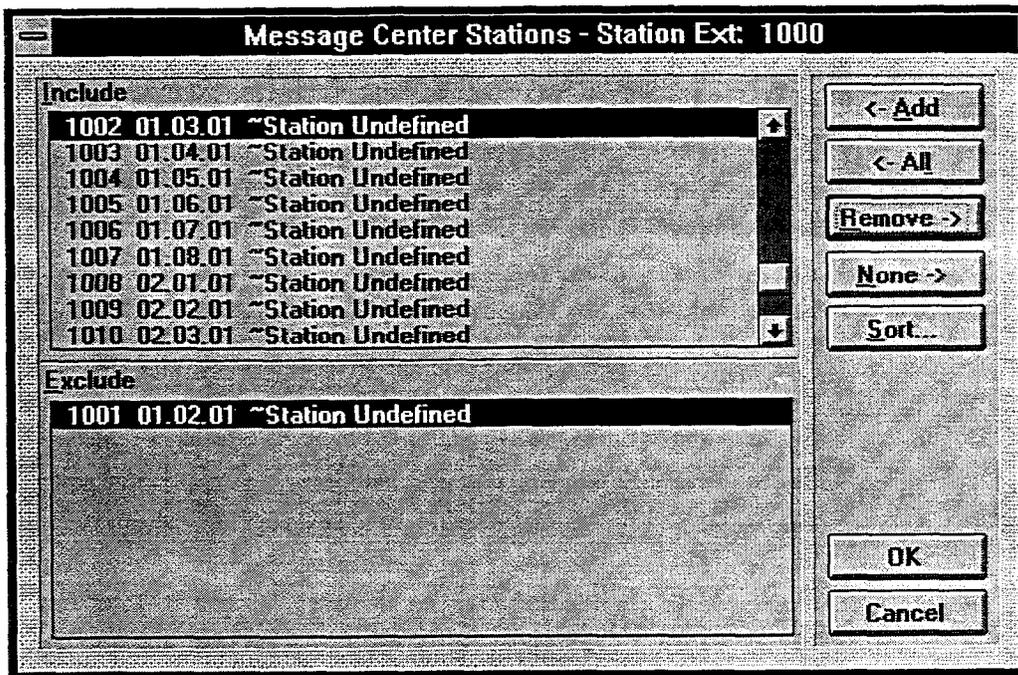
upper Stations Served command button to assign the stations that will be served by this message center. A station list window appears as shown on the next page.

**9.56 ATTENDANT/STATIONS SERVED:** To assign the station as an attendant, select the check box to place a check in it. You can then select the lower Stations Served command button to assign the stations that will be served by this attendant. A station list window appears as shown on the next page. *If you attempt to remove attendant status from the primary attendant, you will see a warning message. (The primary attendant can only be changed using the Miscellaneous System-Wide Information programming screen shown on page 6-87.)*

**9.57 ADMINISTRATOR:** To assign the station as an administrator, select the check box to place a check in it.

**9.58 HOUSE PHONE/DAY/NIGHT:** To assign the station as a house phone, select the check box to place a check in it. You can then select the Day and/or Night text box and enter the extension or outside number (up to 16 digits, including pauses and hookflashes) that will be dialed when the house phone is used during the day and/or night mode. These numbers are also station speed-dial locations codes 0 (day) and 1 (night).

**9.59 OK/CANCEL:** When finished with Special Purpose Station programming, select the OK command. Or select the Cancel command button to exit without changing the station programming.



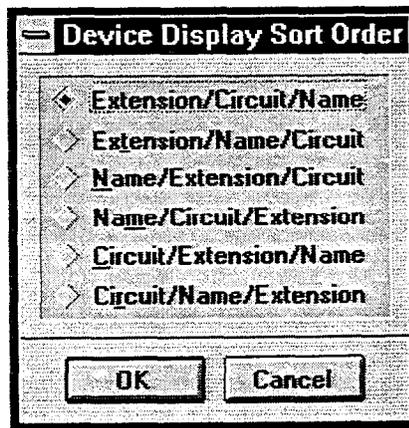
**9.60** The window shown above appears when a Station Served command button is selected. If the Attendant Stations Served button is selected, the header is "Attendant Stations" instead of "Message Center Stations."

**9.61** If an attendant station does not have any stations to serve, it will retain its attendant status. However, if a message center does not have any stations to serve, its message center status will be removed automatically.

**9.62** To determine the stations that are served by the attendant or message center, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the Include list.
- **REMOVE/NONE:** To remove the highlighted station from the Include list, select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window

appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

## G. SYSTEM FORWARDING

**NOTE:** The System Forwarding window cannot be used unless the feature has been enabled as described on page 6-220.

**9.63** The forwarding path assignment is made on a station-by-station basis. Refer to FEATURES, page 4-82 for more details on system forwarding.

**9.64** Each station can have up to three forwarding paths and there can be 100 different programmed paths in the system, numbered 001-100. Path 000 (No Forwarding Path) can be assigned to disable system forwarding for the station. (Forwarding paths are defined using the programming procedure on page 6-95.)

**NOTE:** When a station user transfers a call to the principal station of a forwarding path, the Handsfree Announce System Forward system-wide flag determines what the caller will hear. If enabled, the caller will place a handsfree call to the principal station and can announce the transfer (the call does not enter the forwarding path). If the option is disabled, the transferring station user will hear ringing and can announce the call only if it is answered by the principal station or one of the forwarding points. See page 6-91 for system flag programming information.

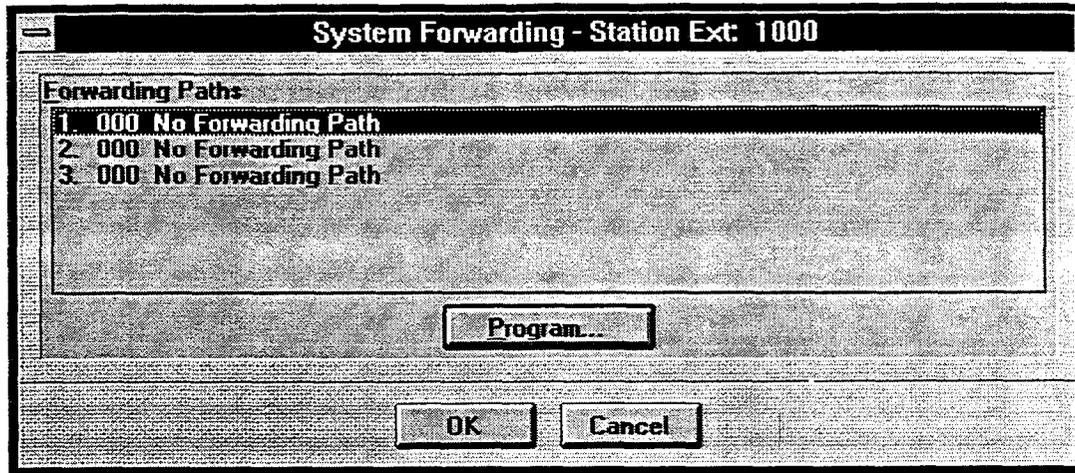
**9.65** The following information can be programmed for each forwarding path:

- **Station Conditions:** The station can be programmed to use the path to forward calls when the station condition is busy, in do-not-disturb, and/or no answer. Or, calls can be forwarded immediately after they are received at the station. (In the default state, all but Immediate are selected.)
- **System Conditions:** The station can be programmed to use the forwarding path when the sys-

tem is in day mode and/or night mode. (In the default state, both day and night mode are selected.)

- **Ring Principal Once:** If the system-forwarded station is a keyset and the user wishes to be notified each time a call is sent to the system forwarding path, this option can be enabled. The station user will hear a single ring tone each time a call is system forwarded and display keyset will show CALL SENT TO FORWARD PATH. (In the default state, this is disabled.)
- **Forwarding Call Types:** The types of calls that can be forwarded include the following. The forwarding station can be programmed to forward any or all of these call types. (In the default state, call routing, ring-in, DISA, and transferred calls are enabled.)
  - Outside calls received through a call routing table (including DID and E&M calls, but not including DISA calls)
  - Ringing outside calls
  - Transferred outside calls (including automated attendant and voice mail transfers)
  - Recalling outside calls
  - DISA calls (including DISA calls received through a call routing table)
  - Intercom calls

**NOTE:** Call forwarding paths are checked in numerical order when they apply to the same call type (for example, multiple forwarding paths for outside calls). If one forwarding path is for the "No Answer" call condition, it should be last on the list of forwarding paths for the station. If No Answer is the condition in the first path, the system will always wait for the System Forward Initiate timer to expire before forwarding, even if the station is in do-not-disturb mode or busy.

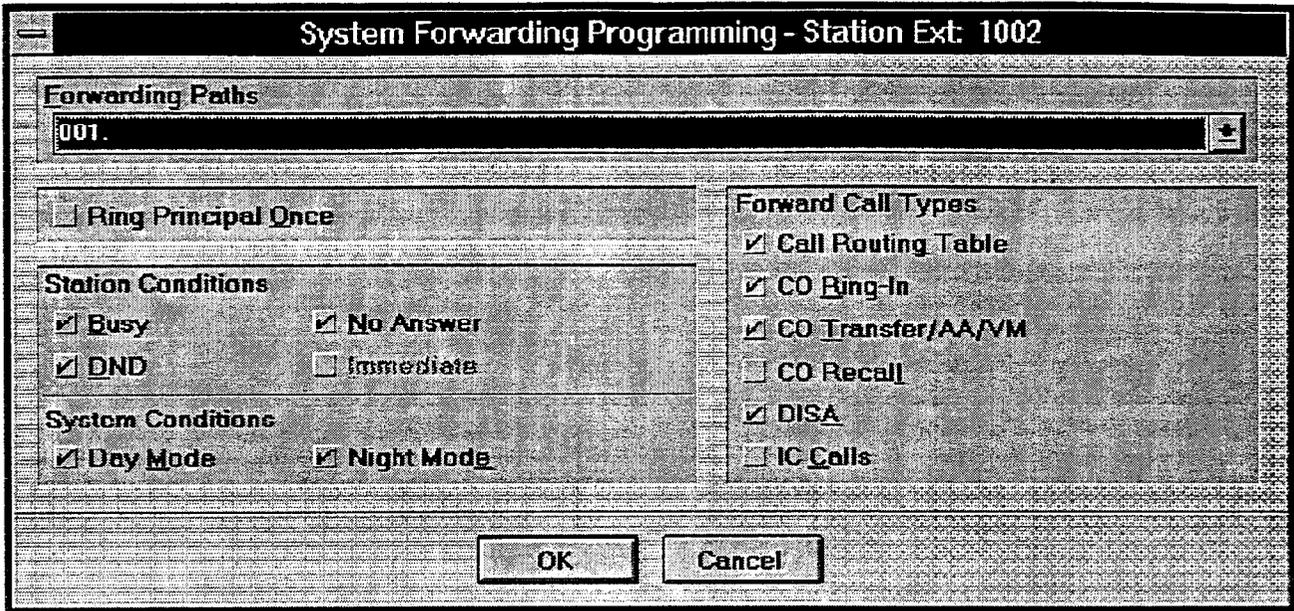


**9.66** To reach this window, select System Forwarding in the window shown on page 6-26.

**9.67 FORWARDING PATHS/PROGRAM:** To select the forwarding path to be programmed for the station, move the highlight bar in the list box to the desired

path number. Then select the Program command button. The window shown on the next page appears.

**9.68 OK/CANCEL:** When all forwarding paths are programmed, select the OK command button to exit. Or, to exit without changing the forwarding paths, select the Cancel command button.



9.69 This window appears when the Program command button, shown on the preceding page, is selected.

9.70 **FORWARDING PATHS:** To begin programming, select the forwarding path number (000–100) that will be used for this path by scrolling through the Forwarding Paths drop-down list box and selecting the desired number. The rest of the options in this window are then used to program that path number. (The options are dimmed unless a forwarding path is selected.)

9.71 **RING PRINCIPAL ONCE:** If the principal station is a keyset and the user wishes to hear a single ring signal and receive a display each time a call enters the forwarding path, select the Ring Principal Once check box to place a check mark in it. In the default state, this is not selected.

9.72 **STATION CONDITIONS:** Determine which station conditions will cause the calls to follow the forwarding path and select them to place a check mark in the desired check box(es). In the default state, all but Im-

mediate are selected. Note that if any condition other than Immediate is selected, Immediate will appear dimmed and cannot be selected.

9.73 **SYSTEM CONDITIONS:** Indicate whether calls will follow the forwarding path in day and/or night mode by selecting the desired system condition(s) to place a check mark in the desired check box(es). In the default state, both day and night mode are selected.

9.74 **FORWARD CALL TYPES:** Determine the types of calls that will follow the forwarding path by selecting each desired call type to place a check mark in the check box. In the default state, all but Recall and IC Calls are selected.

9.75 **OK/CANCEL:** When the forwarding path is programmed, select the OK command button to exit to the System Forwarding window. Or, to exit without changing the forwarding path, select the Cancel command button.

## H. TOLL RESTRICTION INFORMATION

**9.76** Determine the following toll restriction information for each station. Refer to FEATURES, page 4-32, for a full explanation of toll restrictions. The window shown on the next page appears when Toll Restriction is selected in the window shown on page 6-26.

- **Day/night class of service (COS):** Determine which COS designation(s) the station will have during day and night modes. (Stations that do not have any of the COS designations are unrestricted and will be included in COS 0, as shown on page 6-110.) The default values of the pre-programmed COS designations (01-09) are as follows. (COS 10-16 have no default values.) COS designations 1-16 are programmable. (Refer to page 6-108 for station COS programming information. The toll string wild cards and non-programmable wildcards are described and listed on page 6-109.)
  - *COS 01 — ARS Only:* Calls can only be placed using the Automatic Route Selection (ARS) feature when this restriction is assigned. The user will hear reorder tones when attempting to place a call using any other method. A restricted user can still select individual trunks for placing calls if the trunks are designated as “exempt from ARS Only” (as described on pages 4-31 and 6-137). Trunk restriction determines which trunks in the ARS route group can be selected by the station.
  - *COS 02 — Deny Area/Office:* This restriction is divided into three user groups to allow the use of varying area/office code restriction tables. This is useful for reducing restrictions for some of the stations or trunk groups while increasing restrictions for others. Each station and trunk group is assigned a day mode and a night mode user group in database programming. Within each user group, area codes can be designated as restricted, allowed, or extended. See page 6-111 for details.
  - *COS 03 — Deny Operator:* Calls to numbers that match the dial patterns for this class of service (defaults to [Q]RN+, [Q]RO, and [Q]RE) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station or trunk group being used.
  - *COS 04 — Deny Toll Access:* Calls to numbers that match the dial patterns for this class of service (defaults to [Q]TN+ and [Q]TE) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station or trunk group being used.
  - *COS 05 — Deny International:* Calls to numbers that match the dial patterns for this class of service (defaults to [Q]I+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station or trunk group being used.
  - *COS 06 — Deny Equal Access:* Calls to numbers that match the dial patterns for this class of service (defaults to Q+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station or trunk group being used.
  - *COS 07 — Deny Local Calls:* Calls to numbers that match the dial patterns for this class of service (defaults to N+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station or trunk group being used.
  - *COS 08 — Denied Numbers:* Calls to numbers that match the dial patterns for this class of service (defaults to 1900NXXXXXX+ and 976XXXXX+) are restricted, unless the number also matches a dial pattern in an “allowed” class of service that is assigned to the station or trunk group being used.
  - *COS 09 — Allowed Numbers:* Calls to numbers that match with the dial patterns for this class of service (defaults to 1800NXXXXXX+) are allowed, even if the number also matches a dial pattern in a restricted class of service that is assigned to the station or trunk group being used.
- **Day/night user group:** If the station has Area/Office Code restriction, determine which toll restriction user group (1-3) the station is assigned to in day and night modes. The user groups are programmed in Toll Restriction as shown on page 6-111.

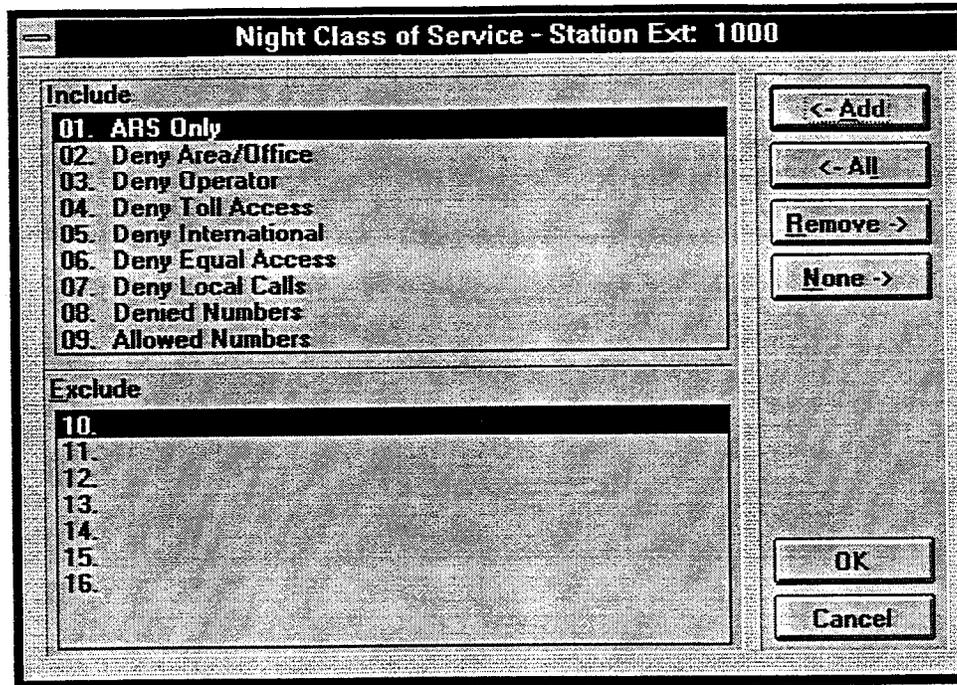
The screenshot shows a programming window with the title "Toll Restriction - Station Ext: 1000". It contains two main sections. The first section is labeled "Day Class Of Service" and includes a "Select..." button and a "User Group" drop-down menu showing "01.". The second section is labeled "Night Class Of Service" and also includes a "Select..." button and a "User Group" drop-down menu showing "01.". At the bottom of the window are "OK" and "Cancel" buttons.

**9.77 DAY/NIGHT CLASS OF SERVICE SELECT:** Use the appropriate Select command button to program class of service for day or night mode. (In the default state, all stations are Unrestricted.) A programming window appears as shown on the next page.

**9.78 DAY/NIGHT USER GROUP:** *(This drop-down list box is dimmed unless the Deny Area/Office code COS has been assigned.)* To determine the toll restriction user group (1-3) for the station being programmed,

select the appropriate drop-down list box for day or night mode. Then scroll to the desired user group. The selected user group will appear in the closed drop-down list box.

**9.79 OK/CANCEL:** When finished, select the OK command button to save the changes and exit. Or, to exit without saving the changes, select the Cancel command button.

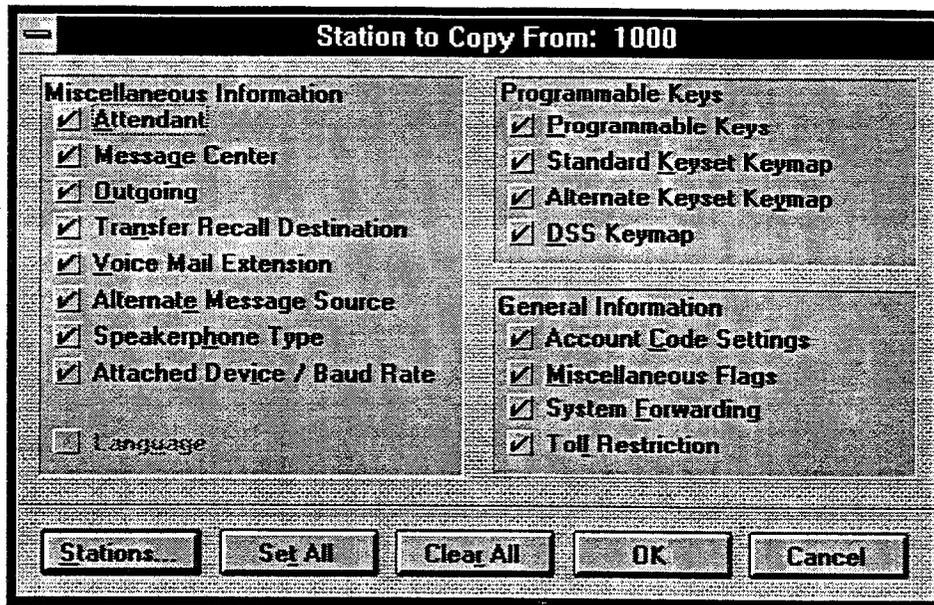


**9.80** To determine the classes of service for the station, use the following procedures.

**9.81 ADD/ALL:** Use the Add command button to move classes of service from the Exclude list to the Include List, or use the All command button to place all classes in the list.

**9.82 REMOVE/NONE:** To remove a class of service from the Include list, highlight it and select the Remove command button. Or, to remove all classes, use the None command button.

**9.83 OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



## I. COPYING STATION INFORMATION

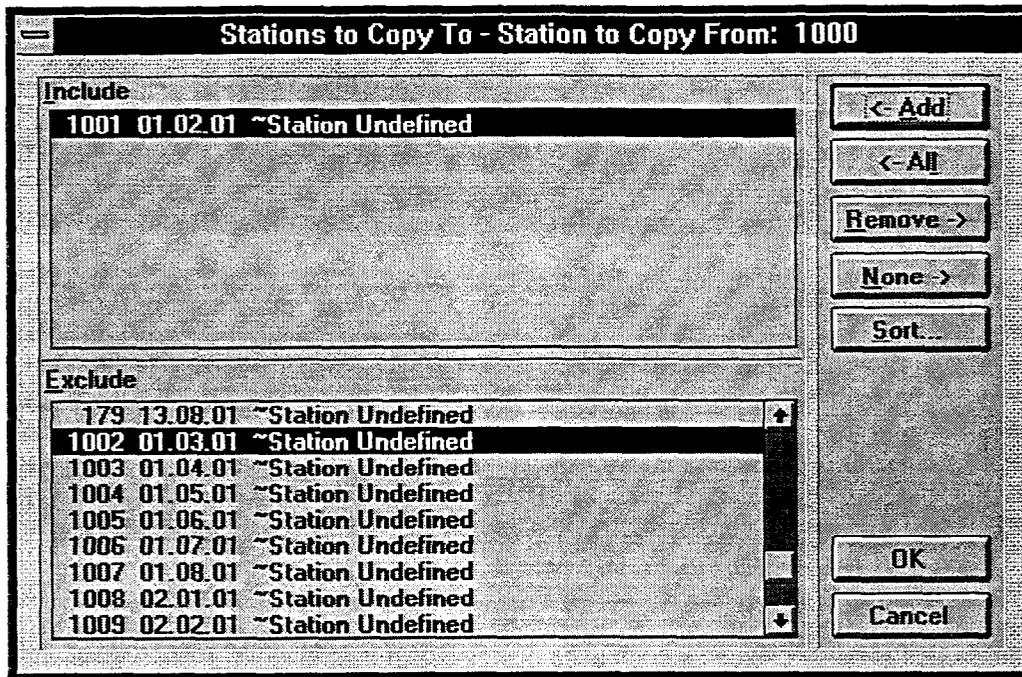
9.84 To copy programmed attributes from the station highlighted in the Stations list box (shown on page 6-25) to one or more other stations, select the Copy command button. The window shown above appears. Note that not all information is valid for each station location or type. Information that cannot be copied from the source station will be dimmed (unavailable).

- **CHECK BOXES:** To determine which attributes will be copied, place a check mark in the box for each desired attribute. To place a check mark in a box, select it. To remove the check mark, select it again. Or, use the following command buttons:

— **SET ALL:** Select this command button to place a check mark in every box.

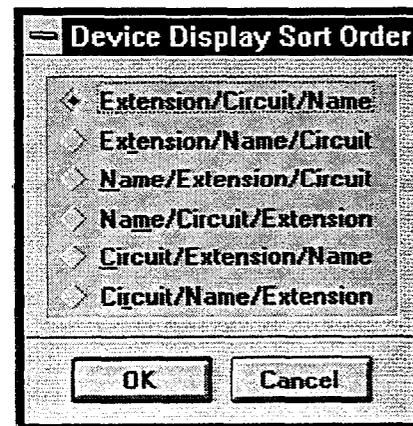
— **CLEAR ALL:** Select this command button to remove all check marks from the boxes.

- **STATIONS:** To determine which stations will receive the copied information, select the Stations command button. The window shown on the next page appears.
- **OK/CANCEL:** When finished, select the OK command button to and exit. Or, to exit without saving the changes, select the Cancel command button.



9.85 The window shown above appears when the Stations command button is selected. To determine the stations that will receive the copied information, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

## 10. STATION PROGRAMMING — BATCH PROGRAMMING OPTIONS

**10.1** When the Station Programming command button is selected from the Database Programming Menu window, the list box shows the following options:

Individual Station Information  
Key Assignments — DSS  
Key Assignments — Station  
Station Miscellaneous Flags

**10.2** The Individual Station Information option is described beginning on page 6-25. The remaining options apply to batch programming of key assignments and station features. They are described in the following pages.

**10.3** The Key Assignments windows are used for performing the following programming tasks for up to 15 keyset map groups and three DSS/BLF map groups:

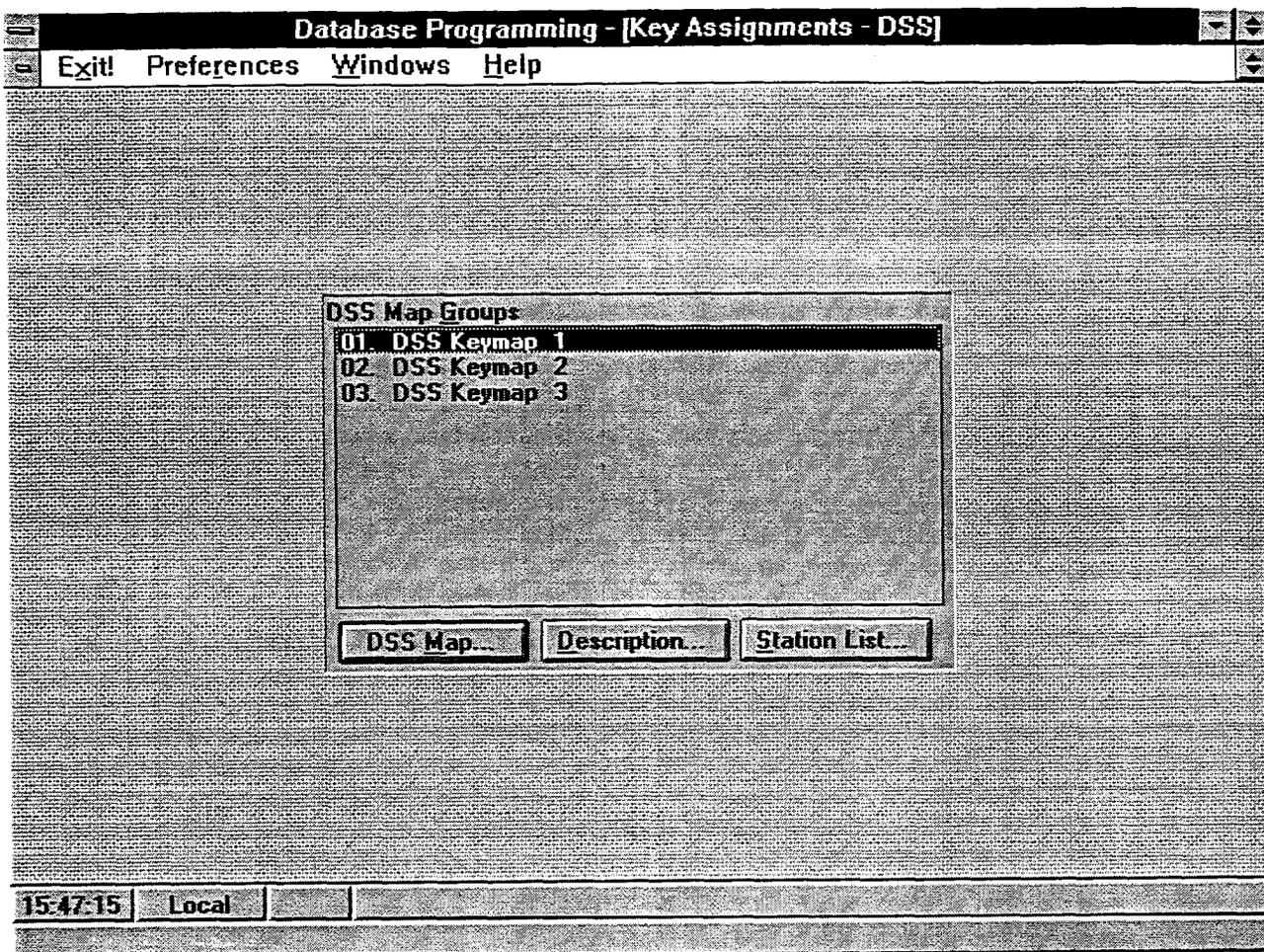
- Naming the key maps.
- Determining the layout of the keys for the station instrument(s) that will use each key map. Note that

when a key is designated on one type of keyset, it will appear on the corresponding key on all stations in that key map.

- Assigning the stations that will use each map as their standard and alternate keymaps.
- Determining the default values for the user-programmable keys and, if desired, updating selected stations.

**10.4** The Key Assignments window for DSS/BLF Unit map programming is shown on the next page. The window for keyset map programming is shown on page 6-52. A program planning sheet appears in Figure 6-7, on page 6-254.

**10.5** The Station Miscellaneous Flags window is used for batch programming of station features. The features that can be programmed are listed on page 6-30. The Station Features window appears on page 6-58. A program planning sheet appears in Figure 6-8, on page 6-255.



**A. KEY ASSIGNMENTS — DSS**

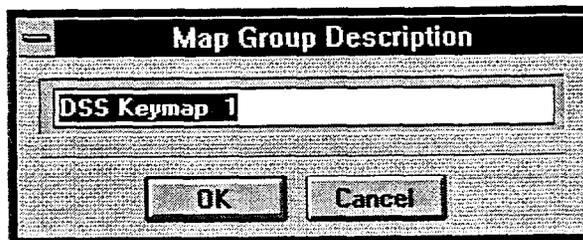
**10.6** The DSS/BLF programming window is shown above. To view it, select “Key Assignments — DSS” from the Database Programming Menu window. (A program planning sheet appears in Figure 6-7, on page 6-254.) The programming procedures are as follows.

**10.7 DSS MAP GROUPS:** While a DSS map group is highlighted in the DSS Map Groups list box, all other programming pertains to that map group.

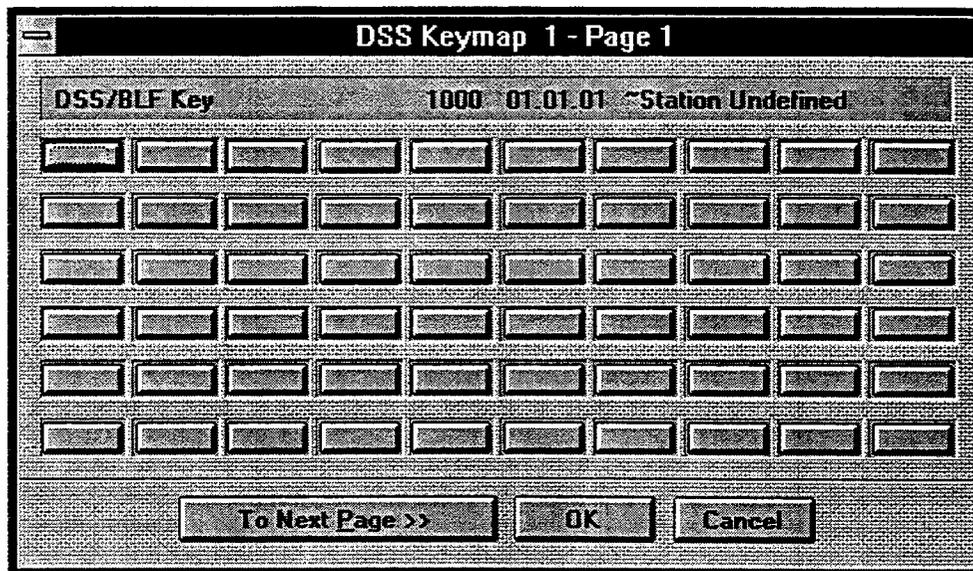
**10.8 DSS MAP:** When the DSS Map command button is selected, an illustration of the DSS/BLF Unit key layout appears as shown on the next page.

**10.9 DESCRIPTION:** To give a name to the map group, select the Description command button. The fol-

lowing window appears. Enter the desired name (up to 20 characters) in the text box. When finished, select the OK command button to save the name or select the Cancel command button to exit without saving any changes.



**10.10 STATION LIST:** To select the DSS stations that will use this key map, select the Station List command button. A window appears as shown on page 6-51.



**DSS/BLF Map**

**10.11 KEYS:** Select the key for which you wish to assign a new value. A window appears as shown on the next page.

**10.12 TO NEXT/PREVIOUS PAGE:** Because DSS/BLF Units can be used in tandem, each key map has two "pages" of keys. To see the keys on the second unit, se-

lect the To Next Page command button. To go back to the first unit, select the To Previous Page command button.

**10.13 OK/CANCEL:** When the DSS Map is programmed as desired, select the OK command button to save the changes. Or, select the Cancel command button to exit without saving changes.

**Key Assignment Programming**

Key Type: Secondary Extension Key

Selection: 1001 01.02.01 ~Station Undefined

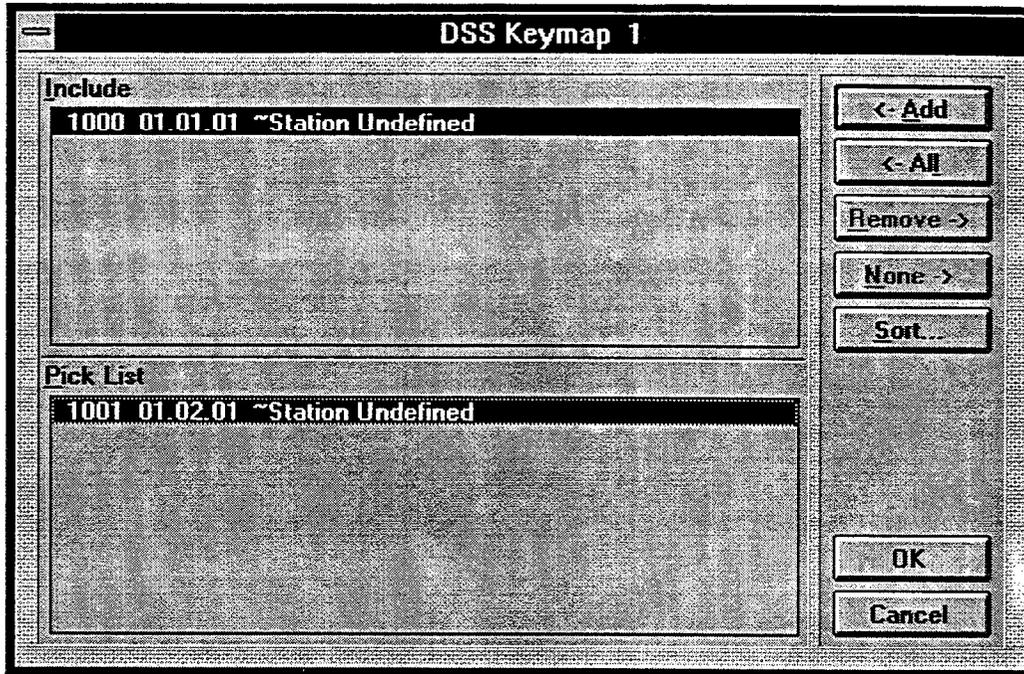
Ring When: 1 Call(s) at Extension 1001

OK Cancel

**10.14 KEY TYPE/SELECTION:** Key type options and the selections that are required are described below. Select the Key Type drop-down list box and scroll to the desired key type. Then select the Selection drop-down list box, if necessary, and select the additional information required for the selected key type (feature code, extension number, etc.). Secondary extension keys also have an additional field, as described below.

- **Call Key:** The next Call key number is automatically selected.
- **DSS/BLF Key:** Select the circuit or extension number of the station that will appear under the selected DSS/BLF key.
- **Feature Key:** Select the feature code that will be entered when this key is pressed.
- **Forward Key:** Select the desired Call Forward feature code.
- **Hunt Group Key:** Select the pilot number of the desired hunt group.
- **Individual Trunk Key:** Select the individual trunk that will be selected when this key is pressed.
- **Intercom (IC) Key:** No further programming is necessary. This key will be used for seizing an intercom channel or answering a waiting intercom call.
- **Page Zone Key:** Select the page zone 0–9 that will be used by selecting the page zone access code 960–969 (respectively).
- **Programmable Key:** Select the desired programmable key number (1–11).
- **Secondary Extension Key:** Two fields are programmed for this type of key:
  - *Selection:* Select the primary station that will be associated with this secondary extension key.
  - *Ring When \_\_ Calls At Extension:* This field allows the station to receive a burst of ringing when “n” number of calls are present at a primary station, and at least one call is ringing or camped on. The ring burst will repeat periodically as long as “n” number of calls are present at a primary station. (This period is determined by the DKTS Secondary Extension Key Alerting Tone timer.)
- **SPCL Key:** No further programming is required.
- **Station Speed Dial Key:** Select the station speed-dial location (0–9) that will be assigned.
- **System Speed Dial Key:** Select the system speed-dial location (000–999) that will be assigned.
- **Trunk Group Key:** Select the trunk group (1–104) that will be selected when this key is pressed.
- **Undefined Key:** No further programming is necessary. This key can be programmed by the user.

**10.15 OK/CANCEL:** When finished assigning key types, select the OK command button to save your changes, or select the Cancel command button to exit without saving any changes.

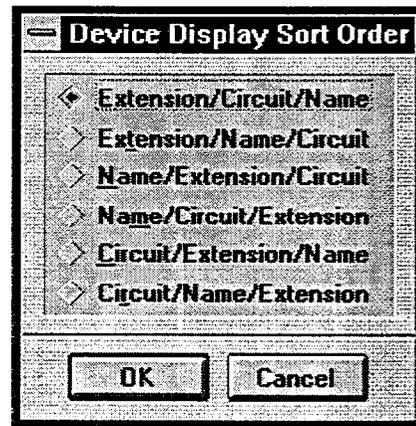


**Keymap Station List**

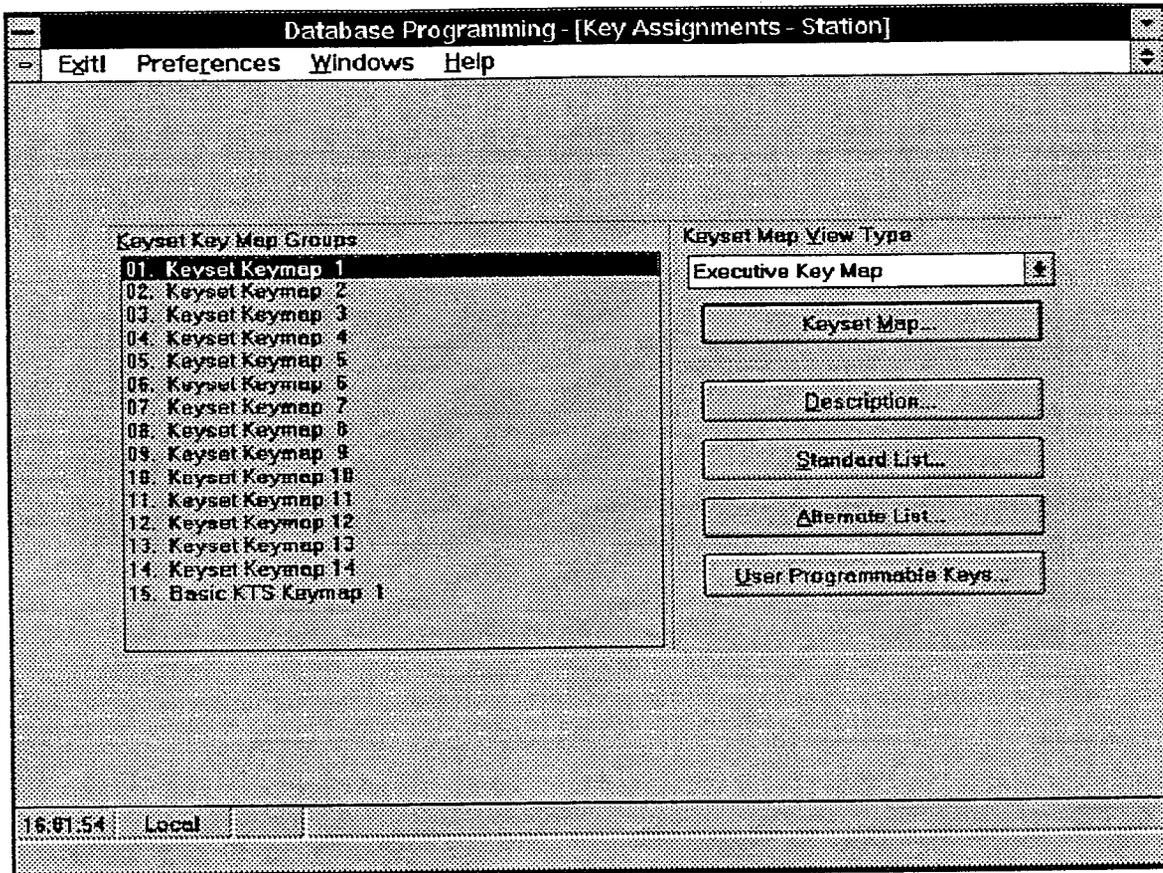
10.16 The window shown above appears when the Station List command button is selected. To determine the DSS/BLF Units that will use the selected key map, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted DSS/BLF from the Pick List to the Include List, or use the All command button to place all DSS/BLF Units in the list.
- **REMOVE/NONE:** These command buttons cannot be used in this screen. To remove a DSS/BLF from this key map, exit, select another key map, and include the DSS/BLF in that map. Each DSS/BLF must be included in a DSS key map.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



## B. KEY ASSIGNMENTS — STATIONS

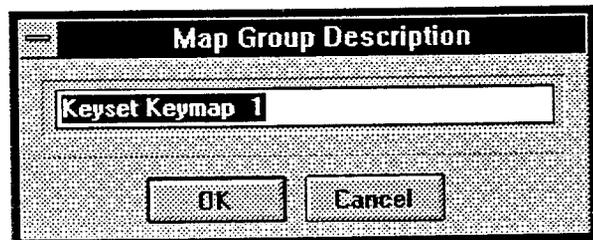
**10.17** The window shown above can be reached by selecting “Key Assignments — Stations” from the Application Programming Menu. A program planning sheet appears in Figure 6-8, on page 6-255.

**10.18 KEYSSET KEY MAP GROUPS:** While a keyset map group is highlighted in the Keypad Key Map Groups list box, all other programming pertains to that map group.

**10.19 KEYSSET MAP VIEW TYPE/KEYSET MAP:** The Keypad Map View Type drop-down list box is used for selecting the Basic, Executive, or Standard keyset layout. Select the drop-down list box and scroll the highlight bar to the desired map type. Then, when the Keypad Map command button is selected, an illustration of the selected keyset layout appears as shown on the next page.

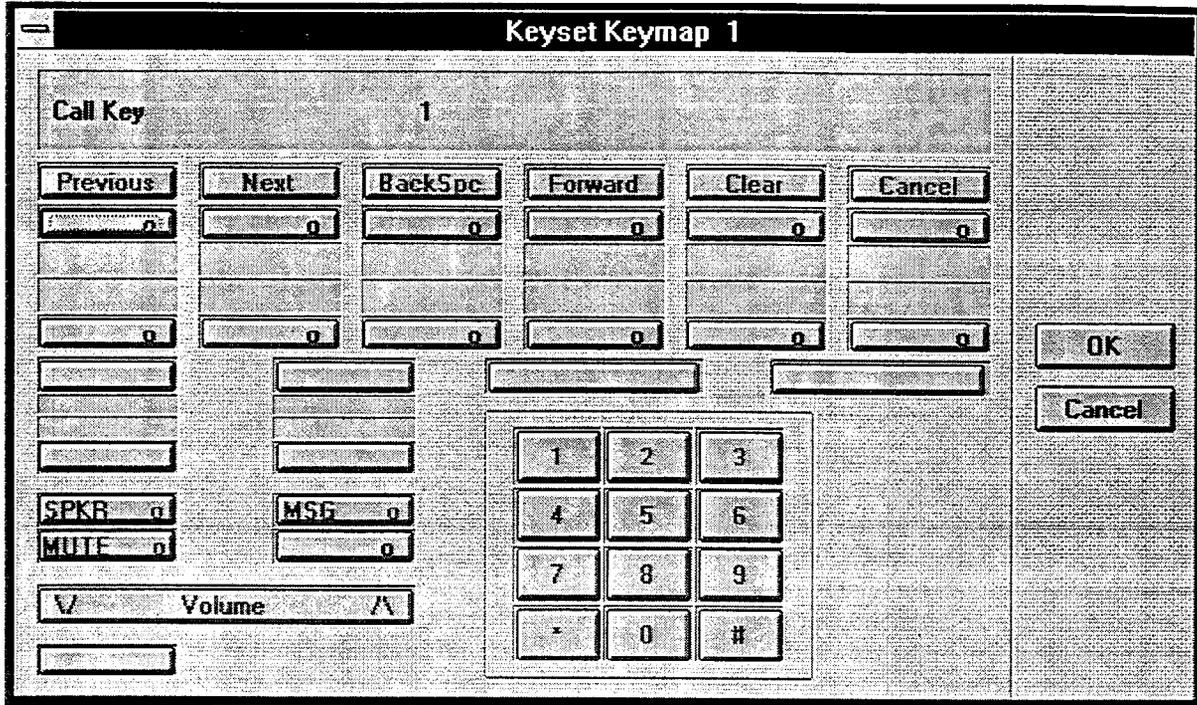
**10.20 DESCRIPTION:** To give a name to the map group, select the Description command button. Then enter the desired name (up to 20 characters) in the text

box. When finished, select the OK command button to save the name or select the Cancel command button to exit without saving any changes.



**10.21 STANDARD LIST/ALTERNATE LIST:** To select the keyset stations that will use this keypad as a standard or alternate map, select the appropriate List command button. A window appears as shown on page 6-55.

**10.22 USER PROGRAMMABLE KEYS:** Select this command button to assign the default value of the user-programmable keys in each keypad map. A window appears as shown on page 6-56.



**Keyset Map**

**10.23** The Executive keyset keymap is shown above. The Standard and Basic keysets have a different key layout.

**10.24** When the system is in the default state there are two pre-programmed keymaps. Key map #1 is for Standard and Executive Keysets. Key map #15 is for Basic Keysets. When a keyset is plugged in, the system determines which type of keyset it is and assigns the appropriate key map (#1 for Standard/Executive or #15 for Basic). If the keyset type is changed, for example from a Basic to a Standard, the system automatically changes the default key map to match the new keyset type (in the example, it changes from #1 to #15). However, if the station has a key map other than its default map (maps 2-14), the key map will not be changed automatically if the keyset type is changes; you must manually change the key map.

**10.25** Two things you should keep in mind when programming keymaps are:

- Key assignments within a key map are common to all keyset types in that map. Modifying a key

changes that key assignment for **ALL** keysets assigned to that map, regardless of keyset type. For example, if the top left key is changed to a user-programmable key for Executive keysets in Keyset Map Group 1, the corresponding key will also be user-programmable on Standard and Basic keysets in Keyset Map Group 1.

- Users who have Standard and Alternate keymaps will want to have their user-programmable keys in the same positions in both keymaps. That way their user-programmable key locations do not change when they switch keymaps. Also, if a fixed feature key is created for the Switch Keymap feature code, it should be in the same position in both keymaps.

**10.26 KEYS:** Select the key for which you wish to assign a new value. A window appears as shown on the next page.

**10.27 OK/ CANCEL:** When the Keyset Map is programmed as desired, select the OK command button to save the changes. Or, select the Cancel command button to exit without saving changes.

**Key Assignment Programming**

**Key Type**  
Secondary Extension Key

**Selection**  
1001 01.02.01 ~Station Undefined

**Ring When** 1 Call(s) at Extension 1001

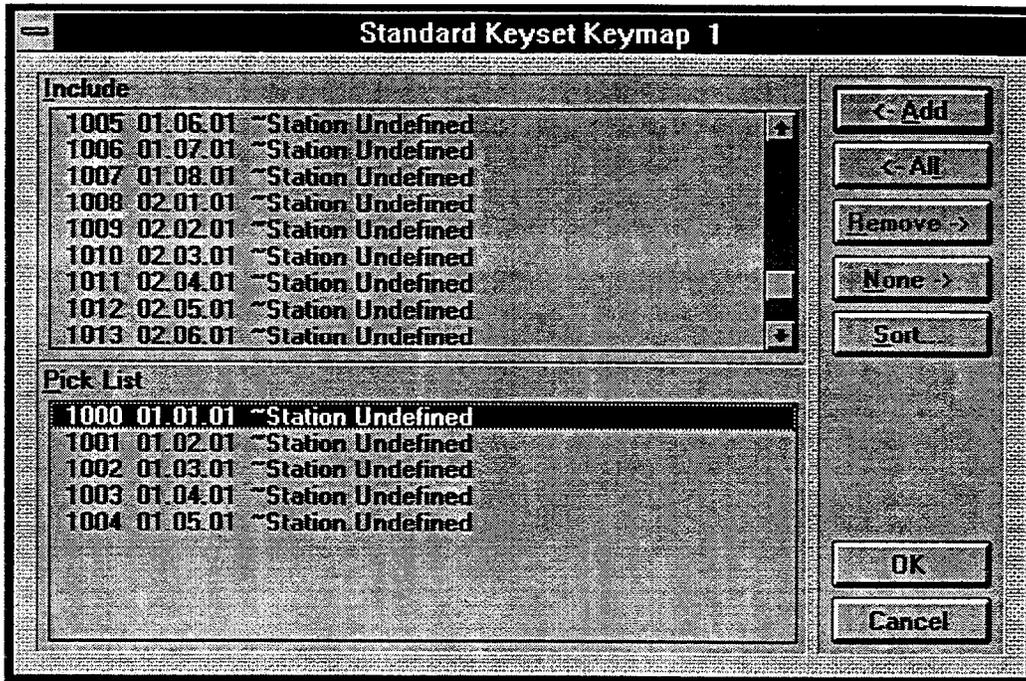
OK Cancel

### Key Assignment Programming

**10.28 KEY TYPE/SELECTION:** Key type options and the selections that are required are described below. Select the Key Type drop-down list box and scroll to the desired key type. Then select the Selection drop-down list box, if necessary, and select the additional information required for the selected key type (feature code, extension number, etc.). Secondary extension keys also have an additional field, as described below.

- **Call Key:** The next Call key number is automatically selected.
- **DSS/BLF Key:** Select the circuit or extension number of the station that will appear under the selected DSS/BLF key.
- **Feature Key:** Select the feature code that will be entered when this key is pressed.
- **Forward Key:** Select the desired Call Forward feature code.
- **Hunt Group Key:** Select the pilot number of the desired hunt group.
- **Individual Trunk Key:** Select the individual trunk that will be selected when this key is pressed.
- **Intercom (IC) Key:** No further programming is necessary. This key will be used for seizing an intercom channel or answering a waiting intercom call.
- **Page Zone Key:** Select the page zone 0-9 that will be used by selecting the page zone access code 960-969 (respectively).
- **Programmable Key:** Select the desired programmable key number (1-11).
- **Secondary Extension Key:** Two fields are programmed for this type of key:
  - *Selection:* Select the primary station that will be associated with this secondary extension key.
  - *Ring When \_\_ Calls At Extension XXXX:* This field allows the station to receive a burst of ringing when “n” number of calls are present at a primary station, and at least one call is ringing or camped on. The ring burst will repeat periodically as long as “n” number of calls are present at a primary station. (This period is determined by the DKTS Secondary Extension Key Alerting Tone timer.)
- **SPCL Key:** No further programming is required.
- **Station Speed Dial Key:** Select the station speed-dial location (0-9) that will be assigned.
- **System Speed Dial Key:** Select the system speed-dial location (000-999) that will be assigned.
- **Trunk Group Key:** Select the trunk group (1-104) that will be selected when this key is pressed.
- **Undefined Key:** No further programming is necessary. This key can be programmed by the user.

**10.29 OK/CANCEL:** When finished assigning key types, select the OK command button to save your changes, or select the Cancel command button to exit without saving any changes.

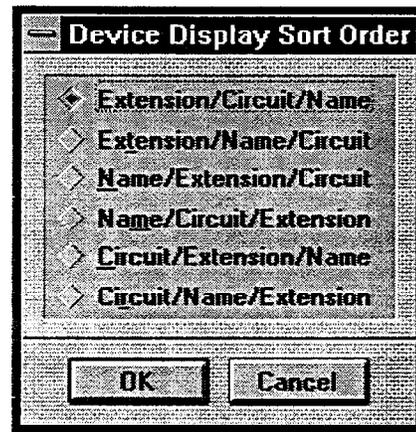


**Keypad Station List**

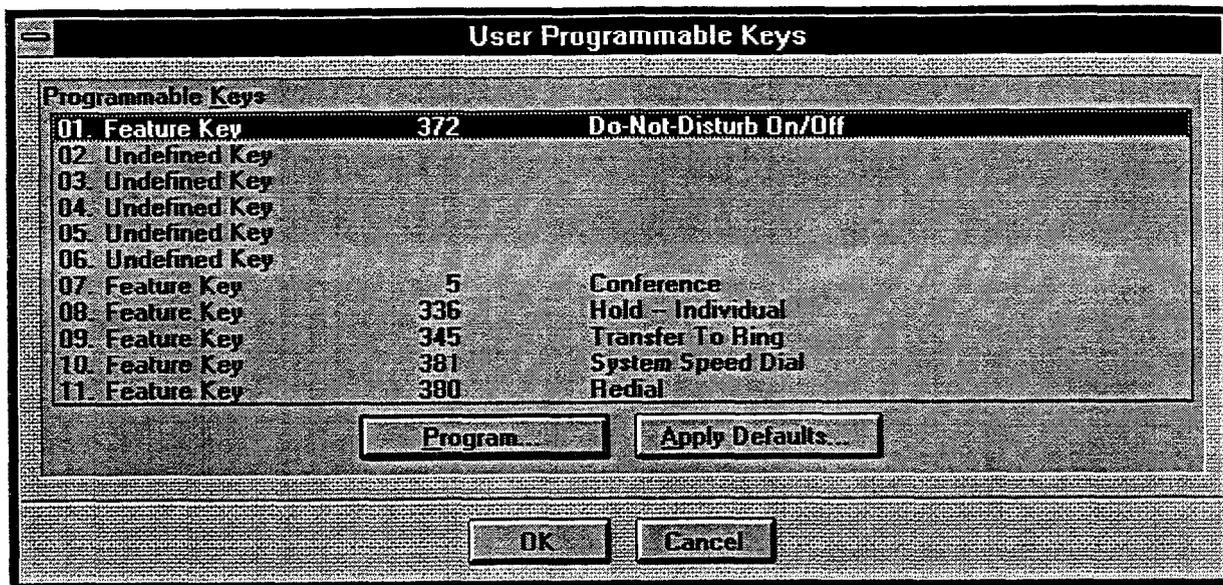
**10.30** The window shown above appears when the Station List command button is selected. To determine the stations that will use the selected key map, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Pick List to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** These command buttons cannot be used in this screen. To remove a station from this key map, exit, select another key map, and include the station in that map. A station must always be included in a key map.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



**User Programmable Keys**

**10.31 PROGRAMMABLE KEYS/PROGRAM:**

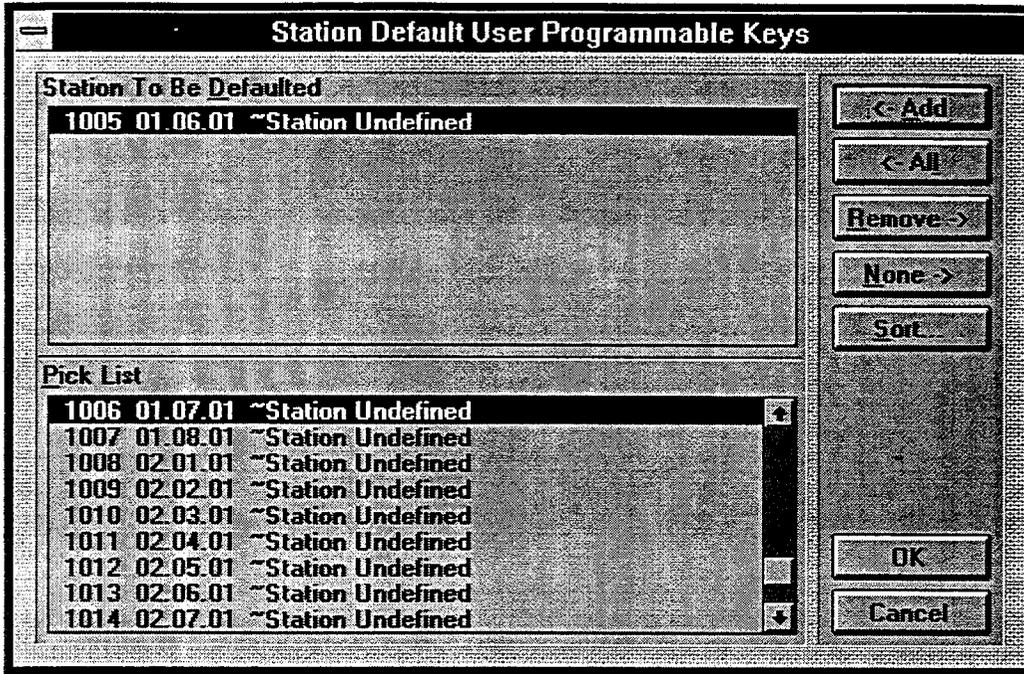
The list box shows all of the available user-programmable keys for the keymap being programmed. Scroll the highlight bar to the key to be programmed and select the Program command button. A window appears as shown on page 6-54. Follow the instructions given on that page.

**10.32** The default values for the programmable keys are as follows:

| KEY # | KEY TYPE    | CODE | FEATURE           |
|-------|-------------|------|-------------------|
| 01    | Feature Key | 372  | Do-not-disturb    |
| 02-06 | Undefined   | None | None              |
| 07    | Feature Key | 5    | Conference        |
| 08    | Feature Key | 336  | Individual Hold   |
| 09    | Feature Key | 345  | Transfer To Ring  |
| 10    | Feature Key | 381  | System Speed Dial |
| 11    | Feature Key | 380  | Redial            |

**10.33 APPLY DEFAULTS:** When user-programmable key values have been changed, you can allow the users to update their own stations (they use the Feature Key Default feature code — 395), or you can use the Apply Defaults command button to update stations in the selected key map. When the Apply Defaults command button is selected, the window shown on page 6-57 appears. *If you choose not to default any keysets, you will see a warning message reminding you that the new values for the user-programmable keys will not take effect until the keysets are defaulted.*

**10.34 OK/CANCEL:** When finished, select the OK command button to save your changes (and apply the defaults, if that option was selected), or select the Cancel command button to exit without saving any changes or defaulting stations.

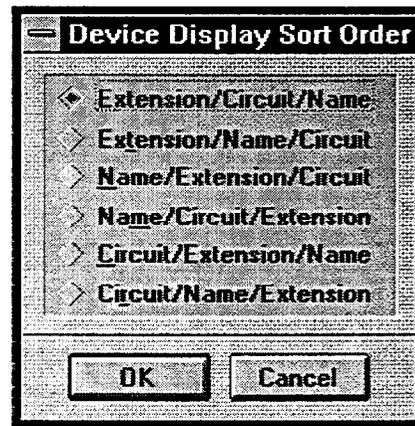


**Default Station List**

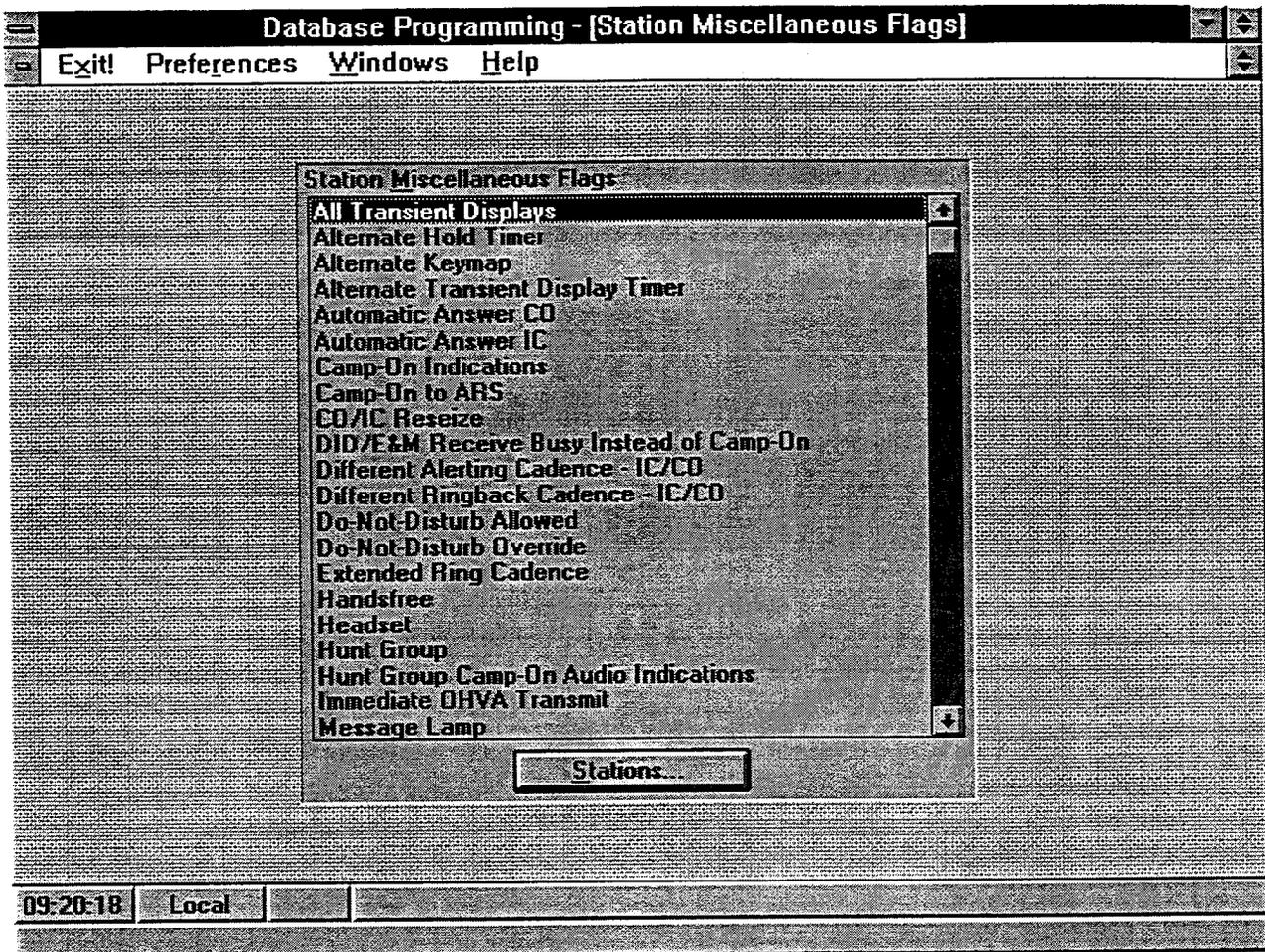
10.35 The window shown above appears when the Apply Defaults command button is selected. The Pick List includes all stations in the selected key map. To determine the stations that will have their user-programmable keys updated, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Pick List to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button to return to the screen shown on the preceding page. Or, to exit without changing the lists or defaulting any stations, select the Cancel command button.

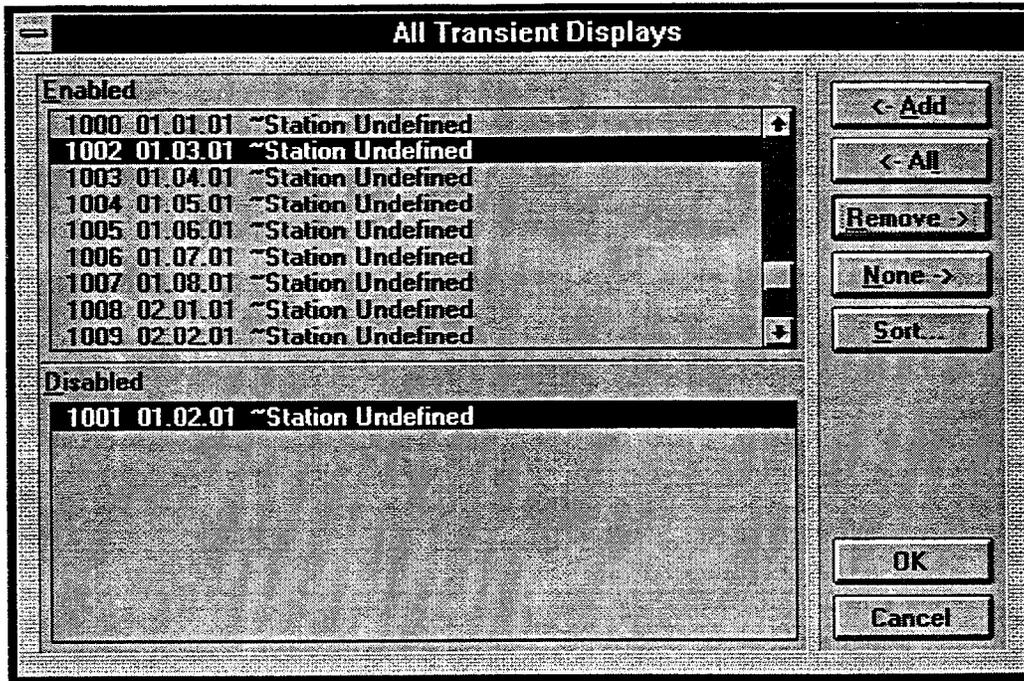


### C. STATION MISCELLANEOUS FLAGS

10.36 The window shown above is used to assign a station feature to a group of stations. It is viewed by selecting Station Miscellaneous Flags from the Station Programming menu or entering the SFEA command. Station features included in this program are the same as those in the Miscellaneous Flags window of Individual Station programming as described on page 6-30. Determine which station will use each of the features. Note

that some are only for keysets or single-line sets features. A program planning sheet is located in Figure 6-9, on page 6-257.

10.37 **STATIONS:** To enable a feature for a group of stations, highlight that feature in the list box and select the Stations command button. The window shown on the following page appears.



**10.38** The window shown above appears when the Stations command button is selected. The feature being programmed is identified in the window header. To determine the stations that will have the selected feature enabled, use the following procedure. In some cases, the feature has two possible states (such as Redial Mode Dialed/Saved or Hunt Group Remove/Replace) and the list box headers show the states instead of Enabled and Disabled.

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove the highlighted sta-

tion from the Include list, select the Remove command button. Or, to remove all stations, use the None command button.

- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.
- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

## 11. SYSTEM-WIDE FEATURES

11.1 When the System-Wide Features command button is selected from the Database Programming Menu window, the list box shows the following options:

- Account Code Information
- ARS Programming
- DND and Reminder Messages
- Extension List Programming
- Extensions, Usernames, and Feature Codes
- Hunt Groups
- Miscellaneous System-Wide Information
- Page Zones
- System Forwarding
- System Speed Dial
- System Timers
- Toll Restriction

11.2 Each of these programs is explained in detail on the following pages.

### A. ACCOUNT CODE INFORMATION

11.3 There can be up to 256 of each type of account code. Maximum account code length can be up to 12 digits. Account codes can be of varying lengths as long as they do not exceed the maximum. For example, if maximum length is four digits, 1, 11, 111, and 1111 can be entered as separate account codes.

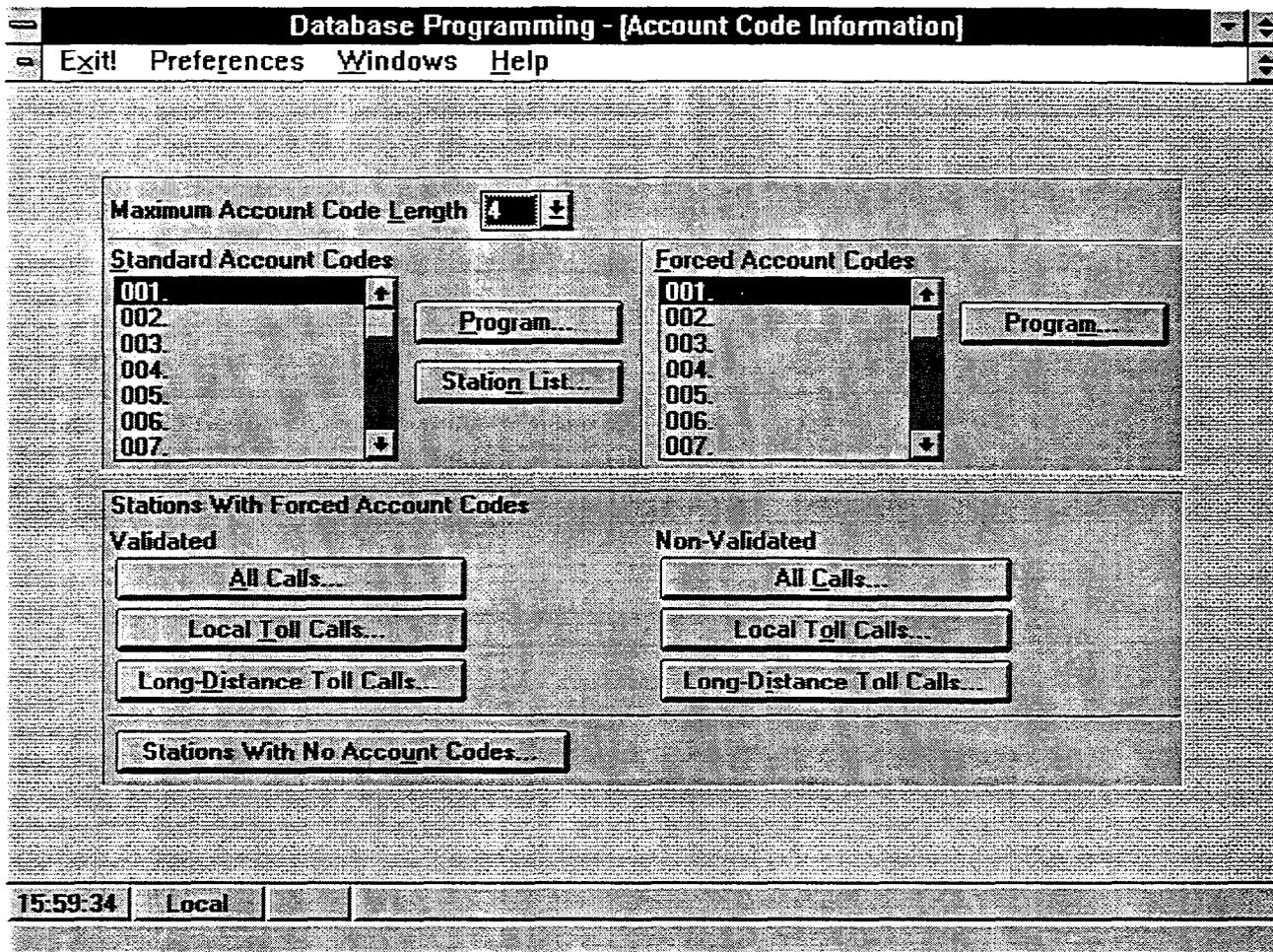
11.4 To program account codes, select Account Code Information from the Database Programming Programming list box. The programming window appears as shown on the next page. A program planning sheet appears in Figure 6-10, on page 6-258.

11.5 The account code types that can be programmed include the following:

- **Standard:** Standard account codes automatically appear in the SMDR printout to identify calls from this station. The station user is not required to enter any digits during the call.
- **Forced — All Calls Validated:** If this type of account code is enabled, the user must enter a forced account code before an outside call can be placed. If the code matches one of the pre-programmed forced

account codes in the database, the call is allowed. If the code does not match, the call is blocked.

- **Forced — All Calls Non-Validated:** With this account code type, the user must enter an account code before placing an outside call. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **Forced — Local Toll Calls Validated:** This account code type requires the user to enter an account code after dialing a local toll call number (a toll call within the local area codes) or a long distance call when using ARS. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked.
- **Forced — Local Toll Calls Non-Validated:** This account code type requires the user to enter an account code after dialing a local toll call number (a toll call within the local area codes) or a long distance call when using ARS. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **Forced — Long-Distance Toll Calls Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call (a toll call outside of the local area codes) has been dialed when ARS is used. If the code matches one of the pre-programmed forced account codes in the database, the call is allowed. If the code does not match, the call is blocked.
- **Forced — Long-Distance Toll Calls Non-Validated:** When this account code type is enabled, the user only has to enter an account code if the system detects that a long distance call (a toll call outside of the local area codes) has been dialed when ARS is used. The code is not checked against any lists and the call is allowed as soon as the code is entered.
- **No Account Code:** If the user will not be required to enter an account code, this option is selected. The user may still use optional account codes or enable the Account Code For All Calls Following feature, as desired.



**11.6 MAXIMUM ACCOUNT CODE LENGTH:**

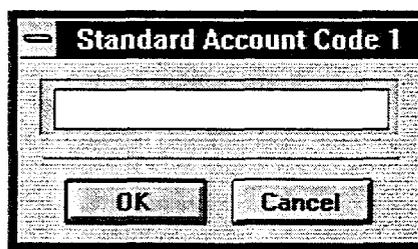
To select the maximum length (number of digits) for all account codes, select the Account Code Length drop-down list box. Then scroll to the desired account code length (3–12). The selected length is shown in the box when it is closed.

**NOTE:** If the maximum length is shortened, an error message will display that tells you that all account codes will be erased. If this message appears, select Yes to erase the codes. Or, select No so that you can go back and change the maximum length.

**11.7 STANDARD ACCOUNT CODES:** The Standard Account Code list box is used for programming the individual account codes (001–256). When the desired account code is highlighted in the list box, you can use the following command buttons to program the account code and to assign the station(s) that will use that code.

- **PROGRAM:** When the Program command button is selected, the following window appears. Enter the desired account code (up to the programmed maximum number of digits, using digits 0–9) and then se-

lect the OK command button. Or, to leave the code unchanged, select the Cancel command button.



- **STATION LIST:** To determine which stations will use the selected standard account code, select the Station List command button. A Station List window appears as shown on page 6–63.

**11.8 FORCED ACCOUNT CODES/PROGRAM:** The Forced Account Code list box is used for programming the individual forced account codes (001–256). When the desired account code is highlighted in the list box, you can use the associated Program command button to program the account code. When the Program command button is selected, a window appears as shown above. Enter the desired account code (up to the

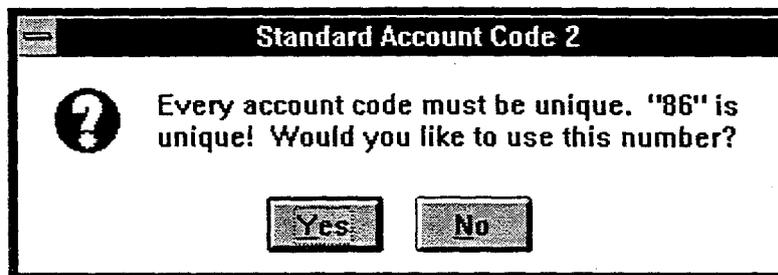
programmed maximum number of digits) and then select the OK command button. Or, to leave the code unchanged, select the Cancel command button.

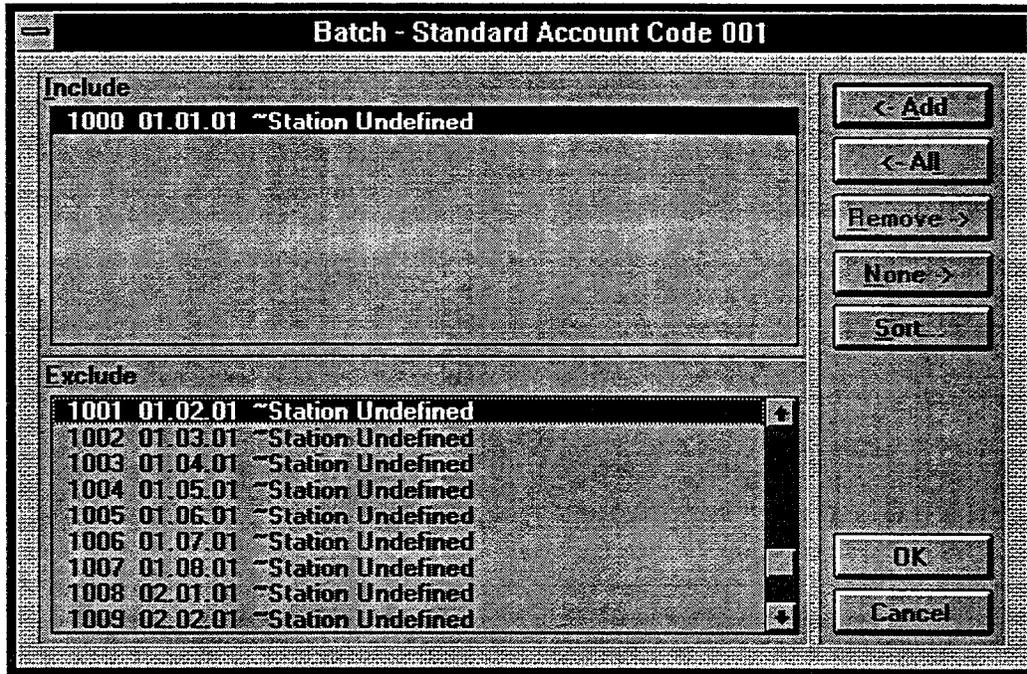
**11.9 STATIONS WITH FORCED ACCOUNT CODES:** To determine which stations will use each type of forced account codes, select the desired command button. A Station List window appears as shown on the next page.

**11.10 STATIONS WITH NO ACCOUNT CODES:** To determine which stations will use no account codes, select the Stations With No Account Codes command button. A Station List window appears as shown on the next page.

**NOTE:** Each station can be assigned *either* a forced or standard account code (or no account code). If you select a station for standard or forced account code that was previously programmed to require an account code, the previous account code type is replaced by the new code type.

**11.11** If you attempt to add an account code that has already been assigned, the following error message appears. The system has selected a unique number. If you wish to use that number, select the Yes command button. If you wish to enter a different number, select the No command button to return to the Account Code window.

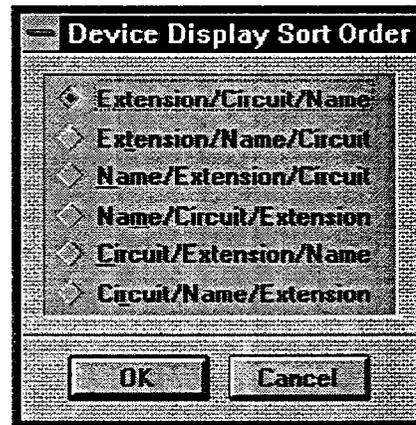




11.12 The window shown below appears when the Stations With... or Station List command button is selected. To determine the stations that will have the selected account code type, use the following procedures.

- **ADD/ALL:** Use the Add command button to move stations from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** These command buttons cannot be used in this screen. To remove a station from an account code list, exit and select another account code list. Then include the station in that list. A station must always be included in a list.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

## B. AUTOMATIC ROUTE SELECTION

**11.13** The automatic route selection (ARS) window, shown on page 6-66, is used to enter data for the ARS route groups and dial rules. To reach it, select ARS Programming from the System-Wide Features Menu.

**NOTE:** This window cannot be used unless the ARS premium feature has been enabled as described on page 6-220. When programming a KF-rated system or a system without ARS, the option will still appear in the System-Wide Features menu. However, when it is selected an error message is presented to remind the programmer that it is not available.

**11.14** To prepare to program ARS, refer to page 4-29 in the FEATURES section. The parameters that are programmed for ARS are as follows. A program planning sheet is located in Figure 6-11, on page 6-263.

**11.15 Route groups:** ARS can have up to 16 groups of trunks that are used for routing calls according to the type of call being placed. The default values of the pre-programmed route groups are as follows. All route groups are programmable.

- **Route Group 1 — Local:** This route group is used for all calls that do not begin with a toll digit (1) or operator digit (0) and for calls to 911. **NOTE:** Calls to 911 will go through this route group even if it re-programmed.
- **Route Group 4 — Toll Local:** This route group is used for calls with a toll digit (1) and a seven-digit number, and for calls to 1N11 (N=Any digit 2-9).
- **Route Group 11 — Toll Long Distance:** This route group processes calls with a toll digit (1) and a 10-digit number. The numbers may also include equal access digits.
- **Route Group 13 — Operator:** This route group processes calls that begin with an operator digit (0) but *do not* begin with an international access code (01 or 011). The numbers may also include equal access digits.
- **Route Group 14 — International Station-to-Station:** This route group is for calls that begin with an international station-to-station access code (011) but *do not* begin with the international operator access code (01). The numbers may also include equal access digits.
- **Route Group 15 — International Operator:** This route group is for calls that begin with an interna-

tion operator access code (01). The numbers may also include equal access digits.

**11.16 Dial rules:** Each route group has a programmed set of dial rules that tell the system what to dial. (The system can have up to 16 dial rules, 12 of which are programmable. Each route group can use up to 10 dial rules.) For example, if the selected route group requires that the number contain "1" but no area code, the dial rules include the 1, but would not echo the area code. The modified telephone number can contain up to 32 digits. When programming ARS, you can use preset dial rules or create new dial rules. Pre-programmed dial rules include the following:

- **Dial Rule #1 — ECHO Equal Access:** This dial rule includes the equal access digits (wildcard Q, which defaults to 10XXX and 101XXX) in the number, if dialed.
- **Dial Rule #2 — ECHO Toll Field:** The toll field is included in the number, if dialed.
- **Dial Rule #3 — ECHO 3 Digits After Toll Field:** With this dial rule, the three digits after the toll field are included in the number. (These digits are usually the area code.)
- **Dial Rule #4 — ECHO Local Address:** This dial rule allows ARS to dial the rest of the digits that were dialed by the station user.
- **Dial Rule #5 — ADD #:** This dial rule adds a pound (#) to the dialed number. This pre-programmed dial rule is programmable.

**NOTE:** Dial rules and dial patterns can contain any digit (0-9, \*, #) and/or hookflashes. Dial rules can also contain pauses.

**11.17 Dial Patterns:** The route groups are programmed to process specific dial patterns. For example, the Operator route group is programmed to process [Q]RN+, [Q]RR+, and [Q]R calls (Q=Equal Access, R=Operator Access, N=Any digit 2-9, [ ]=Optional dial string). A complete list of special characters and toll strings is shown on page 6-109.

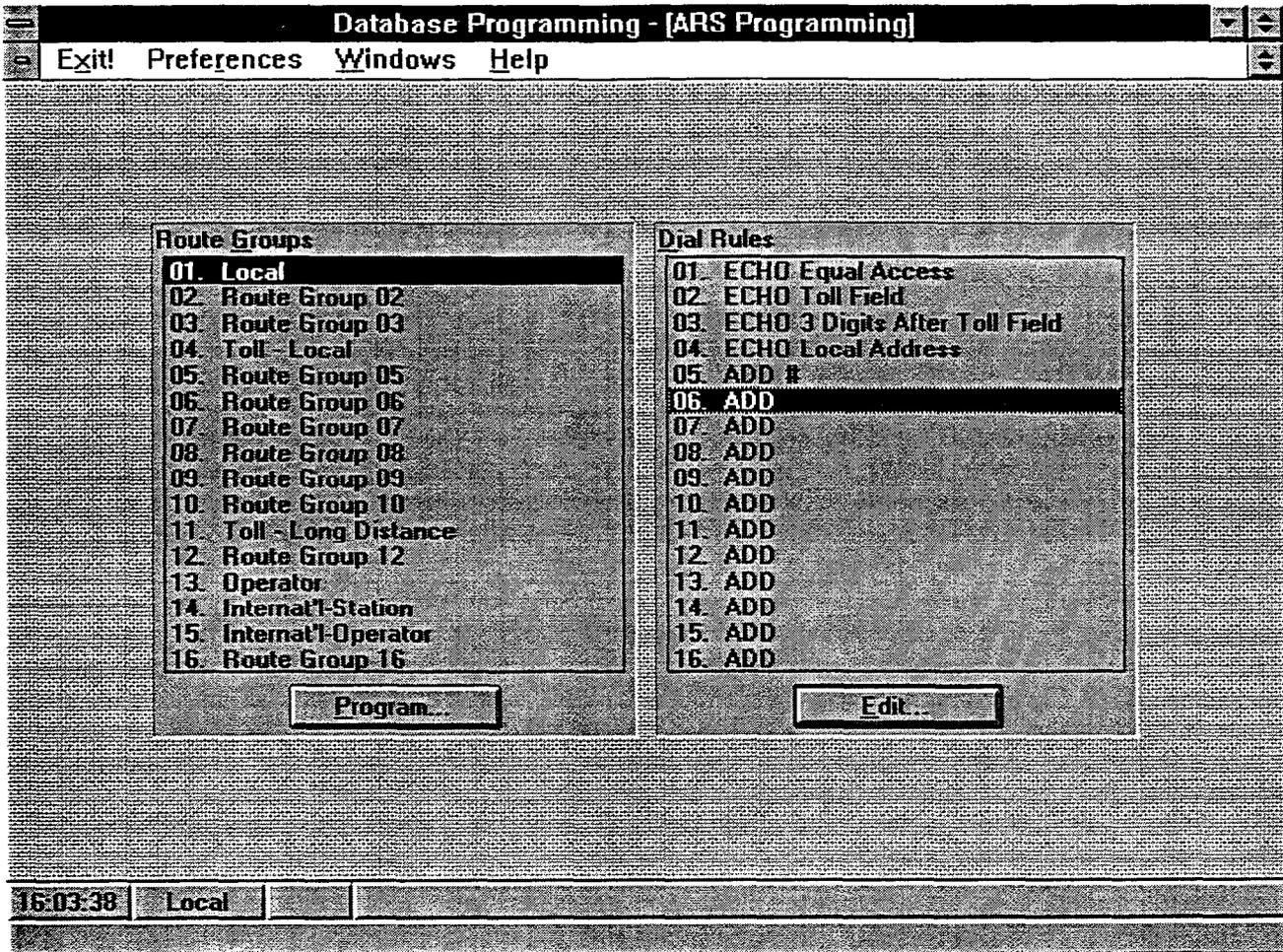
**11.18 Trunk Groups:** Each route group is assigned a list of trunk groups that will be used for placing the calls that match the programmed dialing patterns. For example, the Local route group would contain trunk groups that include local trunks, but the Toll Local route group might have trunks groups with FX trunks.

11.19 Programming ARS follows this general outline:

- (1) Determine whether any special dial strings will be required. If so, program the necessary dial rules.
- (2) Determine what types of calls will be processed by each route group and program names for those route groups.
- (3) For each route group, determine which trunk groups will be used and program them. Make sure that the trunk groups being used in the route group contain the proper type of trunks (local, FX, WATS, etc.) for the calls that will be routed. Trunk group toll restrictions will not apply when ARS is used; only station toll restrictions are checked. Also ensure the stations that will be us-

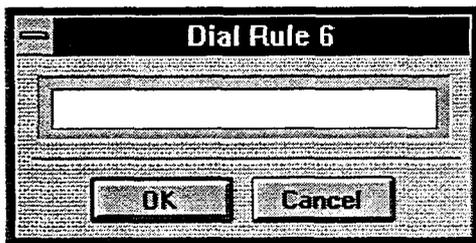
ing the ARS route group have outgoing access for the trunk groups.

- (4) For each route group, determine what dialing patterns it will process and program those dialing patterns. Dial patterns are assigned to the route group in the order they will be used. When checking the route group, the system will look at the first dial pattern. If it does not match, the system will continue checking the other patterns in the route group's list. If a match is found, the route group is selected. If not, the next route group is checked.
- (5) For each route group, program the dial rules so that the outgoing numbers include all of the necessary digits.

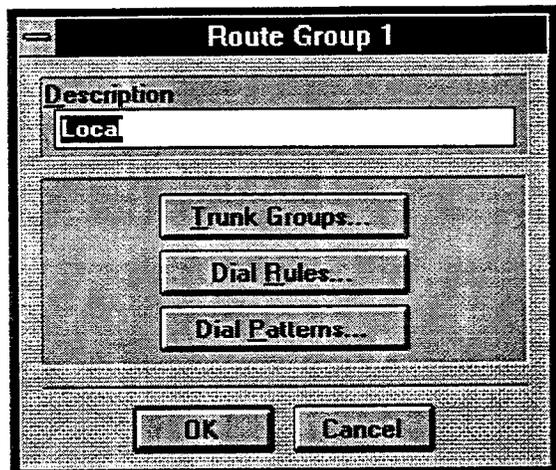


**11.20 ARS ROUTE GROUPS/PROGRAM:** To program one of the route groups, select the ARS Route Groups list box and scroll the highlight bar to the desired route group in the list box. Then select the Program command button. The window on the next page appears.

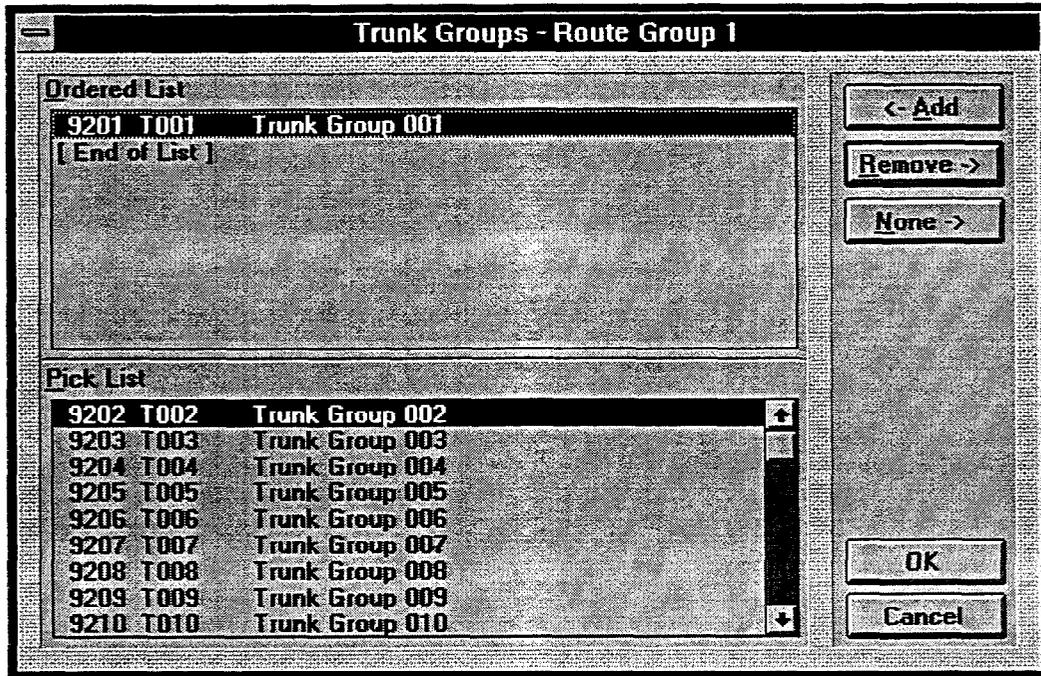
**11.21 ARS DIAL RULES/EDIT:** To program or edit one of the programmable dial rules, select the ARS Dial Rules list box and scroll the highlight bar to the dial rule to be programmed. Then select the Edit command button. The following window appears.



- **DIAL RULE:** Enter the digit string that will be added to dialed number in the text box. Each dial rule can contain up to 16 digits including 0-9, #, \*, timed pauses, and/or hookflashes. To program pauses, enter P for a pause. For a hookflash, enter F. The length of a pause (P) is determined by the programmable Pause timer. The length of the hookflash is determined by the programmable Hookflash timer. Each pause or hookflash (P or F) is considered one digit.
- **OK/CANCEL:** To leave the window without saving any changes, select the Cancel command button. When all programming appears as desired, select the OK command button.



- **DESCRIPTION:** To give a name to the route group, select the Description text box and enter a name of up to 20 characters.
- **TRUNK GROUPS:** To determine the trunk groups that will be used by the route group, select the Trunk Groups command button. A window appears as shown on the next page.
- **DIAL RULES:** To determine the dial rules that will be used by the route group, select the Dial Rules command button. A window appears as shown on page 6-69.
- **DIAL PATTERNS:** The route group can be programmed to process specific dial patterns, such as X11. The dial patterns are programmed as described on page 6-70.



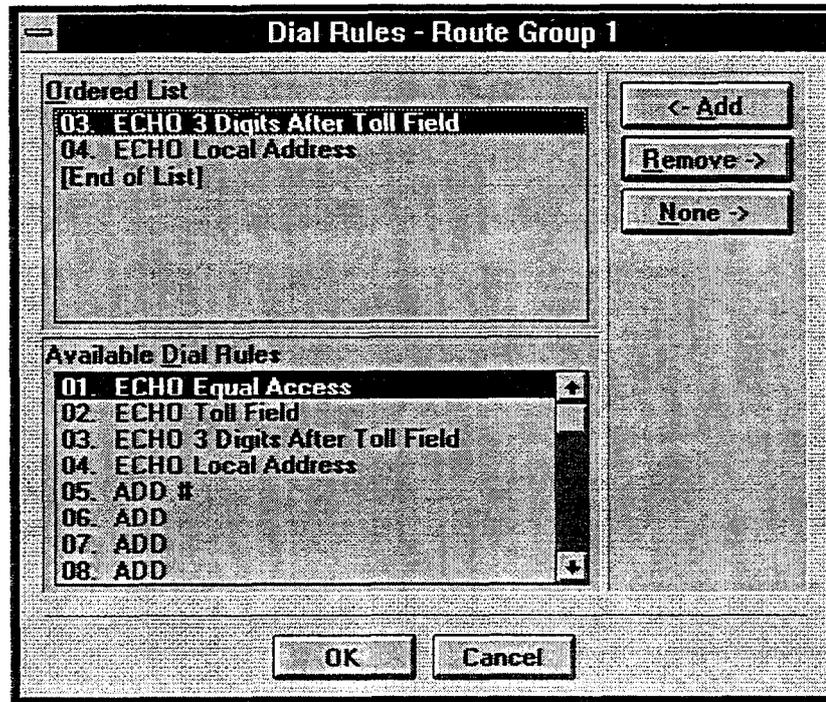
### ARS Trunk Groups

11.22 Trunk groups must be placed in the Ordered List Box in the order that they should be selected. Make sure that the trunk groups being used in the route group contain the proper type of trunks (local, FX, WATS, etc.) for the calls that will be routed. Trunk group toll restrictions will not apply when ARS is used; only station toll restrictions are checked. Also ensure the stations that will be using the ARS route group have outgoing access for the trunk groups.

- **ADD:** Place trunk groups in the Ordered List box in the order in which you want them to be selected. To add a trunk group to the Ordered List box, move the highlight bar below the location in the Ordered List

box where you want the trunk group to appear. Then highlight the desired trunk group in the Pick List box. Select the Add command button to move the highlighted trunk group from the Pick List to the Ordered List.

- **REMOVE/NONE:** To remove a trunk group from the Ordered list, highlight the trunk group and select the Remove command button. Or, to remove all trunk groups, use the None command button.
- **OK/CANCEL:** When the Ordered List appears as desired, select the OK command button. Or, to exit without changing the route group, select the Cancel command button.



#### ARS Dial Rules

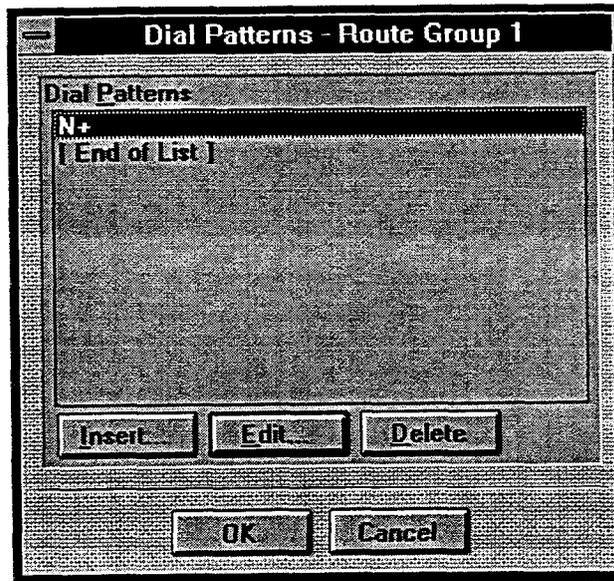
**11.23** Dial rules must be placed in the Ordered List Box in the order that they should be used. For example, list dial rule 2 (Echo Toll Field), then dial rule 3 (Echo 3 Digits After Toll Field), then dial rule 4 (Echo Local Address).

**NOTE:** When dialing an ARS number, the system only sends out a total of 32 digits. For this reason, the complete ARS number (including the dialed number and any assigned dial rules) should be kept under 32 digits.

- **ADD:** Place the scroll bar below the position in the Ordered List box where you wish the rule to appear.

Then select the Add command button to copy the highlighted dial rule from the Pick List to the Ordered List.

- **NONE/REMOVE:** To remove a dial rule from the Ordered list, highlight the dial rule and select the Remove command button. Or, to remove all dial rules, use the None command button.
- **OK/CANCEL:** When the Ordered List appears as desired, select the OK command button. Or, to exit without changing the dial rules for the route group, select the Cancel command button.



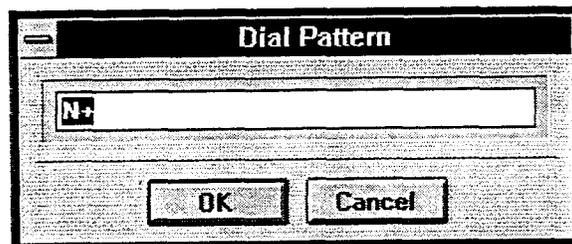
**ARS Dial Patterns**

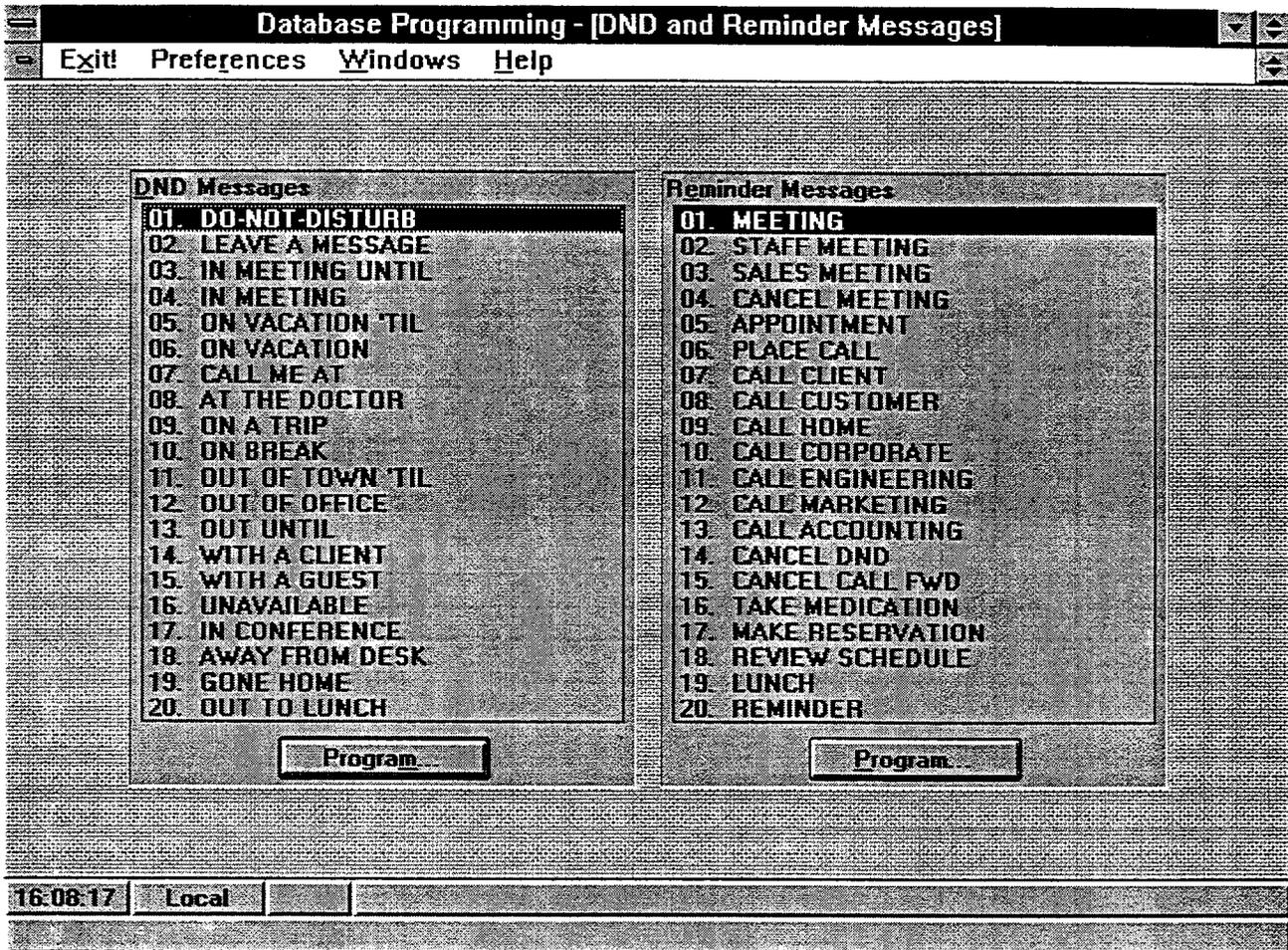
11.24 Dial patterns are assigned to the route group in the order they will be used. When checking the route group, the system will look at the first dial pattern. If it does not match, the system will continue checking the other patterns in the route group's list. If a match is found, the route group is selected. If not, the next route group is checked.

11.25 Only route groups 1, 4, 11, 13, 14, and 15 have default dial patterns. Their defaults are as follows.

| ROUTE GROUP # | DIAL PATTERN(S)     |
|---------------|---------------------|
| 1             | N+                  |
| 4             | TN1, TXXXXXXX       |
| 11            | [Q]TNXXXXXX+        |
| 13            | [Q]RN+, [Q]RR, [Q]R |
| 14            | [Q]011+             |
| 15            | [Q]01+              |

- **INSERT:** To add a dial pattern to the route group, place the highlight bar below the location where you wish to add the pattern. Then select the Insert command button. A text box window appears as shown below. Enter the digit string in the text box and select OK. Or, if you decide not to enter a new dial pattern, select Cancel.
- **EDIT:** To edit a dial pattern, place the highlight on the pattern to be changed and select the Edit command button. A text box window appears as shown below. Edit the digit string in the text box and select OK. Or, if you decide not to change the existing dial pattern, select Cancel. Note that the text in the box is automatically highlighted when the window appears.
- **DELETE:** To remove a dial pattern from the list box, highlight the pattern and then select the Delete command button.
- **OK/CANCEL:** When the Dial Patterns list appears as desired, select OK. Or, to exit without changing the dial patterns for the route group, select Cancel.

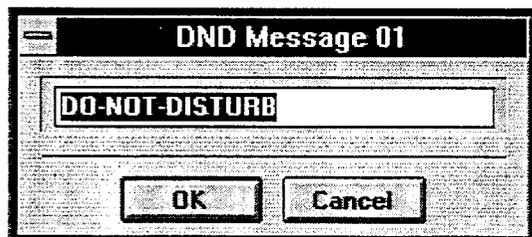




**C. DND AND REMINDER MESSAGES**

**11.26** When you select DND and Reminder Messages from the System-Wide Features Programming menu, the programming window appears as shown above. You can reprogram any or all of the reminder messages and/or do-not-disturb messages with messages of up to 16 characters each. A program planning sheet is located in Figure 6-12, on page 6-264.

**11.27 REMINDER/DND MESSAGES:** Select and scroll through the desired list box until the message to be re-programmed is highlighted. Then select the appropriate Program command button. The following window appears. Type any 16-character message in the text box and select the OK command button. Or select the Cancel command button to leave the message unchanged.



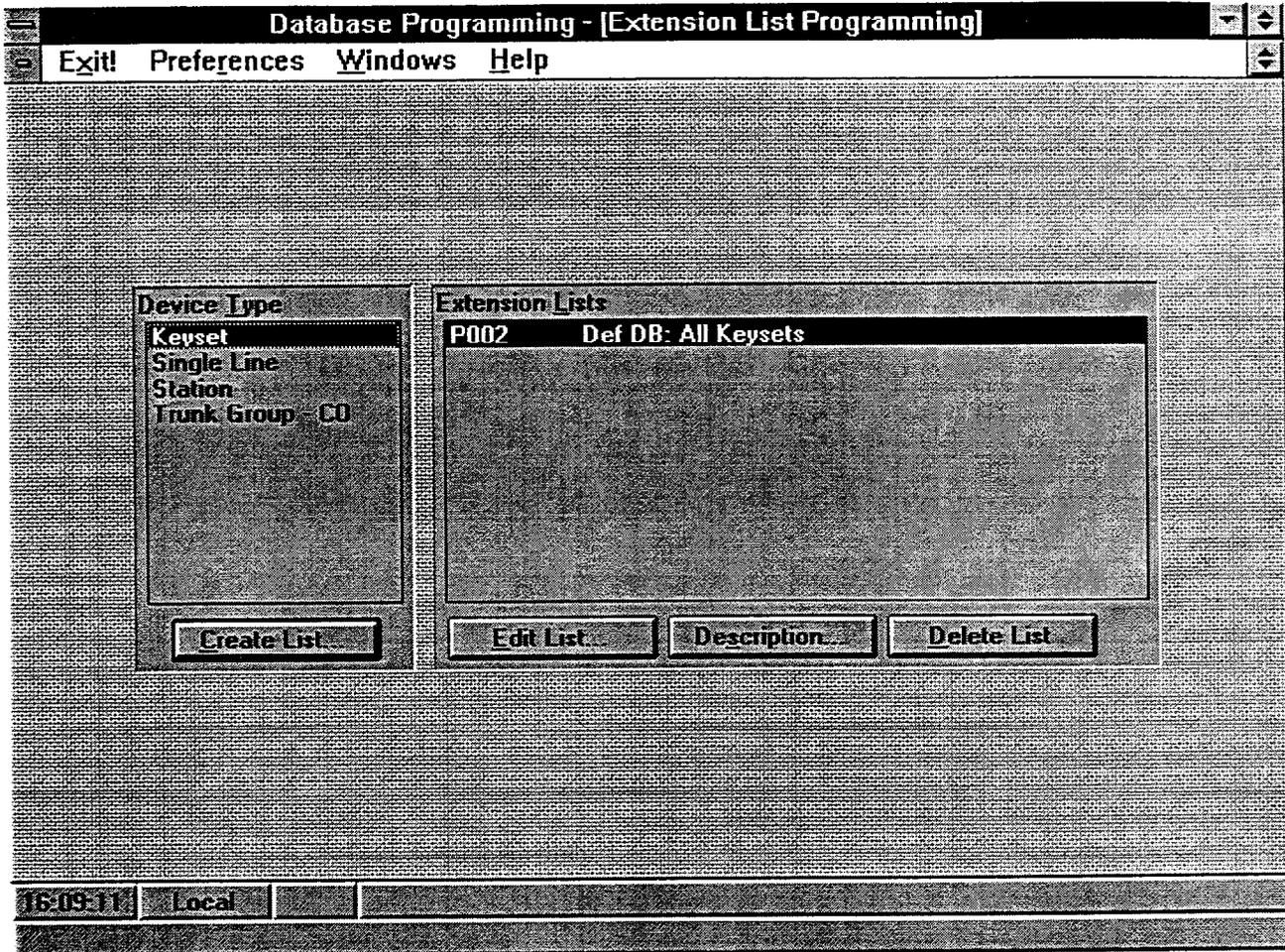
**11.28** The default messages are as follows:

**DO-NOT-DISTURB MESSAGES:**

- |                     |                     |
|---------------------|---------------------|
| 01 DO-NOT-DISTURB   | 11 OUT OF TOWN 'TIL |
| 02 LEAVE A MESSAGE  | 12 OUT OF OFFICE    |
| 03 IN MEETING UNTIL | 13 OUT UNTIL        |
| 04 IN MEETING       | 14 WITH A CLIENT    |
| 05 ON VACATION 'TIL | 15 WITH A GUEST     |
| 06 ON VACATION      | 16 UNAVAILABLE      |
| 07 CALL ME AT       | 17 IN CONFERENCE    |
| 08 AT THE DOCTOR    | 18 AWAY FROM DESK   |
| 09 ON A TRIP        | 19 GONE HOME        |
| 10 ON BREAK         | 20 OUT TO LUNCH     |

**REMINDER MESSAGES:**

- |                   |                     |
|-------------------|---------------------|
| 01 MEETING        | 11 CALL ENGINEERING |
| 02 STAFF MEETING  | 12 CALL MARKETING   |
| 03 SALES MEETING  | 13 CALL ACCOUNTING  |
| 04 CANCEL MEETING | 14 CANCEL DND       |
| 05 APPOINTMENT    | 15 CANCEL CALL FWD  |
| 06 PLACE CALL     | 16 TAKE MEDICATION  |
| 07 CALL CLIENT    | 17 MAKE RESERVATION |
| 08 CALL CUSTOMER  | 18 REVIEW SCHEDULE  |
| 09 CALL HOME      | 19 LUNCH            |
| 10 CALL CORPORATE | 20 REMINDER         |



#### D. EXTENSION LIST PROGRAMMING

**11.29** An extension list is a group of intercom extensions or trunk group extensions. These lists are used when programming features that use common lists. For example, a group of keyset stations could be assigned to the same paging zone and have ring-in for the same trunk groups. With an extension list, the programmer would have to enter only one list number instead of entering all of the extensions. Extension lists of stations can also be included in hunt groups.

**11.30** There are four types of possible extension lists:

- **Keyset:** This type of extension list includes only keyset extension numbers.
- **Single-Line:** This type of extension list includes only single-line set and MDPM extension numbers.
- **Station:** A station extension list can include keysets, MDPMs, and/or single-line extension numbers.
- **Trunk Group:** A trunk group extension list includes only trunk group access numbers.

**11.31** The number of extension lists allowed on the system is determined by the number of entries in the lists. There can be a combined total of up to 2500 entries (station or trunk extensions) in all of the extension lists.

**11.32** The window shown above can be viewed by selecting Extension List Programming from the System-Wide Features menu. A program planning sheet is located in Figure 6-13, on page 6-266.

**11.33 DEVICE TYPE:** When a selection in this list box is highlighted, the Extension Lists list box shows all of the lists that exist for that device type.

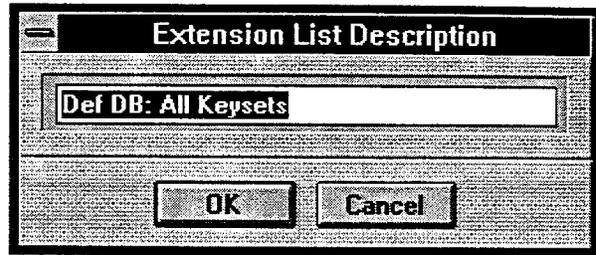
**11.34 CREATE LIST:** To create a new extension list, highlight the desired selection in the Device Type list box and select the Create List command button. A window appears as shown on page 6-74.

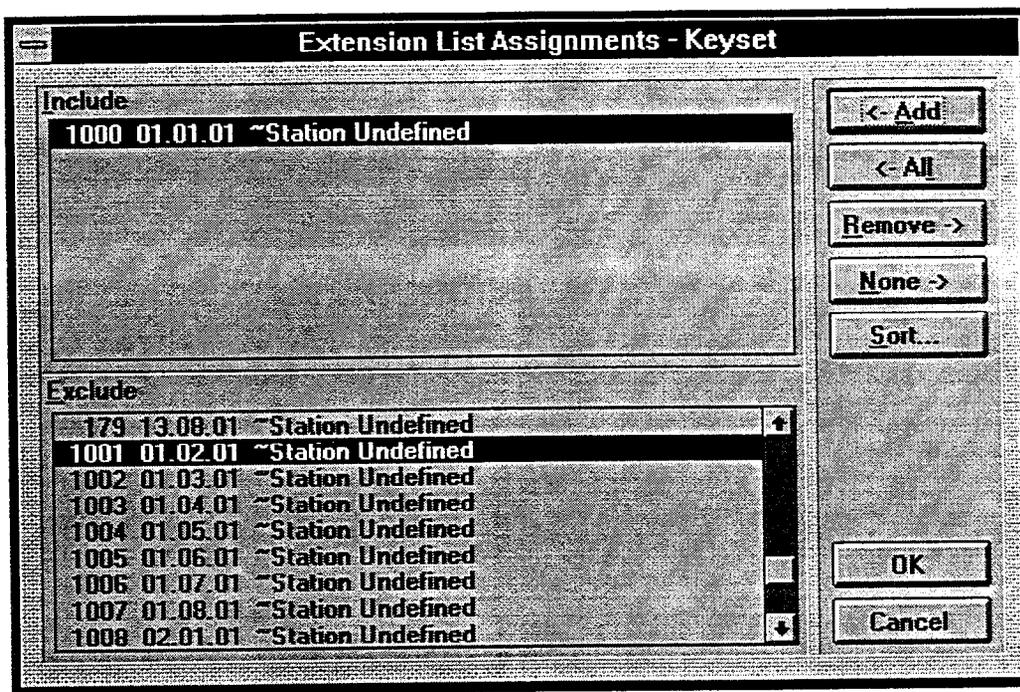
**11.35 EDIT LIST:** To edit an existing extension list, highlight the desired selection in the Extension Lists list box and select the Edit List command button. A window appears as shown on page 6-74.

**11.36 DELETE LIST:** To delete a list, highlight it in the Extension Lists list box and select the Delete List command button. A warning window will appear, asking you to verify that the list should be deleted. To delete the list, select Yes. To cancel the deletion, select No.

**11.37 DESCRIPTION:** To program or change a name for an extension list, highlight the desired list in the Extension Lists list box. The following window appears. Enter the name, up to 20 characters in the text box. When finished, select the OK command button. Or,

to exit without changing the description, select the Cancel command button.



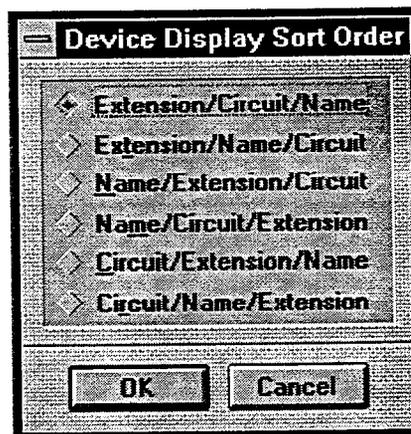


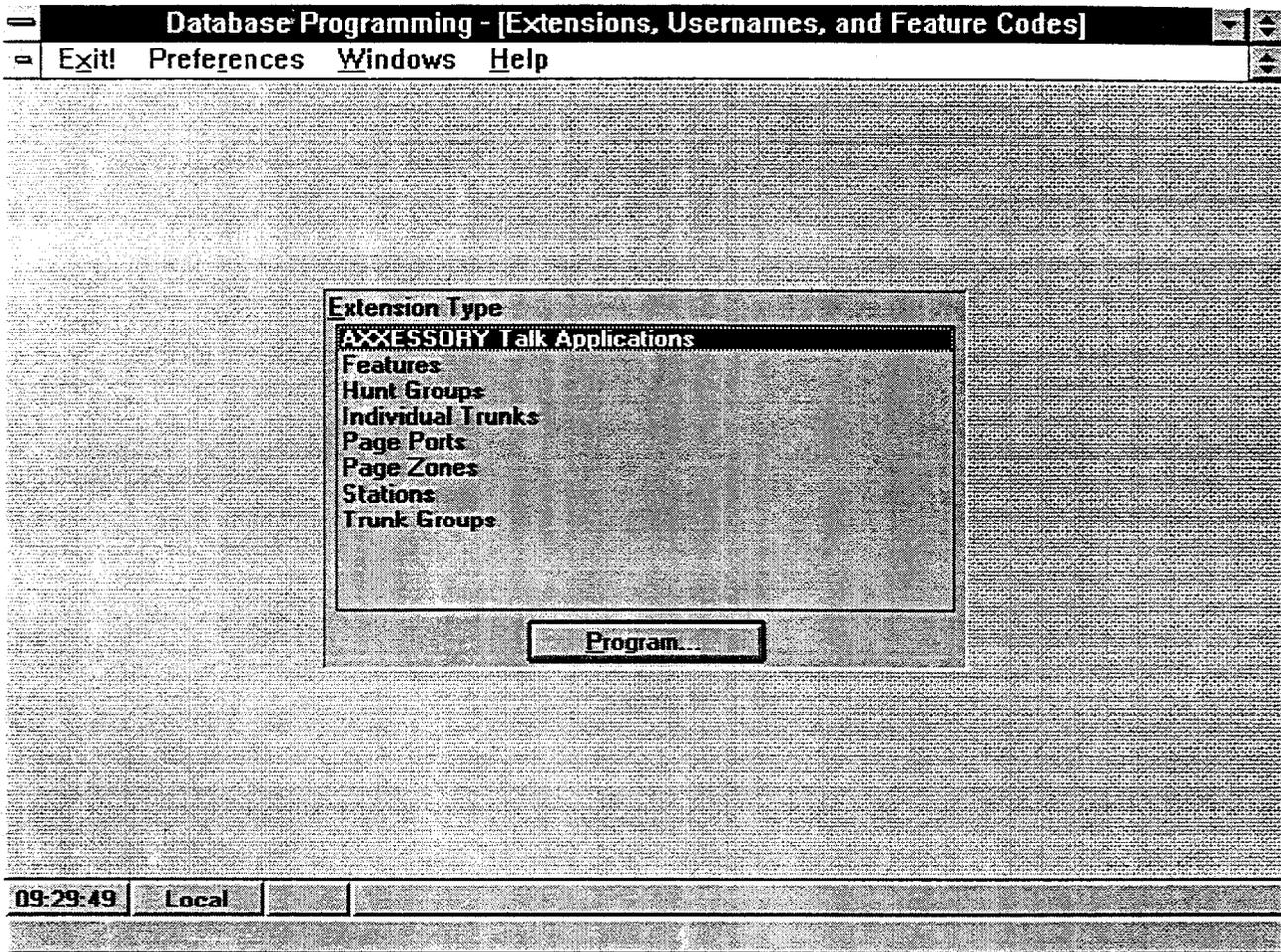
**11.38** The window shown above appears when the Create List or Edit List command button is selected. To determine the stations or trunk groups that will be included in the list, use the following procedure. (A device can be included in more than one extension list.)

**NOTE:** When using an extension list for ring-in or hunt groups, do not exceed 30 stations per list. The system can send ring signal to up to 30 stations.

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and then select the Remove command button. Or, to remove all stations, use the None command button.
- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.





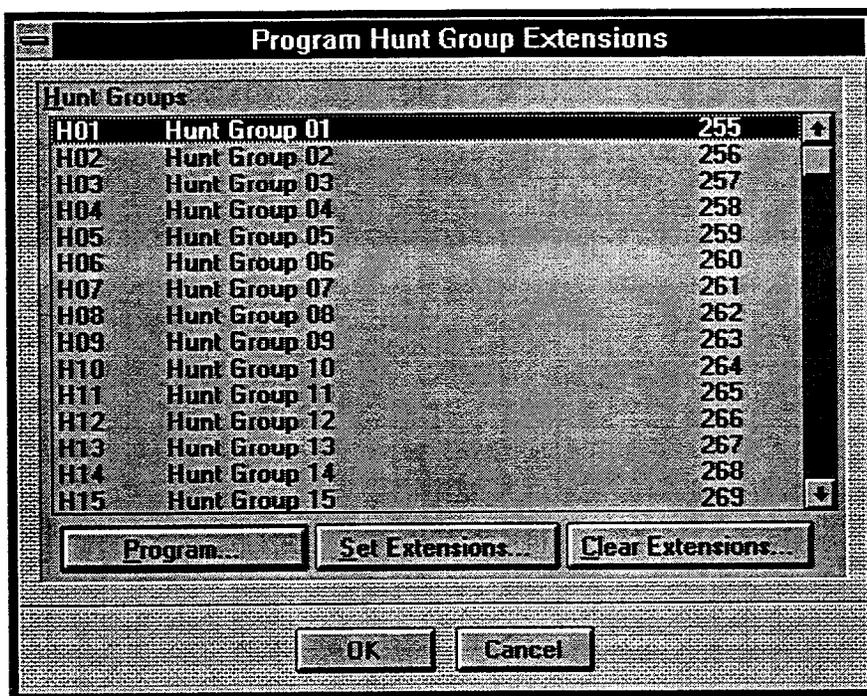
### E. EXTENSIONS, USERNAMES, AND FEATURE CODES

11.39 To reprogram station extension numbers, hunt group pilot numbers, trunk group access codes, feature codes, page port extension numbers, or AXCESSORY Talk applications, select Extensions, Usernames, and Feature Codes from the System-wide Features menu or enter the EXT command. The programming window appears as shown above.

11.40 Make a list of feature codes, extension numbers, hunt group pilot numbers, and trunk group access codes, as well as names and descriptions for the users, hunt groups, page ports, and trunks. A program planning sheet is located in Figure 6-14, on page 6-267.

**NOTE:** If you change feature codes, they will not be updated in the feature code directory used by Desktop Interface devices (such as AXCESSORY Connect) that are installed on the system. Those directories will have to be updated manually. However, any devices installed after the change will have the new feature code information. Unlike feature codes, extension numbers are updated in the intercom directories when the devices are activated and when updates are requested.

11.41 **EXTENSION TYPE/PROGRAM:** This list box allows you to choose the type of extension you wish to program. Highlight the desired option and then select the Program command button. A window appears as shown on the next page.



**11.42 STATIONS/PROGRAM:** The list box shown in the sample above is for stations. If another extension type had been chosen (as shown on the previous page), the list box would reflect that type of extension. To program an entry shown in the list box, highlight it and select the Program command button. A window appears as shown on the next page.

**11.43 SET EXTENSIONS:** *(This option is not available when programming Feature Codes.)* To batch load extension numbers, select the Set Extensions command button. A window appears as shown on page 6-78.

**11.44 CLEAR EXTENSIONS:** *(This option is not available when programming Feature Codes.)* To erase

several numbers, select the Clear Extensions command button. A window appears as shown on page 6-79. Clearing an extension number erases only the extension number. All other programming for that station, hunt group, page zone, trunk group, or AXXESSORY Talk application is unchanged. If the number is later assigned to another resource, the previous programming (description, username, etc.) will be used by the new extension number.

**11.45 OK/CANCEL:** When you are finished programming this extension type, select the OK command button. Or, to exit without making changes, select the Cancel command button.

The screenshot shows a graphical user interface window titled "Hunt Group 1". It features three text input fields: "Description" containing "Hunt Group 01", "Username" which is empty, and "Extension" containing "255". To the right of the "Extension" field is a button labeled "Available Extensions...". At the bottom of the window are two buttons: "OK" and "Cancel".

### Programming Extensions

**11.46 DESCRIPTION:** Enter the following information in the Description text box. (Not used for features.) You may enter up to 20 characters. Do not use Control characters.

- **AXCESSORY Talk Application:** Enter a description for the application.
- **Hunt Group:** Enter a description for the hunt group.
- **Individual Trunk:** This field is not programmable for individual trunks.
- **Page Port:** Enter a description for the page port.
- **Page Zone:** Enter a description for the page zone.
- **Station:** Enter the full name of the station user. (For correct AXCESSORY Talk directory operation, enter the last name, followed by a comma and the first name.)
- **Trunk Group:** Enter a description for the type of trunks in the group or the lead telephone number.

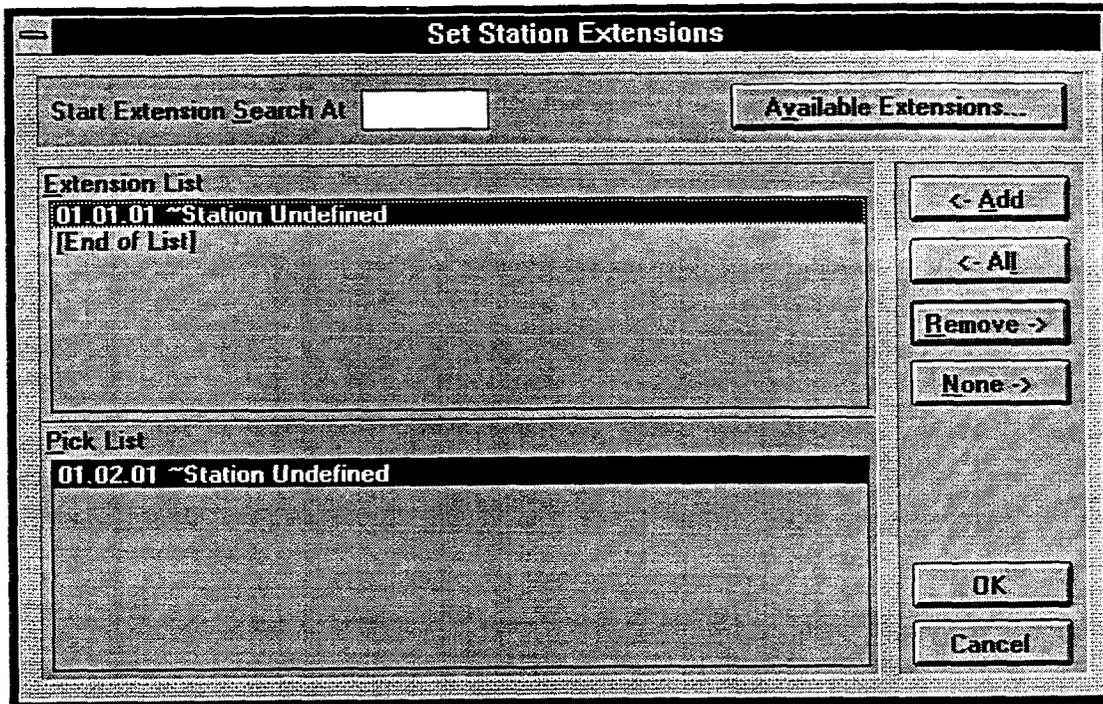
**11.47 USERNAME:** Enter a name, up to 10 characters, in the Username text box. (Not used for features, individual trunks, page ports, or page zones.) Do not use backslash (\), tilde (~), vertical slash (|), or Control characters in usernames.

**11.48 EXTENSION:** Enter the desired feature code, access code, or extension number in the Extension text box, up to four digits.

**11.49 AVAILABLE EXTENSIONS:** To see a list of available extensions, select the Available Extensions command button. A window with a list of numbers appears. The list shows available five-digit extension numbers with Xs in place of blank digits. For example, if 170xx is selected from the list, the Xs will be dropped and 170 will be the first extension number assigned. To select from the list, move the highlight bar to the desired number and select OK. Or, to return to the window shown above and enter your own number, select Cancel.

**11.50** The extension numbers are preset to carefully selected default values. Changing the codes or numbers can cause existing assignments to be erased. For example, if 300, 305, and 306 are assigned as feature codes and you attempt to assign 30 as another feature code, you would receive a warning message, because 30 makes up part of existing codes. The warning message allows you to clear all of the existing extensions (300, 305, and 306) and use the new one (30) by selecting OK, or to leave the existing extensions unchanged by selecting Cancel.

**11.51** If you have created a station extension that matches a previously existing unassociated mailbox, a warning window will appear that tells you that the new extension is the same as an unassociated voice mailbox. Choosing OK will associate the mailbox with the current device. Choosing Cancel will leave the mailbox unassociated.



### Setting Extensions

**11.52 START EXTENSION SEARCH AT:** Begin programming by entering an extension number in the text box. This number, or the first available extension number after this number, will be assigned to the first feature, station, hunt group, or trunk group in the Extension list.

**11.53 AVAILABLE EXTENSIONS:** To see a list of available extensions, select the Available Extensions command button. A window with a list of numbers appears. The list shows available five-digit extension numbers with Xs in place of blank digits. For example, if 170xx is selected from the list, the Xs will be dropped and 1700 will be the first extension number assigned. To select from the list, move the highlight bar to the desired number and select OK. Or, to return to the window shown above and enter your own number, select Cancel.

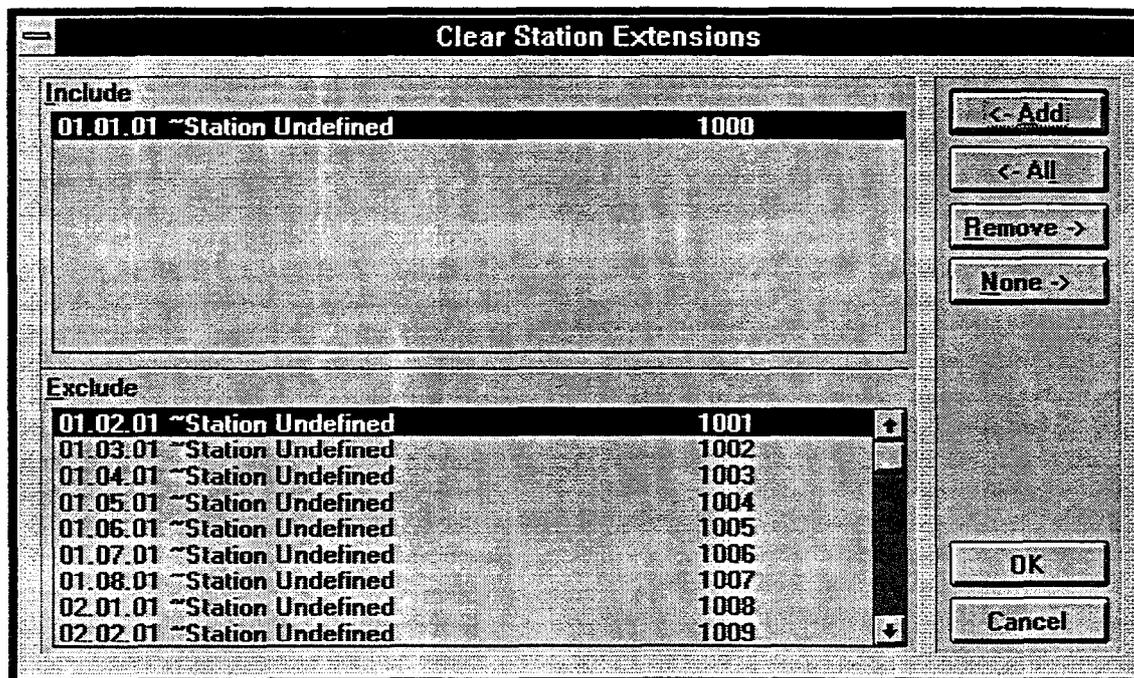
**11.54 EXTENSION LIST/PICK LIST:** The Pick List box contains a list of stations, hunt groups, trunks, trunk groups, or AXCESSORY Talk applications that

do not have assigned numbers. Scroll through the Pick List box to find the entries for which you wish to assign numbers. Locate and select the entries *in the desired order* to move them to the Extension List box. The first entry will be assigned the beginning extension number shown in the text box (or the first available number after the number entered). All others will be assigned numbers in consecutive order as they appear in the Extension list box.

**11.55 ADD/ALL:** Use the Add command button to move entries from the Pick list to the Extension List, or use the All command button to place all entries in the list.

**11.56 REMOVE/NONE:** To remove an entry from the Extension list, select the Remove command button. Or, to remove all entries, use the None command button.

**11.57 OK/CANCEL:** When the Extension List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



**Clearing Extension Numbers**

**11.58** Clearing an extension number erases only the extension number. All other programming for that station, hunt group, page zone, trunk group, or AXCESSORY Talk application is unchanged. If the number is later assigned to another resource, the previous programming (description, username, etc.) will be used by the new extension number.

**11.59 INCLUDE/EXCLUDE:** The Exclude list box contains the stations, hunt groups, trunks, trunk groups, and AXCESSORY Talk applications that have assigned numbers. Scroll through the Exclude list box to find the entries for which you wish to clear the extension num-

bers. Select the entries to move them to the Include list box.

**11.60 ADD/ALL:** Use the Add command button to move the highlighted entry from the Exclude list to the Include list, or use the All command button to place all entries in the Include list.

**11.61 REMOVE/NONE:** To remove an entry from the Include list, highlight it and then select the Remove command button. Or, to remove all entries, use the None command button.

**11.62 OK/CANCEL:** When the Include list contains all entries to be cleared, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

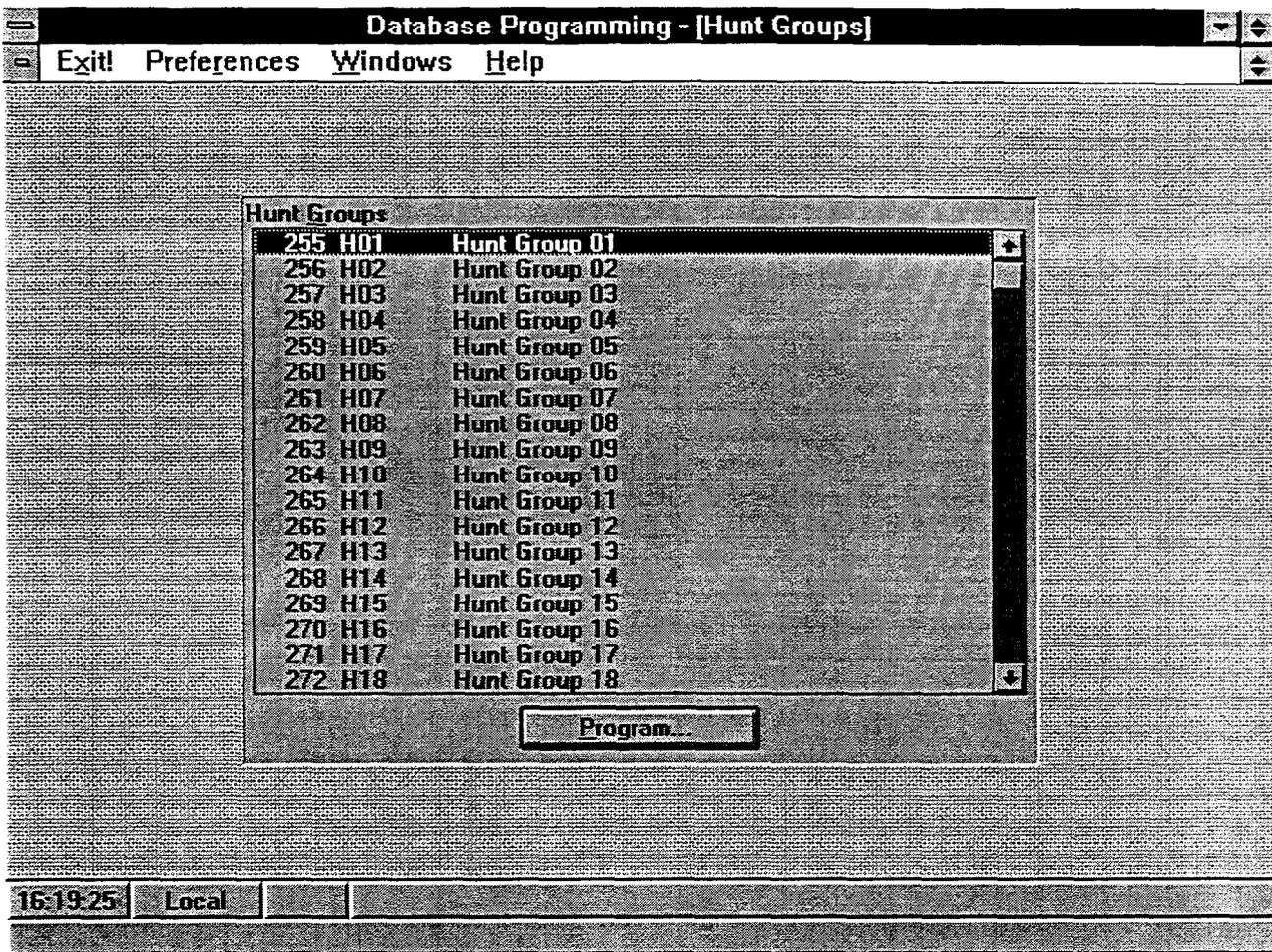
## F. HUNT GROUPS

**11.63** Several items must be determined before programming hunt groups, as follows. Refer to page 4-12 in FEATURES for more details. A program planning sheet is located in Figure 6-15, on page 6-274.

- **Hunt group descriptions and names:** Descriptions can contain up to 20 characters and hunt group names can contain up to 10 characters.
- **Analog voice mail hunt group:** If the Analog Voice Mail premium feature is enabled (see page 6-220), the hunt group can be composed of station ports which are connected to an analog voice mail device. Enabling this option has the effect of passing along station identification when a call reaches the hunt group as a result of forwards and transfers. The purpose of this flag is to provide compatibility between the system and analog voice mail units. (AXXESSORY Talk is a digital system and does not require this flag.) **NOTE:** When an analog voice mail unit is connected to the AXCESS System, the voice mail unit should use the Silent Message feature code (367) instead of the Message feature code (365). (This option is not recommended for ACD hunt groups.)
- **ACD Hunt Group:** The ACD Hunt Group feature must be enabled in Premium Feature Selection. See page 6-220. Automatic Call Distribution (ACD) hunt groups can be programmed to distribute calls to equalize call time or call count among the available members. If the System OAI Events premium feature is enabled, ACD can also provide call information records that can be processed by an external device connected to a system serial port. ACD hunt groups can use all of the standard and UCD hunt group features (if enabled). (This option is not recommended for Analog Voice Mail hunt groups.)
- **Priority Level:** If the UCD premium feature is enabled (see page 6-220), hunt groups can have assigned priority levels. Some stations may be members of more than one UCD hunt group. For this reason, hunt groups are assigned a "priority level." The priority level determines which hunt group's calls should be received first when calls ring in and/or camp on to several hunt groups at once.
- **Search Type:** Available Search Types depend on the type of hunt group being programmed:
  - *For Standard and UCD Hunt Groups:* Determine whether the calls are sent to the stations in linear or distributed order. Linear order means that the call is sent to the first station or extension list on the list and moves down the list until it reaches an available station. With distributed order, the call is sent to the station that appears on the list after the last station or extension list to receive a call (even if the call was not answered).
  - *For ACD Hunt Groups:* ACD Hunt Group calls can circulate in linear or distributed order (as described above) or using one of the ACD distribution methods: Longest Idle or Balance Call Count order. Longest idle means that an incoming call is sent to the station that has not been involved in a call to this hunt group for the longest period of time. Balance Call Count means that, to balance the call load, each incoming call is sent to the station that has received the fewest calls through this hunt group. (It does not count calls that were received through other hunt groups, direct ring-in, or transfer.)
- **Announcement and overflow stations:** If the UCD premium feature is enabled (see page 6-220), hunt groups can have an announcement station and/or an overflow station. If a call to the hunt group is not answered before the Announcement timer expires, the call is picked up by the announcement station. If the call remains unanswered when the hunt group Overflow timer expires, the call is picked up by the overflow station. Announcement and overflow stations should be playback device stations (these can be AXCESSORY Talk Auto Attendant, Voice Mail, or Call Routing Announcement applications). Do not include these stations in the hunt group distribution list.
- **Recall destination station:** Any hunt group can have a recall destination station, regardless of whether UCD is enabled. If a call remains unanswered when the Recall timer expires, it will be sent to the recall destination station. The recall destination station should be a keyset or single-line station. Do not include this station in the hunt group distribution list.
- **Members:** Prepare a list of up to 20 hunt groups and the stations/extension lists to be included in them. If desired, a station or extension list can appear more than once in a hunt group list or can be in more than one hunt group. If a station extension lists is included in a hunt group, it will ring all stations on the extension list. Therefore, to create an "all ring" type of hunt group, you can program the hunt group as either linear or distributed and then assign an extension list at the only hunt group member.

- **Supervisors:** If the UCD premium feature is enabled (see page 6-220), hunt groups can have one or more keysets assigned as the hunt group supervisor(s). (An extension list can be included in the list of supervisors.) If desired, a keyset can be assigned as the supervisor for more than one hunt group.
  - **Timers:** Several timers are programmed on a hunt group-by-hunt group basis:
    - *No Answer Advance:* Determines the amount of time a call will ring at a hunt group station (unanswered) before advancing to the next station on the list. It is started when the call is received at the hunt group. The default value is 18 seconds. It can be programmed for 1-255 seconds.
    - *Announcement:* This determines the amount of time a call will remain unanswered before it is picked up by the hunt group's announcement station. It is started when the call is received at the hunt group. The default value is 18 seconds. It can be programmed for 1-255 seconds.
    - *Overflow:* This determines the amount of time a call will circulate through the hunt group (unanswered) before being picked up by the hunt group's overflow station. This timer is started when the Announcement timer expires (or, if there is no announcement station, when the call is received by the hunt group) and it is restarted each time the call leaves the overflow station.

The default value is 72 seconds. It can be programmed for 1-255 seconds.
- *Recall:* This determines the amount of time a call will circulate through the hunt group (unanswered) before being sent to the hunt group's recall destination station. The timer is started when the call is received by the hunt group. The default value is 180 seconds (3 minutes). It can be programmed for 1-65535 seconds.
  - *ACD Wrap-Up Duration: (ACD Hunt Groups Only)* Each time an agent ends an ACD hunt group call, an ACD Wrap-Up Duration timer is started. Until that timer expires, the agent will not receive another call through any ACD hunt group. (However, the agent can receive other non-ACD hunt group calls, direct ring-in calls, and transfers.) The default value is 15 seconds. The range is 1 to 65535 seconds.
  - *Average Connect Time Per Call: (UCD and ACD Hunt Groups Only)* An AXCESSORY Talk application announcement or overflow station message can be programmed to include the caller's queue position and/or estimated wait time. The estimated wait time is based on the Average Connect Time Per Call multiplied by the number of calls ahead of the caller in the queue, divided by the number of available hunt group members (*avg. connect time per call x no. of waiting calls ÷ available members*). The default value for Average Connect Time Per Call is 60 seconds. The range is 1-10,000 seconds.



11.64 Select Hunt Groups in the System-Wide Features menu or enter the HUNT command to program up to 75 hunt groups. The window appears as shown above.

11.65 HUNT GROUPS/PROGRAM: Begin programming by highlighting the desired hunt group number in the Hunt Groups list box, and then selecting the Program command button. A window appears as shown on the next page.

**11.66 DESCRIPTION and USERNAME:** Type a description of up to 20 characters and/or a username of up to 10 characters in the text boxes. Do not use backslash ( \ ), vertical slash ( / ), or tilde ( ~ ) characters in usernames. Do not use Control characters in descriptions or usernames.

**11.67 ANALOG VOICE MAIL HUNT GROUP:** If the hunt group is composed of station ports which are connected to an analog (non-AXCESSORY Talk) voice mail device, select the check box to place a check in it. (To remove the check, select the check box again.)

**11.68 ACD HUNT GROUP:** If the ACD hunt group Premium Feature is enabled, and you want the hunt group to use the ACD features, select this check box to place a check in it. (To remove the check, select the check box again.)

**11.69 PRIORITY LEVEL:** Select the scrolling edit box and enter the correct level or scroll to the desired priority level for this hunt group. Higher numbers have higher priority. The range is 0–20.

**11.70 SEARCH TYPE:** Select the Search Type drop-down list box and scroll the highlight bar to the appropriate hunt group search type for the hunt group.

**11.71 ANNOUNCEMENT:** Select the Announcement drop-down list box and scroll to the extension number of the playback device or AXCESSORY Talk application that will serve as the announcement station.

**11.72 OVERFLOW:** Select the Overflow drop-down list box and scroll to the extension number of the playback device or AXCESSORY Talk application that will serve as the overflow station.

**11.73 RECALL:** Select the Recall drop-down list box and scroll to the extension number that will serve as the recall destination station.

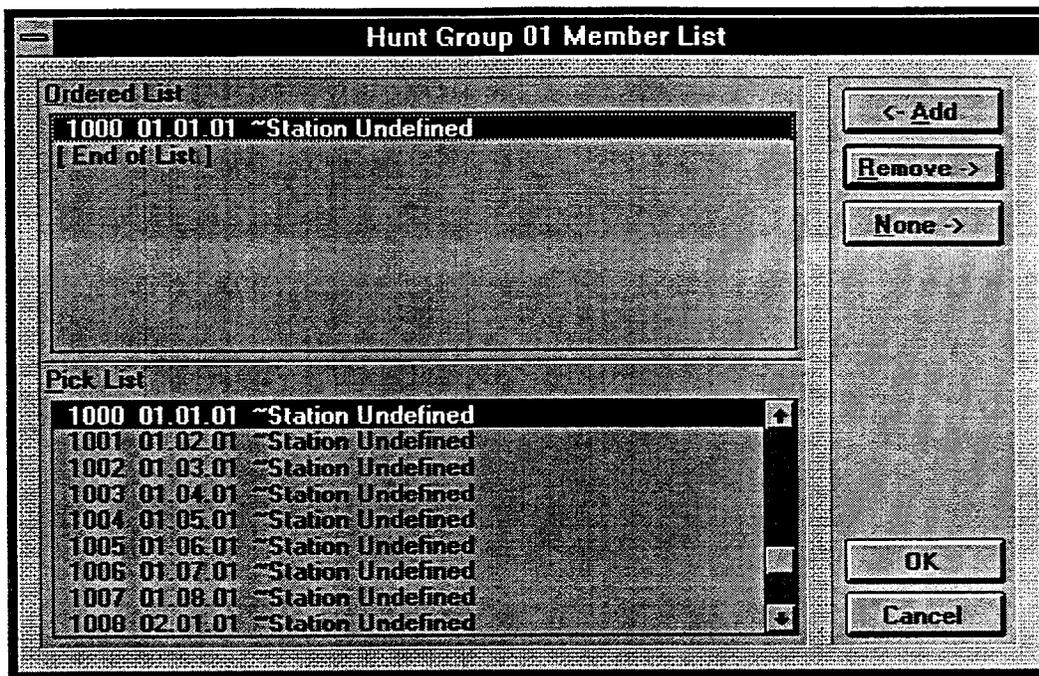
**11.74 MEMBERS:** When you select the Members command button, the window on page 6–84 appears.

**11.75 SUPERVISORS:** When you select the Supervisors command button, the window shown on page 6–85 appears.

**11.76 TIMERS:** When you select the Timers command button, a timer programming window appears as shown on page 6–86.

**11.77 OK:** When Hunt Group programming is complete, select the OK command button. If any information was changed, a window asks you to verify that you wish to update the information. Also, if the hunt group station list was changed, it tells you that the change will require a reset of the hunt group. Select Yes to update the information (note that the associated reset *will drop calls*). Or, select No to leave the information unchanged.

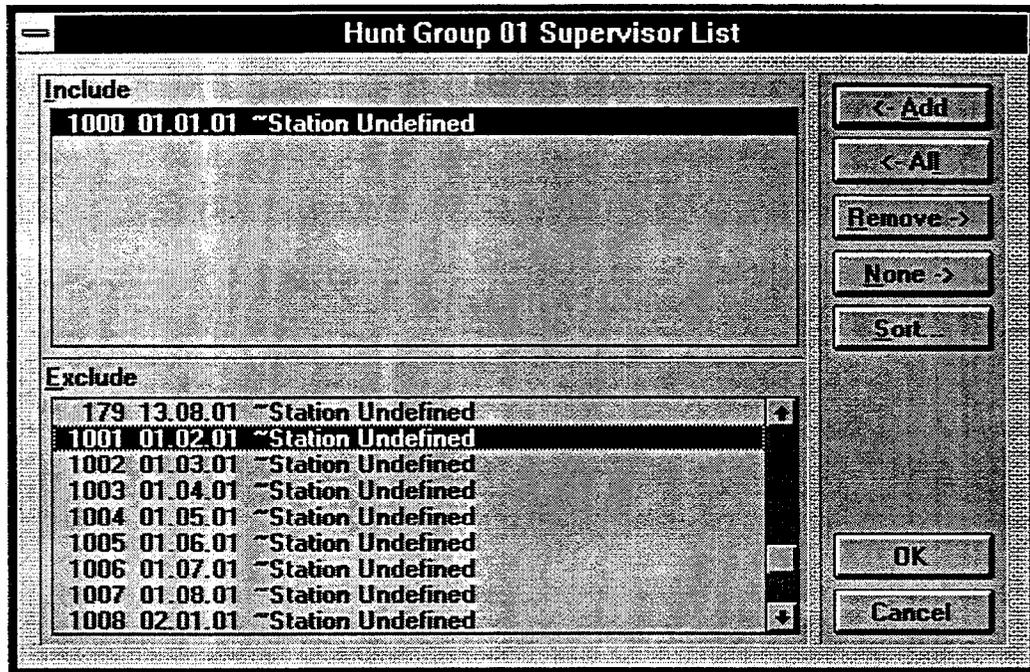
**11.78 CANCEL:** To exit without changing the hunt group programming, select the Cancel command button.



### Hunt Group Members

**11.79** The window shown above appears when the Members command button is selected. To determine the ordered list in which the stations and/or extension lists will appear in the hunt group, use the following procedure:

- **ADD:** Place stations or extension lists in the Ordered List box in the order in which you want the calls to circulate. To add a station or extension list to the Ordered List box, move the highlight bar to the location where you want the station or extension list to appear. Then highlight the desired station or extension list in the Pick List box. Select the Add command button to move the highlighted station or extension list from the Pick List to the Ordered List.
- **REMOVE/NONE:** To remove a station or extension list from the Ordered List box, highlight it and select the Remove command button. Or, to remove all stations and extension lists, use the None command button.
- **OK/CANCEL:** When the Ordered List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



### UCD Hunt Group Supervisors

**11.80** The window shown above appears when the Supervisors command button is selected. To determine the stations that will be supervisors for the hunt group, use the following procedure:

- **ADD:** To add a station or extension list to the Ordered List box, move the highlight bar to the location where you want the station or extension list to appear. Then highlight the desired station or extension list in the Pick List box. Select the Add command button to move the highlighted station or extension list from the Pick List to the Ordered List.
- **REMOVE/NONE:** To remove a station or extension list from the Ordered List box, highlight it and select the Remove command button. Or, to remove all stations and extension lists, use the None command button.
- **OK/CANCEL:** When the Ordered List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

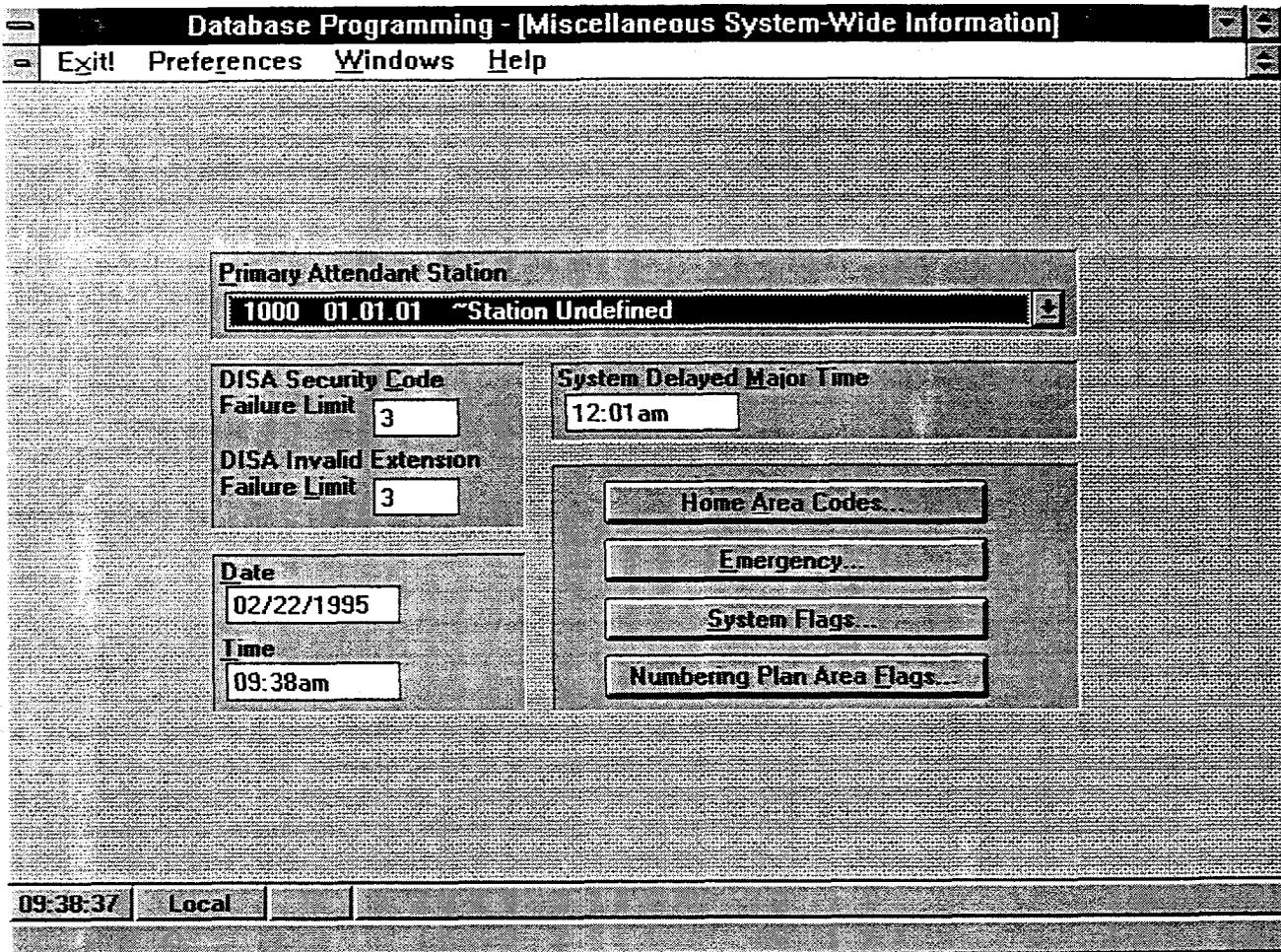
11.81 When you select the Timers command button shown on page 6-83, this window is displayed. To change the timer values, select the desired text boxes and type the new value. The timer functions are:

- **No Answer Advance:** Determines the amount of time a call will ring at a hunt group station (unanswered) before advancing to the next station on the list. It is started when the call is received at the hunt group. The default value is 18 seconds. It can be programmed for 1-255 seconds.
- **Announcement:** This determines the amount of time a call will remain unanswered before it is picked up by the hunt group's announcement station. It is started when the call is received at the hunt group. The default value is 18 seconds. It can be programmed for 1-255 seconds.
- **Overflow:** This determines the amount of time a call will circulate through the hunt group (unanswered) before being picked up by the hunt group's overflow station. This timer is started when the Announcement timer expires (or, if there is no announcement station, when the call is received by the hunt group) and it is restarted each time the call leaves the overflow station. The default value is 72 seconds. It can be programmed for 1-255 seconds.
- **Recall:** This determines the amount of time a call will circulate through the hunt group (unanswered) before being sent to the hunt group's recall destination station. This timer is started when the call is received by the hunt group. The default value is 3 minutes. It can be programmed for 1-255 minutes.

- **ACD Wrap-Up Duration:** (*ACD Hunt Groups Only*) Each time an agent ends an ACD hunt group call, an ACD Wrap-Up Duration timer is started. Until that timer expires, the agent will not receive another call through any ACD hunt group. (However, the agent can receive other non-ACD hunt group calls, direct ring-in calls, and transfers.) The default value is 15 seconds. The range is 1 to 65535 seconds.
- **Average Connect Time Per Call:** (*UCD and ACD Hunt Groups Only*) An AXCESSORY Talk application announcement or overflow station message can be programmed to include the caller's queue position and/or estimated wait time. The estimated wait time is based on the Average Connect Time Per Call multiplied by the number of calls ahead of the caller in the queue, divided by the number of available hunt group members ( $avg. connect time per call \times no. of waiting calls \div available members$ ). The default value for Average Connect Time Per Call is 60 seconds. The range is 1-10,000 seconds.

11.82 **DEFAULT:** To set all five timers to default values, select the Default command button.

11.83 **OK/CANCEL:** When the timers have been programmed as desired, select the OK command button. Or, to exit without changing the timers, select the Cancel command button. *If you have programmed a timer with an invalid value, you will see a warning message that shows you the allowed range for the timer. Select OK in the warning window and set the timer to a valid value before selecting the timer window OK command button again.*



### G. MISCELLANEOUS SYSTEM-WIDE INFORMATION

**11.84** Select Miscellaneous System-wide Information from the Database Programming Menu or enter the MISC command to display the window shown above. A program planning sheet appears in Figure 6-16, on page 6-275.

**11.85 PRIMARY ATTENDANT STATION:** Select the Primary Attendant Station drop-down box and scroll the highlight bar to select the station that will serve as the primary attendant for the system.

### 11.86 DISA SECURITY CODE FAILURE LIMIT:

This determines how many times a caller will be allowed to enter an incorrect DISA security code without being dropped. To program the failure limit, enter the desired number in the text box. Entering 0 will allow unlimited attempts.

**11.87 DISA INVALID EXTENSION FAILURE LIMIT:** This determines how many times a DISA caller will be allowed to dial an invalid extension number before being sent to the primary attendant. To program the limit, enter the desired number in the text box. Entering 0 will allow unlimited attempts.

**11.88 DATE/TIME:** Enter the current date and time in these text boxes.

**11.89 SYSTEM DELAYED MAJOR TIME:** A system reset is required to ensure proper system operation after any cards or devices are equipped or unequipped, an extension list is changed, a trunk group list is changed, or an extension number is changed. A delayed or immediate reset can be requested as you are exiting from the programming session (see page 6-22) or using the Reset System command button (described on page 6-215). This text box sets the *default* time for delayed system resets. To program the default time for delayed resets of the system, enter the time in the text box.

**11.90 HOME AREA CODES:** The database requires a "home" area code for the system site. It also allows up to three additional "local" area codes. The system refers to these area codes for toll restriction and call cost. To program the home and local area code(s) for the system site, select the Home Area Codes command button. A window appears as shown on page 6-89.

**NOTE:** *If you attempt to exit from this window without programming a home area code, you will see a warning window that tell you, "Toll Restrict and Call Cost require a Home Area Code. Do you want to continue?" Answer Yes to exit without entering an area code (however, you should enter one as soon as possible), or select No to return to the window shown above.*

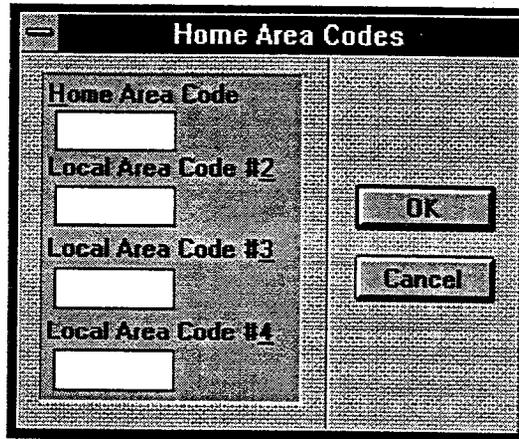
**11.91 EMERGENCY:** Select this command button to program the Emergency Call feature (feature code 911). A window appears as shown on page 6-90.

**11.92 SYSTEM FLAGS:** To program the system-wide features, select the System Flags command button. A window appears as shown on page 6-91.

**11.93 NUMBERING PLAN AREA FLAGS:** If the system is installed in an area where office and area codes overlap and/or where toll digits are allowed on toll calls or required on long distance calls, select the Numbering Plan Area Flags command button. A window appears as shown on the next page. The following numbering plan area flags can be programmed. The first two flags determine in what way area and office codes overlap. The following chart illustrates the difference between the standard North American Numbering Plan (NANP) and each of the overlap flags. In the chart, N=2-9, Z=0 or 1, and X=0-9.

|                            | AREA CODES CAN BE: | OFFICE CODES CAN BE: |
|----------------------------|--------------------|----------------------|
| NANP                       | NZX                | NXX                  |
| Office Codes as Area Codes | NZX or NXX         | NXX                  |
| Area Codes as Office Codes | NZX                | NXX or NZX           |

- **Office Codes Used as Area Codes:** An area code in another location uses an NXX pattern that matches an office code within the system site's area code. Because the system cannot differentiate between an office code and an area code when the second digit dialed is 0-9, it will wait for the Interdigit timer to expire or another digit to be dialed before assuming that dialing is completed.
- **Area Codes Used as Office Codes:** One or more office codes within the system site's area code use an NZX pattern that is the same as an area code in another area. Because area codes do not resemble office codes (NXX), end-of-dialing detection is not affected by this flag.
- **Toll Digit Allowed On Toll Local Calls:** This option applies only if the area and office codes overlap. Callers in the site's area code usually dial a 1 when placing a call within the local area code(s).
- **Toll Digit Required On Toll Long Distance Calls:** This option applies only if the area and office codes overlap. Callers in the site's area code must dial a 1 when placing a call outside of the local area code(s).



### Home Area Codes

11.94 The window shown above appears when the Home Area Codes command button is selected. Program the area codes as follows:

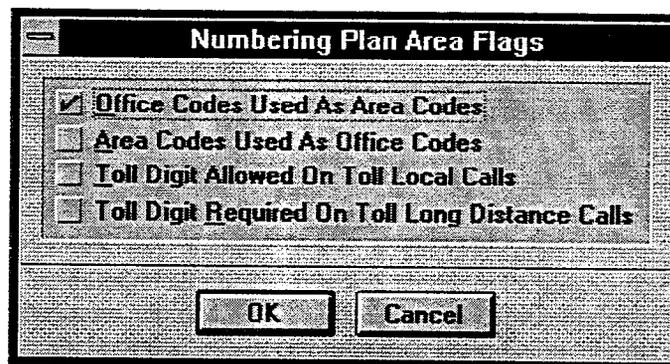
11.95 **HOME/LOCAL AREA CODE:** To program the area code(s) for the system location, select the desired text box(es) and enter the code(s).

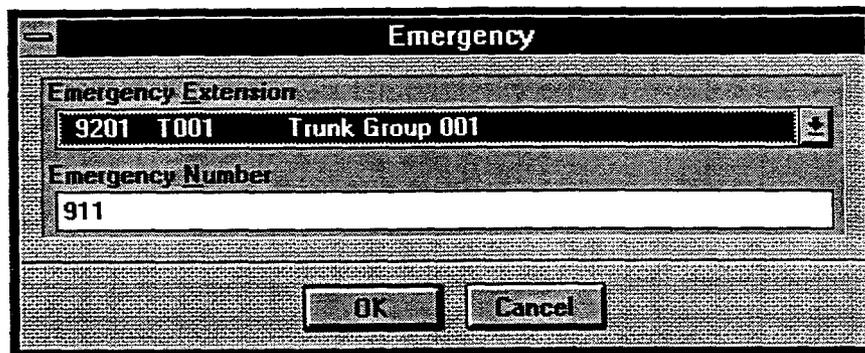
11.96 **OK/CANCEL:** When finished, select OK to save your changes. Or to leave the codes unchanged, select the Cancel command button.

### Numbering Plan Area Flags

11.97 The window shown below appears when the Numbering Plan Area Flags command button is selected. Program the flags as follows:

- **FLAGS:** If any of the numbering plan flags apply to the system location, select the flag to place a check mark in the check box. To remove a check mark, select the check box again. Depending on the combination of flags that are selected, some flags may be dimmed and cannot be selected.
- **OK/CANCEL:** When finished, select OK to save your changes. Or to leave the flags unchanged, select the Cancel command button.





### Emergency Call Feature Programming

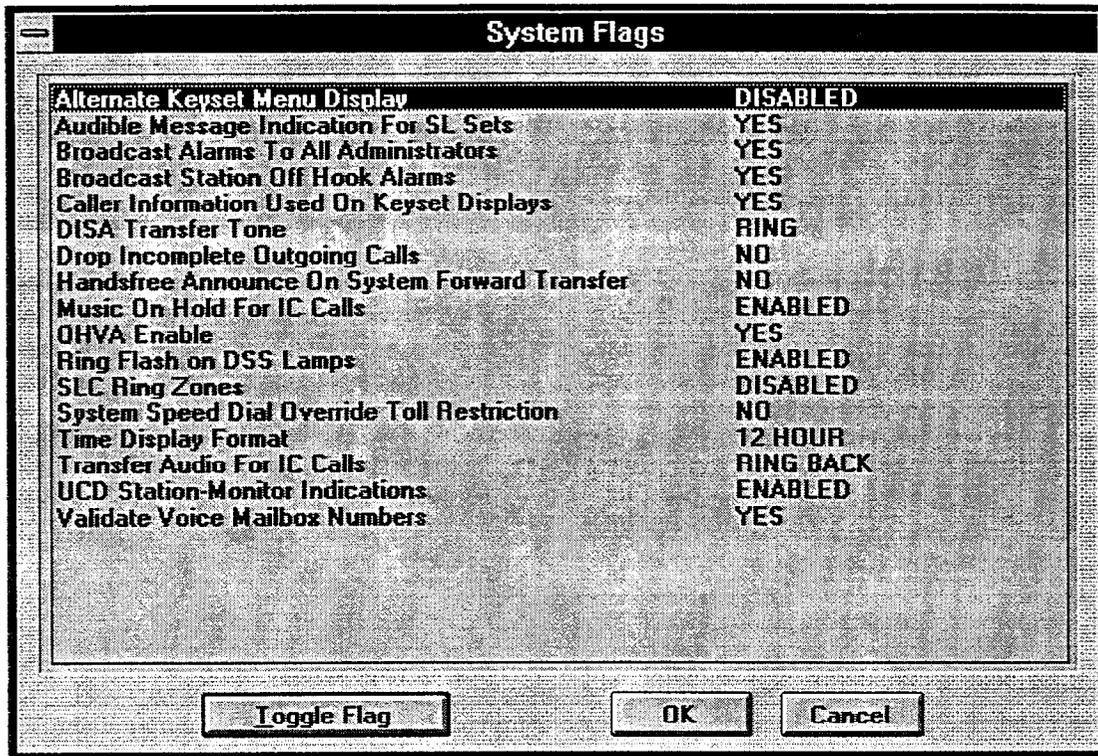
**11.98** This window appears when the Emergency command button is selected. It is used for programming the trunk access code and emergency number that will be used when the Emergency Call feature code is entered by a station user.

**11.99 EMERGENCY EXTENSION:** Select the drop-down list box and scroll to the desired trunk access code. This determines the trunk access that will be selected when the Emergency Call feature is used. It defaults to Trunk Group 1 (9201). You will see a warning

message if you exit without assigning an emergency extension.

**11.100 EMERGENCY NUMBER:** This is the number that will be dialed when the Emergency Call feature is used. Enter the desired number in the text box. This defaults to 911. You will see a warning message if you exit without assigning an emergency number.

**11.101 OK/CANCEL:** When the Emergency Call feature programming is correct, select the OK command button. Or, to exit without changing the programming, select the Cancel command button.



**11.102 SYSTEM FLAGS/TOGGLE FLAG:** To program a feature system-wide, scroll to the desired feature and select the Toggle Flag command button. The status will change each time the command button is selected.

**11.103 OK/CANCEL:** When the system flags are programmed as desired, select the OK command button. Or to exit without saving your changes, select the Cancel command button.

**NOTE:** If you have not programmed a home area code yet, a warning window appears as you exit this window. It asks if you wish to continue. Answer Yes to return to the Database Programming Menu or No to stay in this window. Refer to the window shown on page 6-89 to program the home area code(s).

**11.104** The system flags include the following:

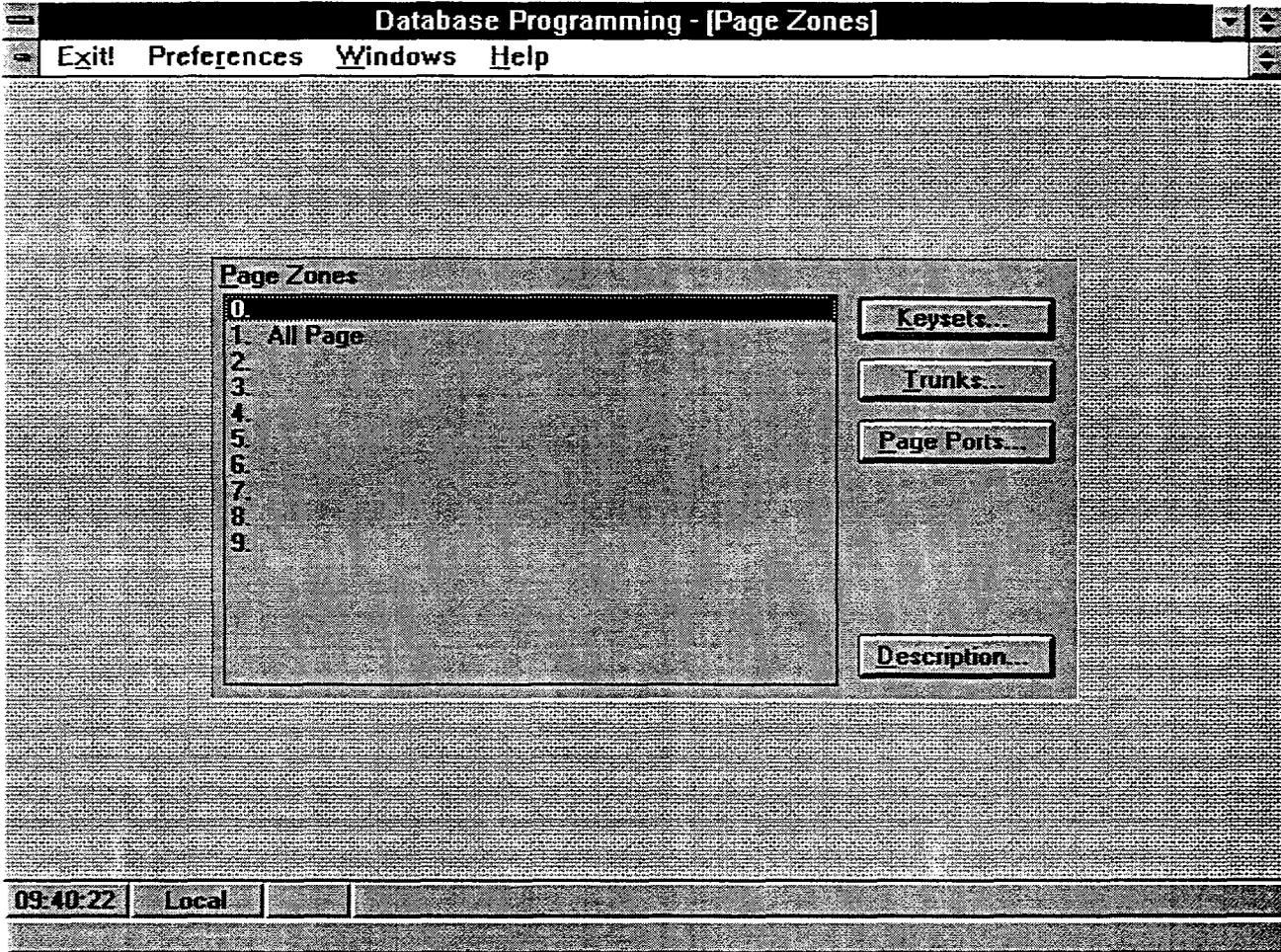
- **Alternate keypad menu display:** This flag determines the display that Executive Keypad users will see during an outside call. In the default state, the main menu display includes the TRANSFER-TO-HOLD option. If alternate displays are enabled, the FLASH option appears in its place. In the default state, this flag is set to *disabled*.
- **Audible message indication for SL sets:** If enabled, single-line sets will receive message waiting

indications (six tones before dial tone) when a message is waiting. In the default state, this is *yes*.

- **Broadcast alarms to all administrators:** Determine whether system alarms will display on all administrator stations (set to "yes"). If not, they will display only at the primary attendant's station (set to "no"). In the default state, this is set to *yes*.
- **Broadcast station off-hook alarms:** Determine whether off-hook alarms will be displayed on all administrator stations and the primary attendant's station (set to "yes"). In the default state, this is set to *yes*.
- **Caller information used on keypad display:** If enabled, any call that is received on a trunk that supports the Caller ID and ANI feature will be identified on the keysets display with the caller information. If disabled, the display will show the programmed trunk name for the call. In the default state, this is set to *yes*.
- **DISA transfer tone:** Select the ring or music option. If ring tones are enabled, callers will hear ringing instead of music when using DISA to call a station. In the default state, this is set to *ring*.
- **Drop incomplete outgoing calls:** Occasionally, a station user will seize a trunk at the exact time a call is coming in on that trunk and the user will be con-

nected to the incoming call instead of dial tone. (This is called "glare.") If the Drop Incomplete Outgoing Calls option is enabled (set to *yes*), the resulting call on that trunk will be dropped, as it would be if the user did not dial a valid telephone number. If the option is disabled (set to *no*), the call will remain connected regardless of the number of digits dialed, if any. In the default state, this is set to *no*.

- **Handsfree announce on system forward transfer:** When a station user transfers a call to the principal station of a forwarding path, this option determines what the caller will hear. If enabled (*yes*), the caller will place a handsfree call to the principal station and can announce the transfer (the call does not enter the forwarding path). If the option is disabled, the transferring station user will hear ringing and can announce the call only if it is answered by the principal station or one of the forwarding points. This defaults to *no*.
- **Music-on-hold for IC calls:** This option determines whether a user hears music when placed on hold by another station or camps on to a resource. In the default state, this is *enabled*.
- **OHVA enable:** Determine whether the Off-Hook Voice Announce (OHVA) feature will be enabled system-wide. In the default state, this is *yes*.
- **Ring flash on DSS lamps:** When enabled, this option allows DSS/BLF keys to indicate a ringing call to a station by showing the ring flash on the associated key. If disabled, the key will show that the station is busy (solid lamp). In the default state, this is set to *enabled*.
- **SLC ring zones:** In some installations, where more than one single-line device is connected in series to an SLC circuit, zoned ringing may be necessary. The system can support devices with 3 Ringer Equivalences (REs) per circuit. However, the system can only ring eight REs at once. Therefore, if there are more than eight REs on any SLC, the system-wide SLC Ring Zones flag must be enabled to allow the single-line devices to ring in smaller groups (zones). In the default state this flag is *disabled*.
- **System speed-dial override toll restriction:** If this option is enabled, the system speed-dial numbers can be speed dialed at any station regardless of toll restrictions. If disabled, all system speed-dial numbers are subject to toll restriction. In the default state, this is *no*.
- **Time display format:** This determines whether keyset displays will show the time in 24-hour or 12-hour (AM/PM) format. In the default state, it is set to *12 hour*.
- **Transfer audio for IC calls:** You can choose to have ringing or music-on-hold heard by intercom callers who are being transferred. In the default state, this is set for *ring back*.
- **UCD station monitor indications:** This flag determines whether station monitoring tones are sent to a UCD hunt group member when the hunt group supervisor is monitoring the call. In the default state, this flag is *enabled*. (Note that call monitoring may be illegal in some locations. It is up to the end user to ensure that use of this feature is in compliance with local laws.) The frequency of the tone is determined by the UCD Station Monitor Indication Frequency timer.
- **Validate voice mailbox numbers:** When enabled, the system will check that a dialed mailbox number matches a programmed extension number. In the default state, this is set to *yes*.



## H. PAGE ZONES

**11.105** To prepare for page zone programming, make a list of the keysets, trunks, and/or the external paging port included in up to 10 paging zones. Devices can be in more than one page zone. In the default state, all keysets are assigned to page zone 1. A program planning sheet is located in Figure 6-17, on page 6-276.

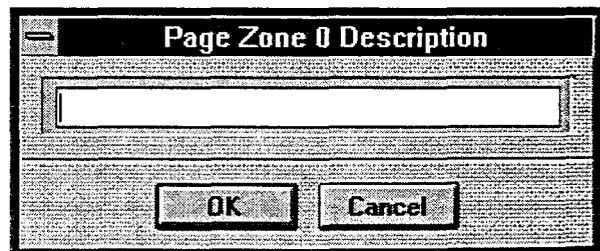
**11.106** To define the page zones, select from the System-wide Features menu, or enter the PAGE command to display the window shown above. Programming is described below.

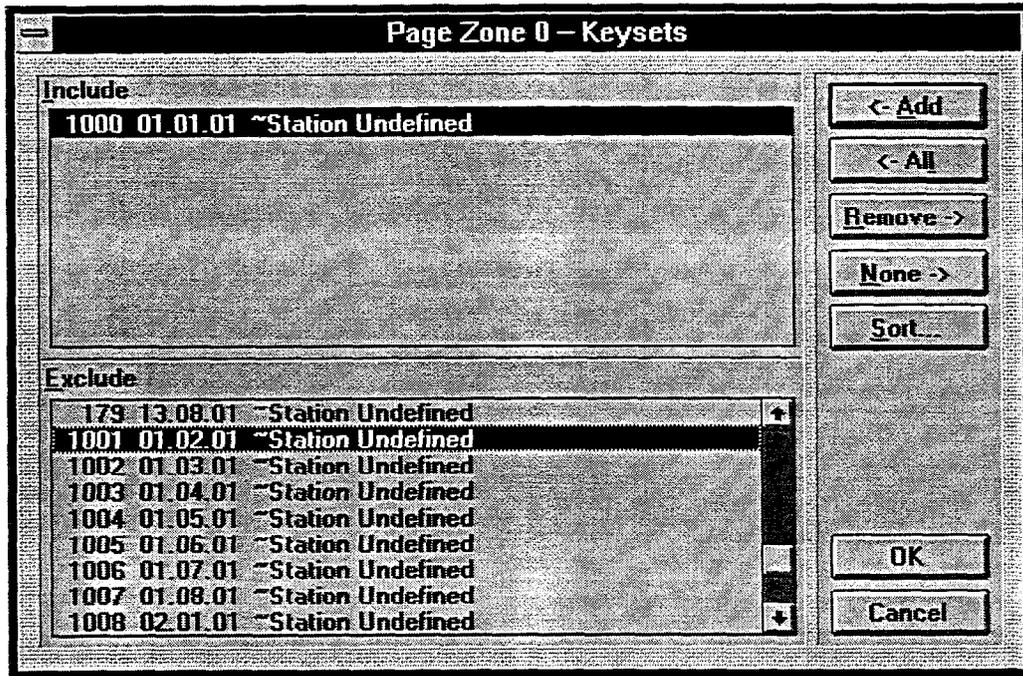
**11.107 PAGE ZONES:** Begin programming by highlighting the desired page zone in the Page Zones list box. When the highlight bar is on a specific page zone, all programming applies to that zone.

**11.108 KEYSSETS, PAGES PORTS, or TRUNKS:** To assign the keysets to a page zone, select the Keysets

command button. To assign the external paging port, select Page Ports. To assign trunks or the external paging port to a page zone, select the Trunks command button. A list window appears as shown on the next page.

**11.109 DESCRIPTION:** When the Description command button is selected, the following window appears. Enter a description of the page zone in the text box and select the OK command button (or select the Cancel command button to leave the description unchanged).



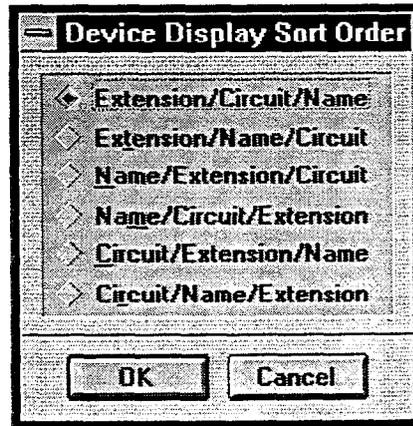


■ **Placing Devices In Page Zones**

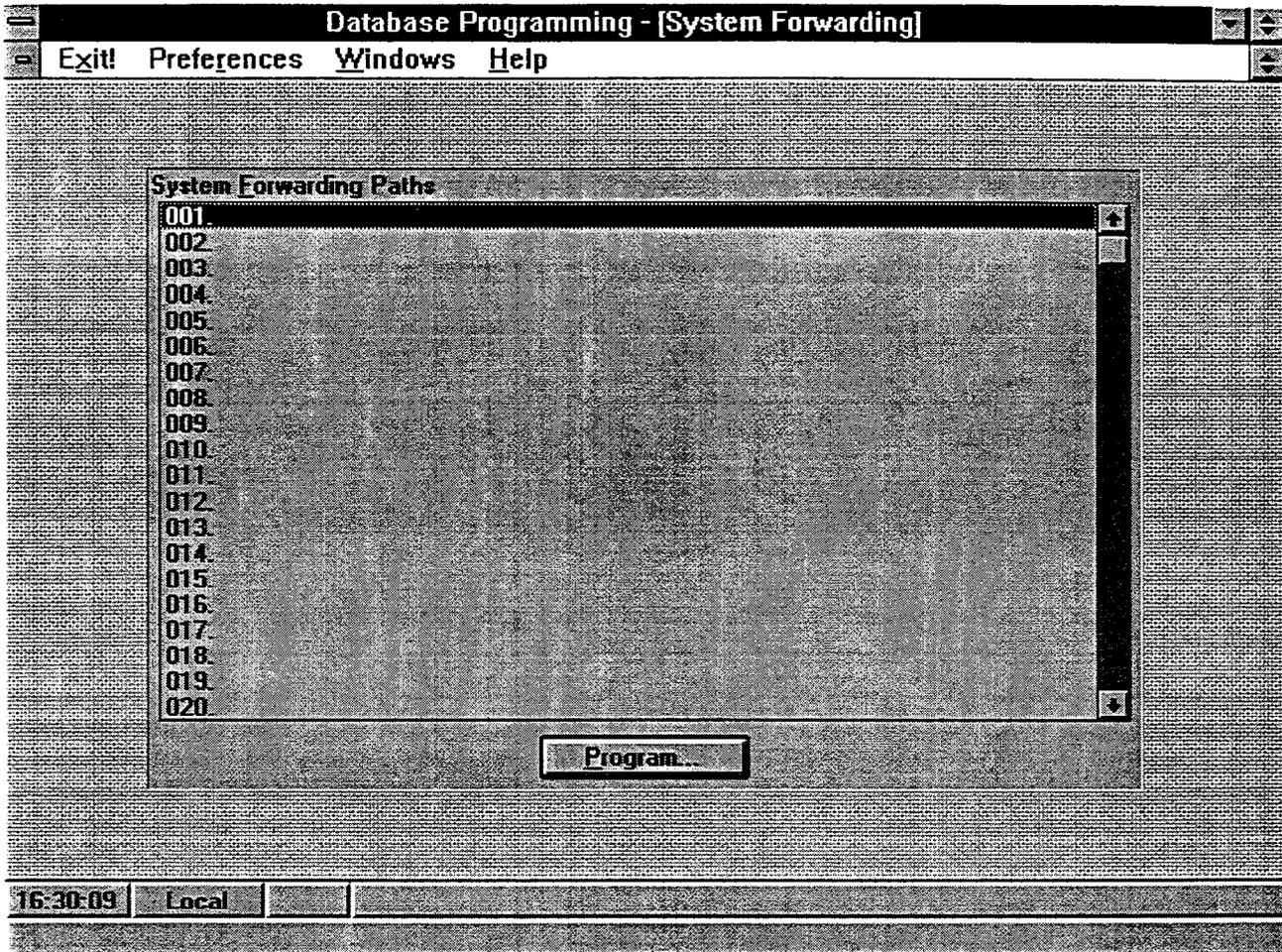
11.110 The window shown above appears when the Stations or Trunks command button is selected. To determine the content of the lists, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted device from the Exclude list to the Include List, or use the All command button to place all devices in the list.
- **REMOVE/NONE:** To remove a device from the Include list, highlight it and select the Remove command button. Or, to remove all devices, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



## I. SYSTEM FORWARDING

**NOTE:** This window cannot be used unless the feature has been enabled as described on page 6-220.

**11.111** When System Forwarding is selected from the System Wide Features menu (or the SFWD command is entered), the programming window shown above appears. It is used for assigning forwarding points to the system forwarding paths. Stations can then be pro-

grammed to use the forwarding paths in the window shown on page 6-39. A program planning sheet is located in Figure 6-18, on page 6-277.

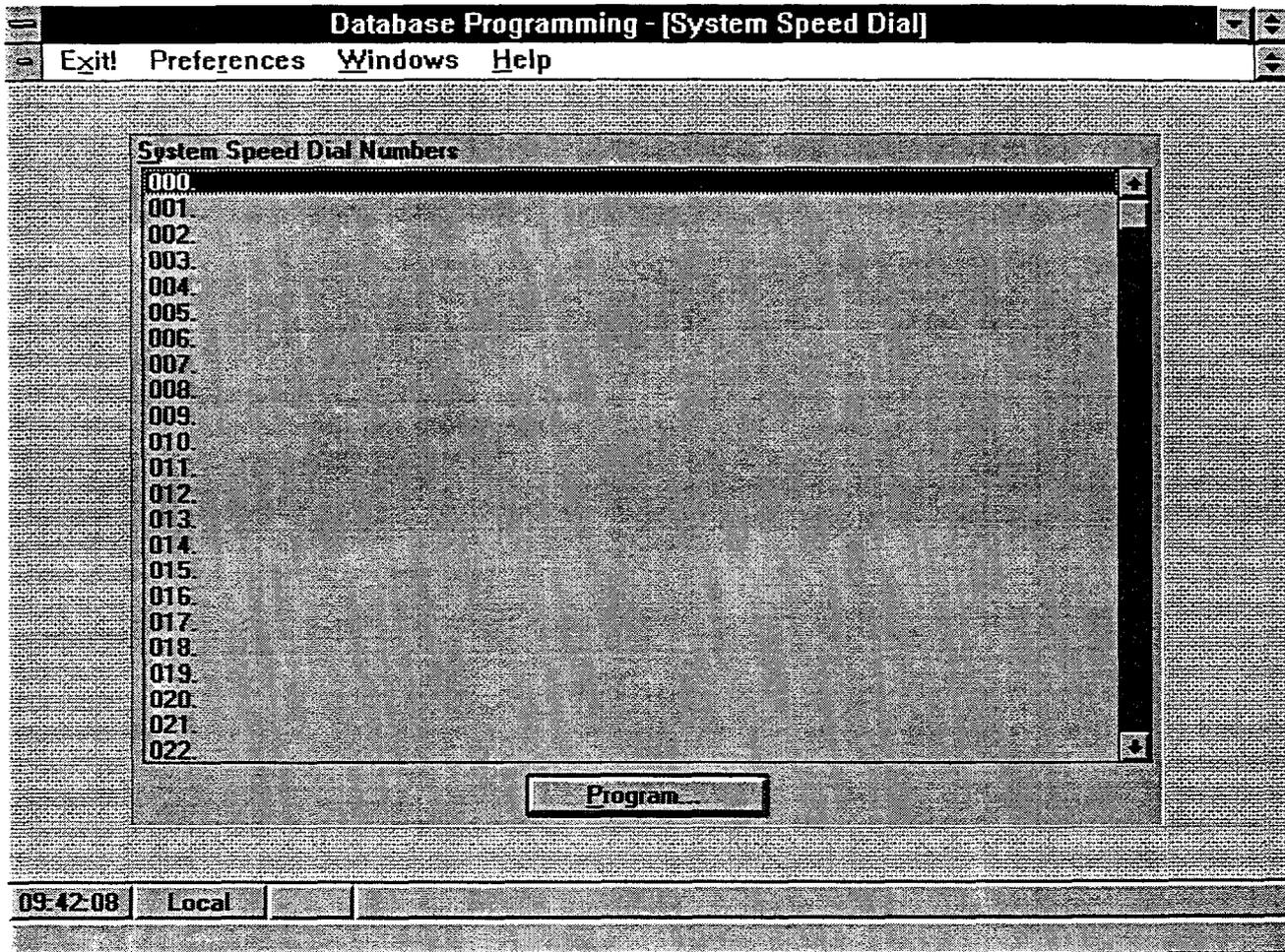
**11.112 SYSTEM FORWARDING PATHS/PROGRAM:** Up to 100 unique forwarding paths (001-100) can be programmed. To program a forwarding path, highlight the desired path number in the list box and select the Program command button. The following window appears.

The screenshot shows a window titled "Forwarding Path 001". Inside the window, there is a text input field labeled "Path Description". Below this are four sections, each labeled "Forwarding Point" followed by a number (1, 2, 3, 4). Each section contains a drop-down menu with the text "<None>" and a small arrow icon on the right side. At the bottom of the window, there are two buttons: "OK" and "Cancel".

11.113 Each forwarding path can have a distinctive description (of up to 20 characters) and four forwarding points. The forwarding points can be stations, voice mail ports, or hunt groups.

- **PATH DESCRIPTION:** Select this text box to enter the name of this forwarding path.
- **FORWARDING POINT(S):** Up to four forwarding points can be programmed. To enter a forwarding point, select the appropriate drop-down list box and scroll the highlight bar to an extension number or hunt group number.

- **OK/CANCEL:** When finished programming the forwarding paths, select the OK command button or press RETURN. To exit to the System Forwarding window without selecting a station, select the Cancel command button.



## J. SYSTEM SPEED DIAL

11.114 To program system speed-dial parameters, determine the following information. There can be up to 1000 system speed-dial numbers (000-999). A program planning sheet is located in Figure 6-19, on page 6-278.

11.115 For each speed-dial location, you will program the following information:

- **Name:** If desired, you can program a name for the speed-dial number. Each name can have up to 16 characters.
- **Number:** Numbers can include up to 32 digits and can include digits (0-9, \*, and #), timed pauses, or hookflashes. Timed pauses and/or hookflashes are used when entering a series of numbers, such as access codes, security codes, and telephone numbers for specialized common carrier (SCC) dialing. To include a pause in the number, enter the letter P for a pause. To include a hookflash, enter F. The pause

length represented by the P is determined by the Pause timer. Each pause or hookflash is considered one of the 32 digits.

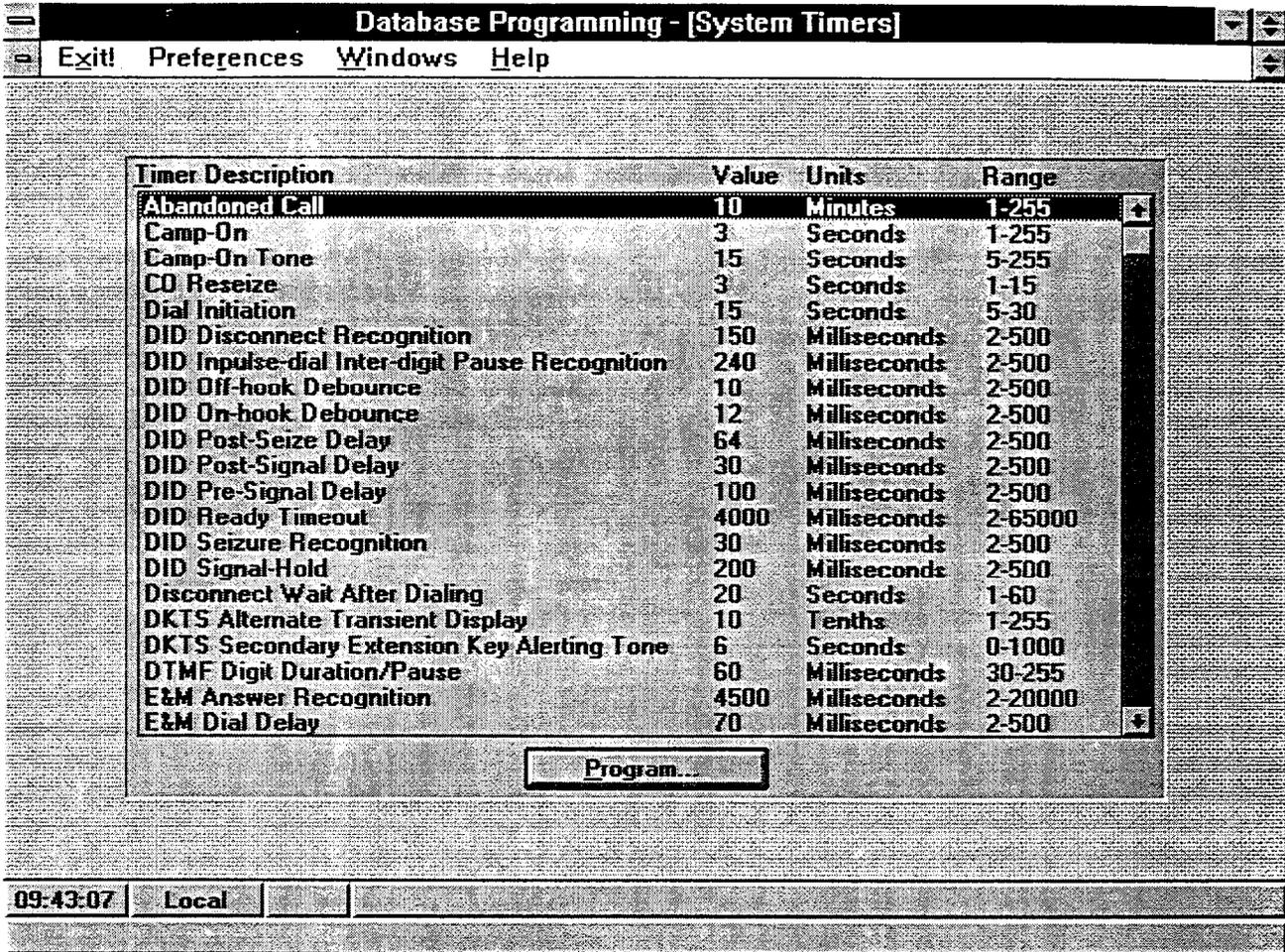
- **Display speed-dial:** Determine which system speed-dial number locations may be viewed on display keysets. Non-display numbers do not appear on display keysets when dialed and cannot be redialed at display keysets. Non-display numbers will appear in the SMDR when dialed. Display/non-display status is programmed on a location-by-location basis.

11.116 The System Speed Dial programming window is selected from the System-Wide Features menu or the SSPD command is entered. The window appears as shown above.

11.117 **SYSTEM SPEED-DIAL NUMBERS/PROGRAM:** To program a number, highlight the desired number in the list box and then select the PROGRAM command button. The window shown on the next page appears.

The image shows a graphical user interface window titled "System Speed Dial Location 000". The window contains three input fields: a "Name" text box, a "Number" text box, and a checked checkbox labeled "Display Speed-Dial". To the right of these fields are two buttons: "OK" and "Cancel".

- **NAME:** If desired, select the Name text box and type the desired name up to 16 characters.
- **NUMBER:** Select the Number text box to enter a number of up to 32 digits as described on the previous page.
- **DISPLAY SPEED-DIAL:** To allow the speed-dial number to be displayed when dialed, place a check mark in the check box by selecting the empty check box. To make it a non-display number, remove the check by selecting it again.
- **OK or CANCEL:** When the name and speed-dial number are correct, select the OK command button. To exit without saving the changes, select the Cancel button. The System Speed Dial window returns.



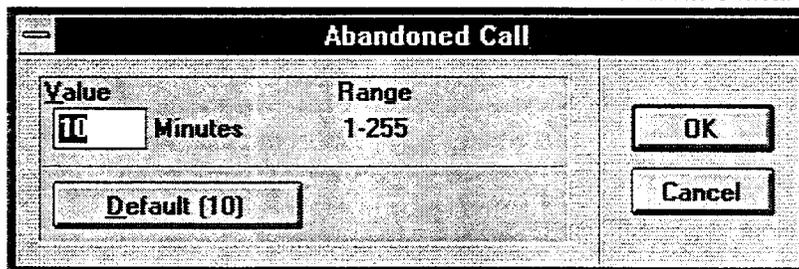
**K. TIMERS**

**11.118** There are programmable timers that control various system functions. In the System Timers programming window, the programmer can change any or all of them. The timers and their default values, programmable ranges, and purposes are described on the following pages. The default values have been carefully selected to ensure proper system operation under most circumstances. Occasionally, one or more of the timers may need to be adjusted. A program planning sheet is located in Figure 6-20, on page 6-279.

**11.119** To reach this window, select System Timers from the System-wide Features menu or enter the TIMR command.

**11.120 SYSTEM TIMER LIST:** To change the value of a system timer, scroll through the list box until it is highlighted. When the timer is selected, a window appears that is similar to the one shown below.

- **VALUE:** Select the Value text box and enter the new value for the timer.
- **DEFAULT:** To return the selected timer to its default value, select the Default command button. The default value is shown in the command button.
- **OK or CANCEL:** To save the change and return to the System Timers list box, select the OK command button. To exit without saving any changes, select the Cancel command button.



### Timer Definitions

11.121 The timer definitions are shown below and on the following pages. A "DID" in the timer names indicates that the timer applies to DID trunks only. "DKTS" refers to keysets only and "SL" applies to single-line sets only. "E&M" timers apply only to E&M trunks (except E&M Disconnect Flash Duration), and "T1" applies only to T1 trunks. "LS" indicates a loop-start trunk timer, "GS" refers to ground-start trunks, and "LS/GS" applies to both types. The "UCD" timer applies only to UCD hunt groups.

| TIMER                                          | DEFAULT VALUE | RANGE                                  | PURPOSE                                                                                                                                                                                                                                          |
|------------------------------------------------|---------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Abandoned Call                                 | 10            | 1-255 minutes                          | After a call has recalled to the last possible station, it will recall until this timer expires. If it remains unanswered, the system will disconnect the call. (This timer is started when the call begins recalling the first recall station.) |
| Camp-On                                        | 3             | 1-255 seconds                          | Length of time a caller hears busy tone before camping on.                                                                                                                                                                                       |
| Camp-On Tone                                   | 15            | 5-255 seconds                          | Length of time between camp-on tones.                                                                                                                                                                                                            |
| CO Reseize                                     | 3             | 1-15 seconds                           | When a user reseizes a trunk, this timer determines the length of time the system will hold the trunk open.                                                                                                                                      |
| Dial Initiation                                | 15            | 5-30 seconds                           | Limits time a station can remain off hook without dialing before the system sends reorder tones.                                                                                                                                                 |
| DID Disconnect Recognition                     | 150           | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the minimum amount of time the circuit must be on hook for the system to recognize that the call has been disconnected.                                                                                                                  |
| DID Impulse-dial Inter-digit Pause Recognition | 240           | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the minimum pause allowed between incoming pulse-dial signals sent from the remote circuit. It allows the system to recognize the separation between digits.                                                                             |
| DID Off-hook Debounce                          | 10            | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the minimum amount of time the circuit must be off hook before the system will recognize another on-hook/off-hook transition.                                                                                                            |
| DID On-hook Debounce                           | 12            | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the minimum amount of time the circuit must be on hook before the system will recognize another on-hook/off-hook transition.                                                                                                             |
| DID Post-Seize Delay                           | 64            | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the minimum time allowed between the recognition of a seizure and the beginning of digit validation. Used only for Immediate-Dial circuits.                                                                                              |
| DID Post-Signal Delay                          | 30            | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the minimum time allowed between the end of a handshake and the beginning of digit validation. Used only for Wink-Start and Dial-Delay circuits.                                                                                         |
| DID Pre-Signal Delay                           | 100           | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the amount of time that must elapse between the recognition of a trunk seizure and the handshake. Used only for Wink-Start and Dial-Delay circuits.                                                                                      |
| DID Ready Timeout                              | 4000          | 2-65000 millisecond.<br>(.002-65 sec.) | This is the maximum time the T1C or SLA will wait for the "Digit Register Ready" command. If the timer expires, the SLA or T1C will automatically initiate a handshake. Used only for Wink-Start and Dial-Delay circuits.                        |

| <u>TIMER</u>                               | <u>DEFAULT VALUE</u> | <u>RANGE</u>                           | <u>PURPOSE</u>                                                                                                                                                                                                                                                                                    |
|--------------------------------------------|----------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DID Seizure Recognition                    | 30                   | 2–500 milliseconds<br>(.002–.5 sec.)   | This is the minimum amount of time the circuit must be on hook for the system to recognize that the trunk has been seized.                                                                                                                                                                        |
| DID Signal Hold                            | 200                  | 2–500 milliseconds<br>(.002–.5 sec.)   | This is the maximum duration of a wink-start handshake or the minimum duration of a dial-delay handshake. Used only for Wink-Start and Dial-Delay circuits.                                                                                                                                       |
| Disconnect Wait After Dialing              | 20                   | 1–60 seconds                           | Length of time the system waits after dialing an outside telephone number before checking the trunk for disconnect.                                                                                                                                                                               |
| DKTS Alternate Transient Display           | 10                   | 1–255 tenths<br>(.1–25.5 sec.)         | This is the amount of time transient displays will appear on keyset stations with the “Alternate Transient Display Timer” station flag enabled.                                                                                                                                                   |
| DKTS Secondary Extension Key Altering Tone | 6                    | 1–1000 seconds                         | This timer is in effect only if the station has a number greater than 1 in the “Ring When <i>n</i> Calls At Extension” field. It determines how often the station with the secondary extension key will hear an alerting tone while the primary station has “ <i>n</i> ” number of calls present. |
| DTMF Digit Duration/Pause                  | 60                   | 30–255 milliseconds<br>(.03–.255 sec.) | Adjusts the duration of and pause between digits of DTMF tones sent by the system. Both the tone and the pause will use the assigned duration (for example, a 6/100 second tone has a 6/100 second pause between digits).                                                                         |
| E&M Answer Recognition                     | 4500                 | 2–20000 millisec.<br>(.002–20 sec.)    | Determines the minimum amount of time the receiving PBX must be off-hook, when a station user places an outgoing call on an E&M trunk. This allows the system to recognize that the call has been answered (unless the Answer Recognition timer is disabled as described on page 6–129).          |
| E&M Dial Delay                             | 70                   | 2–500 milliseconds<br>(.002–.5 sec.)   | This is the maximum amount of time the E&M circuit will wait before transmitting digits following a handshake. This timer goes in effect after the handshake on a Wink-Start or Dial-Delay circuit or after seizure on an Immediate-Dial circuit.                                                 |
| E&M Dial Delay Hold                        | 140                  | 2–500 milliseconds<br>(.002–.5 sec.)   | This is the minimum length for a Dial-Delay handshake. Used only for Dial-Delay circuits.                                                                                                                                                                                                         |
| E&M Dialing Wait After Hookflash           | 3000                 | 2–20000 millisec.<br>(.002–20 sec.)    | Determines how long the E&M circuit will wait when transmitting a hookflash before dialing additional digits or checking for disconnection.                                                                                                                                                       |
| E&M Disconnect Flash Duration              | 15000                | 2–40000 millisec.<br>(.002–40 sec.)    | This is the minimum amount of time a T1 E&M or DID circuit will remain on hook to cause a disconnection from the remote circuit.                                                                                                                                                                  |
| E&M Disconnect Recognition                 | 1500                 | 2–10000 millisec.<br>(.002–10 sec.)    | This is the amount of time a circuit must be on hook before the E&M circuit recognizes a disconnection.                                                                                                                                                                                           |

| <u>TIMER</u>                                      | <u>DEFAULT<br/>VALUE</u> | <u>RANGE</u>                           | <u>PURPOSE</u>                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------|--------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E&M False Signal Debounce                         | 50                       | 2-500 milliseconds<br>(.002-.5 sec.)   | Determines the minimum length of a valid handshake signal that is received from a remote circuit. Used only on Wink-Start and Dial-Delay circuits.                                                                                                                                                                                         |
| E&M Handshake Timeout                             | 5000                     | 2-20000 millisecond.<br>(.002-20 sec.) | Determines the maximum length of a valid handshake signal. Used only on Wink-Start and Dial-Delay circuits.                                                                                                                                                                                                                                |
| E&M Hookflash Duration                            | 600                      | 2-10000 millisecond.<br>(.002-10 sec.) | Determines the length of hookflashes sent to the remote circuits.                                                                                                                                                                                                                                                                          |
| E&M Hookflash Recognition                         | 300                      | 2-10000 millisecond.<br>(.002-10 sec.) | Determines the minimum length of recognizable hookflashes from the remote circuit.                                                                                                                                                                                                                                                         |
| E&M Impulse-dial Inter-digit<br>Pause Recognition | 300                      | 2-10000 millisecond.<br>(.002-10 sec.) | This is the minimum pause allowed between incoming pulse-dial signals sent from the remote circuit. It allows the system to recognize the separation between digits.                                                                                                                                                                       |
| E&M Off-Hook Debounce                             | 10                       | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the minimum amount of time the remote circuit must be off hook before the E&M circuit will recognize another on-hook/off-hook transition.                                                                                                                                                                                          |
| E&M On-Hook Debounce                              | 10                       | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the minimum amount of time the remote circuit must be on hook before the E&M circuit will recognize another off-hook/on-hook transition.                                                                                                                                                                                           |
| E&M Outpulse-dial Inter-digit<br>Pause            | 700                      | 2-10000 millisecond.<br>(.002-10 sec.) | This is the minimum amount of time the E&M circuit will pause between pulse-dial digits when dialing.                                                                                                                                                                                                                                      |
| E&M Outpulse-dial Inter-pulse<br>Pause            | 40                       | 2-500 millisecond.<br>(.002-.5 sec.)   | This is the length of time the E&M circuit will pause between pulse-dial digits when dialing.                                                                                                                                                                                                                                              |
| E&M Post-Seize Delay                              | 65                       | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the minimum allowed time between the recognition of a seizure and the beginning of digit validation. Used only for Immediate-Dial circuits.                                                                                                                                                                                        |
| E&M Post-Signal Delay                             | 30                       | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the minimum allowed time between the end of a handshake and the beginning of digit validation. Used only for Wink-Start and Dial-Delay circuits.                                                                                                                                                                                   |
| E&M Pulse Hold                                    | 60                       | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the maximum length of a pulse-dial signal that is dialed by the E&M circuit.                                                                                                                                                                                                                                                       |
| E&M Ready Timeout                                 | 4000                     | 2-20000 millisecond.<br>(.002-20 sec.) | <i>On a Wink-Start circuit:</i> This is the maximum time the E&M circuit will wait for a "Digit Register Ready" command before initiating the Wink-Start handshake.<br><i>On a Dial-Delay circuit:</i> This is the maximum time the E&M circuit will wait for a "Digit Register Ready" command before the Dial-Delay signal is terminated. |
| E&M Receive Handshake<br>Delay                    | 20                       | 2-500 milliseconds<br>(.002-.5 sec.)   | This is the minimum time required, after seizure, before an incoming handshake signal can be recognized. Used only for Wink-Start and Dial-Delay circuits. If a Wink or Dial Delay signal is detected within this time, the outgoing call is blocked.                                                                                      |

| <u>TIMER</u>                  | <u>DEFAULT VALUE</u> | <u>RANGE</u>                          | <u>PURPOSE</u>                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------|----------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E&M Seizure Debounce          | 2                    | 2–500 milliseconds<br>(.002–.5 sec.)  | Determines the minimum amount of time the remote circuit must remain off hook before the E&M circuit validates the incoming call.                                                                                                                                                                                                                                                                                            |
| E&M Transmit Handshake Delay  | 100                  | 2–500 milliseconds<br>(.002–.5 sec.)  | This is the minimum delay time between the recognition of a seizure and the beginning of a handshake signal. Used only for Wink-Start and Dial-Delay circuits.                                                                                                                                                                                                                                                               |
| E&M Wait for Dial Tone        | 1000                 | 2–20000 millisec.<br>(.002–20 sec.)   | This is how long the E&M circuit will wait for dial tone before dialing digits on an outgoing call. Only used on Immediate-Dial circuits with the Dial Tone Wait option enabled.                                                                                                                                                                                                                                             |
| E&M Wink Hold                 | 214                  | 2–500 milliseconds<br>(.002–.5 sec.)  | Determines the length of a Wink-Start handshake.                                                                                                                                                                                                                                                                                                                                                                             |
| E&M Wink Timeout              | 350                  | 2–500 milliseconds<br>(.002–.5 sec.)  | Determines the maximum allowed length of wink signals that are received from the remote circuit. If the time limit is exceeded, the call will be blocked and the attempt terminated. Used only for Wink-Start circuits.                                                                                                                                                                                                      |
| Forward No Answer             | 15                   | 3–255 seconds                         | Length of time a call waits at an unavailable station before being forwarded. (Applies to manual call forwarding only, not system forwarding.)                                                                                                                                                                                                                                                                               |
| GS Dialing Wait After Connect | 30                   | 1–50 tenths<br>(.1–5 sec.)            | This is the length of time the system waits after a ground start trunk has been seized, to place an outgoing call, before dialing digits.                                                                                                                                                                                                                                                                                    |
| GS Tip-Ground Debounce        | 50                   | 10–500 milliseconds<br>(.001–.5 sec.) | This is the length of time the system will ignore subsequent attempts to seize a ground start trunk once it has been seized.<br><br><b>NOTE:</b> The database contains a station option that can be set to prevent users from reseizing a trunk. If selected, the station user cannot reseize a trunk until it is disconnected by replacing the handset, pressing the SPKR key (if off hook), or pressing another trunk key. |
| GS Transition Delay           | 10                   | 10–500 milliseconds<br>(.001–.5 sec.) | This is the amount of time that must elapse after a disconnection before another call can ring in on that trunk.                                                                                                                                                                                                                                                                                                             |
| Hold                          | 60                   | 0–255 seconds                         | Limits time a call remains on hold before recalling the station. If set to 0, the call will not recall.                                                                                                                                                                                                                                                                                                                      |
| Hold — Alternate              | 180                  | 0–1000 seconds                        | If the station has the Alternate Hold Timer flag enabled, this limits time a call remains on hold before recalling the station. If set to 0, the call will not recall.                                                                                                                                                                                                                                                       |
| Inactivity Alarm              | 60                   | 10–255 seconds                        | Limits the time a station can remain off hook and inactive (after first receiving reorder tones) before registering a system alarm.                                                                                                                                                                                                                                                                                          |
| Interdigit — Long             | 15                   | 2–255 seconds                         | Used in determining end of dialing. Short timer is used after a valid number has been dialed. Long timer is used until digits form a valid number.                                                                                                                                                                                                                                                                           |
| Interdigit — Short            | 4                    | 2–30 seconds                          |                                                                                                                                                                                                                                                                                                                                                                                                                              |

| TIMER                                                                                                                                                                                                                                                                                                                                                                                           | DEFAULT VALUE | RANGE                               | PURPOSE                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LS Caller ID Relay Hold                                                                                                                                                                                                                                                                                                                                                                         | 2500          | 2-4000 milliseconds (.002-4.0 sec.) | Amount of time the system will look for Caller ID information when a call is received.                                                                                                                                                                                                   |
| LS Caller ID Ring Idle                                                                                                                                                                                                                                                                                                                                                                          | 500           | 2-4000 milliseconds (.002-4.0 sec.) | This sets the time between the end of first ring and the time at which the system begins to check for Caller ID information.                                                                                                                                                             |
| <p><b>NOTE:</b> The Caller ID timer values combined must be shorter than the period of silence between CO rings. The following illustration shows the relationship between CO ringing and the Caller ID relay action:</p>                                                                                                                                                                       |               |                                     |                                                                                                                                                                                                                                                                                          |
| <p>The diagram illustrates the timing relationship between CO ringing and timer actions. It shows a sequence of two 'CO RING' pulses. The first pulse is followed by a period labeled 'RING IDLE TIMER'. After the second 'CO RING' pulse, a period labeled 'RELAY HOLD TIMER' begins, which overlaps with the end of the second ring pulse and extends into the subsequent silence period.</p> |               |                                     |                                                                                                                                                                                                                                                                                          |
| LS Dialing Wait After Connect                                                                                                                                                                                                                                                                                                                                                                   | 15            | 1-50 tenths (.1-5.0 sec.)           | The length of time the system waits for outside dial tone before dialing or checking the trunk for a disconnect.                                                                                                                                                                         |
| LS/GS CO Hookflash                                                                                                                                                                                                                                                                                                                                                                              | 60            | 2-1000 hundredths (.02-10.0 sec.)   | Adjusts the duration of the timed hookflash that is sent over the trunk by the system when the Hookflash feature code is used.                                                                                                                                                           |
| LS/GS CO-CO Disconnect                                                                                                                                                                                                                                                                                                                                                                          | 35            | 2-1000 hundredths (.02-10.0 sec.)   | A call is disconnected by the system if it detects loss of loop current lasting longer than this timer during trunk-to-trunk calls.                                                                                                                                                      |
| LS/GS Dialing Disconnect                                                                                                                                                                                                                                                                                                                                                                        | 120           | 2-1000 hundredths (.02-10.0 sec.)   | The connection is dropped if the system detects loss of loop current lasting longer than this timer during dialing.                                                                                                                                                                      |
| LS/GS Dialing Wait After Hookflash                                                                                                                                                                                                                                                                                                                                                              | 30            | 2-199 tenths (.2-19.9 sec.)         | Delays dialing after a hookflash to allow the system and central office hardware to recover.                                                                                                                                                                                             |
| LS/GS IC-CO Disconnect                                                                                                                                                                                                                                                                                                                                                                          | 60            | 2-1000 hundredths (.02-10.0 sec.)   | A call is disconnected by the system if it detects loss of loop current (lasting longer than this timer) during station-to-trunk calls.                                                                                                                                                  |
| LS/GS Inter-ring Silence                                                                                                                                                                                                                                                                                                                                                                        | 60            | 1-250 tenths (.1-25.0 sec.)         | Indicates the duration of the silence between rings on an incoming call to determine if the trunk has stopped ringing prior to being seized. In most areas, trunk ring pattern is 2 seconds on/ 4 seconds off. Check with the local telephone company for the ring pattern in your area. |
| <p><b>NOTE:</b> This timer must always be set higher than the central office's ring off time.</p>                                                                                                                                                                                                                                                                                               |               |                                     |                                                                                                                                                                                                                                                                                          |
| LS/GS Loop Current Debounce                                                                                                                                                                                                                                                                                                                                                                     | 100           | 2-500 milliseconds (.002-.5 sec.)   | This is the minimum amount of time the system must detect loop current for it to recognize that a trunk is present when it is seized.                                                                                                                                                    |
| LS/GS Outpulse-dial Inter-digit Pause                                                                                                                                                                                                                                                                                                                                                           | 700           | 2-1500 milliseconds (.002-1.5 sec.) | This is the idle time between pulse-dial digits sent by the system.                                                                                                                                                                                                                      |

| <u>TIMER</u>                            | <u>DEFAULT VALUE</u> | <u>RANGE</u>                         | <u>PURPOSE</u>                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------|----------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LS/GS Outpulse-dial Inter-pulse Pause   | 40                   | 2-500 milliseconds<br>(.002-.5 sec.) | This is the amount of time between pulses when pulse-dial digits are sent by the system.                                                                                                                                                                                                                                                                                                                                                                |
| LS/GS Outpulse-dial Pulse Hold Duration | 60                   | 2-500 milliseconds<br>(.002-.5 sec.) | This is the duration of a single pulse-dial digit sent by the system.                                                                                                                                                                                                                                                                                                                                                                                   |
| LS/GS Ring Frequency — High Boundary    | 100                  | max. 1000 Hertz                      | These parameters determine the valid range of ring frequencies that will be recognized by the system. Any ring signal outside of this range is ignored. The ranges for these timers are interdependent. The minimum value for the high boundary is the current value of the low boundary. The maximum for the low boundary is the current value for the high boundary.                                                                                  |
| LS/GS Ring Frequency — Low Boundary     | 15                   | min. 4 Hertz                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| LS/GS Trunk Ring Detection              | 5                    | 1-250 tenths<br>(.1-2.5 sec.)        | This is a low-level timer that specifies the duration that continuous ring voltage must be detected on a trunk for the system to recognize a new incoming call. If this timer is too low, then false rings could be detected. If the timer is too high, then new incoming calls may not be detected at all. Common ring durations sent by central offices are 1-second and 2-second.                                                                    |
| Message Wait                            | 5                    | 1-255 seconds                        | Length of time a caller waits after pressing the MSG key before being connected to the called party's message center.                                                                                                                                                                                                                                                                                                                                   |
| Off-Hook Voice Announce Screening       | 5                    | 1-255 seconds                        | After the Camp-On timer expires, length of time before an OHVA call can be completed.                                                                                                                                                                                                                                                                                                                                                                   |
| Page                                    | 15                   | 0-255 seconds                        | Limits duration of page. If set to 0, pages are unlimited in length.                                                                                                                                                                                                                                                                                                                                                                                    |
| Pause Dialing Digit Length              | 3                    | 1-15 seconds                         | Length of timed pauses used in system and station speed-dial telephone numbers and in ARS dial rules.                                                                                                                                                                                                                                                                                                                                                   |
| Queue Callback                          | 15                   | 10-255 seconds                       | Time allowed for a station to respond to a queue callback before the queue is cancelled.                                                                                                                                                                                                                                                                                                                                                                |
| Recall                                  | 60                   | 10-255 seconds                       | Length of time a hold or transfer recall rings at a station before recalling that station's recall destination. If the station receiving the recall has no recall destination, the call remains at the station until the Abandoned Call timer expires.                                                                                                                                                                                                  |
| SL Disconnect Flash Duration            | 15                   | 1-250 tenths<br>(.1-25.0 sec.)       | When a single-line station is involved in a call that is dropped by the other party, and the single-line station remains off hook, the system turns off tip and ring battery for the duration of this timer. If there is peripheral equipment on the single-line circuit (such as a voice mail unit, page amplifier, or other phone system) then this loss of battery will signal a call disconnect and will usually cause the equipment to disconnect. |
| SL Hookflash Maximum                    | 12                   | 2-20 tenths<br>(.2-2.0 sec.)         | The maximum amount of time a single-line set user can press the hookswitch before the system disconnects calls.                                                                                                                                                                                                                                                                                                                                         |

| <u>TIMER</u>                      | <u>DEFAULT<br/>VALUE</u> | <u>RANGE</u>                           | <u>PURPOSE</u>                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------|--------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SL Hookflash Minimum              | 2                        | 1–10 tenths<br>(.1–1.0 sec.)           | The minimum length of time a single-line set user must press the hookswitch for the system to recognize a hookflash.                                                                                                                                                                                                                                                                               |
| SL Inpulse-dial Inter-digit Pause | 300                      | 2–1500 milliseconds<br>(.002–1.5 sec.) | The minimum pause allowed between incoming pulse-dial signals sent from the remote circuit. It allows the single-line device to recognize the separation between digits.                                                                                                                                                                                                                           |
| SL Wait For Disconnect            | 2                        | 1–60 seconds                           | When a single-line station is involved in a call that is disconnected by the other party, and the single-line station remains off hook, this timer specifies the length of time between the disconnection and when the disconnect flash (which is set by the Disconnect Flash Duration timer) is transmitted to the single-line circuit. During this time, the station receives no audible signal. |
| System Forward Advance            | 15                       | 2–255 seconds                          | Determines how long a call will ring (unanswered) at each forwarding point in a system forwarding path.                                                                                                                                                                                                                                                                                            |
| System Forward Initiate           | 15                       | 2–255 seconds                          | Determines how long a call will ring (unanswered) at the principal station before advancing to the first forwarding point in a system forwarding path.                                                                                                                                                                                                                                             |
| T1 Busyout Switch Timeout         | 60                       | 10–10000 seconds                       | When a T1 circuit is made busy using the busyout switch or programming command, this timer starts. If it expires, the Make-Busy LED on the T1 Card flashes and the busyout process is canceled.                                                                                                                                                                                                    |
| T1 Loopback Timeout               | 600                      | 10–10000 seconds                       | This is the maximum allowed length of a remote loopback test. If the timer expires, the test is automatically terminated.                                                                                                                                                                                                                                                                          |
| Transfer — Attendant              | 30                       | 10–255 seconds                         | When an attendant transfers a call, this timer limits the time a transferred call rings unanswered before it recalls the attendant.                                                                                                                                                                                                                                                                |
| Transfer — Available              | 20                       | 10–255 seconds                         | Limits time a transferred call rings unanswered before it recalls the transferring station. (Does not apply to calls transferred by attendant stations or AXXESSORY Talk or calls transferred to a busy station.)                                                                                                                                                                                  |
| Transfer — AXXESSORY Talk         | 20                       | 10–255 seconds                         | Limits time a transferred call waits at an AXXESSORY Talk destination before recalling the programmed recall destination.                                                                                                                                                                                                                                                                          |
| Transfer — Busy                   | 24                       | 10–255 seconds                         | Limits time a transferred call waits at a busy station before recalling the transferring station. (Does not apply to calls transferred by attendant stations or AXXESSORY Talk or to calls transferred to an idle station.)                                                                                                                                                                        |

| <u>TIMER</u>                             | <u>DEFAULT VALUE</u> | <u>RANGE</u>               | <u>PURPOSE</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------|----------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Trunk Key Debounce                       | 3                    | 1-30 seconds               | <p>The length of time the system will ignore subsequent attempts to press a trunk key once it has been pressed. This prevents a keyset user from accidentally disconnecting a call by re-selecting the trunk key if the key is pressed twice while answering a call.</p> <p><b>NOTE:</b> The database contains a CO/IC Reseize station flag that can be set to prevent users from reseizing a trunk. If selected, the station user cannot reseize a trunk until it is disconnected by replacing the handset, pressing the SPKR key, or pressing another trunk key.</p> |
| UCD Station Monitor Indication Frequency | 15                   | 1-255 seconds              | This is the length of the pause between hunt group station monitoring tones.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Unsupervised CO                          | 5                    | 1-255 minutes              | Limits duration of outside calls transferred or forwarded to outside telephone numbers before recalling the primary attendant.                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Valid Call                               | 15                   | 1-60 seconds               | Minimum duration of an outgoing call before it is recorded in SMDR. Calls placed on hold or transferred are not subject to this timer.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Voice Mail Dial Delay                    | 5                    | 1-250 tenths (.1-2.5 sec.) | When a call is answered by the voice mail unit, this indicates the amount of time the system waits before sending digits to the voice mail unit after it answers the call.                                                                                                                                                                                                                                                                                                                                                                                             |

## 12. TOLL RESTRICTION

**12.1** The Toll Restriction programming window is shown on page 6-110. To prepare for programming Toll Restriction information, list all unrestricted stations, AXCESSORY Talk applications, and trunk groups and those that are affected by each of the following restrictions. Also, determine the dialing patterns that will be used for the toll restriction classes of service. (Refer to FEATURES page 4-32 for COS details. A program planning sheet is located in Figure 6-21, on page 6-282.)

**12.2 Class of Service:** The COS designations 00-09 have default values. COS designations (10-16) are blank. Classes of service 02-16 are programmable. Each may be specified to be an allowed or denied class of service, dialing patterns can be programmed for each, and each can be assigned to station and trunk groups as needed. The default values of COS 00-09 are as follows. (The toll string wild cards and non-programmable wild-cards are shown on page 6-109.)

- **COS 00 — Unrestricted:** This COS can be assigned to disable all toll restriction for that station.
- **COS 01 — ARS Only:** Calls can only be placed using the Automatic Route Selection (ARS) feature when this restriction is assigned. The user will hear reorder tones when attempting to place a call using any other method. A restricted user can still select individual trunks if the trunks are designated as "exempt from ARS Only" (as described on pages 4-31 and 6-137), or were transferred, were placed on hold, or are recalling or ringing. Trunk restriction determines which trunks in the ARS route group can be selected by the station.
- **COS 02 — Deny Area/Office:** This restriction is divided into three user groups to allow the use of varying area/office code restriction tables. This is useful for reducing restrictions for some of the stations or trunk groups while increasing restrictions for others. Each station, AXCESSORY Talk application, and trunk group is assigned a day mode and a night mode user group in database programming. Within each user group, area codes can be designated as restricted, allowed, or extended. Restricting an area code prevents users from placing calls to that area code. Allowing an area code allows all office codes within that area code. Designating an area code as extended allows the programmer to determine which office codes (up to 800) are allowed or restricted within that area code. For each user group, 800 area codes can be marked as allowed or restricted in the database list, and up to four area codes can be marked as extended.
- **COS 03 — Deny Operator:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]RN+, [Q]R0, and [Q]RE) are restricted, unless the number also matches a dial pattern in an "allowed" class of service that is assigned to the station, AXCESSORY Talk application, or trunk group used.
- **COS 04 — Deny Toll Access:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]TN+ and [Q]TE) are restricted, unless the number also matches a dial pattern in an "allowed" class of service that is assigned to the station, AXCESSORY Talk application, or trunk group used.
- **COS 05 — Deny International:** Calls to numbers that match the dial patterns for this class of service (defaults to [Q]I+) are restricted, unless the number also matches a dial pattern in an "allowed" class of service that is assigned to the station, AXCESSORY Talk application, or trunk group being used.
- **COS 06 — Deny Equal Access:** Calls to numbers that match the dial patterns for this class of service (defaults to Q+) are restricted, unless the number also matches a dial pattern in an "allowed" class of service that is assigned to the station, AXCESSORY Talk application, or trunk group being used.
- **COS 07 — Deny Local Calls:** Calls to numbers that match the dial patterns for this class of service (defaults to N+) are restricted, unless the number also matches a dial pattern in an "allowed" class of service that is assigned to the station, AXCESSORY Talk application, or trunk group being used.
- **COS 08 — Denied Numbers:** Calls to numbers that match the dial patterns for this class of service (defaults to 1900NXXXXXXXX+ and 976XXXX+) are restricted, unless the number also matches a dial pattern in an "allowed" class of service that is assigned to the station, AXCESSORY Talk application, or trunk group being used.
- **COS 09 — Allowed Numbers:** Calls to numbers that match with the dial patterns for this class of service (defaults to 1800NXXXXXXXX+) are allowed, even if number also matches a dial pattern in a restricted class of service that is assigned to the station, AXCESSORY Talk application, or trunk group being used.

**12.3** Exact (complete) pattern matches with classes of service marked as "allowed" always override exact (complete) pattern matches with classes of service marked as "denied." Also, partial (incomplete) pattern matches with classes of service marked as "allowed" al-

ways override partial (incomplete) pattern matches with classes of service marked as "denied." The only time a pattern in a denied class of service overrides a pattern in an allowed class of service is when the match with the denied pattern is exact (complete) and the match with the allowed pattern is partial (incomplete).

**12.4 Toll Strings:** Toll strings are dialing patterns which are abbreviated to single character "wildcards." These wildcards are used in COS and Automatic Route Selection programming. Toll strings can contain any digit 0-9 including the keypad special characters #

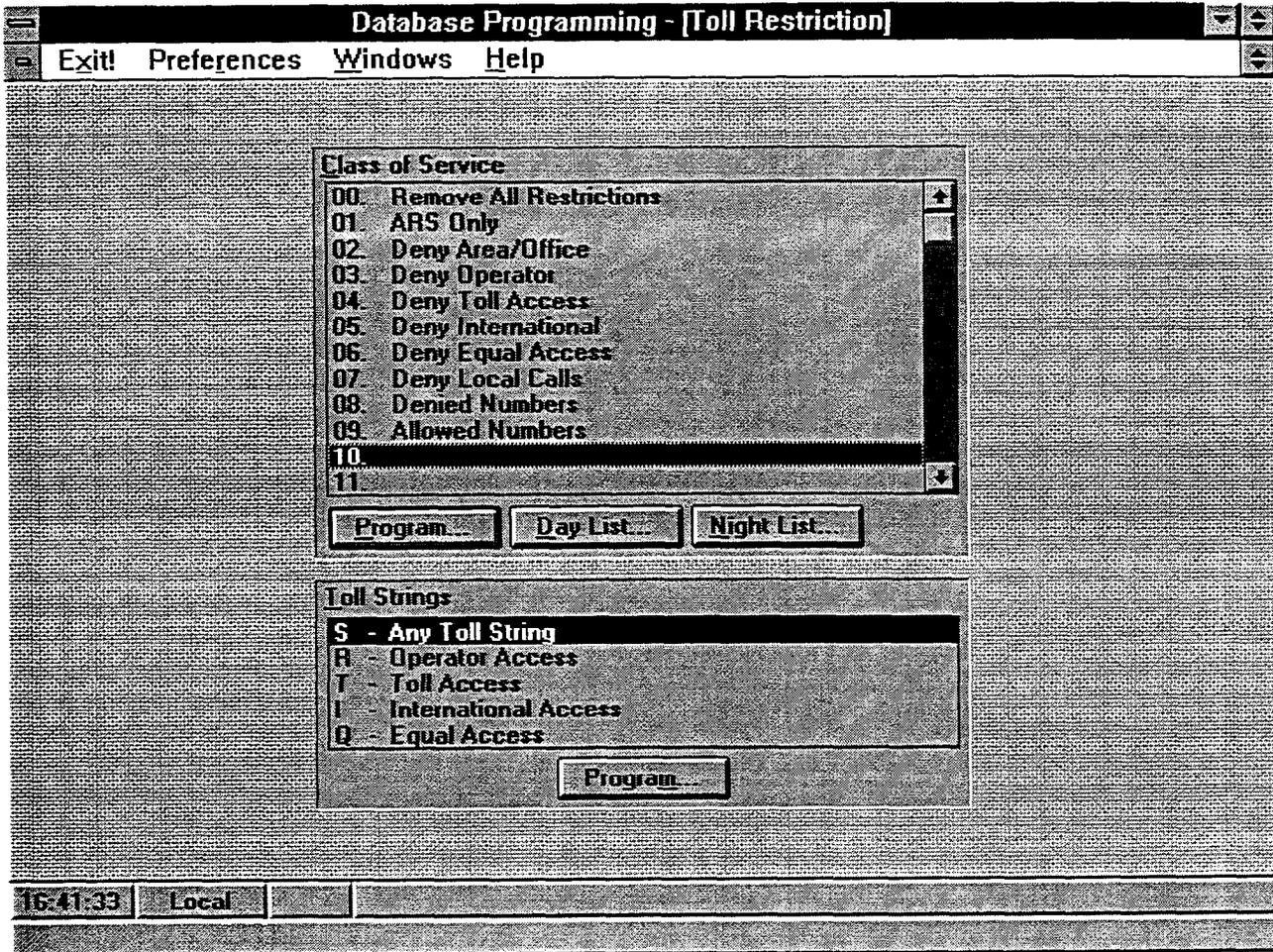
and \*. In addition, a variety of special characters may be entered into the database to reflect particular digit strings, hookflashes, or special digit strings. Each of the following toll string wildcards can be reprogrammed and/or renamed to meet the customer's requirements. *However, note that changing these dialing patterns will affect all of the other parts of the system where they are used.* The first list below shows the programmable toll string wildcards. The second list shows the special characters that may be used when specifying dialing patterns; these characters are not programmable.

**Toll String Wild Cards**

| CHARACTER | MEANING                                                                                                                                                                                                      |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S         | <i>Any Toll String:</i> Any of the designated patterns can be dialed at that point in the telephone number. (In the default state, the dialing patterns for this toll string are "I," "R," and "T.")         |
| R         | <i>Operator Access:</i> This represents the digit string that is required to call the telephone company's operator. (In the default state, this dialing pattern is 0)                                        |
| T         | <i>Toll Access:</i> Represents the digit(s) required for using long distance service. (In the default state, this dialing string is 1.)                                                                      |
| I         | <i>International:</i> Represents the digits required for international dialing. (In the default state, the dialing patterns for this toll string are 011 and 01.)                                            |
| Q         | <i>Equal Access:</i> Represents the digits required to select secondary carriers for equal access dialing. (In the default state, the dialing patterns for this toll string are 101XXXX, 10NXXX, and 100XX.) |

**Special Characters For Dialing Patterns**

| CHARACTER | MEANING                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X         | Any digit 0-9                                                                                                                                                                                                                                                                                                                                                                                                         |
| A         | Any keypad entry (0-9, #, *)                                                                                                                                                                                                                                                                                                                                                                                          |
| N         | Any digit 2-9                                                                                                                                                                                                                                                                                                                                                                                                         |
| Z         | Any digit 0 or 1                                                                                                                                                                                                                                                                                                                                                                                                      |
| B         | # or *                                                                                                                                                                                                                                                                                                                                                                                                                |
| H         | A hookflash                                                                                                                                                                                                                                                                                                                                                                                                           |
| E         | End of dialing; the pattern will not match if any other digits are dialed beyond this point                                                                                                                                                                                                                                                                                                                           |
| +         | Any additional dialing will be accepted, from that point in the string, with no further checking for a match. This also means that no further dialing is required beyond this point.                                                                                                                                                                                                                                  |
| [x]       | Indicates an optional pattern within another pattern. For example, the International Access character (I) could be defined as 01[1]. (The 01 is followed by an <i>optional</i> 1.)                                                                                                                                                                                                                                    |
| (x-x)     | Indicates a range of digit strings within a pattern. The strings on either side of the hyphen and all strings that fall within the numerical range are included in the match. The strings on either side of the hyphen must be the same length, and the only digits that may appear in the range are 0-9 (#, *, pauses, and flashes are not allowed).                                                                 |
| <x>       | Indicates repeatable patterns within patterns. In other words, no matter how many times the digit string within the brackets is dialed, the system will consider the dialed digits to match the pattern. Note that a repeatable pattern is an entire pattern; no other characters are allowed before or after a repeatable pattern. In other words, a repeatable pattern cannot be included within any other pattern. |



12.5 To reach this window, select Toll Restriction from the System-Wide Features menu or enter the TOLL command.

12.6 **CLASS OF SERVICE:** To program a COS or assign the COS to stations, AXCESSORY Talk applications, and trunk groups for day or night mode, highlight the desired COS in this list box. All programming will apply to that COS until the highlight bar is moved.

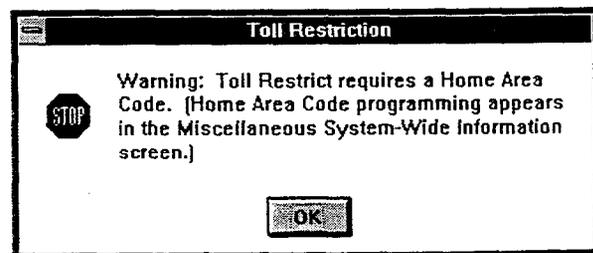
12.7 **PROGRAM:** To program a COS, highlight the desired COS in the list box and select the Program COS command button. A programming window appears. The Deny Area/Office Code programming window is shown on the next page. The programming window for all other classes of service is shown on page 6-114. (Remove All Restrictions and ARS Only are not programmable classes of service. When they are highlighted, the Program COS command button is dimmed and cannot be selected.)

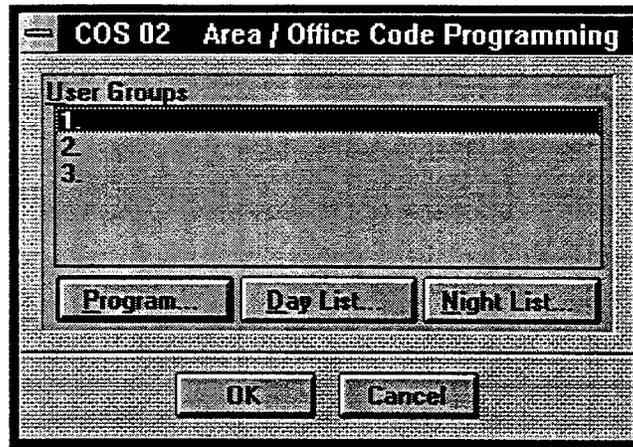
12.8 **DAY/NIGHT LIST:** To program the list of stations, AXCESSORY Talk applications, and trunk groups that will have a specific COS in day or night

mode, highlight the desired COS in the list box and then select the Day List or Night List command button. A window appears as shown on page 6-115.

12.9 **TOLL STRINGS/PROGRAM:** To program a toll string, scroll through the Toll Strings list box until the desired string is highlighted. Then select the Program String command button to reach the programming window shown on page 6-117.

**NOTE:** If you have not programmed a home area code yet, a warning window appears as you exit this window. It asks if you wish to continue; select OK. To program a home area code, refer to the window shown on page 6-89.





### A. AREA/OFFICE CODE PROGRAMMING

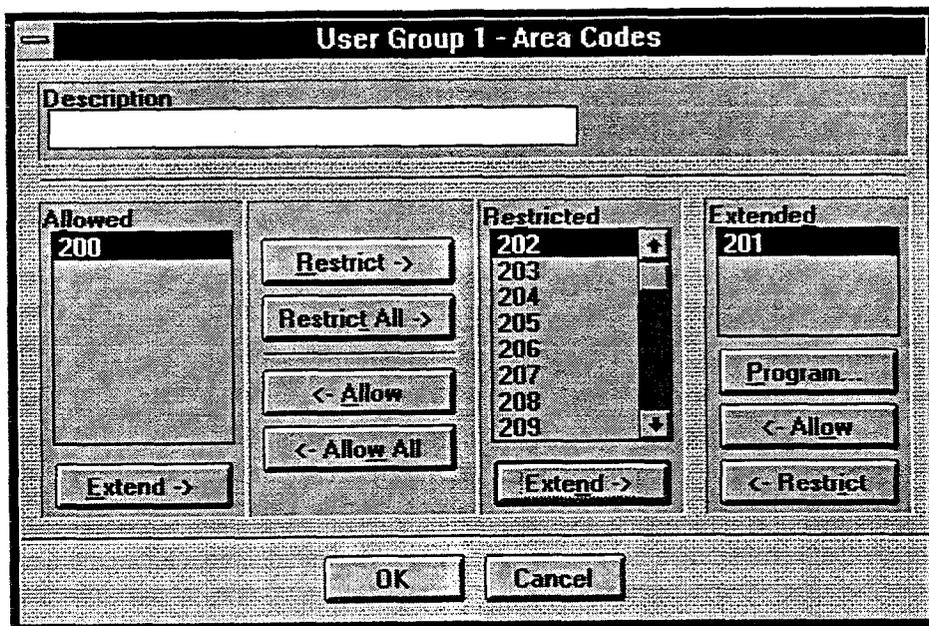
**12.10** The window shown above is used for programming the various aspects of area and office code restriction used for the Deny Area/Office class of service.

**12.11** Set up area and office code tables for up to three user groups to allow different area/office code restriction to be used. This is useful for reducing restrictions for some users while increasing restrictions for others. Each station, AXCESSORY Talk application, and trunk group is assigned to a user group. Within each user group, area codes can be restricted, allowed, or extended. Restricting an area code prevents users from placing calls to that area code and all of its office codes. Allowing an area code allows all office codes within that area code. Designating an area code as extended allows the programmer to determine which office codes within that area code are allowed or restricted. There can be up to four extended area codes per user group. To prepare

for programming, list the area codes that are allowed, restricted, and extended. Also, list the office codes within the extended area code(s) that are allowed and restricted.

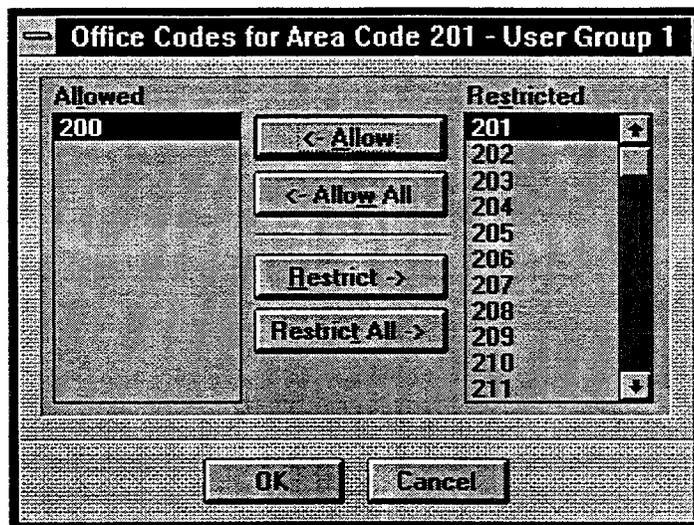
**12.12 USER GROUPS/PROGRAM:** The list box shows the user groups and their descriptions (if programmed). To program a user group, highlight the desired user group and then select the Program User Group command button. The window shown on the following page appears.

**12.13 DAY/NIGHT LIST:** To program the list of stations, AXCESSORY Talk applications, and trunk groups that are included in a specific user group in day or night mode, highlight the desired user group in the list box and select the Day List or Night List command button. The window shown on page 6-116 appears. *Note that only extensions with COS 02 can be placed in a user group day or night list.*

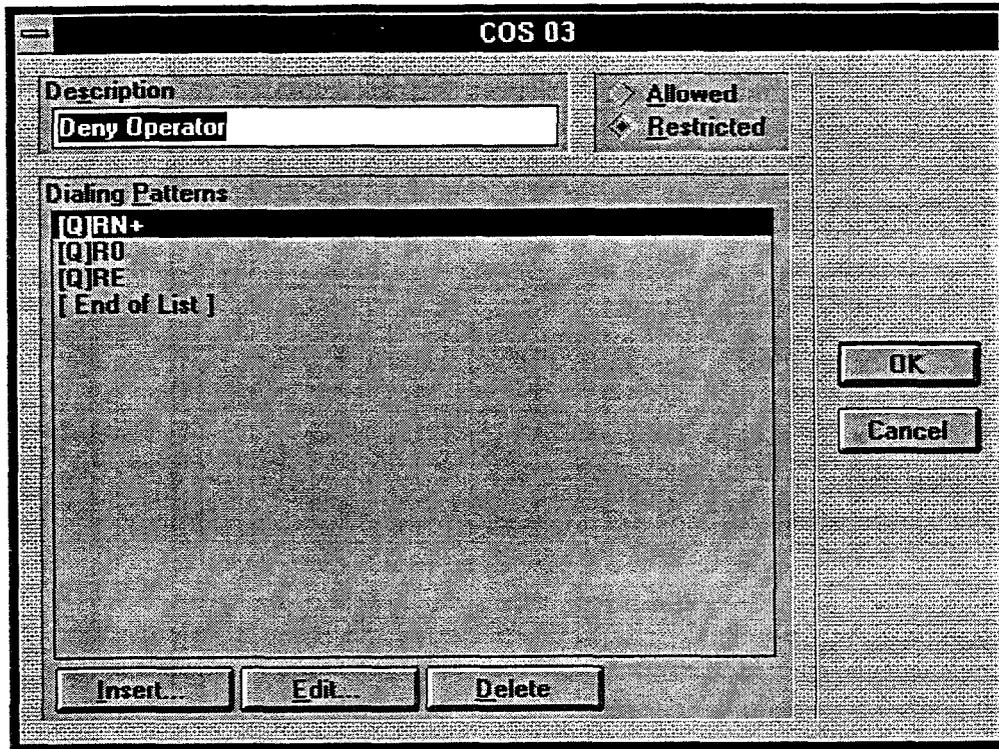


**12.14** To program the area codes for a specific user group, highlight the desired line in the User Groups list box then select the Program command button (as shown on the preceding page). An Area Code programming window will appear as shown above.

- **DESCRIPTION:** Enter a name for the user group, up to 20 characters, in the Description text box.
- **ALLOW/RESTRICT:** To allow users in the user group access to area codes, the codes must be placed in the Allowed list. To place an area code in the Allowed list box, locate that area code on the Restricted list and highlight it. Then select the Allow command button. The area code will automatically move to the Allowed list. To remove an area code from the list, highlight the code in the Allowed list and select the Restrict command button to move it to the Restricted list.
- **ALLOW ALL/RESTRICT ALL:** To include all area codes in the Allowed list, select the Allow All command button. To move all codes to the Restricted list, select the Restrict All command button.
- **EXTEND/ALLOW/RESTRICT:** There can be up to four extended area codes per user group, each with an individual list of allowed and restricted office codes. To create an extended area code, highlight the desired code in the Allowed or Restricted list box. Then select the associated Extend command button. The area code moves to the Extended list box. Office codes can then be programmed as allowed or restricted for that area code as described below and on the next page. To remove an extended area code from the list, highlight the code in the Extended list box and select the Allow command button to move it to the Allowed list box or select Restrict to move it to the Restricted list box.
- **PROGRAM:** To program the lists of allowed and restricted office codes for an extended area code, highlight the desired area code in the Extended list box and select the Program command button. A window appears as shown on the next page.
- **OK/CANCEL:** When area code programming is complete for the user group, select the OK command button. To exit from the window without saving changes, select the Cancel command button.



- **ALLOW/RESTRICT:** To allow users in the user group access to office codes within the extended area code, the office codes must be placed in the Allowed list. To place an office code in the Allowed list box, locate that office code on the Restricted list and highlight it. Then select the Allow command button. The office code will automatically move to the Allowed list. To remove an office code from the list, highlight the office code in the Allowed list and select the Restrict command button to move it to the Restricted list.
- **ALLOW ALL/RESTRICT ALL:** To include all office codes in the Allowed list, select the Allow All command button. To move all office codes to the Restricted list, select the Restrict All command button.
- **OK/CANCEL:** When office code programming is complete for the extended area code, select the OK command button. To exit from the window without saving changes, select the Cancel command button.



## B. CLASS OF SERVICE PROGRAMMING

**12.15** When Classes of Service 03–16 are highlighted in the list box shown on page 6–110 and the Program command button is selected, a window appears as shown above. (The Deny Area/Office Code window is shown on page 6–111. COS 00 and 01 are not programmable.) Use the following procedures to program the individual classes of service.

**12.16 DESCRIPTION:** The class of service can be given a descriptive name of up to 20 characters. Select the Description text box and type the desired name.

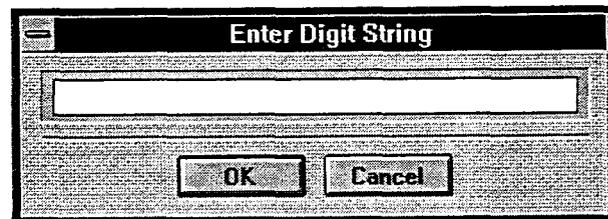
**12.17 ALLOWED/RESTRICTED:** Decide whether the dialing patterns for this class of service will be allowed or restricted. Then select either the Allowed or Restricted option button to place a dot in it.

**12.18 DIALING PATTERNS:** This list box shows the dialing patterns that will be allowed or denied by this class of service. You can add to this list, remove patterns from the list, or change entries as described below.

**12.19 INSERT:** Use this command button to add a dialing pattern to the list. Place the scroll bar below the location where you want the string to appear in the Dialing Patterns list box, then select the Insert command button. The editing window shown at right appears. Type up to 32 characters in the text box (including wildcards). Then select the OK command button to return to the COS programming window. (Or select the Cancel com-

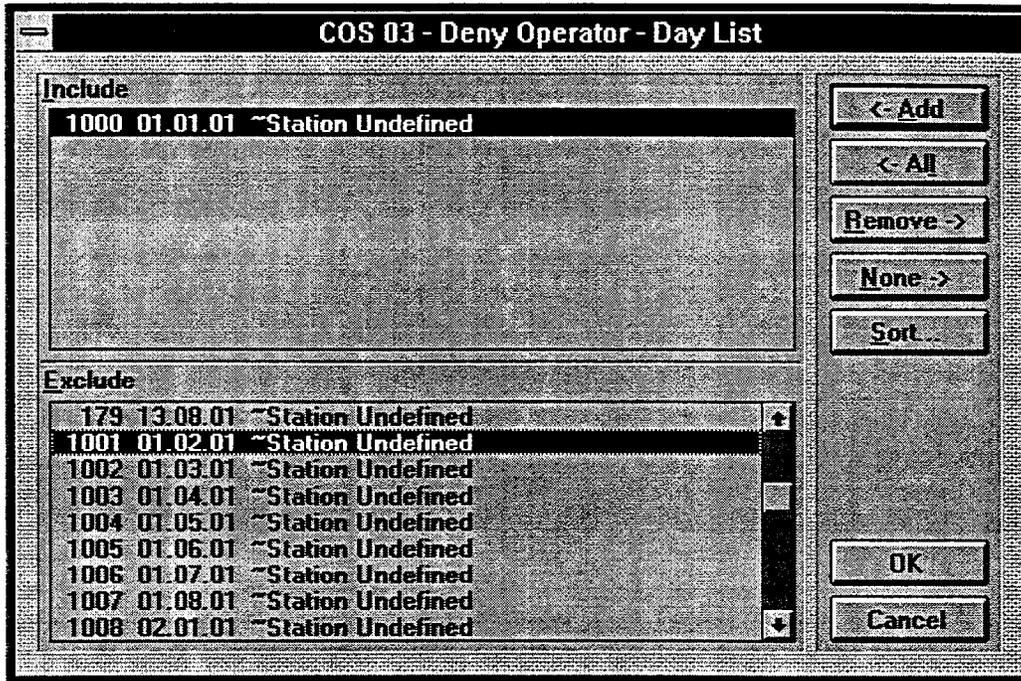
mand button to exit without adding the dialing pattern to the list.)

**12.20 EDIT:** Use this command button to change an existing dialing pattern. Highlight the pattern to be changed in the Dialing Patterns list box, then select the Edit command button. The window shown below appears. Type up to 32 characters in the text box (including wildcards). Then select the OK command button to return to the COS programming window. (Or select the Cancel command button to exit without changing the dialing pattern.)



**12.21 DELETE:** Use this command button to remove an existing dialing pattern. Highlight the pattern to be deleted in the Dialing Patterns list box. Then select the Delete command button.

**12.22 OK/CANCEL:** When programming is complete for this COS, select the OK command button. To exit from the window without saving changes, select the Cancel command button.



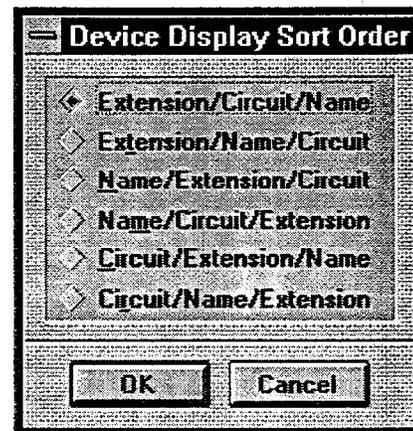
**C. COS DAY AND NIGHT LIST PROGRAMMING**

**12.23** The window shown above appears when a Class of Service is highlighted in the list box and the Day List or Night List command button is selected (as shown on page 6-110).

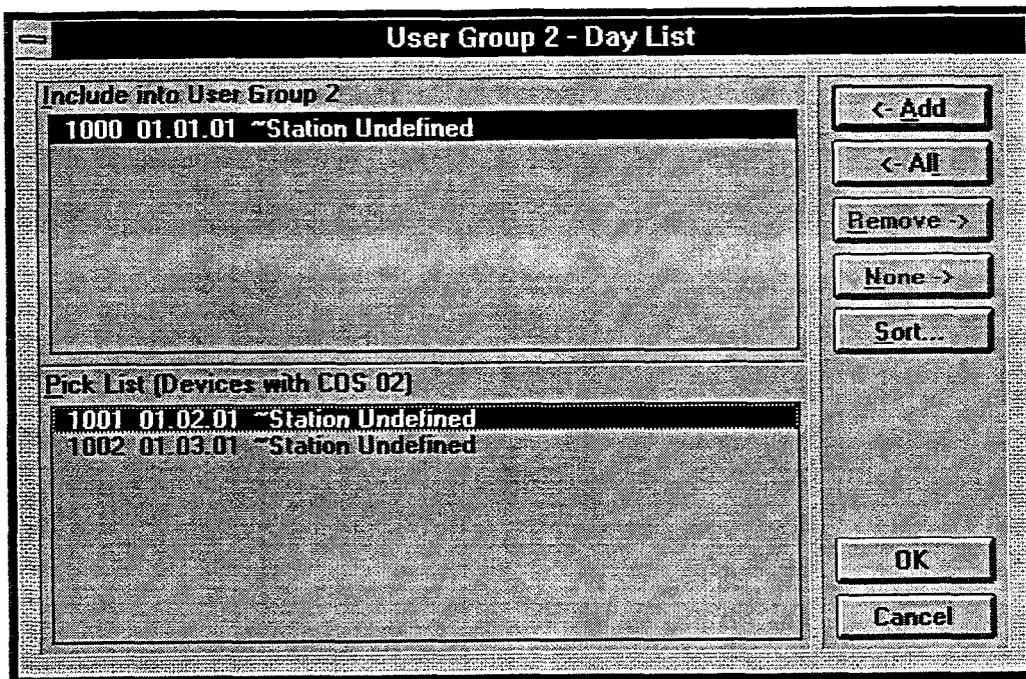
**12.24** To program the day and night lists, use the following procedures:

- **ADD/ALL:** Use the Add command button to move the highlighted extension from the Exclude list to the Include List, or use the All command button to place all extensions in the list.
- **REMOVE/NONE:** To remove an extension from the Include list, highlight it and select the Remove command button. Or, to remove all extensions, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the de-

sired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



#### D. USER GROUP DAY AND NIGHT LIST PROGRAMMING

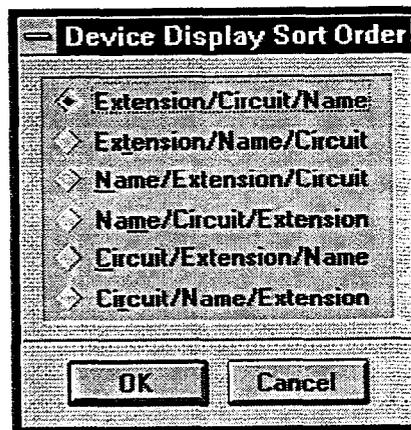
12.25 The window shown above appears when the Day List or Night List command button is selected in the User Group programming window (as shown on page 6-111).

12.26 The Pick List box and shows all extensions with COS 02, regardless of the assigned user group. *A station or trunk group must be programmed for COS 2 before it can be assigned to a user group.*

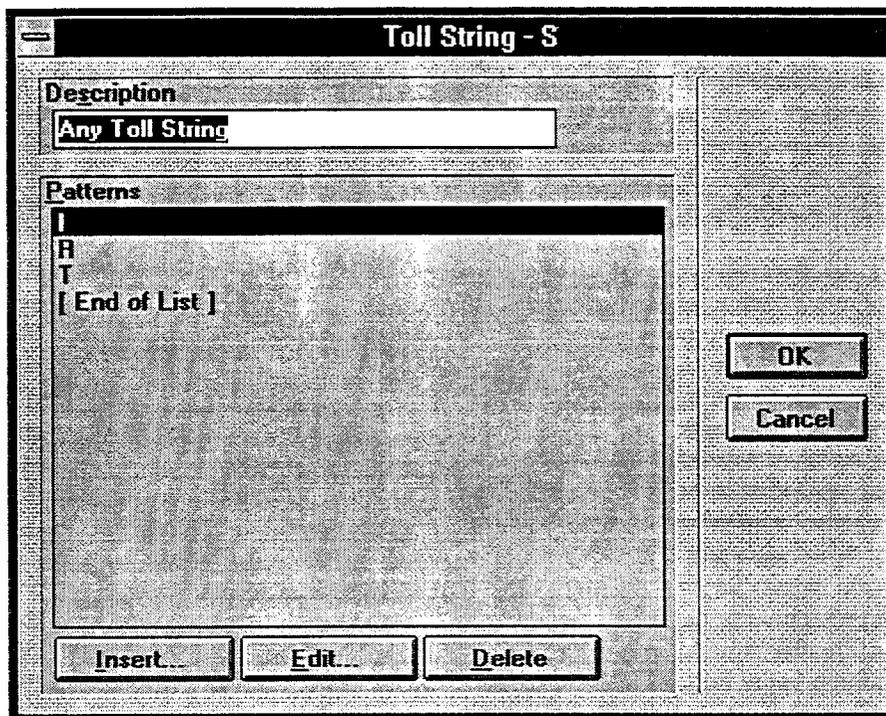
12.27 To program the day and night lists, use the following procedures:

- **ADD/ALL:** Use the Add command button to move the highlighted extension from the Pick List to the Include List, or use the All command button to place all extensions in the list.
- **REMOVE/NONE:** These command buttons are not available in this window. To remove an extension from the user group you must go to another user group and include it there. This ensures that each station with COS 2 has an assigned user group at all times.

- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



**12.28** Toll strings can consist of the non-programmable wildcards, digits (0–9, \*, and #), hookflashes, and/or other toll strings. This programming window allows you to designate dialing patterns which are abbreviated to single character “wildcards.” Refer to page 6–109 for lists of default toll strings and special characters.

**12.29 DESCRIPTION:** The toll string can be given a descriptive name of up to 20 characters. Select the Description text box and type the desired name.

**12.30 PATTERNS:** This list box shows the dialing patterns that are represented by this toll string. You can add to this list, remove patterns from the list, or change entries as described below.

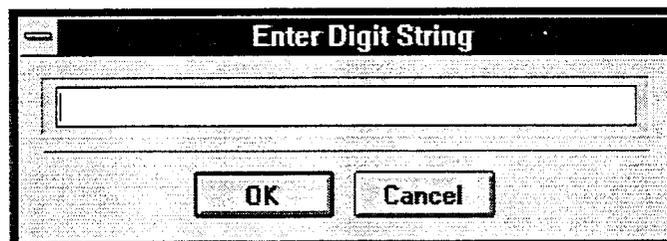
**12.31 INSERT:** Use this command button to add a pattern to the list. Place the scroll bar below the location where you want the string to appear in the Patterns list box, then select the Insert command button. The following window appears. Type up to 32 characters in the text box (including wildcards). Then select the OK com-

mand button to return to the Toll Restriction programming window. (Or select the Cancel command button to exit without adding the pattern to the list.)

**12.32 EDIT:** Use this command button to change an existing pattern. Highlight the string to be changed in the Patterns list box, then select the Edit command button. The window shown below appears. Type or edit up to 32 characters in the text box (including wildcards). Then select the OK command button to return to the Toll Restriction programming window. (Or select the Cancel command button to exit without changing the pattern.)

**12.33 DELETE:** Use this command button to remove an existing pattern. Highlight the string to be deleted in the Patterns list box, then select the Delete command button.

**12.34 OK/CANCEL:** When programming is complete for this toll string, select the OK command button. To exit from the window without saving changes, select the Cancel command button.



### 13. CALL ROUTING TABLES

**NOTE:** The Advanced CO Interfaces feature must be enabled in Premium Feature Selection to use Call Routing Tables. See page 6–220.

**13.1** A trunk group can be programmed to ring in to a call routing table to utilize the digits received from DID, ANI, or DNIS number strings, and Caller ID Information. This added information will allow the station user to receive helpful information about the callers (such as location, name, or which advertisement they saw) by looking at the keyset display. For a full description of call routing tables and sample applications, refer to page 4–27 in FEATURES.

**13.2** A call routing table consists of fields for dialing patterns, ring-in types/destinations, and names. The fields are used for analyzing the source or destination of the call and directing it to the proper destination.

**13.3** The call routing table fields are as follows:

- **Pattern strings:** The patterns strings in the table are compared against the digits received from the trunk interface for the incoming call. If the digits match one of the pattern strings, the call is routed according to the other fields in the table. Pattern entries can include up to 32 digits. Valid characters are shown in the table below.
- **Name:** The name field determines how the call will be identified at display keyset stations when received. It can contain up to 12 characters. The name can be any word or number that identifies the call source. (You can use any combination of letters and numbers.)
- **Ring-in type/destination:** The call can ring in to a single extension number (station, hunt group, or AXXESSORY Talk application), an extension list,

or as a DISA call (which allows the caller to select a destination).

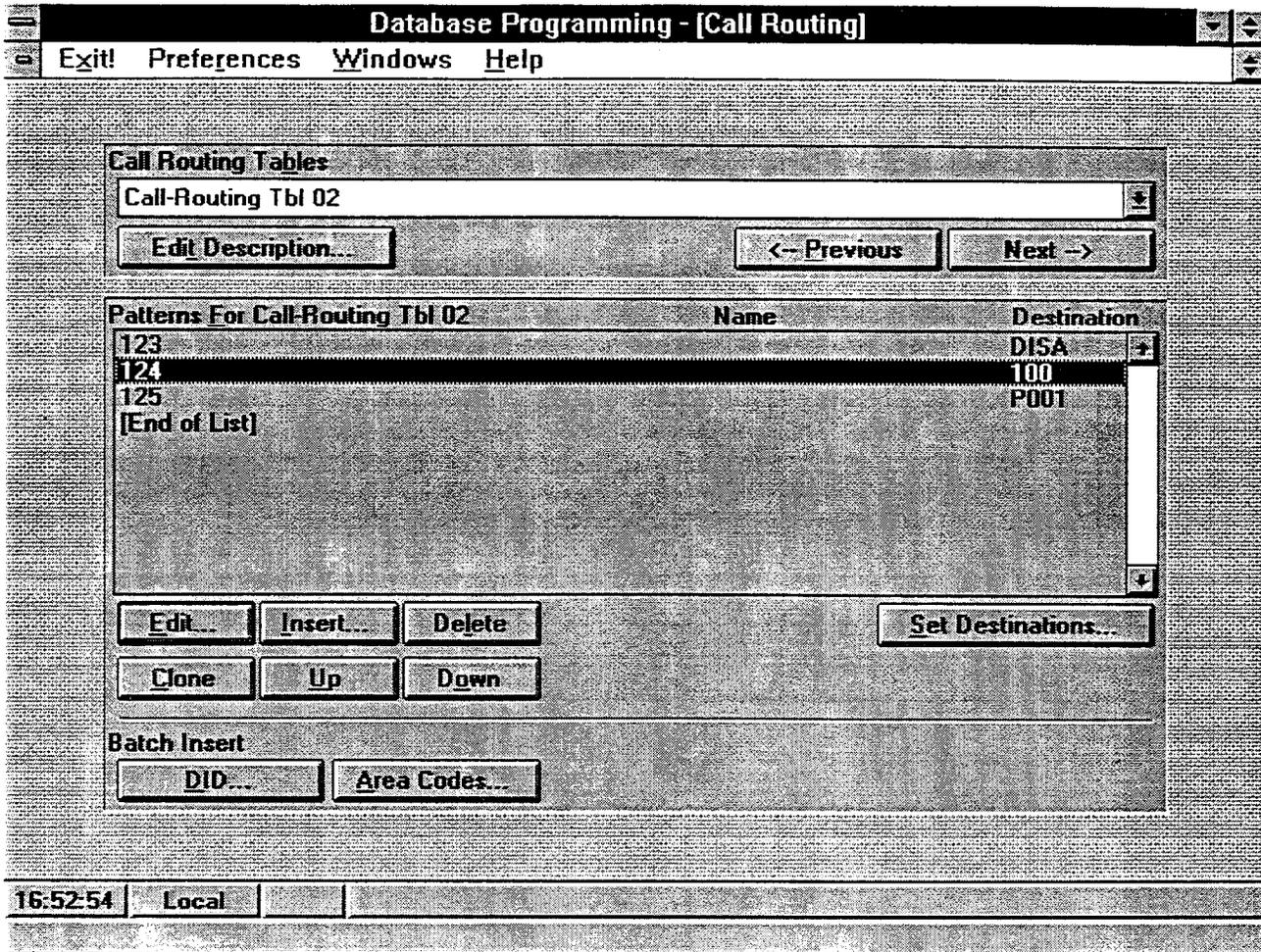
**13.4** The patterns are listed in the call routing table in the order they will be checked against the incoming digits. When the system finds a match with a pattern, it will stop searching through the list and route the call according to the programming for that pattern. If the call reaches the end of the list without matching any patterns, the call is automatically sent to the primary attendant.

**NOTE:** If you have numbers (such as unused DID numbers) that you do not want callers to access, you can program them to ring in to an extension number that returns busy signal. To do this, locate a keyset that does not have an attached MDPM. Then program that keyset's circuit as a keyset with an MDPM to create a "phantom" MDPM extension (see System Configuration on page 6–237). In Individual Station programming (page ), program the MDPM circuit with the "DID/E&M Return Busy Instead of Camp-On" flag to cause it to always send busy signal (the system will consider it permanently off hook because no equipment is installed on the circuit). When creating the Call Routing Table for the trunk group, program the selected numbers to ring in to the MDPM station that returns busy signal.

**13.5** Each individual trunk, not the trunk group, is programmed to collect digits using Caller ID, DID, ANI, or DNIS. If the trunk is programmed to collect digits, but the trunk group does not use call routing tables, the system routes the call based on the trunk group programming and ignores the collected digits. If the trunk is not set up to collect digits and the trunk group uses call routing tables, the system uses the call routing destination for "no-digit" calls.

**13.6** The system can have up to 15 call routing tables. The call routing tables share a total data space of 45K of memory. This allows at least 900 patterns per system.

| CHARACTER        | MATCHES                                                                                                                                                                                               |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Digits 0–9, *, # | Specific digits                                                                                                                                                                                       |
| X                | Any digit 0–9                                                                                                                                                                                         |
| A                | Any digit 0–9, #, or *                                                                                                                                                                                |
| N                | Any digit 2–9                                                                                                                                                                                         |
| Z                | Digits 0 or 1                                                                                                                                                                                         |
| [ x ]            | Optional digits; for example, 2[13]2 matches 22 or 2132.                                                                                                                                              |
| ( x – x )        | Range of digits; for example, (320–360)XXXX matches any 7–digit number with an office code between 320 and 360, inclusive.                                                                            |
| E                | End of dialing; the pattern will not match if any digits are dialed beyond this point. An "E" by itself in a pattern will match when no digits are received (for example, anonymous Caller ID calls). |
| +                | Matches 0 or more digits of any value. A "+" by itself will match any incoming information, including anonymous calls that send no digits.                                                            |

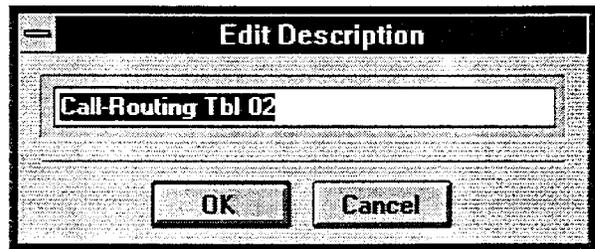


13.7 This window can be reached by selecting Call Routing from the Trunk Programming menu or entering the CALL abbreviated command.

13.8 **CALL ROUTING TABLES:** This drop-down list box contains a list of call routing table descriptions. When a call routing table is displayed in the list box, all other programming in this window applies to that table. The Patterns list box below it shows the patterns that have been programmed for that table. To select a table, open the drop-down list box and scroll the highlight bar to the desired entry. That table description will be displayed when the box is closed. You can also use the following command buttons:

- **PREVIOUS/NEXT:** To move up or down in the Call Routing Table list, you can select the Previous command button (to move up) or the Next command button (to move down). The Call Routing Table drop-down list box does not have to be opened to use these command buttons.

- **EDIT DESCRIPTION:** To change the description of the displayed call routing table, select the Edit Description command button. The following window appears. Enter the new description in the text box and select the OK command button to save it. Or, select the Cancel command button to leave it unchanged.



13.9 **PATTERNS, NAMES, AND DESTINATIONS:** This list box contains the ordered list of patterns for the table displayed in the Call Routing Table drop-down list box above it. The following command

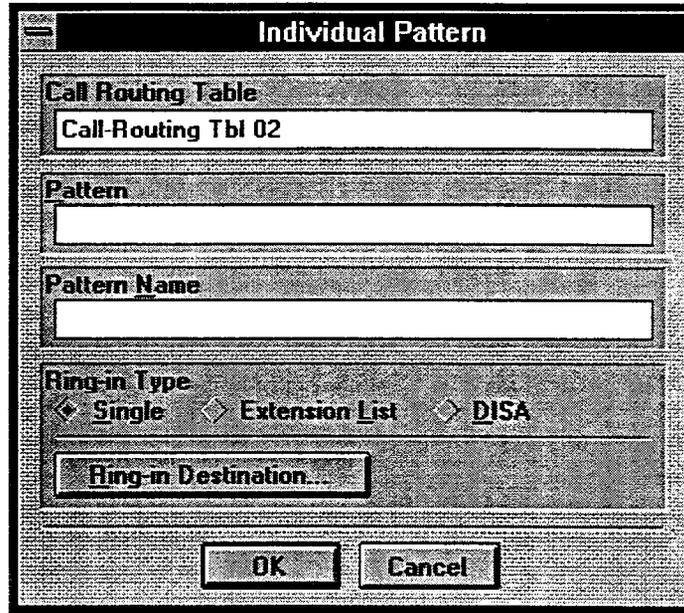
buttons are used for modifying the contents of this list box.

- **EDIT:** To edit an existing pattern, name, or destination place the highlight bar in the Patterns list box on the pattern to be changed. Then select the Edit command button. The window shown on page 6-121 appears.
- **INSERT:** To add a pattern to the list box, place the highlight bar on the line *below* the position where you want the new pattern to appear. Then select the Insert command button. The window shown on page 6-121 appears.
- **DELETE:** To remove a pattern from the list, place the highlight bar on the pattern to be removed and then select the Delete command button. The pattern is automatically removed.
- **CLONE:** To duplicate a pattern in the list, place the highlight bar on the pattern to be copied and select the Clone command button. The copy is inserted into the list directly *above* the existing pattern. Creating duplicate patterns can help speed up the programming process when several similar patterns are used. Each copy can then be edited to create the different patterns.

- **UP:** To move a pattern up one position in the list, place the highlight bar on that pattern in the list box and select the Up command button.
- **DOWN:** To move a pattern down one position in the list, place the highlight bar on that pattern in the list box and select the Down command button.
- **SET DESTINATIONS:** The Set Destinations command button can be used for programming the destinations for all of the patterns in the list box, using a batch-programming window. When you select this command button, the window shown on page 6-122 appears.

**13.10 BATCH INSERT:** To place several patterns in the list box at once, you can use the following batch-programming command buttons.

- **DID:** Select this command button to insert several DID numbers into the pattern list. When you select this command button, the window shown on page 6-123 appears.
- **AREA CODES:** Select this command button to insert several area codes into the pattern list. When you select this command button, the window shown on page 6-124 appears.



**A. INSERTING AND EDITING PATTERNS**

**13.11** The window shown above appears when the Edit or Insert command buttons in the Call Routing Tables programming window (shown on page 6-118) are selected. The pattern is programmed as follows:

**13.12 CALL ROUTING TABLE:** This text box shows the name of the call routing table that is being programmed. You cannot change the name using this window; it is displayed for reference only.

**13.13 PATTERN:** Enter the desired pattern in the Pattern text box. The pattern can have up to 32 characters. Valid entries are shown on page 6-118.

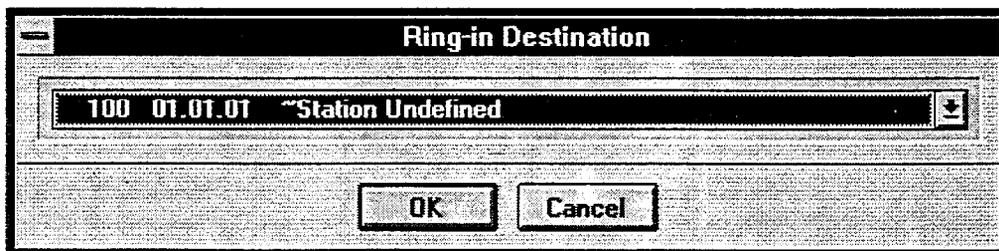
**13.14 PATTERN NAME:** Enter the desired name in the Pattern Name text box. The name field determines how the call will be identified at display keyset stations when received. The name can be a word or number that identifies the call source. (You can use any combination of letters and numbers.)

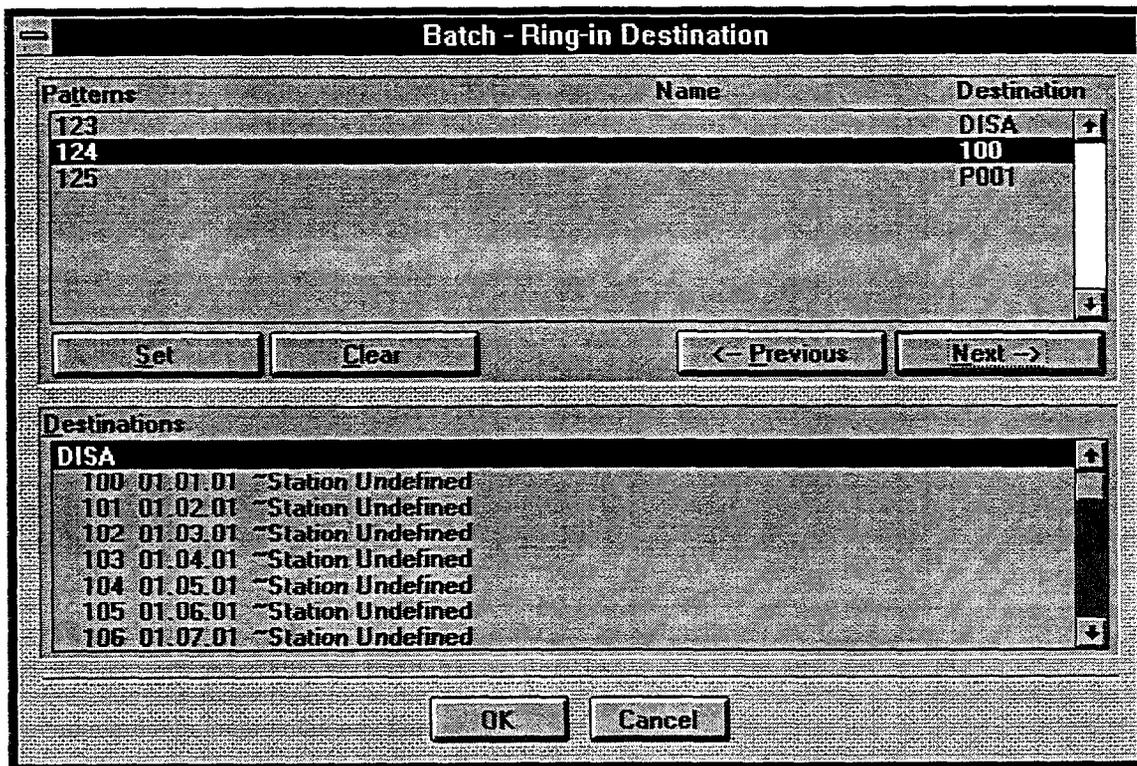
**13.15 RING-IN TYPE:** Select the desired ring-in type by selecting the desired option button. The call can

ring in to a single extension number (station, hunt group, or AXCESSORY Talk application), an extension list, or as a DISA call (which allows the caller to select a destination). If Single or Extension List is selected, you must also program the destination as described below. DISA ring-in requires no additional programming. Any DISA security codes programmed for the trunk group will apply to callers.

**13.16 RING-IN DESTINATION:** To select the specific destination for the pattern, select the Ring-In Destination command button. A window appears as shown below. Scroll the highlight bar in the drop-down list box to the desired ring-in destination and select the OK command button to save it. Or, to leave it unchanged, select the Cancel command button. If the Ring-In Destination is set to "None" the call will be sent to the primary attendant.

**13.17 OK/CANCEL:** When the pattern is programmed as desired, select the OK command button to exit from this window. Or, to exit without saving any changes, select the Cancel command button.





**B. BATCH PROGRAMMING DESTINATIONS**

**13.18** The window shown above appears when the Set Destinations command button is selected (shown on page 6-119). It is used for programming the destinations for all of the patterns in the selected Pattern List. It is especially useful when you have made batch creations of DID or area code patterns. To program each pattern in the list, use the following commands.

**13.19 PATTERNS:** This list box contains all of the patterns that have been programmed for the selected call routing table. Select the pattern you wish to program by placing the highlight bar on it in the Patterns list box. Use can use the following command buttons to move within the list.

- **PREVIOUS:** This moves the highlight bar up one position in the Patterns list box.
- **NEXT:** This moves the highlight bar down one position in the Patterns list box.

**13.20 DESTINATIONS:** This list box shows all of the potential destinations for calls. Select the desired ring-in destination for the selected pattern by highlighting it in the Destinations list box.

**13.21 SET:** To assign the highlighted destination to the highlighted pattern select the Set command button. The highlight bar then automatically moves down to the next entry.

**13.22 CLEAR:** To remove the existing ring-in destination assignment from the highlighted pattern, select the Clear command button. (If the ring-in destination is left blank, the call associated with this pattern will be sent to the primary attendant.) The highlight bar then automatically moves down to the next entry.

**13.23 OK/CANCEL:** When all of the patterns have been assigned ring-in destinations, select the OK command button to save the changes and exit. Or, to exit without saving the changes, select the Cancel command button.

The screenshot shows a dialog box titled "DID - Batch Pattern Insert". It contains the following fields and controls:

- Call Routing Table:** A text box containing "Call-Routing Tbl 02".
- Name Prefix:** An empty text box.
- First DID Pattern:** An empty text box.
- Pattern Count:** A text box containing "0" with up and down arrow buttons to its right.
- Buttons:** "OK" and "Cancel" buttons at the bottom.

### C. BATCH PROGRAMMING DID PATTERNS

**13.24** The window shown above appears when you select the DID command button shown in the window on page 6-119. It is used for quickly programming a series of DID number patterns. After creating the patterns with this batch process, assign the ring-in destination as described on page 6-122.

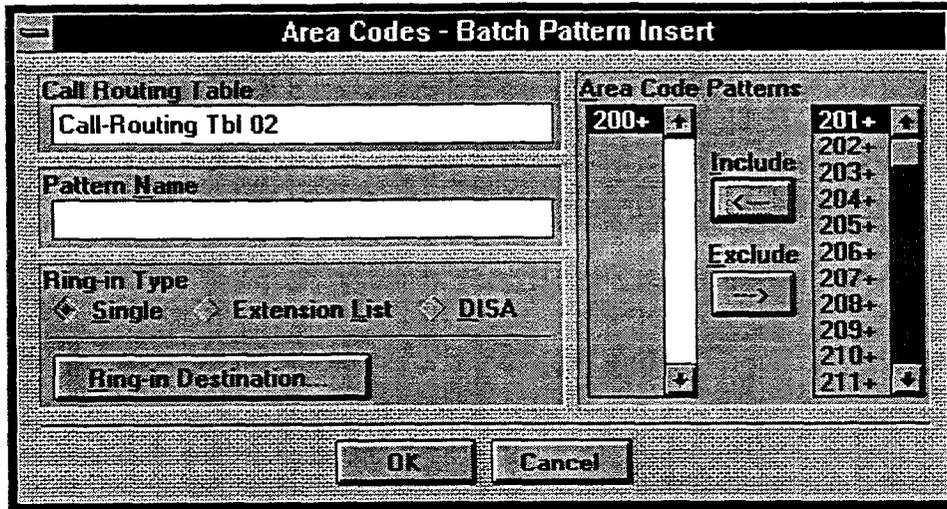
**13.25 CALL ROUTING TABLE:** This text box shows the name of the call routing table that is being programmed. You cannot change the name using this window; it is displayed for reference only.

**13.26 NAME PREFIX:** Each DID number will be identified in the list by the digits that are sent after the handshake. The base number of the DID numbers is the name prefix. The prefix and the collected digits are combined to form a complete number for display (for example, a base number 9619 would combine with digits 000 to display 9619000). Enter the base number of the DID number block in the Name Prefix text box.

**13.27 FIRST DID PATTERN:** This is the first number in the series of DID numbers being programmed (without the base number). For example, if you were programming for DID numbers 9619000 through 9619019 (9619 is the base number), you would enter 000. Enter the first DID number in the First DID Pattern text box.

**13.28 PATTERN COUNT:** This is the number of DID numbers that will be included in the pattern list. In the example above (9619000 through 9619019) you would enter 20 because the range includes 20 DID numbers. Enter the appropriate number for your DID list in the Pattern Count text box.

**13.29 OK/CANCEL:** When the DID pattern information has been entered correctly, select the OK command button to create the patterns. They will appear in the Patterns list box when the Call Routing Patterns window returns. To exit without saving the DID patterns, select the Cancel command button.



**D. BATCH PROGRAMMING AREA CODE PATTERNS**

**13.30** The window shown above appears when you select the Area Codes command button shown in the window on page 6-119. It is used for quickly programming a series of area code patterns for use with ANI trunks.

**13.31 CALL ROUTING TABLE:** This text box shows the name of the call routing table that is being programmed. You cannot change the name using this window; it is displayed for reference only.

**13.32 PATTERN NAME:** Enter the desired name in the Pattern Name text box. This name will be used for all area code patterns created using this batch command. The name field determines how calls will be identified at display keyset stations. The name can be a word or number that identifies the call source. You can use any combination of letters and numbers.

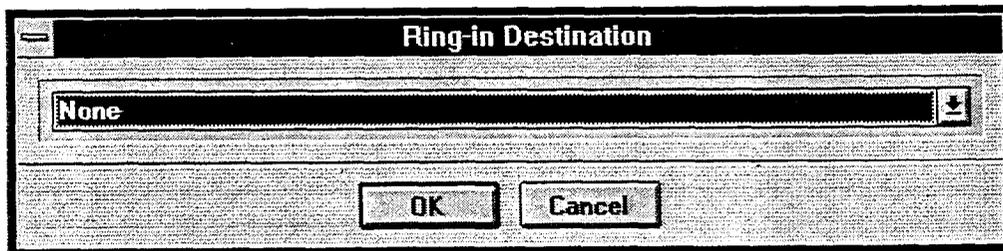
**13.33 RING-IN TYPE:** Select the desired ring-in type by selecting the desired option button. This ring-in type will be used for all area code patterns created using this batch command. The call can ring in to a single extension number (station, hunt group, or AXCESSORY Talk application), an extension list, or as a DISA call (which allows the caller to select a destination). If Single or Extension List is selected, you must also program the destination as described below. DISA ring-in requires no additional programming. Any DISA codes programmed for the trunk group will apply to callers.

**13.34 RING-IN DESTINATION:** To select the specific destination for the area codes, select the Ring-In Destination command button. A window appears as shown below. Scroll the highlight bar in the drop-down list box to the desired ring-in destination and select the OK command button to save it. Or, to leave it unchanged, select the Cancel command button. If the Ring-In Destination is set to "None" the call will be sent to the primary attendant.

**13.35 AREA CODE PATTERNS:** To select the area codes that will be included in the batch of patterns, use the following command buttons to place area codes in the Include and Exclude lists:

- **INCLUDE:** Scroll through the Exclude list (on the right) to select the area code you want to place in the Include list (on the left). When the area code is highlighted, select the Include command button.
- **EXCLUDE:** To remove an area code from the Include list, highlight it and select the Exclude command button. It will automatically move to the Exclude list.

**13.36 OK/CANCEL:** When the area code pattern information has been entered correctly, select the OK command button to create the patterns. They will appear in the Patterns list box when the Call Routing Patterns window returns. To exit without saving the patterns, select the Cancel command button.



## 14. INDIVIDUAL TRUNK PROGRAMMING

14.1 When you select Individual Trunk from the Trunk Programming menu or enter the INDT command, the window shown on the next page appears.

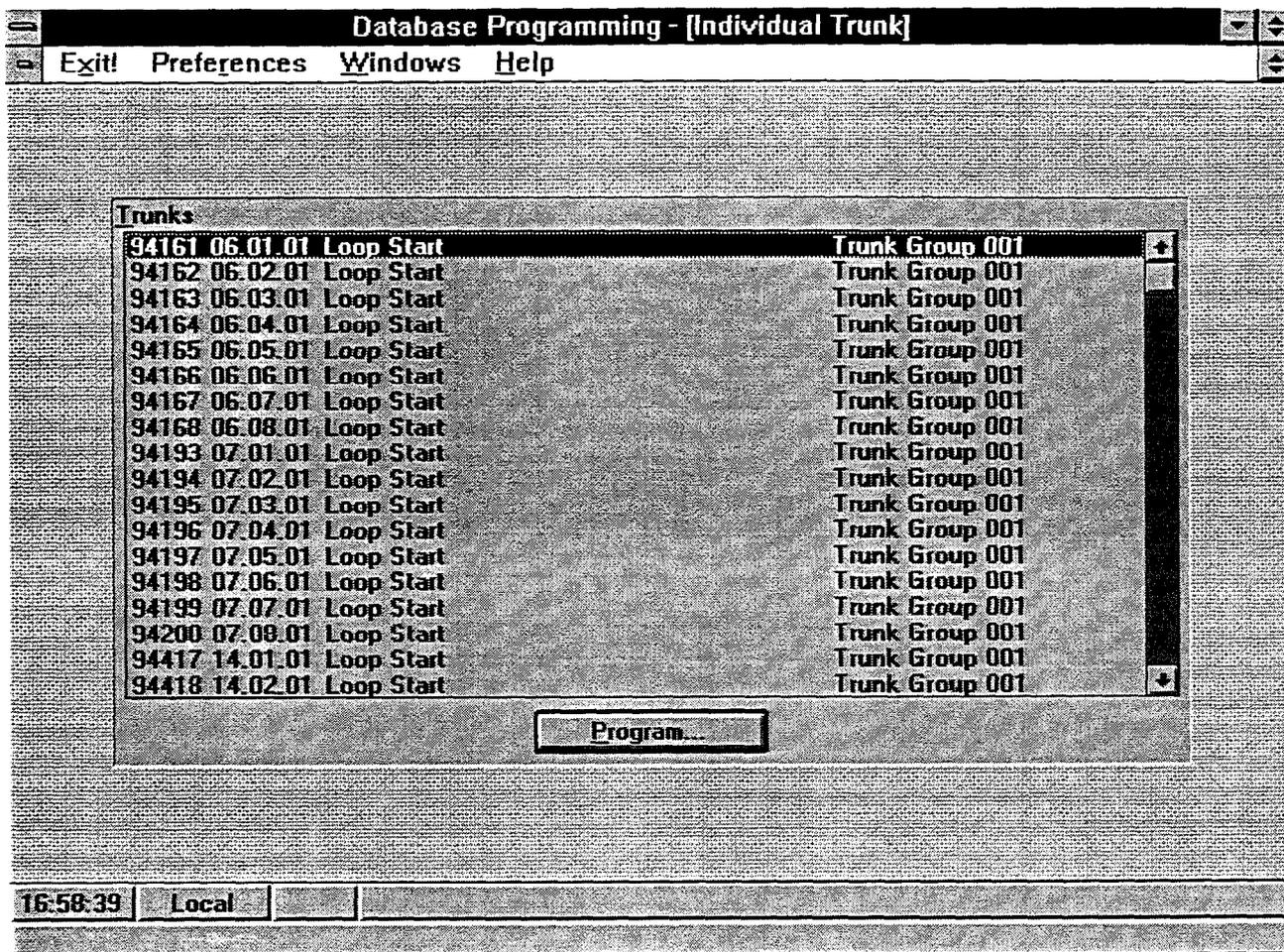
14.2 The following information can be programmed for each trunk. A program planning sheet is located in Figure 6-23, on page 6-286.

- **Trunk Group Assignment:** Trunks can be assigned to trunk groups on an individual basis.
- **Answer Supervision:** (*Loop Start and E&M only*) Available answer supervision types depend on whether a loop-start or E&M trunk is being programmed, as follows:
  - *Loop Start:* Answer supervision determines whether the system should consider a call valid (or disconnected) when it receives polarity reversal from the central office (select "Polarity Reversal") or wait for the Valid Call timer to expire (select "Valid Call Timer"). Any outside call put on hold becomes valid immediately, regardless of Answer Supervision or Valid Call timer status.
  - *E&M:* Answer supervision determines whether the system should consider a call valid when the Off-Hook Debounce timer expires or when the Answer Recognition timer expires.
- **Hybrid Balance:** (*LSC Analog Loop Start only*) Hybrid balance can be set to Normal or Short to allow the installer to adjust the hybrid impedance of the trunk based on local central office conditions.
  - *Short:* The short balance is used when trunks are supplied by other equipment located within the same building, using private, copper wire termination (e.g., an OPX supplied by another PBX that does not use the public network) or when the site is located close to the central office.
  - *Normal:* The normal balance can be used by most trunks.
- **Start Type:** (*E&M and DID only*) E&M and DID trunks perform "handshaking" between the system and the central office to transfer call information. The three start types are:
  - *Immediate:* If programmed for "Immediate" start type, the calling system will immediately begin sending the dialed digits to the receiving system.

- *Wink:* If programmed for "Wink" start type, the systems perform a "handshake" to allow the receiving system to signal that it is ready to receive the digits dialed by the other system. (This is the default start type.)
- *Delay Dial:* If programmed for "Delay Dial" start type, the calling system will wait until its E&M Dial Delay timer expires before sending any digits to the receiving system.
- *Dial Tone: (E&M Trunks Only)* If programmed for "Dial Tone" start type, the calling system will wait until it detects dial tone from the other system before sending any digits.
- **DTMF Signaling:** Trunks can be set for DTMF or dial pulse signals.
- **Service Type:** (This cannot be programmed unless the Advanced Trunk Interfaces premium feature is enabled. See page 6-220. Caller information features require OPC programming, described on page 6-243. Caller ID uses Caller ID receivers. Because DTMF receivers are required to receive DID and ANI information, you should enable additional receivers.) Available service types are determined by the type of trunk being programmed:
  - *Loop Start:* Loop start trunks can use Caller ID.
  - *E&M or DID:* E&M and DID trunks can use ANI and DID/DNIS.
  - *Ground Start:* Ground start trunks do not have programmable service types.

14.3 When selected, the Caller ID service type option indicates that the associated trunk will provide caller identification signals. Because the central office sends the information after the first cycle of ring voltage is applied, selecting this box will also prevent the system from signalling an incoming call to the station users until the system has had an opportunity to collect the caller information. (Note that the system will provide ring signaling on the second ring signal if no caller information has been collected.)

14.4 Each individual trunk, not the trunk group, is programmed to collect digits using Caller ID, DID, ANI, or DNIS. If the trunk is programmed to collect digits, but the trunk group does not use call routing tables, the system routes the call based on the trunk group programming and ignores the collected digits. (However, the collected digits will appear in SMDR and can be used by the Desktop Interface.) If the trunk is not set up to collect digits and the trunk group uses call routing tables, the system uses the call routing destination for "no-digit" calls.



**14.5 TRUNKS/PROGRAM:** To program an individual trunk, highlight it in the Trunks list box and then select the Program command button. Refer to the following windows, depending on the type of trunk being programmed:

- For loop start trunks, see page 6-127.
- For ground start trunks, see page 6-128.
- For E&M trunks, see page 6-129.
- For DID trunks, see page 6-130.

Loop Start Trunk Extension: 94161

CO Trunk Group  
9201 T001 Trunk Group 001

Service Type  
None  
Caller ID

DTMF Signaling

Answer Supervision Type  
Valid Call Timer

Hybrid Balance  
Normal

Language

OK Cancel

#### A. LOOP START TRUNKS

**14.6** The loop start trunk programming window is shown above.

**14.7 CO TRUNK GROUP:** Select the trunk group to which this trunk will be assigned by selecting the Trunk Group drop-down list box and scrolling to the desired trunk group.

**14.8 ANSWER SUPERVISION TYPE:** Select the desired option (Polarity Reversal or Valid Call Timer) in the Answer Supervision Type drop-down list box.

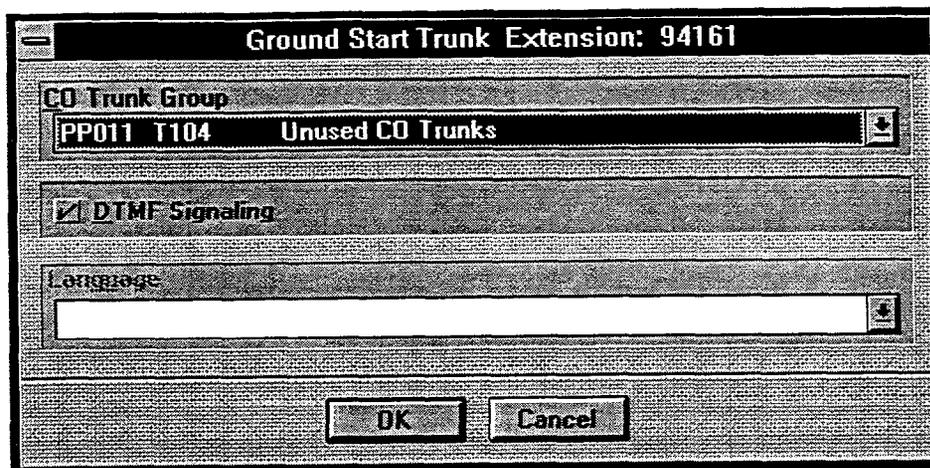
**14.9 HYBRID BALANCE:** Balance can be set to Normal or Short by selecting the desired option in the Hybrid Balance drop-down list box.

**14.10 DTMF SIGNALING:** If the trunk uses DTMF signaling, select the DTMF Signaling check box to place a check mark in it. If the trunk uses dial pulse signaling, and the check box contains a check mark, remove it by selecting the check box.

**14.11 SERVICE TYPE:** If the trunk uses Caller ID, select the Caller ID option button to place a mark in it. To disable Caller ID, select None.

**14.12 LANGUAGE:** This field is not used in this software version. It is used in international versions to select the language used on the keyset displays.

**14.13 OK/CANCEL:** When programming is correct for the trunk, select the OK command button. Or, to exit without changing the programming, select the Cancel command button.



## B. GROUND START TRUNKS

**14.14** The ground start trunk programming window is shown below.

**14.15 CO TRUNK GROUP:** Select the trunk group to which this trunk will be assigned by selecting the Trunk Group drop-down list box and scrolling to the desired trunk group.

**14.16 DTMF SIGNALING:** If the trunk uses DTMF signaling, select the DTMF Signaling check box to

place a check mark in it. If the trunk uses dial pulse signaling, and the check box contains a check mark, remove it by selecting the check box.

**14.17 LANGUAGE:** This field is not used in this software version. It is used in international versions to select the language used on the keyset displays.

**14.18 OK/CANCEL:** When programming is correct for the trunk, select the OK command button. Or, to exit without changing the programming, select the Cancel command button.

**C. E&M TRUNKS**

**14.19 CO TRUNK GROUP:** Select the trunk group to which this trunk will be assigned by selecting the Trunk Group drop-down list box and scrolling to the desired trunk group.

**14.20 START TYPE:** Indicate the type of “handshaking” the E&M trunk utilizes (Wink, Delay Dial, Immediate, or Dial Tone). Place a dot in the desired option button by selecting it. (Defaults to Wink.)

**14.21 DTMF SIGNALING:** If the trunk uses DTMF signaling, select the DTMF Signaling check box to place a check mark in it. If the trunk uses dial pulse signaling, and the check box contains a check mark, remove it by selecting the check box.

**14.22 ANSWER SUPERVISION TYPE:** Select the desired option (Use Off-Hook Debounce Timer or Use Answer Recognition Timer) in the Answer Supervision Type drop-down list box.

**14.23 SERVICE TYPE:** To indicate whether the trunk uses E&M, DID/DNIS, or ANI, select the appropriate option button to place a mark in it. If the service type is DID/DNIS, program the following:

- **SERVICE BASE NUMBER:** This is the DID base number for the trunk. Enter the digits in the text box (up to 32 digits).
- **NUMBER OF DIGITS TO RECEIVE:** This is the number of digits the AXCESS will use for directing the call. Highlight this scrolling edit box and scroll to or enter the correct amount (1–32).

**14.24 LANGUAGE:** This field is not used in this software version. It is used in international versions to select the language used on the keyset displays.

**14.25 OK/CANCEL:** When programming is correct for the trunk, select the OK command button. Or, to exit without changing the programming, select the Cancel command button.

DID Trunk Extension: 94162

CO Trunk Group  
PP011 T104 Unused CO Trunks

Start Type  
◊ Wink  
◊ Delay Dial  
◊ Immediate

DTMF Signaling  
 Disconnect Timer

Service Type  
◊ DID/DNIS  
◊ ANI

Service Base Number  
[ ]

Number of Digits to Receive  
2 [ ]

Language  
[ ]

OK Cancel

#### D. DID TRUNKS

**14.26 CO TRUNK GROUP:** Select the trunk group to which this trunk will be assigned by selecting the Trunk Group drop-down list box and scrolling to the desired trunk group.

**14.27 START TYPE:** Indicate the type of “handshaking” the DID trunk utilizes (Wink, Delay Dial, or Immediate). Place a dot in the desired option button by selecting it. (Defaults to Wink.)

**14.28 SERVICE TYPE:** To indicate whether the trunk uses DID/DNIS or ANI, select the appropriate option button to place a mark in it. If the service type is DID/DNIS, program the following:

- **SERVICE BASE NUMBER:** This is the DID base number for the trunk. Enter the digits in the text box (up to 32 digits).

- **NUMBER OF DIGITS TO RECEIVE:** This is the number of digits the AXXESS will use for directing the call. Select this scrolling edit box and scroll to or enter the correct amount (1–32).

**14.29 DTMF SIGNALING:** If the trunk uses DTMF signaling, select the DTMF Signaling check box to place a check mark in it. If the trunk uses dial pulse signaling, and the check box contains a check mark, remove it by selecting the check box.

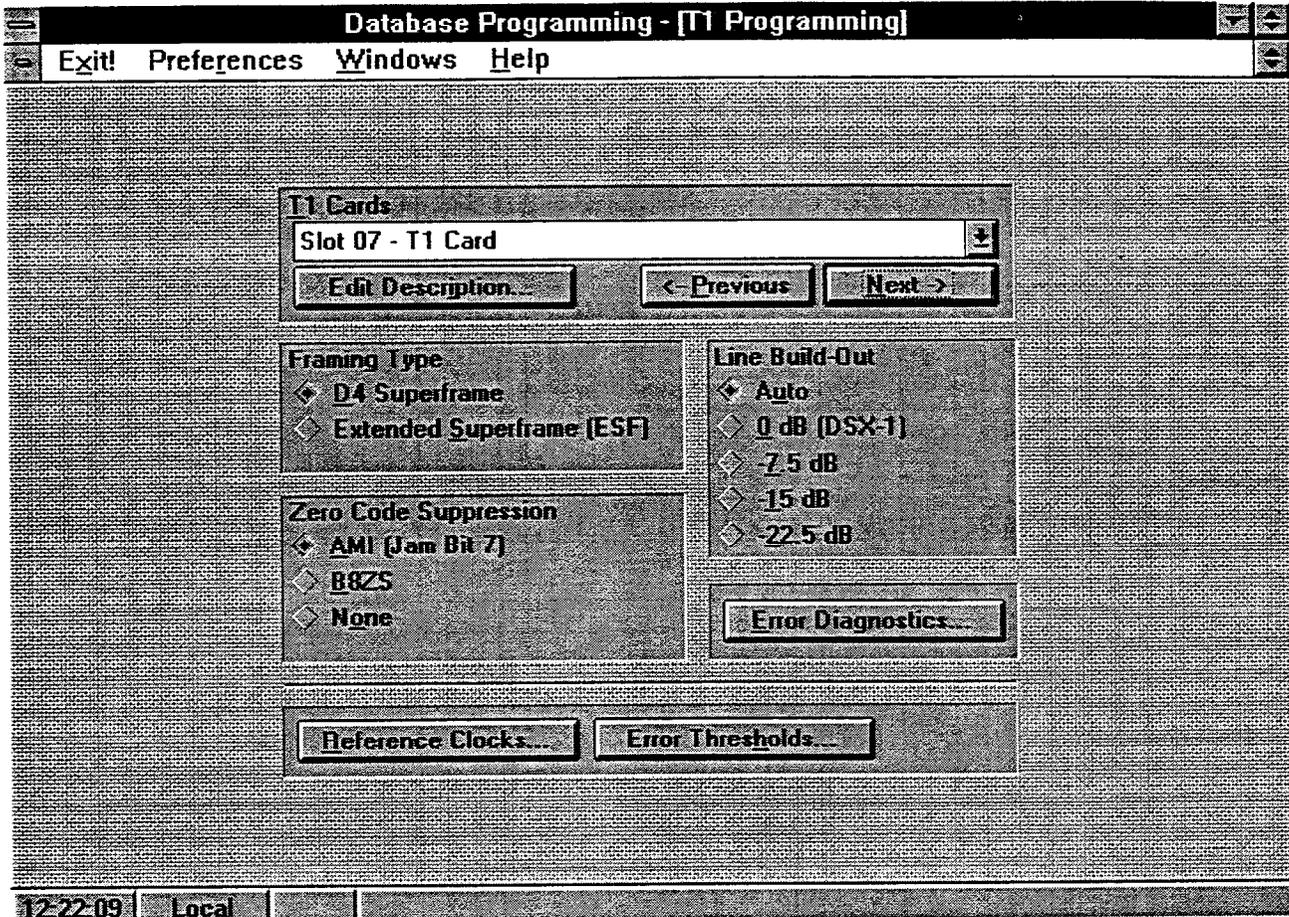
**14.30 LANGUAGE:** This field is not used in this software version. It is used in international versions to select the language used on the keyset displays.

**14.31 OK/CANCEL:** When programming is correct for the trunk, select the OK command button. Or, to exit without changing the programming, select the Cancel command button.

## 15. T1 PROGRAMMING

**15.1** The information that is programmed *specific to each T1 Card* installed in the system includes the following. This information is determined by the equipment being used.

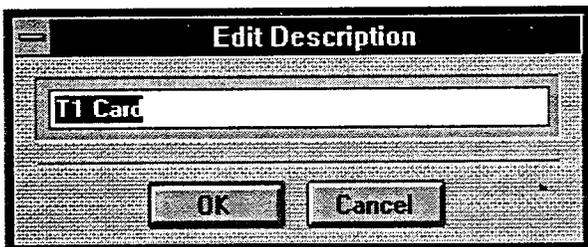
- **Framing type:** The type of framing scheme used by the T1 trunks connected to the card can be D4 Superframe or Extended Superframe (ESF).
- **Zero code suppression scheme:** The T1 trunk zero-suppression scheme for the trunks on the T1 card can be AMI (Bit 7), Bipolar Eight Zero Substitution (B8ZS), or "none."
- **Line build-out (LBO):** The LBO attenuation of the T1 trunk connected to the card value is determined by the distance to the nearest public network T1 repeater. The selections are shown below. (The Auto option should be used during initial installation. The other settings can be used if the T1 Card needs to be adjusted later.)
  - 0 dB (DSX-1)
  - -7.5 dB
  - -15 dB
  - -22.5 dB
  - Auto
- **Error diagnostics:** If desired, you can generate a report that shows the current T1 error counts (by hour and by day) for the selected card.
- **Reference clock programming:** One T1 card is designated as the "Slave from Public Network" and is the system reference card. All other T1 cards are the backup cards.
- **Error thresholds:** The programmer can set numerical thresholds (number per hour and number per day) for T1 Card errors. If a threshold is exceeded, an error is printed on the error message report (see page 6-217). These are set to default values that, in most cases, will not need to be changed. Possible T1 errors include the following:
  - BPV (Bipolar Violations): This is a non-zero signal element that has the same polarity as the previously received non-zero element.
  - CRC-6 (Cyclic Redundancy Check): The calculation carried out on a set of transmitted bits by the transmitter does not match the calculation performed by the AXCESS.
  - OOF/COFA (Out of Frame/Change of Frame Adjustment): OOF is a state in which the frame alignment that is received is not consistent with that which is transmitted. COFA occurs when AXCESS realigns its receiver to the proper frame alignment signal. This could be caused by an incorrect line build-out (LBO) value.
  - CS (Controlled Slips): The AXCESS replicated or deleted one 192-bit digital signal (DS1) frame due to a lack of frequency synchronization. This could be caused by an incorrect line build-out (LBO) value.
  - ES (Errored Seconds): These are seconds in which at least one error occurred.
  - SES (Severely Errored Seconds): This is a second during which transmission performance is degraded below an acceptable level.
  - UAS (Unavailable Seconds): This is the time interval during which the T1 span is unavailable for service. This time begins with 10 or more consecutive Severely Errored Seconds and ends with 10 or more Non-Severely Errored Seconds.



**15.2 T1 CARDS:** This drop-down list box contains all T1 Cards that are configured in the system. To program a T1 Card, highlight and select it. All other programming in this window applies to that T1 card. If desired, you can use the following command buttons to scroll through the list (the list box does not have to be open to use these buttons):

- **PREVIOUS:** Select this command button to move up one line in the list box.
- **NEXT:** Select this command button to move down one line in the list box.

**15.3 EDIT DESCRIPTION:** When you select this command button, the following window appears. Enter a description and select the OK command button. Or, to leave the current description unchanged, select the Cancel command button.



**15.4 FRAMING TYPE:** Select the option button for the type of framing scheme used by the T1 Card.

**15.5 ZERO CODE SUPPRESSION SCHEME:** Indicate the type of zero suppression scheme used by the T1 Card by selecting the appropriate option button.

**15.6 LINE BUILD-OUT (LBO):** Designate the LBO attenuation of the T1 Card by selecting the correct option button. (The Auto option should be used during initial installation. The other settings can be used if the T1 Card needs to be adjusted later.)

**15.7 ERROR DIAGNOSTICS:** When you select this command button, the window shown on page 6-133 appears.

**15.8 REFERENCE CLOCKS:** When you select this command button, the window shown on page 6-134 appears.

**15.9 ERROR THRESHOLDS:** When you select this command button, the window shown on page 6-135 appears.

| Error Conditions                                     | Hourly | Daily |
|------------------------------------------------------|--------|-------|
| 1. Bipolar Violations (BPV)                          | 0      | 0     |
| 2. Cyclic Redundancy Check (CRC-6)                   | 0      | 0     |
| 3. Out-Of-Frame/Change-Of-Frame-Adjustment (OOFCOFA) | 0      | 0     |
| 4. Controlled Slips (CS)                             | 0      | 0     |
| 5. Errored Seconds (ES)                              | 0      | 0     |
| 6. Severely Errored Seconds (SES)                    | 0      | 0     |
| 7. Unavailable Seconds (UAS)                         | 0      | 0     |

**A. ERROR DIAGNOSTICS**

**15.10** You can view selected reports that show the current T1 error counts (by hour and day) for the selected T1 Card.

**15.11 ERROR CONDITIONS:** This list box shows all of the available error information categories. To select a category, highlight it in the list box. All other commands will display information that reflects the selected error condition.

**15.12 HISTORY:** When you select this command button, the screen displays a table that shows the number of errors each hour for the last 24 hours and the current hour. It also shows the number of errors each day for the last seven days and the current day.

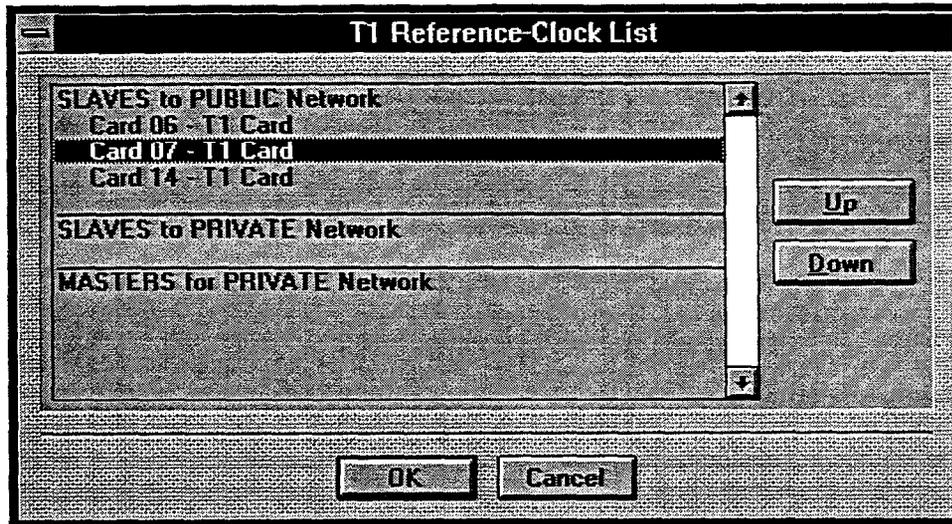
**15.13 CURRENT:** When you select this command button, the screen displays a table that shows the current number of errors.

**15.14 PREVIOUS:** This button changes the display to show the statistics for the previous error condition on the list.

**15.15 NEXT:** This button changes the display to show the statistics for the next error condition on the list.

**15.16 UPDATE:** (*Not available in Stand-Alone programming mode*) To ensure that the error statistics are as current as possible, select the Update command button to refresh the statistics.

**15.17 CLOSE:** When finished viewing the error table, select the Close command button to return to the T1 Programming window.



## B. REFERENCE CLOCKS

**15.18** The reference clock list has three categories that determine whether the T1 Card is a master or a slave and if it is in a public network or a private network. All T1 Cards configured in the system appear in this window. Place the T1 Cards in the proper categories by highlighting them and using the Up/Down command buttons.

**15.19 UP/DOWN:** Use these command buttons to

move the highlighted T1 Card up or down one box.

**15.20 OK/CANCEL:** When Reference Clock programming is completed, select the OK command button. To exit without saving any changes, select the Cancel command button.

**15.21** The card that appears on the top of the "Slave from Public Network" list is the system reference card. The cards that appear below it are the backup cards (in the order they appear in the window).

|                                                    | Hourly | Daily  |
|----------------------------------------------------|--------|--------|
| Bipolar Violations (BPV)                           | 53360  | 133400 |
| Cyclic Redundancy Check (CRC-6)                    | 53184  | 132960 |
| Out-of-Frame/Change of Frame Adjustment (OOF/COFA) | 7      | 17     |
| Controlled Slips (CS)                              | 2      | 4      |
| Errored Seconds (ES)                               | 259    | 648    |
| Severely Errored Seconds (SES)                     | 40     | 100    |
| Unavailable Seconds (UAS)                          | 10     | 10     |

Default OK Cancel

**C. ERROR THRESHOLDS**

15.22 T1 specifications include several error thresholds. When an error exceeds one of these thresholds, an error message is generated and sent to the error message output port (see page 6-217). These can be adjusted for hourly and daily thresholds. To change a value, select the desired threshold text box and enter the desired value.

- **HOURLY:** In this text box, enter the appropriate

number of errors allowed per hour.

- **DAILY:** In this text box, enter the number of allowed errors per day.

15.23 **DEFAULT:** To return all error thresholds to default values, select this command button.

15.24 **OK/CANCEL:** When the error thresholds are programmed as desired, select the OK command button. Or to exit without changing any thresholds, select the Cancel command button.

## 16. TRUNK GROUPS

16.1 The following information can be programmed for each trunk group. A program planning sheet is located in Figure 6-25, on page 6-288.

- **Description and Username:** Trunk group description (up to 20 characters) and "username" display identification (up to 10 characters). Do not use backslash (\), vertical slash (/), or tilde (~) characters in usernames. Do not use Control characters in descriptions or usernames.
  - **Trunk List:** Each trunk group has a programmed list of individual trunks.
  - **Day/Night Ring-In:** Ring-in type is determined separately for day and night modes. Ring in can be the same for both modes, or any combination of the following can be used:
    - *Single:* The trunk group can ring at a single extension number or a hunt group.
    - *Multiple:* The trunk group can ring in to a list of stations, extension lists, and/or AXCESSORY Talk applications (but not hunt groups). (NOTE: When using an extension list for ring-in or hunt groups, do not exceed 30 stations per list. The system can send ring signal to up to 30 stations.)
    - *DISA:* If the trunk group is to be used for DISA, a security code can be assigned.
    - *Call Routing Table:* If the trunk is used for Caller ID, DID/DNIS, or ANI, the calls can be routed according to the information sent by the central office. See page 4-27 in FEATURES for complete information on Call Routing Tables.
- NOTE:** Loop start trunks that are connected to paging equipment should not have any ring-in designations. They should be reserved for internal use only.
- **Day/Night Answer Access:** There are separate lists for stations with allowed-answer access in day and night modes.
  - **Trunk List:** Each trunk group has a programmed list of individual trunks.
  - **One-Way Incoming Only:** Certain types of trunks, such as incoming WATS, need to be marked as "incoming-only" so that the system will recognize the lines during power-up and/or testing. (This is because, on these types of lines, battery is not returned when the line is seized and the system cannot power up the trunk unless this option is enabled.)

- **Hookflash:** The Hookflash feature can be enabled or disabled for each trunk group. If disabled, users cannot use the Hookflash feature code (330) while using the trunks in the trunk group. Hookflashes dialed through ARS are ignored by the trunk groups with hookflash disabled.
- **Linear or Distributed Searching:** The trunk group can be programmed for linear or distributed trunk searching:
  - *Linear trunk group:* Requests for an outgoing trunk are always processed beginning with the highest numbered trunk on the list and moving down the list until an available line is found.
  - *Distributed trunk group:* The first request will be processed beginning with the highest numbered trunk on the list. The next request will begin with the second trunk, and each subsequent request will begin one trunk lower on the list. When the end of the list is reached, requests begin again with the highest numbered trunk on the list.
- **Music-On-Hold:** The music-on-hold option that will be heard by outside callers on the trunks in the trunk group can be set for music, tick tones, or silence.
- **Audio On Transfer:** To select what callers (except those using DISA) will hear while their call is being transferred, the Audio on Transfer option can be set for the music-on-hold selection (as described above) or ringing. (The feedback that DISA callers hear is determined by the DISA Transfer tone system flag that is programmed on page 6-91.)
- **Day/Night Outgoing Access:** There are separate lists for stations with outgoing access in day and night modes. (On loop start trunks that are connected to paging equipment, the outgoing access designation does not affect stations' ability to seize the trunk for paging. Trunks used for paging should not allow any station to have outgoing access for placing outside calls.)
- **Toll Restriction:** Each trunk group can have the following toll restriction parameters programmed:
  - *Class of service:* Each trunk group has Classes of Service (COS) which restrict or allow certain dialing patterns from being dialed on an outside call.
  - *Subject to toll restriction:* If the trunk group is not subject to toll restriction, the station and trunk classes of service (except ARS-Only restriction) are not checked when a trunk in the group is used.

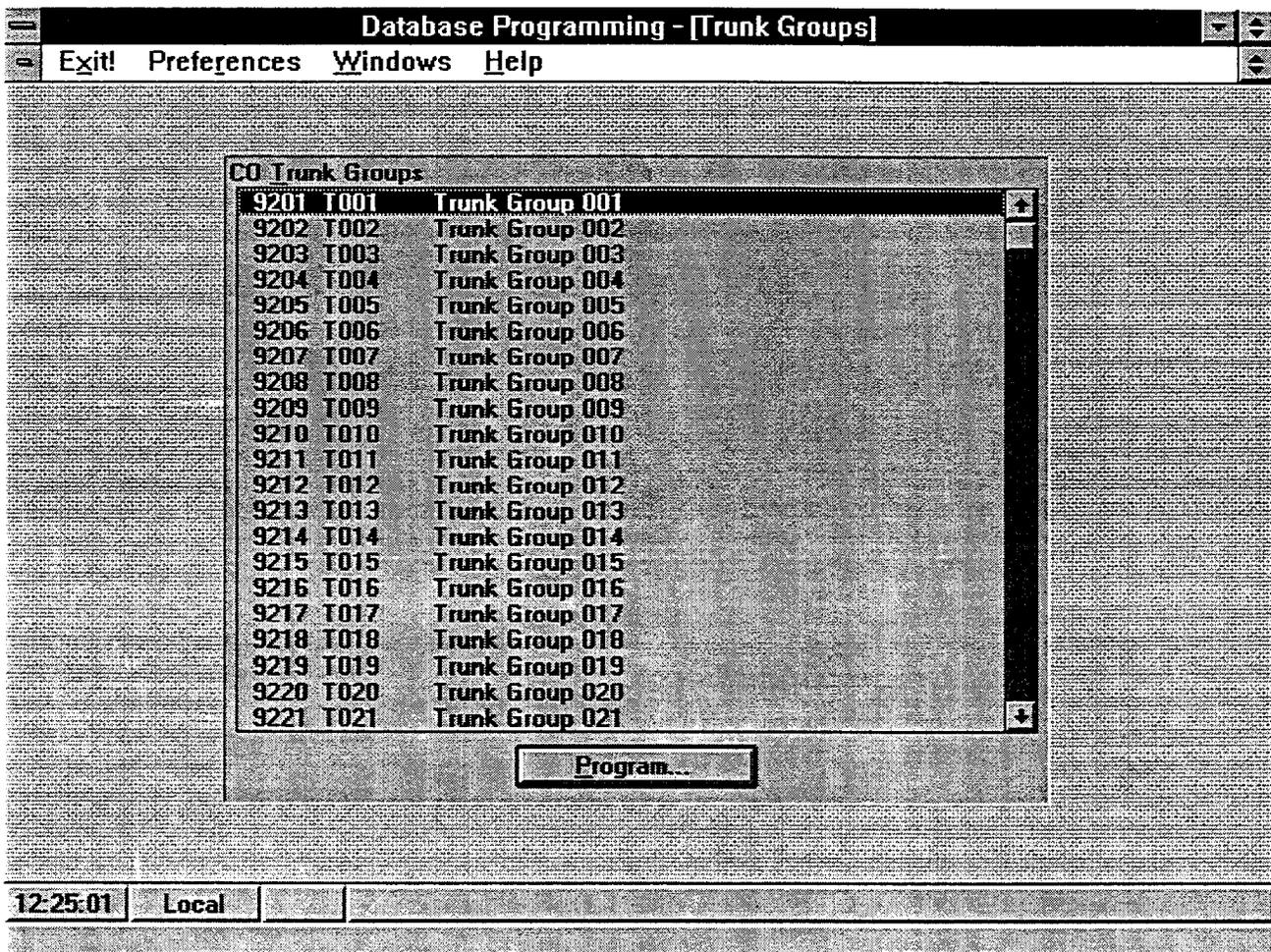
- *Exempt from ARS only:* The trunk group can be exempt from, or subject to, the ARS-only restriction. If exempt from ARS-only, stations with that restriction can directly select the trunks. If subject to ARS-only, ARS-restricted stations can use the trunk group only if it is part of an ARS route group.
- *Call cost:* For trunk groups that are not subject to toll restriction, the call cost rate to be used for calls placed on the trunks can be: free, local, toll local, toll long distance, or operator-assisted/international rate.
- *Absorbed digits:* Trunk groups can be pro-

grammed to absorb digits for PBX installations and installations in areas where the first digit(s) of the office code are absorbed.

**NOTE:** On loop start trunks that are connected to paging equipment, toll restriction does not affect stations' ability to seize the trunk for paging.

**16.2** When Trunk Groups is selected from the Trunk Group Programming menu, the programming window appears as shown below.

**16.3 TRUNK GROUPS/PROGRAM:** To program a trunk group, highlight it in the Trunk Groups list box and then select the Program command button. Another window appears as shown on the next page.



**16.4 DESCRIPTION:** If desired, program a description for the trunk group by selecting the Description text box and entering a description of up to 20 characters. Do not use Control characters.

**16.5 USERNAME:** If desired, select the Trunk Name text box and enter a name of up to 10 characters. Giving a trunk group a name allows it to appear in the system directory. If no entry is made, TG (*number*) appears on keyset displays. Do not use backslash ( \ ), vertical slash ( | ), tilde ( ~ ) or Control characters in usernames.

**16.6 SEARCH ALGORITHM:** Select a Linear or Distributed search algorithm by selecting the drop-down list box and scrolling the highlight bar to the desired option.

**16.7 MUSIC-ON-HOLD:** To select the music-on-hold option that will be heard by outside callers when these trunks are used, select the Music-On-Hold drop-down list box and scroll the highlight bar to the desired option (music, silence, or tick tone).

**16.8 AUDIO ON TRANSFER:** To select what callers (except DISA callers) will hear while their call is being transferred, select the Audio on Transfer drop-down list box and scroll the highlight bar to the desired option (Music-on-hold, as programmed above, or Ringback).

**16.9 ONE-WAY INCOMING ONLY:** If the trunk group contains incoming-only lines, place a check mark

in the One-Way Incoming Only check box by selecting it. To remove the check mark, select it again. When you place the check mark in the check box, the system checks whether any stations have outgoing access for that trunk group. *If there are stations with outgoing access*, a window appears that asks if you wish to delete the outgoing-access assignments for those stations. Select the Yes command button to remove the outgoing-access assignments, or select the No command button to allow outgoing access.

**16.10 ENABLE HOOKFLASH:** The Hookflash feature, in which the user enters a feature code (330) to generate a timed hookflash, can be enabled or disabled on a trunk group basis. To allow the Hookflash feature to be used, place a check mark in the Enable Hookflash check box by selecting it. If the box already contains a check mark, and you wish to disable the feature, select it again.

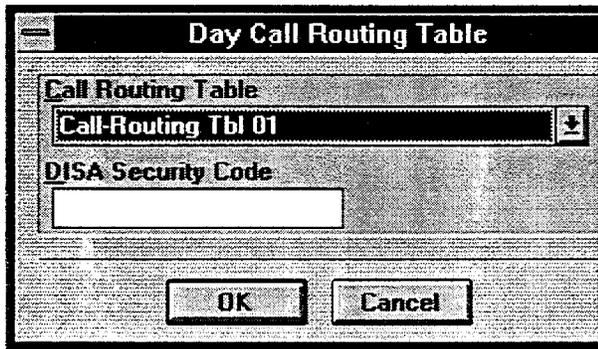
**16.11 DAY/NIGHT OUTGOING ACCESS:** To program the stations that will have outgoing access for the trunk group, select the Day Outgoing Access or Night Outgoing Access command button. The window on page 6-142 appears. *If all trunks in the group are incoming-only (such as DID trunks), but the One-Way incoming Only flag is not enabled*, a window appears that reminds you that the stations will not have outgoing access for the trunks.

**16.12 TOLL RESTRICTION:** To program the toll restriction parameters for this trunk group, select the Toll Restriction command button. The window shown on page 6-143 appears.

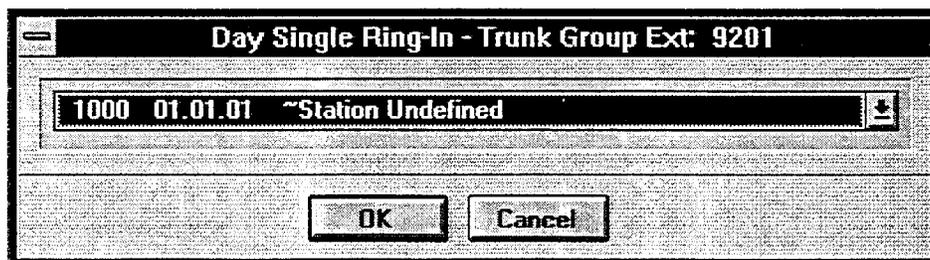
**16.13 TRUNK LIST:** To determine the trunks that will be included in this trunk group, select the Trunk List command button. The window shown on page 6-146 appears.

**16.14 DAY/NIGHT RING-IN/PROGRAM:** To program the ring-in type for the trunk group, select the Day Ring-In or Night Ring-In drop-down list box and scroll to the desired option (Call Routing Table, Single, Multiple, or DISA ring-in). Then select the Program command button to program the resources that will receive ring in, or the DISA security code. One of the following windows appears.

- **CALL ROUTING TABLE:** If the trunk group is set to ring in to a Call Routing Table, the following window appears. Select the drop-down list box and scroll the highlight bar to the desired call routing table. Also enter a DISA security code if any destinations in the call routing table are set for DISA (see DISA RING-IN). When finished, select the OK command button. Or select the Cancel command button to exit without saving any changes.

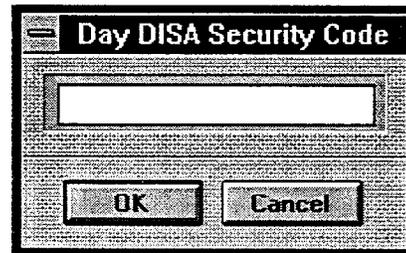


- **SINGLE RING-IN:** If the trunk group has Single Ring-In, a window appears as shown below when the Program command button is selected. Select the drop-down list box and scroll the highlight bar to the desired extension number or hunt group. (NOTE:



When using an extension list for ring-in or hunt groups, do not exceed 30 stations per list. The system can send ring signal to up to 30 stations simultaneously.)

- **DISA RING-IN:** If DISA Ring-In is selected for the trunk group, a security code can be assigned by selecting the Program command button. The following window appears. Enter the desired code, up to eight digits (0-9, but not \* or #), in the text box. Then select the OK command button to save the code or the Cancel button to exit without saving the code.

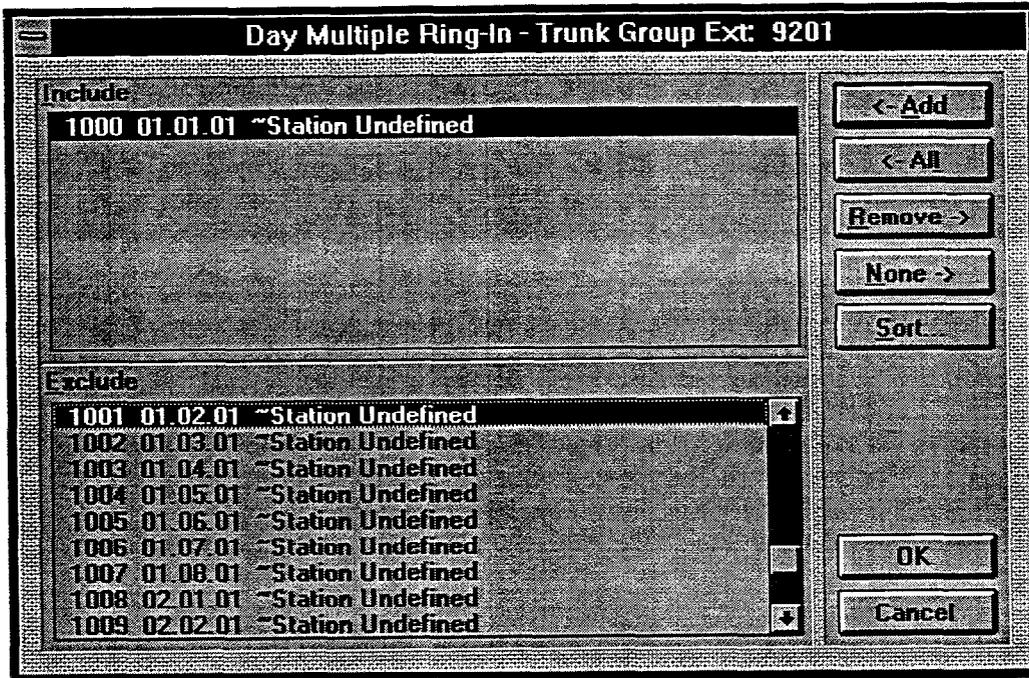


- **MULTIPLE RING-IN:** If the trunk group will ring in to several stations a window appears as shown on the next page when the Program command button is selected. (NOTE: When using an extension list for ring-in, do not exceed 30 stations per list. The system can send ring signal to up to 30 stations.)

**16.15 DAY/NIGHT ANSWER ACCESS:** (Not available for DISA trunks) To determine which stations will have allowed-answer permission for the trunk group in day or night mode, select the appropriate Answer Access command button. The window shown on page 6-141 appears.

**16.16 OK:** When trunk group programming is complete, select the OK command button. If the trunk group list was changed, a window appears that tells you that the change will require a reset of the trunk group. Select Yes to update the information (note that the associated reset *will drop calls on the trunks in the affected trunk group*). Or, select No to leave the information unchanged.

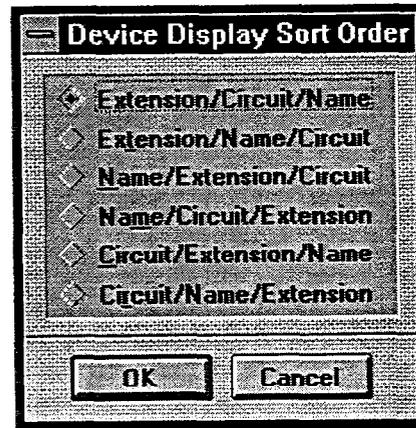
**16.17 CANCEL:** To exit without changing any trunk group information, select the Cancel command button.



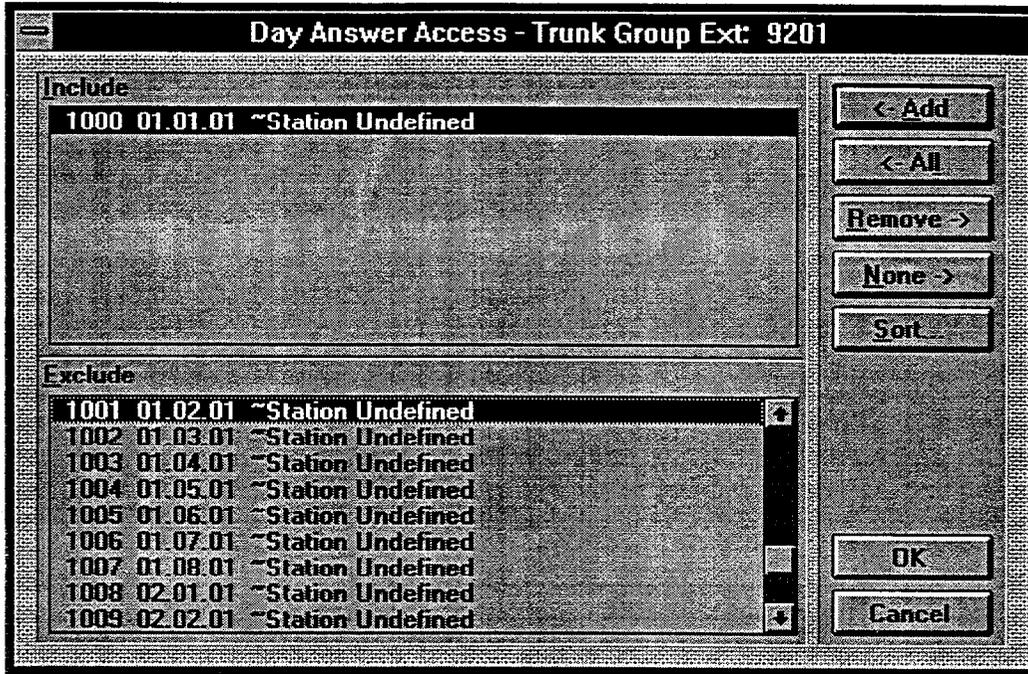
### Multiple Ring-In

**16.18** To determine the (multiple) stations that will have ring-in for this trunk group, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



**Answer Access — Day Or Night Mode**

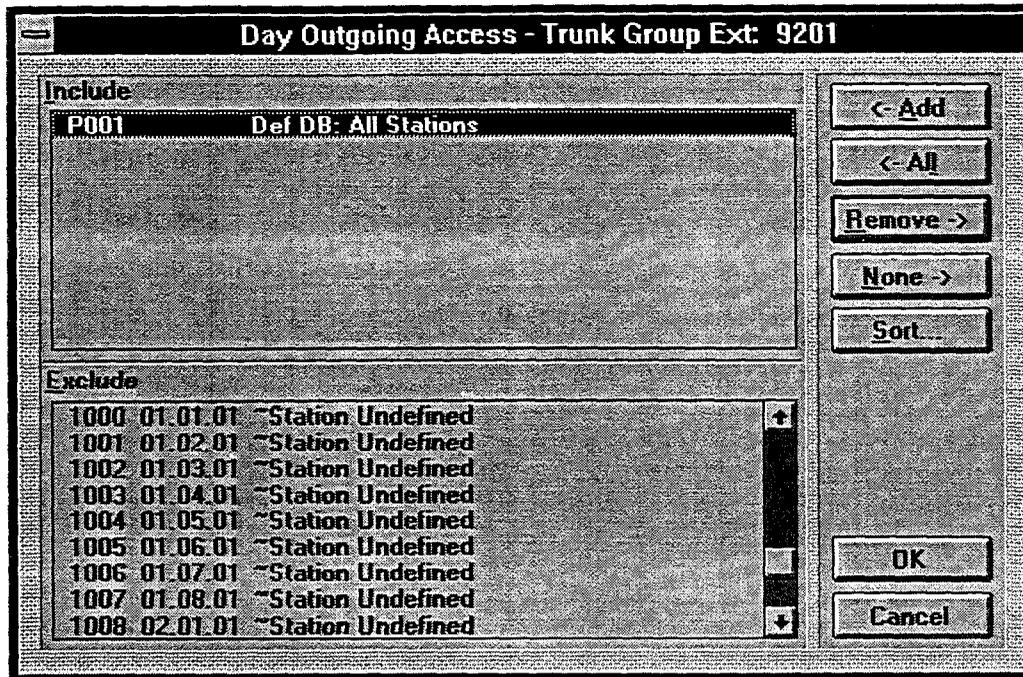
**16.19** The window shown above appears when an Answer Access command button is selected. To determine the stations that will have Allowed-Answer permission for the trunk group, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



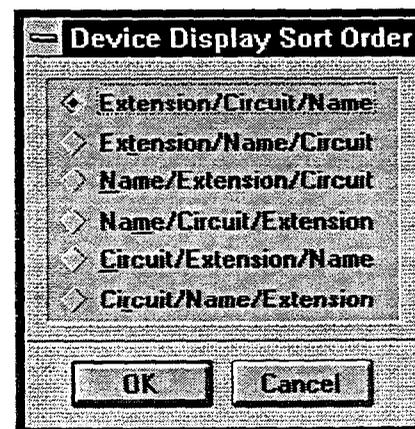
#### Outgoing Access — Day Or Night Mode

**16.20** Outgoing-access assignments can be made on a station-by-station basis for day and night modes. (On loop start trunks that are connected to paging equipment, the outgoing access designation does not affect stations' ability to seize the trunk for paging. Trunks used for paging should not allow any station to have outgoing access for placing outside calls.)

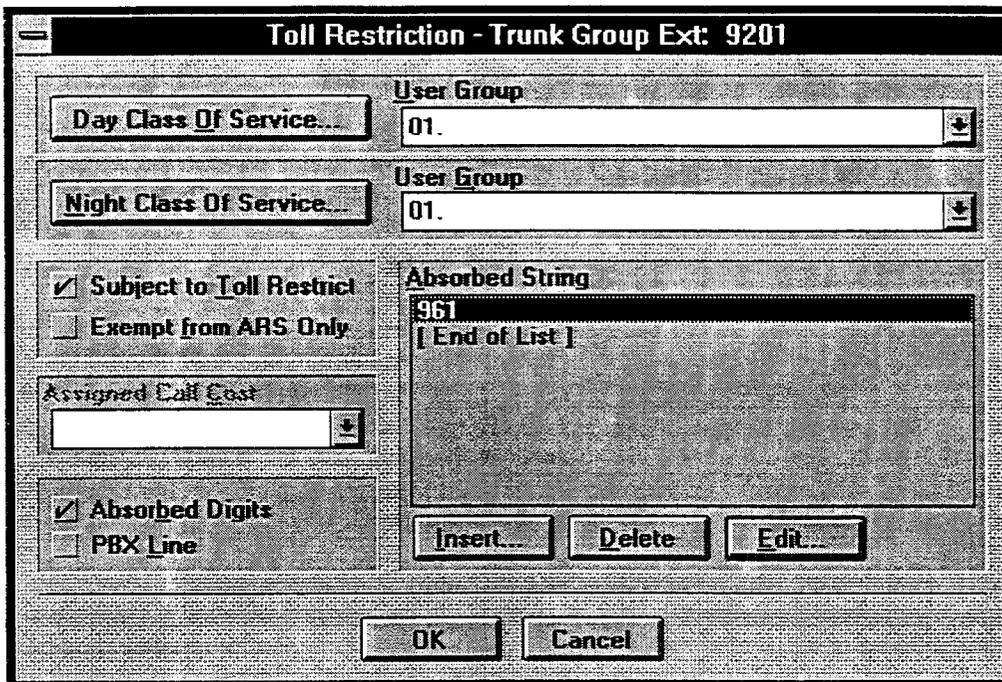
**16.21** The window shown above appears when an Outgoing Access command button is selected. To determine the stations that will have outgoing access for this trunk group, use the following procedures:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window

appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



**Toll Restriction**

**16.22** To program the toll restriction parameters for the trunk group (i.e., equal access, absorbed digits, etc.), select the Toll Restriction command button (shown on page 6-138) and refer to the window shown above.

**16.23 DAY/NIGHT CLASS OF SERVICE:** To select the class(es) of service for the trunk group, for day or night mode, select the appropriate Class of Service command button. A window appears as shown on page 6-145.

**16.24 USER GROUP:** If the trunk group has Area/Office code restriction in day or night mode, the associated User Group drop-down list box changes from dimmed to dark. Select the user group by selecting the appropriate User Group drop-down list box and scroll the highlight bar to the desired user group (01-03).

**16.25 SUBJECT TO TOLL RESTRICT:** If desired, select the Subject to Toll Restrict check box to place a check mark in it (selecting the check box again will remove the check mark).

**16.26 EXEMPT FROM ARS ONLY:** To disable ARS Only restriction, select the Exempt from ARS

Only check box to place a check mark in it. (Selecting the check box again will remove the check mark.)

**16.27 ASSIGNED CALL COST:** For trunk groups that are not subject to toll restriction, determine the call cost rate to be used when calls are placed using this trunk group. Select the Assigned Call Cost drop-down list box and scroll the highlight bar to the desired call cost option (free, local, toll local, toll long distance, or operator/international).

**16.28 ABSORBED DIGITS/PBX LINE:** (Available only on trunks that are subject to toll restriction) To program the trunk group to absorb digits, select the Absorbed Digits check box to place a check mark in it. (Selecting the check box again will remove the check mark.) If the digits will be absorbed because the system is connected to a PBX, select the PBX Line check box to place a check mark in it.

**16.29 ABSORBED STRING/PATTERNS:** If digits are absorbed because of the local central office, only one digit string is programmed. To program digit strings/patterns, use one of the command buttons (Insert, Edit, or Delete) as described on the next page.

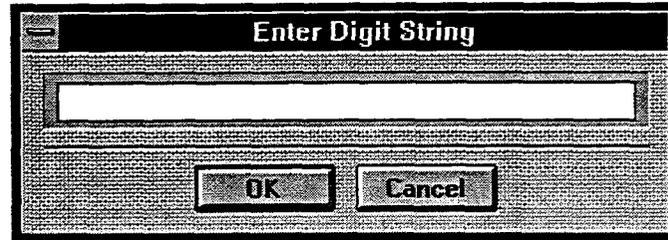
**16.30 DELETE:** To remove the highlighted line, select the Delete command button.

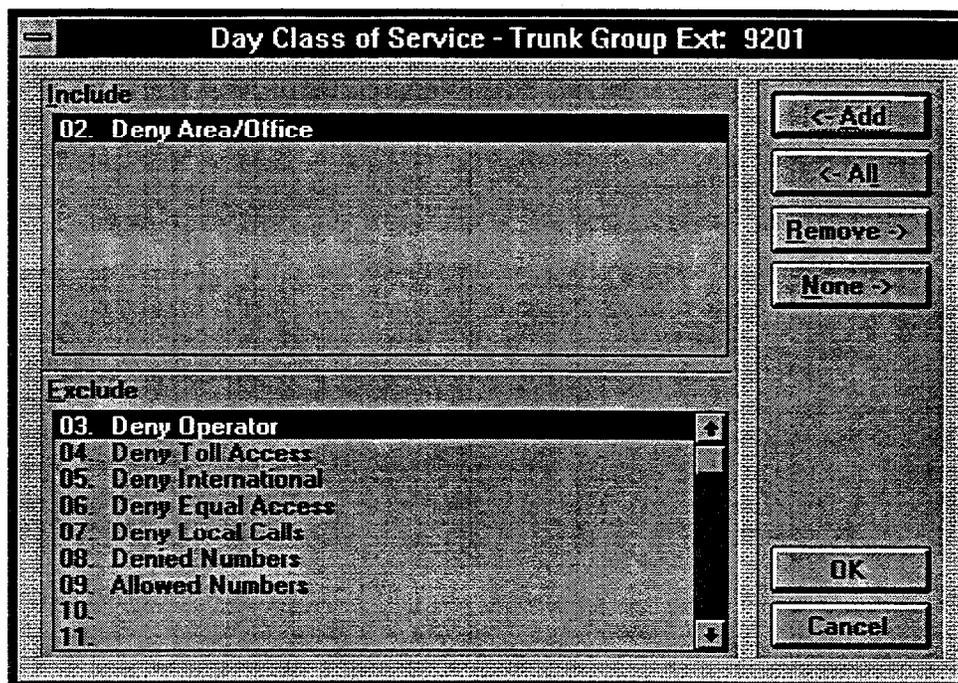
**16.31 INSERT:** To add a digit string or pattern, scroll the highlight bar to the desired position in the list box. Then select the Insert command button. The following window appears. Enter the desired digit string of up to 21 digits. Then select OK to save your changes and exit. Or select Cancel to leave the digit string unchanged.

**16.32 EDIT:** To change an existing digit string or pattern, scroll the highlight bar to the desired digit string/pattern in the list box. Then select the Edit command

button. The Enter Digit String window appears (as shown below). Edit the digit string, then select Ok (or select Cancel to leave it unchanged).

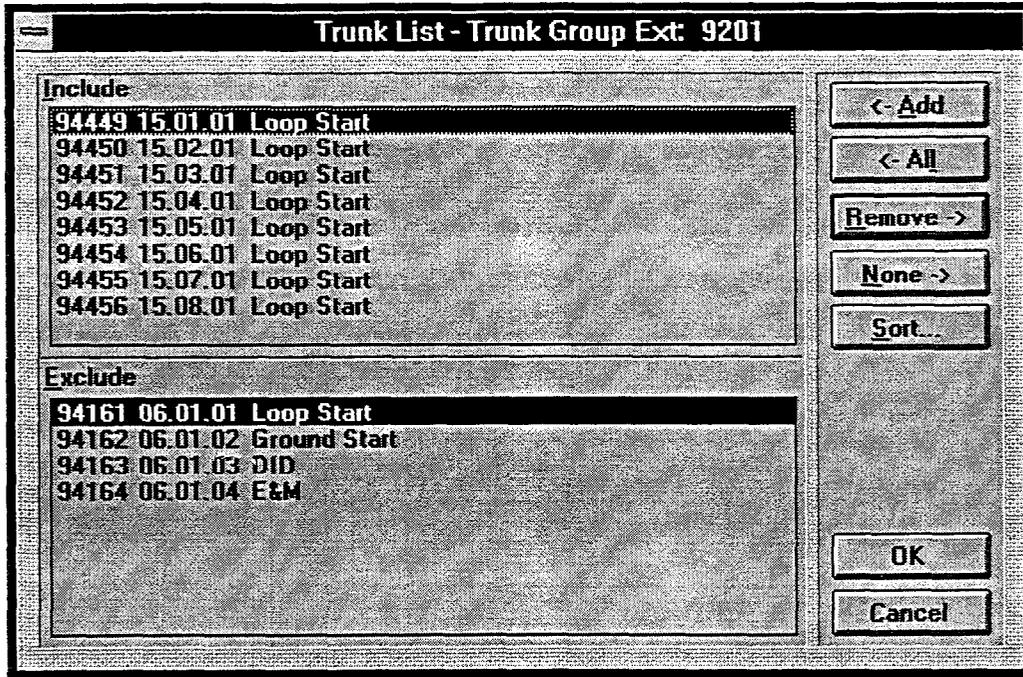
**16.33 OK/CANCEL:** When toll restriction programming is completed for the trunk group, select the OK command button to return to the Trunk Group programming window. Or, to exit without saving any changes, select the Cancel command button.





16.34 The window shown above appears when the Day Class of Service or Night Class of Service command button is selected. To determine the class(es) of service that will be assigned to this trunk group, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted COS from the Exclude list to the Include List, or use the All command button to place all classes of service in the list.
- **REMOVE/NONE:** To remove a COS from the Include list, highlight it and select the Remove command button. Or, to remove all classes of service, use the None command button.
- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

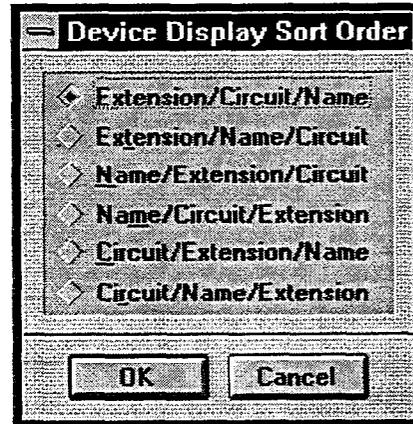


### Trunk List

16.35 The window shown above appears when the Trunk List command button is selected. To determine the trunks that will be included in the trunk group, follow these procedures:

- **ADD/ALL:** Use the Add command button to move the highlighted trunk from the Exclude list to the Include List, or use the All command button to place all trunks in the list.
- **REMOVE/NONE:** To remove a trunk from the Include list, highlight it and select the Remove command button. Or, to remove all trunks, use the None command button.
- **SORT:** To change the way the Exclude list is sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK

command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

## 17. STATION MESSAGE DETAIL

17.1 When the Station Message Detail command button is selected, the Database Programming Menu shows two options: Call Cost and SMDR. Each of the options and their programming windows are described in detail in the following pages.

### A. CALL COST FACTORS

17.2 When Call Cost is selected from the Database Programming Menu, the window shown on the next page appears. To prepare to program call cost, determine the following. (A program planning sheet is in Figure 6-26, on page 6-289.)

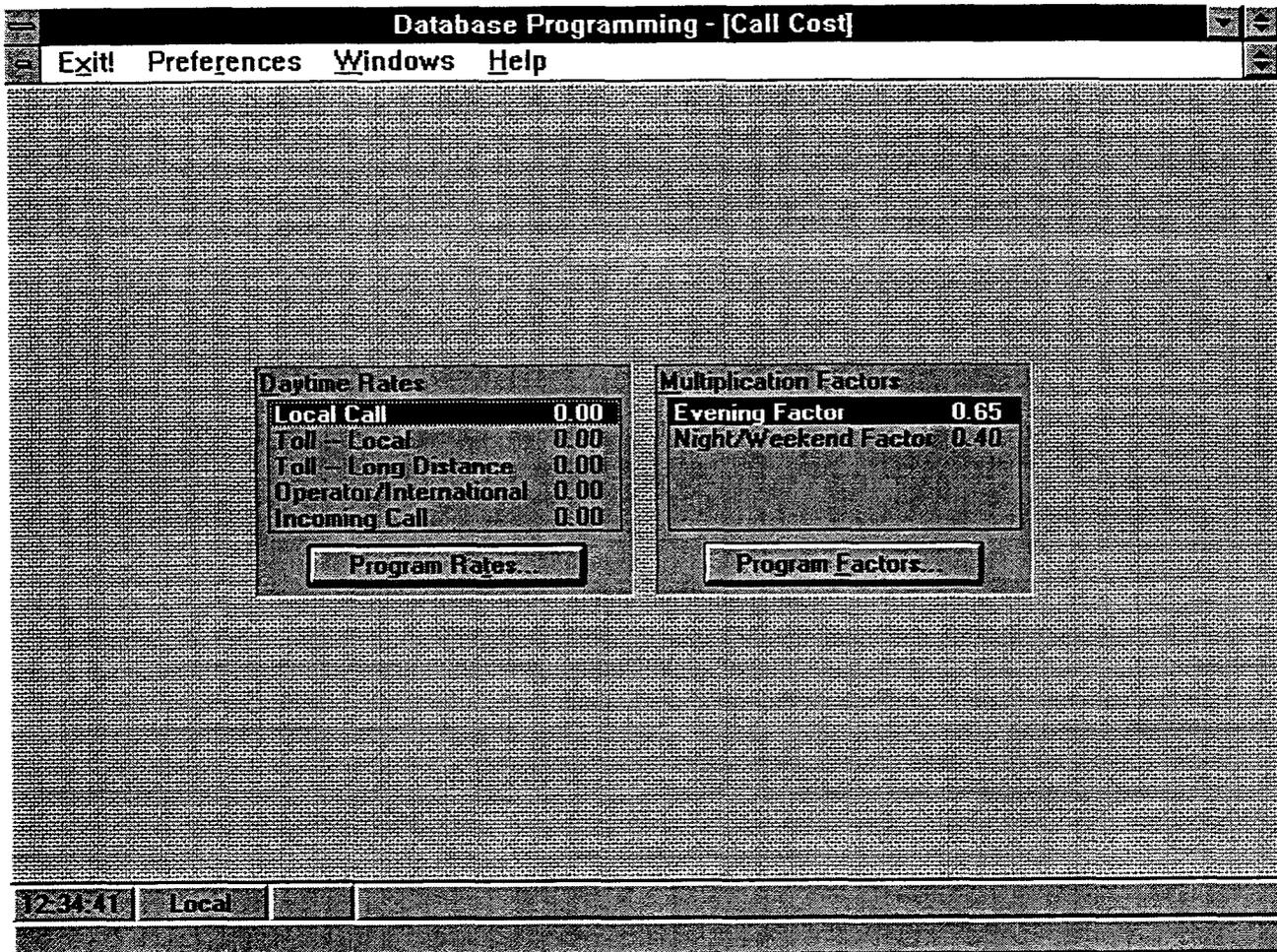
- Determine the daytime rates (in dollars per minute) for the following types of calls (all default values are 0.00). Use several telephone bills from months with typical usage to calculate the average cost per minute of each type of call. Record the charges in dollars and cents from 00.00 to 99.99. You may need to adjust the calculations later to more accurately estimate actual call costs. (This program is to be used as an estimate only; refer to page 4-110 in FEATURES for details.)

— Local calls

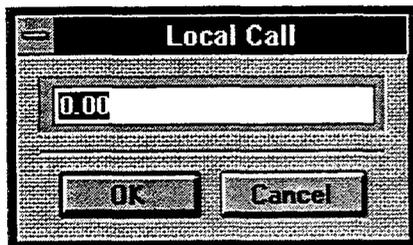
- Toll local calls
- Toll long distance calls
- Operator-assisted and international calls
- Incoming calls

- Then, determine the multiplicative factors that adjust the daytime per-minute call cost for evening and weekend rates. Record these as decimal factors. For example, if the evening discount rate is 35%, the rate is 65% of the regular rate. So it would have a factor of 0.65 times the day rate. The allowed range is between 0.00 and 1.99. The defaults are .65 for evening and .40 for night/weekend. The daytime rate (D), evening (E) multiplicative factor, and night/weekend (N/W) multiplicative factors are used on the following schedule:

|                     | SUN | MON | TUE | WED | THU | FRI | SAT |
|---------------------|-----|-----|-----|-----|-----|-----|-----|
| 8 AM<br>TO<br>5 PM  | N/W | D   | D   | D   | D   | D   | N/W |
| 5 PM<br>TO<br>11 PM | E   | E   | E   | E   | E   | E   | N/W |
| 11 PM<br>TO<br>8 AM | N/W |



**17.3 DAYTIME RATES/PROGRAM RATES:** To program a rate, highlight it in the Daytime Rates list box and then select the Program Rates command button. A window appears as follows. Enter the desired rate in the text box and select the OK command button. Or select the Cancel button to leave it unchanged.



**17.4 MULTIPLICATIVE FACTORS/PROGRAM FACTORS:** To program a multiplicative factor, highlight it in the Multiplicative Factors list box and then select the Program Factors command button. A window similar to the one shown at left appears. Enter the desired rate in the text box (up to five digits) and select the OK command button. Or select the Cancel command button to leave it unchanged.

**NOTE:** If you have not programmed a home area code yet, a warning window appears as you exit this window. It asks if you wish to continue. Answer Yes to return to the Database Programming Menu or No to stay in this window. Refer to the window shown on page 6-89 to program the home area code(s).

**B. SMDR**

**17.5** The station message detail reporting (SMDR) produces a record of calls and their costs. Report format is discussed in the FEATURES section, starting on page 4-111. A program planning sheet is located in Figure 6-27, on page 6-290.

**17.6** Determine the following SMDR information:

- **SMDR Output Active:** SMDR output to the serial port can be enabled or disabled using this option.
- **Stations:** You can determine which stations will be included in the report.

**17.7** Determine if any digits will be suppressed:

- **Suppress Absorbed Digits:** Absorbed digits (on local or PBX lines) will not appear in the report if this option is selected.

**NOTE:** If absorbed digits are repeatable on a local line, the absorbed digits will not appear in the SMDR report even when repeated.

- **Suppress Equal Access Digits:** Equal access digits will not appear in the report if this option is selected.
- **Suppress Toll Digits:** When this option is selected, toll digits will not appear in the report.
- **Suppress All Caller Numbers:** When this option is selected, any Caller ID or ANI information provided for the trunk will not be included in the SMDR report. However, all DID and DNIS numbers will appear; they cannot be suppressed.

**17.8** Determine how elapsed time will be shown in the report:

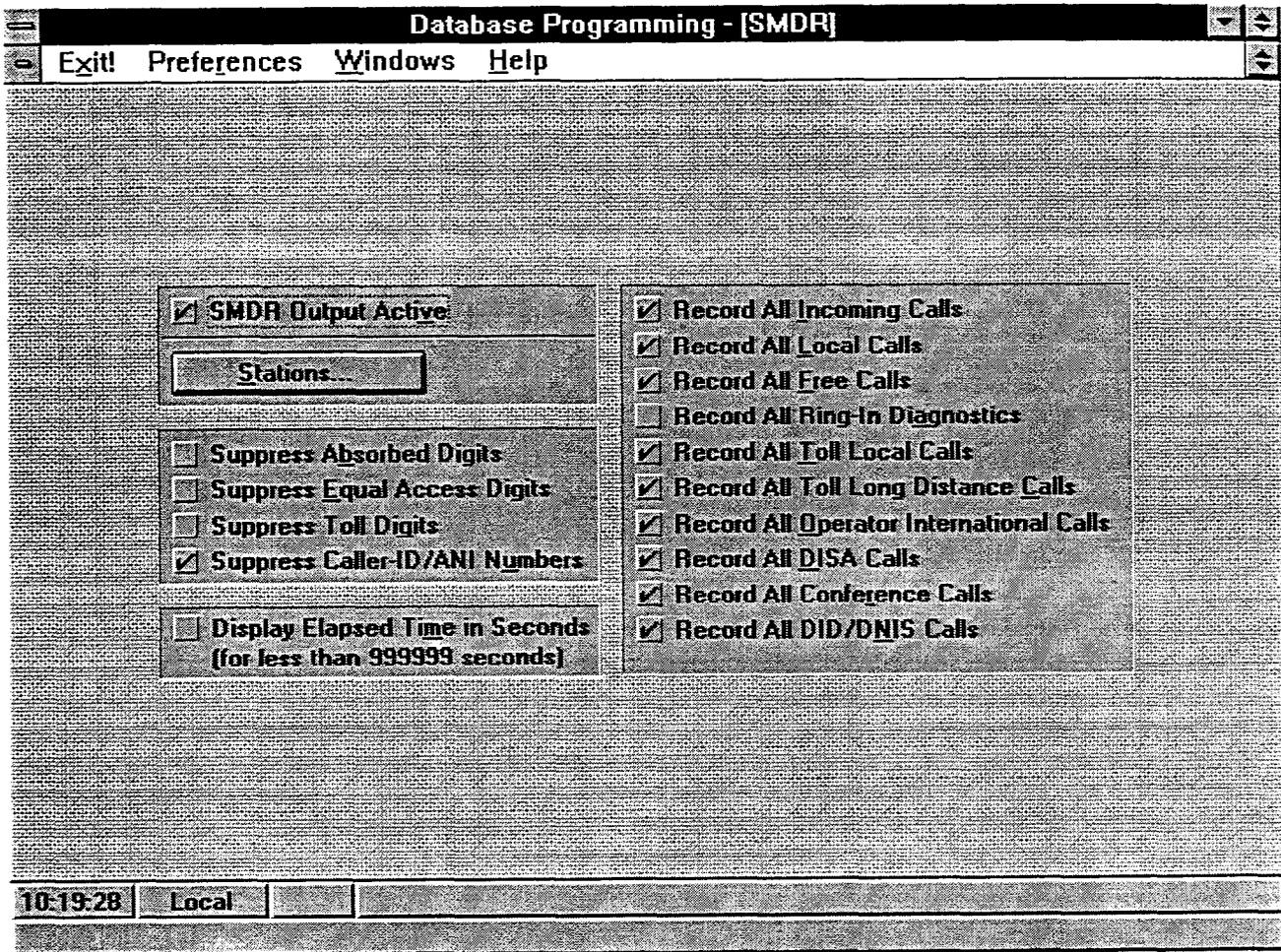
- **Display Elapsed Time in Seconds:** To allow SMDR to give a more accurate representation of elapsed time, an option can be enabled that records the elapsed time of calls in seconds instead of minutes. For calls up to 999999 seconds long, the ELAPSED

TIME field will show "S=XXXXXX" (XXXXXX represents the number of seconds). For calls lasting longer than 999999 seconds, ELAPSED TIME will show "HH:MM" (hours and minutes rounded up to the nearest minute).

**17.9** Determine what types of records will be included:

- **Record All Incoming Calls:** Selecting this check box includes all incoming calls in the SMDR report.
- **Record All Local Calls:** Records all local, non-toll, valid calls.
- **Record All Free Calls:** Records all "free" calls.
- **Record All Ring-in Diagnostics:** A ring-in message is recorded for every incoming call (whether answered or unanswered) to indicate how long it rang. All incoming calls are recorded, even those involving stations not listed in the station list.
- **Record All Toll Local Calls:** Records all valid local toll calls.
- **Record All Toll Long Distance Calls:** Records all valid long distance toll calls.
- **Record All Operator International Calls:** Records all operator assisted and international calls.
- **Record All DISA Calls:** This includes all DISA calls in the SMDR report.
- **Record All Conference Calls:** This includes all conference calls in the SMDR report.
- **Record All DID/DNIS Calls:** Records all calls received through DID and DNIS.

**17.10** The SMDR programming window appears as shown on the next page when you select SMDR from the Station Message Detail menu or enter the SMDR command.



**17.11 STATIONS:** To assign the stations that will be included in the SMDR output, select the Stations command button. The window shown on the next page appears.

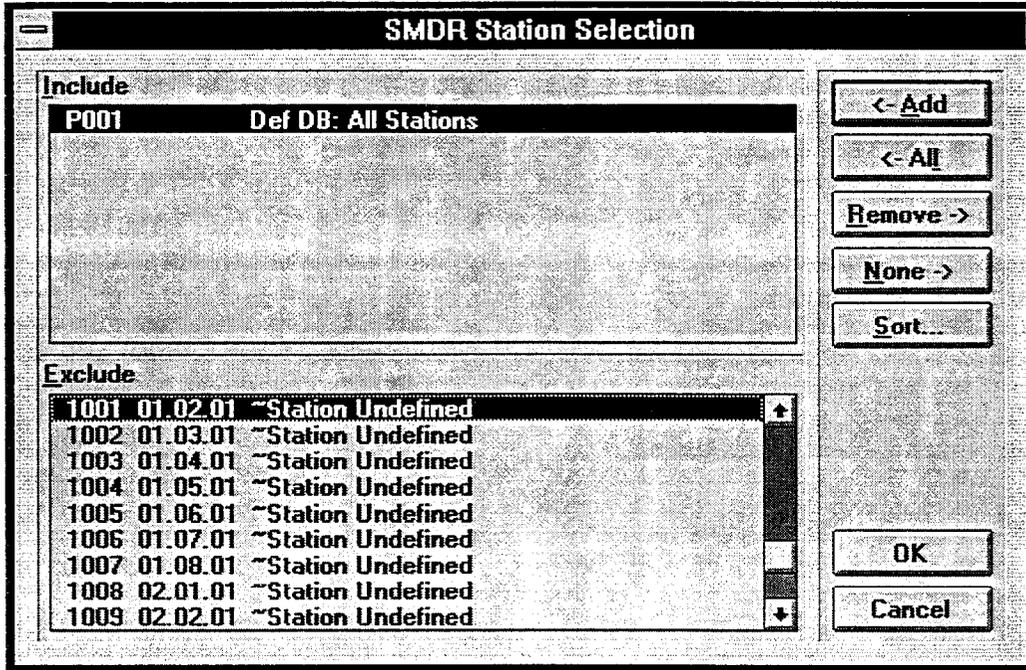
**17.12 SMDR OUTPUT ACTIVE:** To activate the SMDR reporting feature, place a check mark in the SMDR Output Active check box by selecting it. To disable the reports, remove the check mark by selecting the check box again.

**17.13 SUPPRESS OPTIONS:** The check boxes on the left side of the window determine which digits, if any, will be suppressed when the dialed digits are reported. To choose the desired options, select the appropriate check boxes to place a check mark in them. To remove an option, select the check box again to remove

the check mark from the check box. (Options are described on page 6-149.)

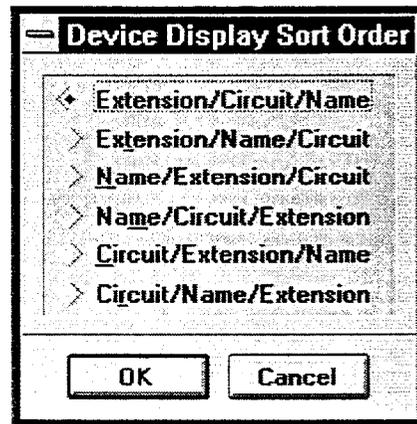
**17.14 DISPLAY ELAPSED TIME IN SECONDS:** If you wish to have call durations of fewer than 999999 seconds displayed in seconds, select this check box to place an X in it. To remove the X, select the check box again.

**17.15 RECORD OPTIONS:** The check boxes on the right side of the window determine the content of the output. To choose the desired options, select the appropriate check boxes to place a check mark in them. To remove an option, select the check box again to remove the check mark from the check box. (Options are described on page 6-149.)



17.16 The window shown above appears when the Stations command button is selected. To determine the stations that will be included in the SMDR reports, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station from the Exclude list to the Include List, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a station from the Include list, highlight it and select the Remove command button. Or, to remove all stations, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

## 18. AXCESSORY TALK PROGRAMMING

18.1 When the AXCESSORY Talk command button is selected, the Database Programming menu shows the following AXCESSORY Talk options:

- AXCESSORY Talk Application Programming
- AXCESSORY Talk Extension ID Programming
- AXCESSORY Talk Fax Programming
- AXCESSORY Talk Group List Programming
- AXCESSORY Talk Mailbox Programming
- AXCESSORY Talk Miscellaneous Information
- AXCESSORY Talk Report Programming
- AXCESSORY Talk SMDR Buffer Programming
- AXCESSORY Talk System-Wide Information

18.2 Each of the options is described in detail in this section. For information regarding AXCESSORY Talk applications and features, refer to AXCESSORY TALK FEATURES.

18.3 AXCESSORY Talk programming cannot be performed until an AXCESSORY Talk communications port has been established in the Miscellaneous System-Wide Information programming window (shown on page 6-87).

### A. APPLICATIONS PROGRAMMING

18.4 Applications Programming is used for assigning extension numbers and other parameters to applications. Once the applications are programmed, they may be used as system forwarding paths, hunt group announcement/overflow stations, direct ring-in destinations, message centers, attendants, and alternate message source destinations. A program planning sheet is located in Figure 6-28, on page 6-291.

18.5 Applications Programming is also used for assigning time slot groups and voice channel capacity. Setting up time slot groups allows the programmer to specify the total number of voice channels available per group of applications for processing calls between the AXCESS and the applications.

**NOTE:** Time slot group and voice channel programming should be completed before applications are created and programmed.

18.6 Applications can include the following (refer to AXCESSORY TALK FEATURES for more information regarding each application type):

- **Automated Attendant:** The automated attendant is a programmable feature that can be used to provide automated call answering service. Calls can be

transferred, forwarded, or can directly ring in to an Automated Attendant application. When an automated attendant answers a call, it plays a recording that gives dialing instructions. After hearing the recording, the caller may then directly dial a station extension number, voice mail application number, or hunt group pilot number.

- **Automated Attendant Recall Destination:** If a call that was transferred by the Automated Attendant application is not answered before the Transfer AXCESSORY Talk timer expires, the call recalls the Automated Attendant Recall Destination application. The recall destination announces that the station is unavailable and allows the caller to choose to leave a message (if a mailbox is programmed for that station) or dial another extension number.
- **Call Routing Announcement:** Call Routing Announcements can be used two ways:
  - A Call Routing Announcement application can be used in place of a playback device. The playback device function is especially useful for programming hunt group announcement and overflow stations. When called, the Call Routing Announcement application will play a recording and then hang up.
  - The Call Routing Announcement application can use Digit Translation which allows the caller to press a single digit for access to a mailbox, a Fax On Demand function, or to a station or hunt group that has an associated mailbox or extension ID. Digit translation can be programmed for each digit 0-9, #, and \*, plus a Timeout that is used when the caller does not enter a digit. Each digit can lead to a "node" that has its own digit translation values. This layered Call Routing Announcement digit translation creates a "tree" of programmable nodes as shown in the window on page 6-154. There can be up to 200 nodes in the system.
- **Message Notification/Retrieval:** Only one Message Notification/Retrieval application may be created for the system and it *must* be created in order to allow voice mail message notification and quick mailbox access.
- **Voice Mail:** This application handles all calls that are directed to voice mail (other than to the Message Notification/Retrieval application) by subscribers and non-subscribers. Outside callers will hear the main company greeting, followed by a menu of available options. Internal callers will hear only the menu of options. Stations can forward or transfer

calls directly to their mailbox using this application's extension number.

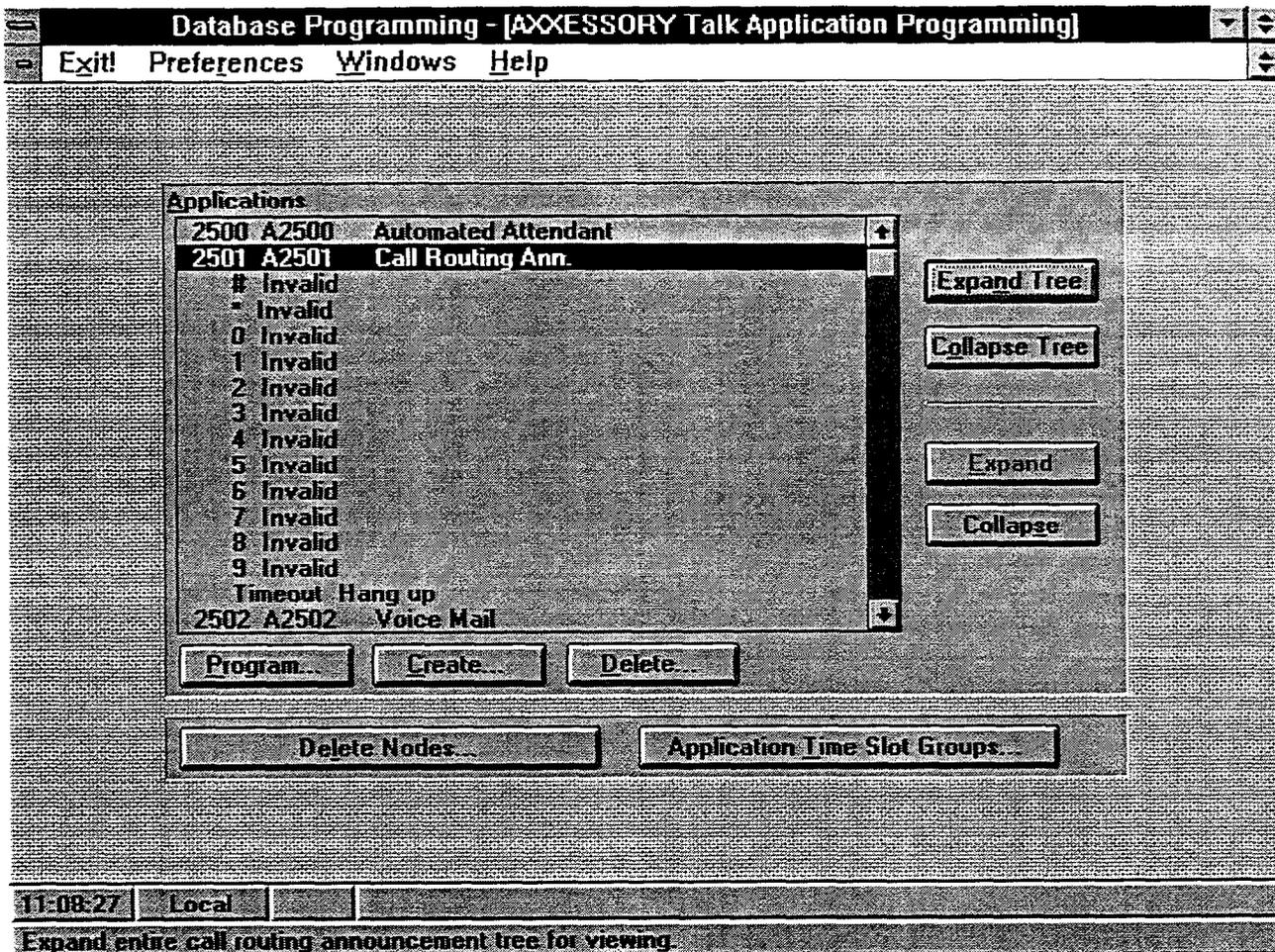
18.7 Up to 150 AXXESSORY Talk applications can be programmed (however, there can be only one Message Notification/Retrieval application). In the default database, extension numbers 2500–2649 are reserved for applications, but any available extension number can be used.

18.8 Programmable application and node parameters include the following:

- *Description:* The description for an application or Call Routing node appears wherever the application is listed, as well as in the system directory.
- *Username:* The username for the application will appear on keyset displays when the application is called. (Call Routing Announcement nodes do not have usernames.)
- *Day/night greetings:* (Not used for automated attendant recall and message notification/retrieval applications.) When the application or node is called, a custom Audiotex Recording (made using the System Administrator's mailbox, as described in AXXESSORY Talk FEATURES, page 5–24.) will play. You can select any Greeting Number for the Day and/or Night Greeting. The Day message is played when the AXXESS is in day mode and the night message is played during night mode. (Recording 01, by default, contains the Voice Mail standard company greeting. Recording 02, by default, contains the system-provided Auto Attendant company greeting.)
- *Attendant extension:* A station, hunt group, or other application can serve as the attendant station for an application. This attendant will receive recalls when the Transfer Recall Destination does not answer or is unavailable. (Call Routing Announcement nodes do not have assigned attendants.)
- *Time slot group:* Each application is assigned to a "Time Slot Group" which determines the maximum number of voice channels that will be used by the applications in that group. Voice channels are used for processing calls between the AXXESS and the applications. The voice channel limit for the time slot

group may exceed the number of voice channels actually provided by the hardware, due to programmed limits set higher than the hardware limits and/or heavy system traffic. For example, if an Automated Attendant application is assigned to a time slot group that has a programmed limit of five voice channels, it can normally support five simultaneous transfers of outside calls to extensions. However, if only four voice channels are available (because all other channels are in use by other applications or the hardware only supports four channels), a fifth call cannot be completed to that (or any other) application. When all voice channels are busy, intercom callers will hear reorder tone and see a CALL CANNOT BE COMPLETED display and outside callers will hear ringing but their calls will not be answered. (Call Routing Announcement nodes do not have assigned time slot groups.)

- *Transfer recall destination extension:* This is the station, hunt group, or application that will receive any calls that recall after being transferred by the application. The Automated Attendant Recall Destination application is usually used by Automated Attendant applications. See page 6–152. (Call Routing Announcement nodes do not have assigned transfer recall destinations.)
- *Digit translation:* (Call Routing Announcement applications and nodes only) Digit translation allows callers to dial a single digit to select a designated extension number, mailbox, or hunt group pilot number. Digit translation can be programmed for each digit 0–9, #, and \*, plus a Timeout that is used when the caller does not enter a digit. Each digit can lead to a "node" that has its own digit translation values. This layered Call Routing Announcement digit translation creates a "tree" of programmable nodes as shown in the window on page 6–154. For a detailed explanation of Call Routing Announcement nodes and a sample tree, refer to page 5–7 in AXXESSORY TALK FEATURES. Once node is created, it can be assigned to more than one Call Routing Announcement application. This allows entire node hierarchies to be shared or moved without reprogramming. A node can only be deleted if it is not associated with a Call Routing Announcement application.



**18.9** The window shown above appears when AX-  
XESSORY Talk Application Programming is selected  
from the AXXESSORY Talk programming options or  
the APPL or AAPP abbreviated command is entered. It  
is used for creating, programming, and deleting AX-  
XESSORY Talk applications and nodes and for pro-  
gramming application time slot groups.

**NOTE:** Time slot group and voice channel pro-  
gramming should be completed before applications are  
created and programmed.

**18.10 APPLICATIONS:** The Applications list box  
shows the currently programmed applications and Call  
Routing Announcement nodes, if any. When an applica-  
tion or node is highlighted, you can use the Program  
command button to program it using the window shown  
on page 6-157.

**18.11 PROGRAM:** To program an existing applica-  
tion or Call Routing Announcement node, highlight it in  
the Applications list box and select the Program com-  
mand button. A window appears as shown on page  
6-156.

**18.12 CREATE:** To create a new application, select  
the Create command button. A window appears as  
shown on page 6-156. This command button cannot be  
selected if 150 AXXESSORY Talk applications have al-  
ready been programmed. (Nodes are created in the Digit  
Translation window shown on page 6-159.)

**18.13 DELETE:** To remove one or more applications  
from the Applications list box, select the Delete com-  
mand button. A window appears as shown on page  
6-163.

**18.14 EXPAND TREE:** This button is available if a  
Call Routing Announcement application is highlighted.  
It allows you to expand the list box to show digit transla-  
tion values of the application and its nodes. The sample  
shown above is an example of an expanded tree.

**18.15 COLLAPSE TREE:** To return all expanded  
Call Routing Announcements back to their unexpanded  
state, select the Collapse Tree command button.

**18.16 EXPAND:** To expand the list to show one addi-  
tional level of a Call Routing Announcement tree, high-

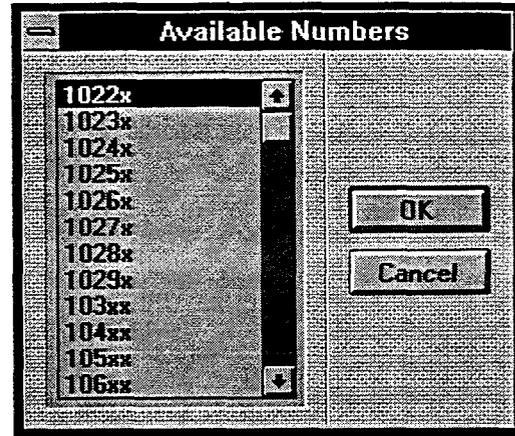
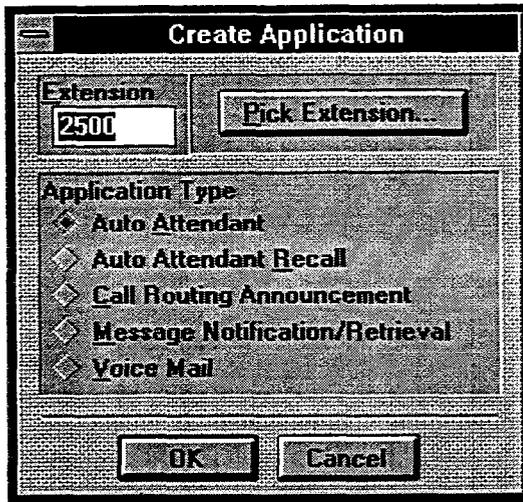
light the desired application or node and select the Expand command button.

**18.17 COLLAPSE:** To shorten the list to show one less level of a Call Routing Announcement tree, highlight the desired application or node and select the Collapse command button.

**18.18 DELETE NODES:** Nodes are created in the Digit Translation window shown on page 6-159. When you select the Delete Nodes command button, a window

(shown on page 6-162) appears that allows you to select nodes to delete. Only nodes that are not assigned to Call Routing Announcement applications can be deleted.

**18.19 APPLICATION TIME SLOT GROUPS:** To program the time slot groups, select the Application Time Slot Groups command button. A window appears as shown on page 6-164.



### Creating Applications

**18.20** The window shown above appears when the Create command button is selected. To create a new application, follow these procedures:

**18.21 EXTENSION/PICK EXTENSION:** The default extensions for AXCESSORY Talk applications are 2500–2649. An available AXCESSORY Talk extension number is displayed in the Extension text box. To change the extension number for the application, either type the desired extension in the text box or select the Pick Extension command button. If you select the command button, the following window appears. (If you attempt to enter an invalid extension number or a number that is already assigned, you will see a warning window. Select OK to continue and then select a valid extension number.)

**NOTE:** The application extension number may also be changed using the Extensions, Usernames and Feature Codes window (page 6–75). If this is done, all references to the old number, that included the old name, will be updated with the new name.

- **AVAILABLE NUMBERS:** This list box contains the available extension numbers. A number with Xs in it, such as 116XX or 12XXX, indicates that a series of numbers with that prefix are available. When selected, the prefix of the series (e.g., 116 or 12) is assigned to the application. To select an extension number, scroll the highlight bar in the list box to the desired number.
- **OK/CANCEL:** When the desired extension number is highlighted, select the OK command button. Or, to exit without changing the extension number, select the Cancel command button.

**18.22 APPLICATION TYPE:** Select the type of application by selecting the desired option button. A dot in the center of the option button indicates the selected application. (Only one Message Notification/Retrieval application can be programmed per system. Once it has been assigned, that option button is dimmed and cannot be selected.)

**18.23 OK:** When the application has an extension number and an application type, select the OK command button. The programming window shown on page 6–157 automatically appears. Enter the information for the new application as described on that page.

**18.24 CANCEL:** To exit without creating the new application, select the Cancel command button.

Call Routing Announcement Ext: 2500

Description  
Call Routing

Username  
ROUTE

Attendant  
1000 01.01.01 ~Station Undefined

Time Slot Group  
01. ~Timeslot Undefined [4 channels]

Transfer Recall Destination  
2500 A2500 Call Routing

Digit Translation...  
Day Greetings...  
Night Greetings...

OK Cancel

#### Programming An Application Or Node

**18.25** The window shown above appears when the Program command button is selected. Program the application or node parameters as follows.

**18.26 DESCRIPTION:** Enter a name, of up to 20 characters, in the Description text box. Do not use Control characters.

**18.27 USERNAME:** (*Not used for Call Routing Announcement nodes.*) The username will appear on key-set displays when the application is called. To program a username, enter up to 10 characters in the Username text box. Do not use backslash (\), vertical slash (/), tilde (~), or Control characters in usernames.

**NOTE:** The application description and username may also be changed using the Extensions, Usernames and Feature Codes window (page 6-75). If this is done, all references to the old number, that included the old name, will be updated with the new name.

**18.28 DAY/NIGHT GREETING:** (*Not used for automated attendant recall and message notification/retrieval applications.*) To assign the day and/or night greetings for the application or node, select the appropriate Greetings command button. A window appears as shown on the next page.

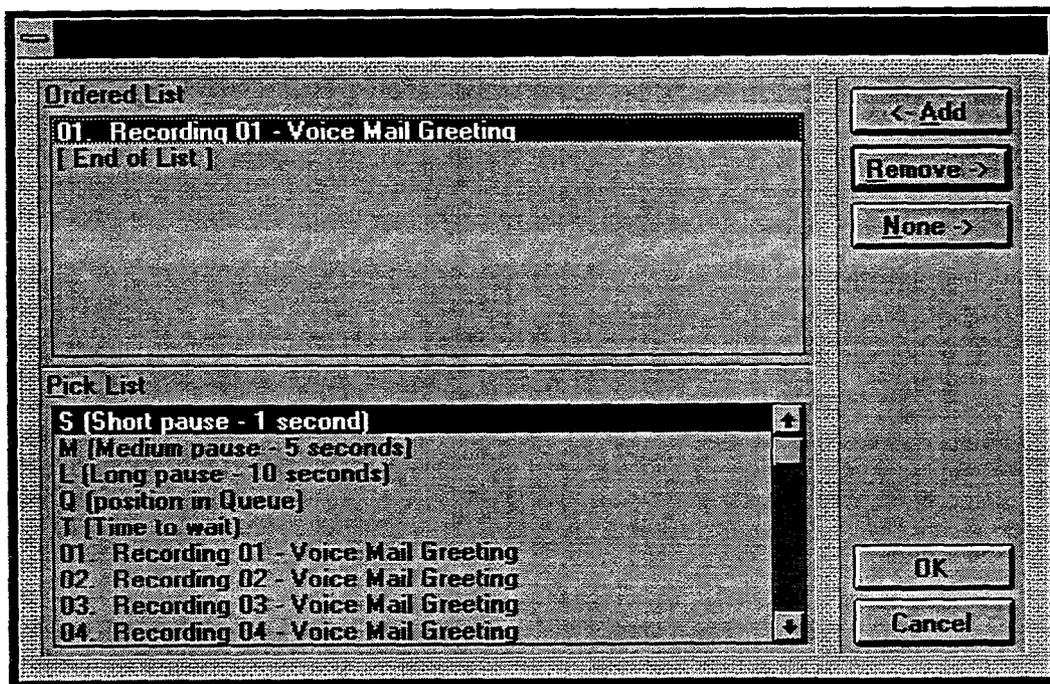
**18.29 ATTENDANT:** (*Not used for Call Routing Announcement nodes.*) Determine which station, hunt group, or other application will serve as the attendant for this application. Then select the Attendant drop-down list box and scroll the highlight bar to the desired station.

**18.30 TIME SLOT GROUP:** (*Not used for Call Routing Announcement nodes.*) Determine which time slot group this application will use. Then select the Time Slot Group drop-down list box and scroll the highlight bar to the desired group.

**18.31 TRANSFER RECALL DESTINATION:** (*Not used for Call Routing Announcement nodes.*) Determine which station, hunt group, or other application will receive transfer recalls for this application. Then select the Transfer Recall Destination drop-down list box and scroll to the desired extension number.

**18.32 DIGIT TRANSLATION:** (*This is available in Call Routing Announcement applications and nodes only.*) To program Digit Translation for the node or application, select this command button. A window appears as shown on the next page.

**18.33 OK/CANCEL:** When all programming is completed for the application, select the OK command button. Or, to exit without changing any application parameters, select the Cancel command button.



### Day or Night Greetings

**18.34** This window appears when you select the Day Greetings or Night Greetings command button shown on the preceding page. It allows you to program the custom Audiotex Recording that will be played when this application or node is called. The special characters that can be used for programming greetings include the following:

- **S – Short Pause:** This inserts a 1-second pause.
- **I – Intermediate Pause:** This inserts a 5-second pause.
- **L – Long Pause:** This inserts a 10-second pause.
- **Q – Queue Position:** (This can be used for hunt group Call Routing Announcements only.) This tells the caller how many calls are waiting ahead if his or her call.
- **T – Time To Wait:** (This can be used for hunt group Call Routing Announcements only.) This tells the caller how long he or she can expect to wait, based on the number of calls waiting and the Average Call Length programmed for the hunt group.

**18.35** You can combine several recordings and special characters to provide information to the caller. For example you could arrange a series as follows:

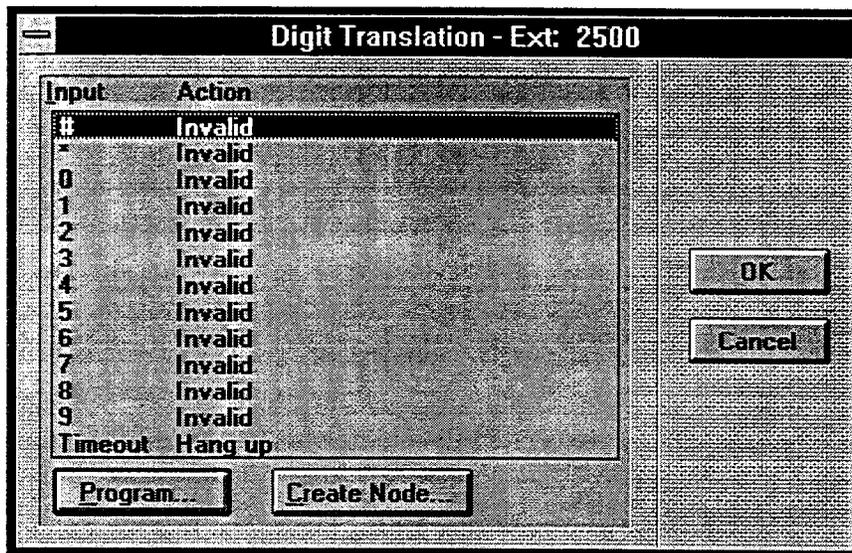
- Recording 05: *"Thank you for calling Inter-Tel. All of our agents are busy."*

- Q System-generated recording: *"Your call is X in line."*
- T System-generated recording: *"Your call should be answered within X minutes."*
- Recording 06: *"Our busiest hours are from 10 am to 1 pm. Our business hours are 8 am to 5 pm."*

**18.36 ORDERED LIST/PICK LIST:** To arrange the desired greeting(s) and/or special characters in the order they will be used, scroll through the Pick List and move the desired lines to the Ordered List box using the following command buttons.

- **ADD:** Use the Add command button to move the highlighted line from the Pick List to the Ordered List.
- **REMOVE/NONE:** To remove a line from the Ordered List, highlight it and select the Remove command button. Or, to remove all lines, use the None command button.

**18.37 OK/CANCEL:** When the Greeting has been programmed as desired, select the OK command button to save the changes. Or, to exit without saving any changes, select the Cancel command button.



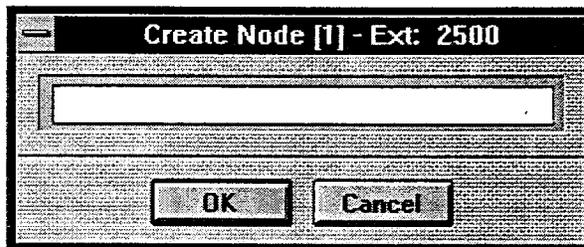
**Digit Translation Programming**

**18.38 INPUT/ACTION:** The list box shows the digit translation table for the Call Routing Announcement application being programmed. The Input is the digit that the caller presses. The Action is what occurs when that digit is pressed. Timeout is the input that represents no digits being entered.

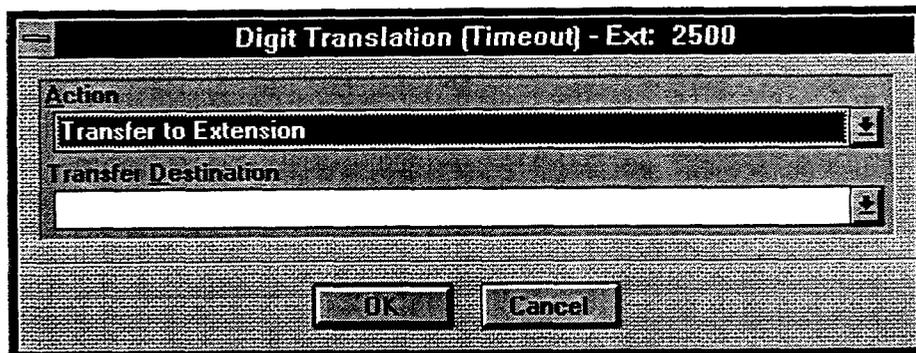
**18.39 PROGRAM:** To program a digit or Timeout, highlight it in the Input/Action list box and then select the Program command button. The window shown on the next page appears.

**18.40 CREATE NODE:** There can be up to 200 nodes in the system. Each node can have its own description, digit translation programming, and greetings. The node is assigned as a destination for a digit translation "Transfer To Node" Action (see page 6-160). Each node can be used in one or more Call Routing Announcement applications. This allows entire node trees to be shared or moved without reprogramming. A node can only be deleted if it is not associated with a Call

Routing Announcement application. When you select the Create Node command button, the following window appears. Enter a description of up to 20 characters in the text box. Then select OK to exit. Or select Cancel to exit without saving any changes. To program the digit translation and greetings for the node, return to the window on page 6-154, expand the tree, and select the new node for programming.



**18.41 OK/CANCEL:** When the digit translation table is complete, select OK to return to the window shown on the previous page, or select Cancel to exit without saving any changes.



**18.42** The window shown above appears when you select the Program command button while a digit or Timeout is highlighted.

**18.43 ACTION:** Scroll through the drop-down list box to the desired Action for the digit being programmed. The Actions that can be selected for the digits (\*, #, 0-9) and for the Timeout option are:

- *Transfer To Operator:* This action transfers the call to the Dial-0 Destination that is programmed in the System Maintenance window, shown on page 6-211.
- *Company Directory – First Name:* This sends the caller to the directory prompt that asks the caller to enter the first name of the desired party.
- *Company Directory – Last Name:* This sends the caller to the directory prompt that asks the caller to enter the last name of the desired party.
- *Subscriber Access:* This sends the caller to the Voice Mail application that prompts the caller to enter a mailbox number.
- *Invalid:* (Not available for Timeout.) The digit will not be used. Callers who press this digit hear a recording that tells them that it is invalid.
- *Select Fax Document:* (Not available for Timeout, and not available if there are no fax documents in the system.) This Action selects a specific document for faxing. Callers should be prompted to select this digit with a recording that tells them the name of the document. For example, "Press 2 for a price list." This Action must be accompanied by an End Fax Selection Action and should also be accompanied by a Cancel Fax Selection Action.
- *Select Fax By Document Number:* (Not available for Timeout, or digits \* or #.) This Action is like the Transfer to Collected Extension Action described below. It allows the caller to enter the exact four-digit number(s) of the desired document(s). Assign this Action to the digit(s) that correspond to the first digits of the document numbers. For example, if you have documents numbered 0001-1000, digits 0 and 1 should have a Select Fax By Document Number Action. Callers can then dial four-digit document numbers that begin with 0 or 1. **NOTE:** When document numbers begin with 0, the caller can select documents by entering the number without 0 and pressing #. For example, the caller can enter 99# for document number 0099. This Action must be accompanied by an End Fax Selection Action and should also be accompanied by a Cancel Fax Selection Action.
- *End Fax Selections:* This Action is usually assigned to the digit #. It is required for signaling the system that the caller has entered all desired fax document selections (either through a Select Fax Document By Number Action or a Select Fax Document Action). You will see a warning message when you exit if you have programmed a Select Fax action without creating an End Fax Selections action.
- *Cancel Fax Selections:* This Action is usually assigned to the digit \*. It is used for canceling fax document selections that a caller has entered.
- *Transfer To Node:* (Not available for Timeout, and not available if there are no programmed nodes.) This Action sends the call to a node that allows access to further digit translation options.
- *Transfer To Extension:* This action sends the call to the designated extension (station, hunt group, or application).
- *Transfer To Mailbox:* This sends the call to the designated mailbox. (This will not appear if there are no programmed mailboxes.)
- *Transfer To Collected Extension:* (Cannot be used for Timeout, \*, #, or 0) To allow callers to dial extension numbers of stations and hunt groups that have a mailbox or extension ID, use this Action for digits that correspond to the first digits of extension num-

bers. For example, if digit 1 is "Transfer To Collected Extension," callers can dial extension numbers that begin with 1. However, if digit 1 is "Transfer to extension 2000," a caller attempting to dial a station extension number that begins with 1 will instead be transferred to 2000.

- **Hang Up:** (This action is used for Timeout only.) This disconnects from the call if the user does not enter a digit.

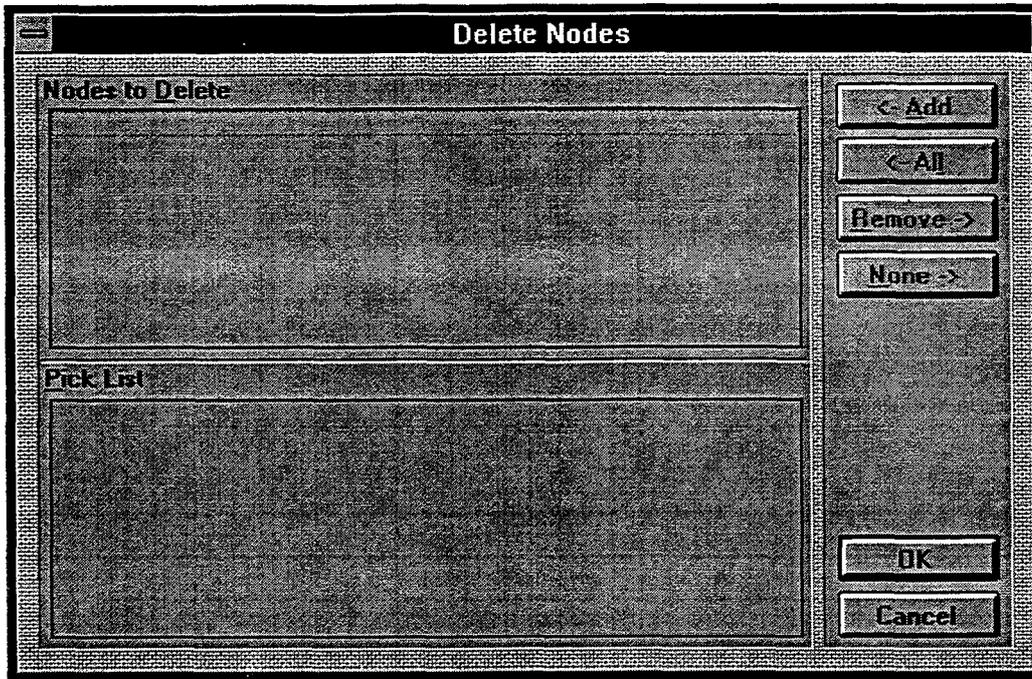
**NOTE:** If you select Transfer To Operator and there is not a programmed Operator Access Dial-0 Des-

tinuation in System Maintenance window (see page 6-211), you will see a warning message. Go to that window and program the Operator Access Destinations.

**18.44 TRANSFER DESTINATION:** Refer to the chart below to determine the type of destination, if any, to be programmed for the selected Action.

**18.45 OK/CANCEL:** When finished, select OK to return to the window shown on the previous page. Or select Cancel to exit without saving changes.

| ACTION                          | DESTINATION TYPE |
|---------------------------------|------------------|
| Cancel Fax Selections           | None             |
| Company Directory – First Name  | None             |
| Company Directory – Last Name   | None             |
| End Fax Selections              | None             |
| Invalid                         | None             |
| Select Fax By Document Number   | None             |
| Select Fax Document             | Document Number  |
| Subscriber Access               | None             |
| Transfer To Collected Extension | None             |
| Transfer To Extension           | Extension number |
| Transfer To Mailbox             | Mailbox number   |
| Transfer To Node                | Node number      |
| Transfer To Operator            | None             |
| Hang Up                         | None             |



### Deleting Nodes

**18.46** A node can only be deleted if it is not associated with a Call Routing Announcement application. When you select the Delete Node command button shown on page 6-154, this window appears.

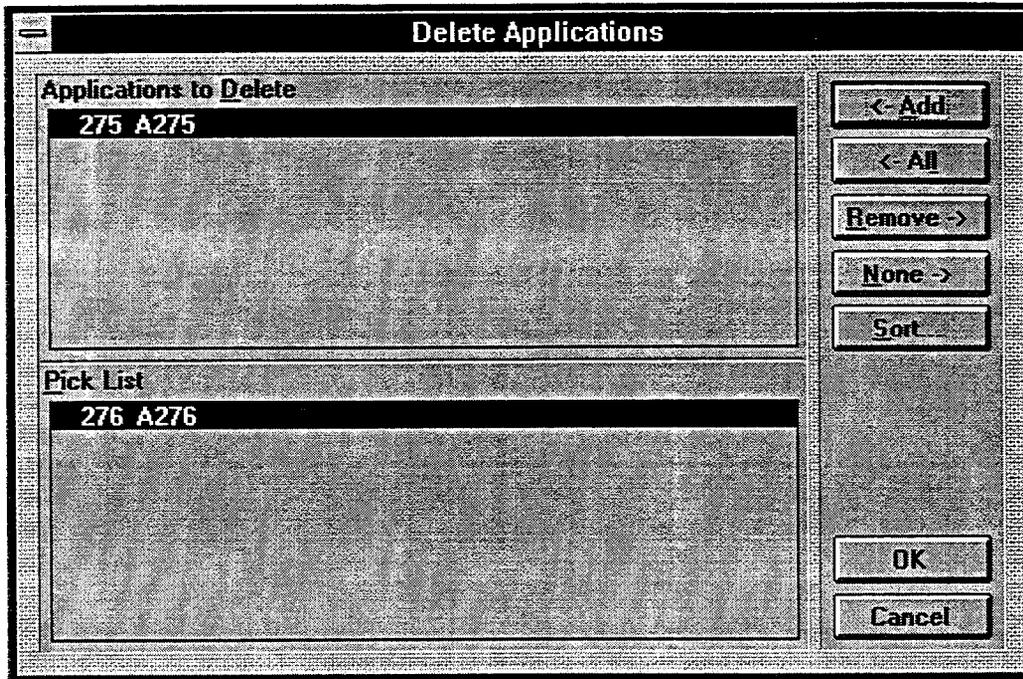
**18.47 NODES TO DELETE/PICK LIST:** Unassigned nodes are listed in the Pick List box. To select the nodes to be deleted, use the following command buttons:

- **ADD/ALL:** Use the Add command button to move the highlighted node from the Pick List to the Nodes

To Delete list, or use the All command button to place all unassigned nodes in the Nodes To Delete list.

- **REMOVE/NONE:** To remove a node from the Nodes To Delete list, highlight it and select the Remove command button. Or, to remove all nodes, use the None command button.

**18.48 OK/CANCEL:** When the Node To Delete appears as desired, select the OK command button to delete the selected nodes. Or, to exit without deleting any nodes, select the Cancel command button.



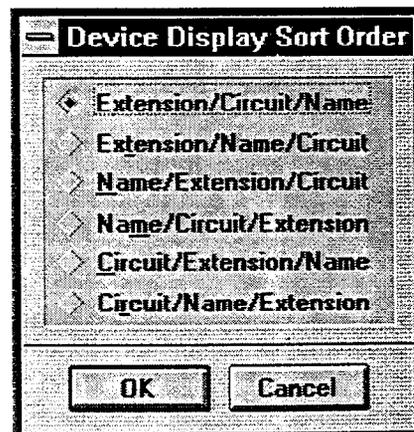
**Deleting Applications**

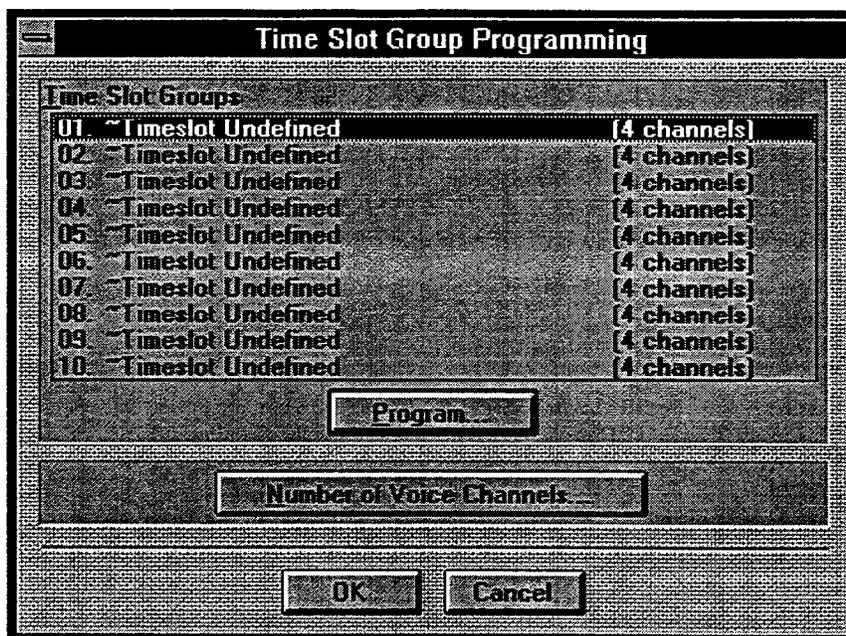
18.49 The window shown above appears when the Delete Applications command button is selected. To determine the applications that will be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted application from the Pick List to the Applications To Delete list, or use the All command button to place all applications in the list.
- **REMOVE/NONE:** To remove an application from the Applications To Delete list, highlight it and select the Remove command button. Or, to remove all applications, use the None command button.
- **OK:** When the Include List appears as desired, select the OK command button. A window appears that asks you to verify that you want the applications deleted. To delete them, select Yes. To leave them unchanged, select No. *If any application was serving as a Transfer Recall Destination for another application, another warning will appear telling you that the recall destination for the other application will be returned to default value (its own extension). Select Yes to continue, or No to cancel the deletion.* *If a Audiotex Recording had been assigned to the de-*

*leted application, the recording is not erased and any assignment of the recording to another application is unaffected.*

- **CANCEL:** To exit without deleting any applications, select the Cancel command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.





### Time Slot Group Programming

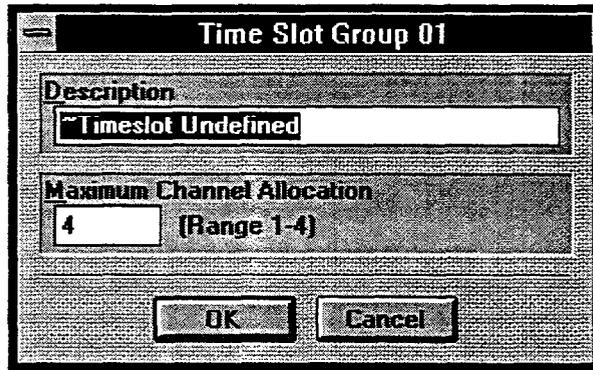
**18.50** Time Slot Groups allow the programmer to assign a maximum number of AXCESSORY Talk voice channels to groups of applications. Voice channels are used for processing calls between the AXCESS and the applications. (See page 5-2 for details.)

**18.51 TIME SLOT GROUPS/PROGRAM:** The list box in this window shows the time slot groups and the number of channels currently assigned to the groups. To program a time slot group, highlight it in the list box and select the Program command button. A window appears as shown on the next page.

**18.52 NUMBER OF VOICE CHANNELS:** Voice channels allow communication between the AXCESS and the applications. If a voice channel is not available in an application's time slot group, callers to that application will receive busy signals and the call will be

sent to the application's attendant. At default there are four available voice channels. The actual number of voice channels may be higher or lower depending on the number of Voice Processing Cards used and the port configuration of the Voice Processing Cards. The number of available voice channels determines the maximum number of channels that can be assigned to any single Time Slot Group. The combined total of channels assigned to Time Slot Groups may exceed the actual number of voice channels, because it is unlikely that all time slot groups will use their maximum allotment at once. To set the number of available voice channels, select the Number of Voice Channels command button to enter the correct number. A window appears as shown on the next page.

**18.53 OK/CANCEL:** When time slot group programming is complete, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.



### Programming A Time Slot Group

**18.54** This window appears when the Program command button is selected. It is used for entering a description of the group and establish the total number of available voice channels for the time slot group.

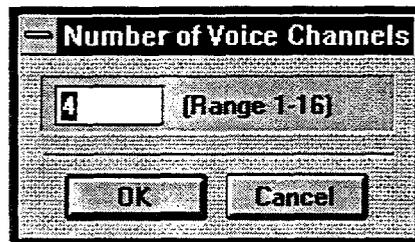
**18.55 DESCRIPTION:** Enter a name, with up to 20 characters, for this time slot group.

**18.56 MAXIMUM CHANNEL ALLOCATION:** This determines the maximum number of voice channels that will be used by the application(s) that will be assigned to this time slot group. By default, this text box will show the maximum available voice channels, as determined by the hardware configuration. Enter the maximum number of voice channels that will be used by the

application(s) that will be assigned to this time slot group. By default, this text box will show the maximum available voice channels.

**NOTE:** The combined total of voice channels assigned to all time slot groups *may* exceed the number of voice channels provided by the hardware. This is allowed because it is not likely that all time slot groups will be busy at once. However, an individual time slot group is limited to the Maximum Channel Allocation. This parameter is used for setting the *limit* of voice channels that will be used by the associated application.

**18.57 OK/CANCEL:** When the time slot group has been programmed as desired, select the OK command button. Or, to exit without changing the time slot group, select the Cancel command button.



### Number Of Voice Channels

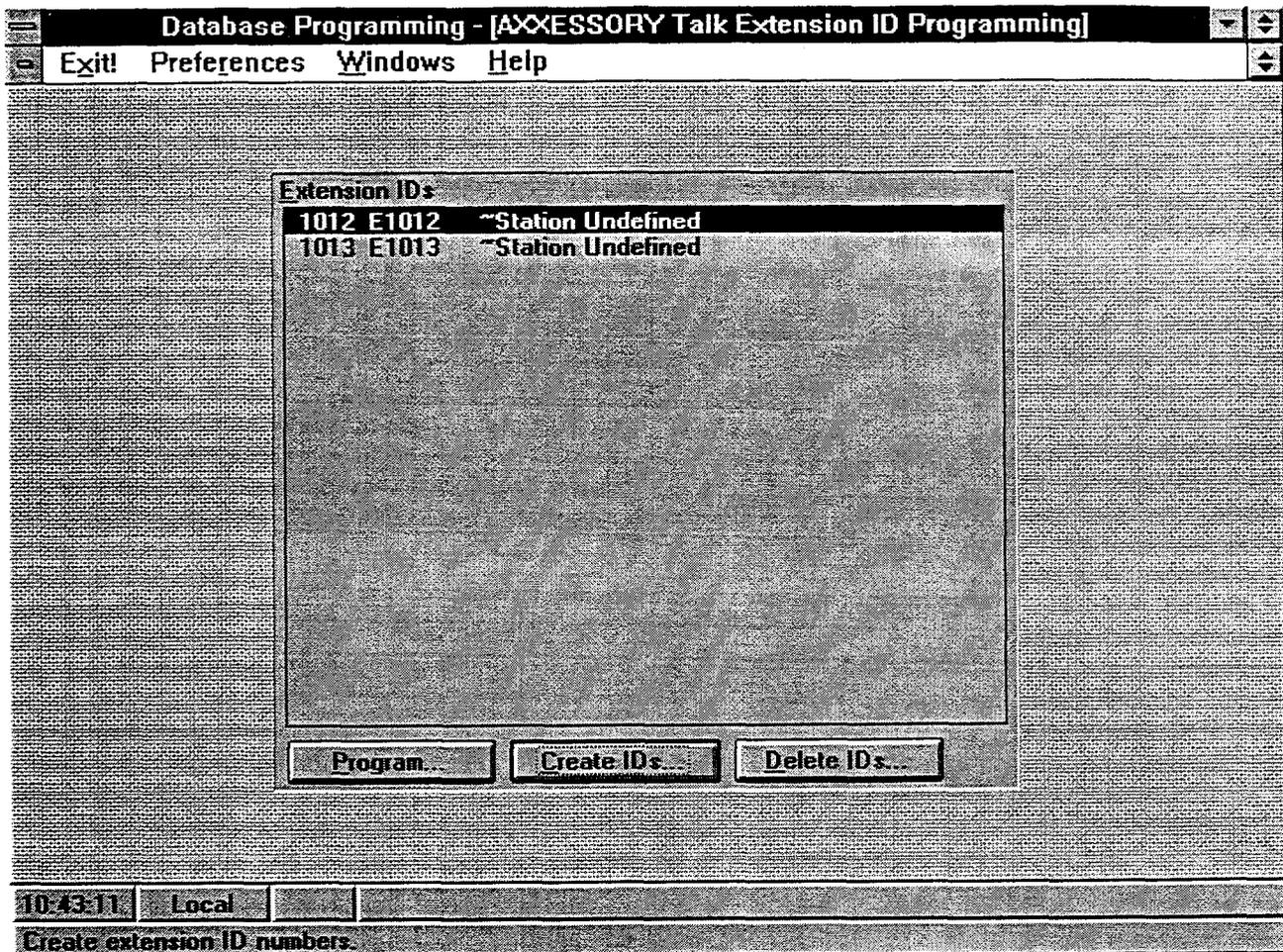
**18.58** This window appears when the Number of Voice Channels command button is selected. It is used for entering the number of available voice channels for use by the Time Slot Groups.

**18.59 NUMBER OF VOICE CHANNELS:** Enter the correct number in the text box and then select the OK command button. Or, select the Cancel command button to exit without changing the number.

**NOTE:** If the number of channels entered is less than the time slot count for any one of the time slot groups, a

window appears that tells you, "One or more time slot groups currently specify the maximum channel usage greater than 'xx'. Do you wish to change all of these values to 'xx'?". If you wish to change those time slot counts, select Yes. If you wish to exit and change the number of channels to a higher value, select No.

**18.60 OK/CANCEL:** When the number of voice channels is correct, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.



## B. EXTENSION ID PROGRAMMING

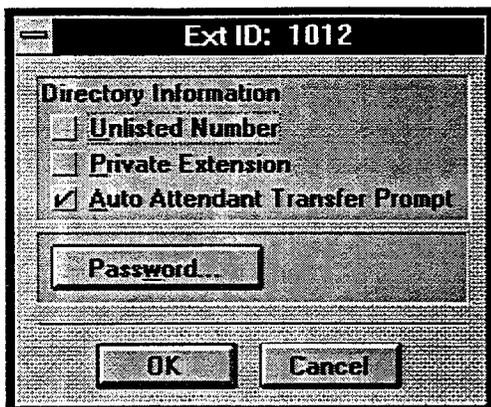
**18.61** Extension IDs provide the Auto Attendant application a means for transferring calls to extensions which do not have mailboxes. An extension ID allows the owner to record a name for the directory and establish a password. Extension IDs can be created for stations, hunt groups, and applications. (**NOTE:** If a mailbox is created for a station with an extension number, the system converts the extension ID into a mailbox and eliminates the extension ID.) A program planning sheet for this window appears in Figure 6-29, on page 6-293.

**18.62 EXTENSION IDS:** This list box shows the existing extension IDs. When an ID is highlighted in this list box, you can program directory information and a password for it.

**18.63 CREATE IDS/DELETE IDS:** To add or delete extension IDs, select the Create IDs or Delete IDs command button. A window appears as shown on page 6-168.

**18.64 PROGRAM:** To program a password and the directory information for an extension ID, select the Program command button. The window shown on the next page appears.

### Programming An Extension ID

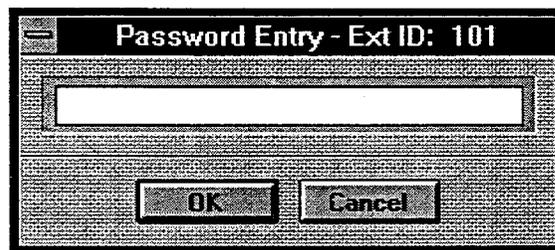


- **DIRECTORY INFORMATION:** Select the desired options to place check marks in the check boxes. Unlisted numbers are not included in the directory, but can be dialed if the caller knows the extension number. Private numbers can be dialed, but only the name is played in the directory.

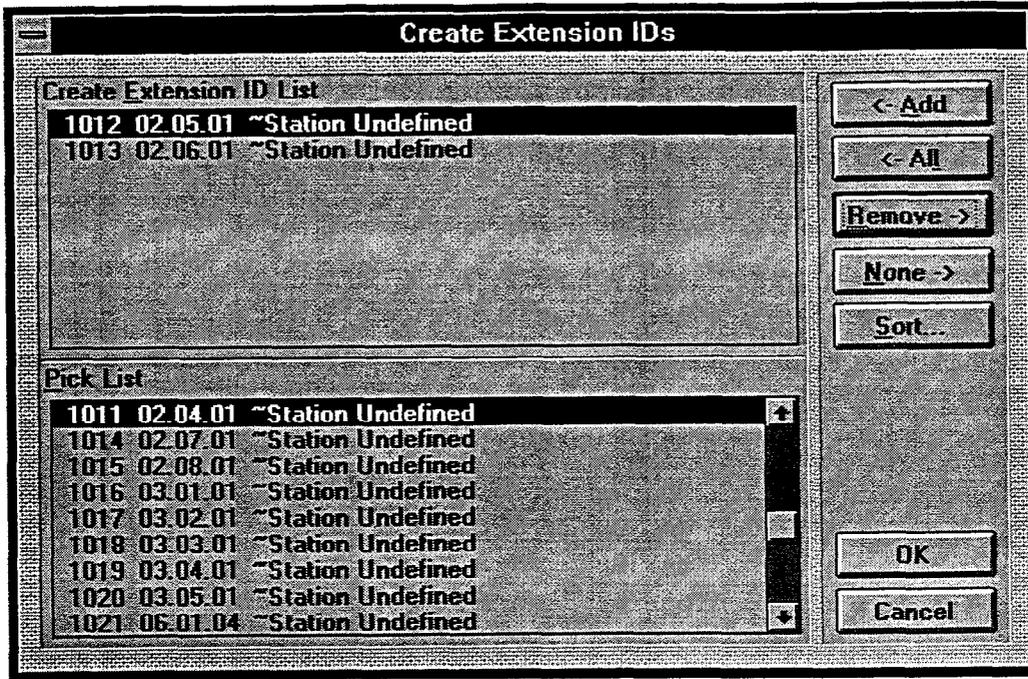
**AUTO ATTENDANT TRANSFER PROMPT:** This check box determines whether the transfer prompt ("Please hold while your call is being transferred to...") plays after a caller has entered the extension number of the station associated with this extension ID. This applies to calls transferred by Au-

tomated Attendant and Call Routing Announcement applications and transfers to the operator. To disable the prompt, select the check box to remove the check mark. To enable the prompt, select the box again.

- **PASSWORD:** To program a password for the Extension ID, select this command button. A window appears as shown below. Enter a password (up to 12 digits, using digits 0-9). The digits will not appear on the screen when typed; they will appear as asterisks (\*\*\*)). Then select the OK command button. The window heading will change to "Password Validation" and you must retype the password exactly as before. If the entered passwords match, you will return to the Password window, if not, you must re-enter the new password and verify it again. If you make a mistake while entering the password or wish to leave it unchanged, select Cancel.

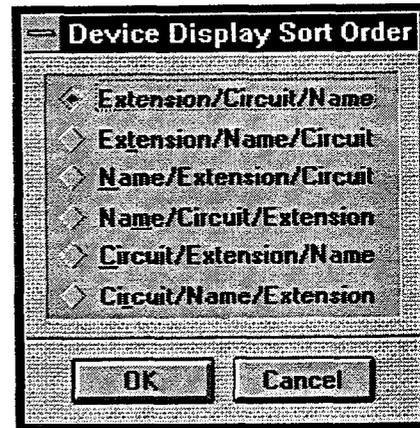


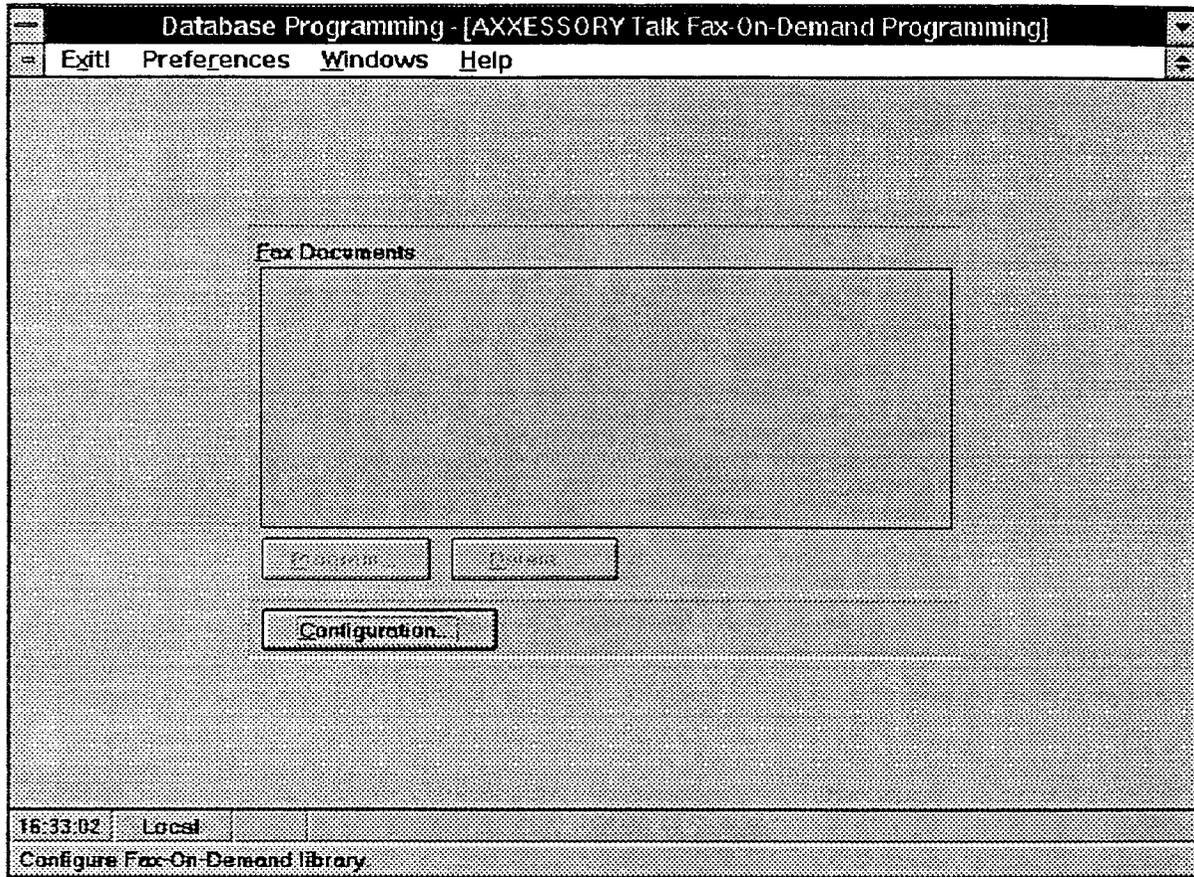
- **OK/CANCEL:** When finished select OK. Or to exit without changing the information, select Cancel.



**18.65** A window like the one shown above appears when the Create IDs or Delete IDs command button is selected. To determine the stations that will have assigned extension IDs or the extension IDs to be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted extension ID from the Pick List to the Extension ID list, or use the All command button to place all IDs in the list.
- **REMOVE/NONE:** To remove an ID from the Extension ID List, highlight it and select the Remove command button. Or, to remove all IDs, use the None command button.
- **OK:** When the Include List appears as desired, select the OK command button. A window appears that tells you that you are about to create (or delete) extension IDs for the selected devices, and asks if you wish to continue. Select Yes to continue, or No to leave the IDs unchanged.
- **CANCEL:** To exit without changing the lists, select the Cancel command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.





### C. AXCESSORY TALK FAX PROGRAMMING

**18.66** The window shown above appears when AXCESSORY Talk Fax Programming is selected from the AXCESSORY Talk programming options or the FAX or AFAX abbreviated command is entered. It is used for programming and deleting fax documents that have been imported into the system. (See page 5-26 for fax importing instructions.) It is also used for configuring the Fax On Demand feature.

**18.67 PROGRAM:** To program the number and description, or to view the request history, highlight the

document in the list box and select the Program command button. The window shown on the next page appears.

**18.68 DELETE:** To remove one or more fax documents from the list, select the Delete command button. The window shown on page 6-171 appears.

**18.69 CONFIGURATION:** To set up the system-wide fax delivery information, formatting information, and timers, select the Configuration command button. The window shown on page 6-172 appears.

| Request History    |              |                   |
|--------------------|--------------|-------------------|
| Number of Requests | Last Request | Last Modification |
| 65000              | MM/DD/YY     | MM/DD/YY HH:MM    |

### Programming Fax Documents

**18.70 DOCUMENT NUMBER:** Enter a number, up to four digits, to identify the fax document. This number will be used by programmers to select the destination for digit translations and by callers when selecting fax documents by number.

**18.71 DESCRIPTION:** This is the abbreviated description that is used in programming screens. It can have up to 20 characters.

**18.72 DETAILED DESCRIPTION:** This is the description that appears on the fax cover sheet and in any fax programming reports. It can include up to 40 characters. If you do not enter a detailed description for the document before exiting, you will receive a warning message.

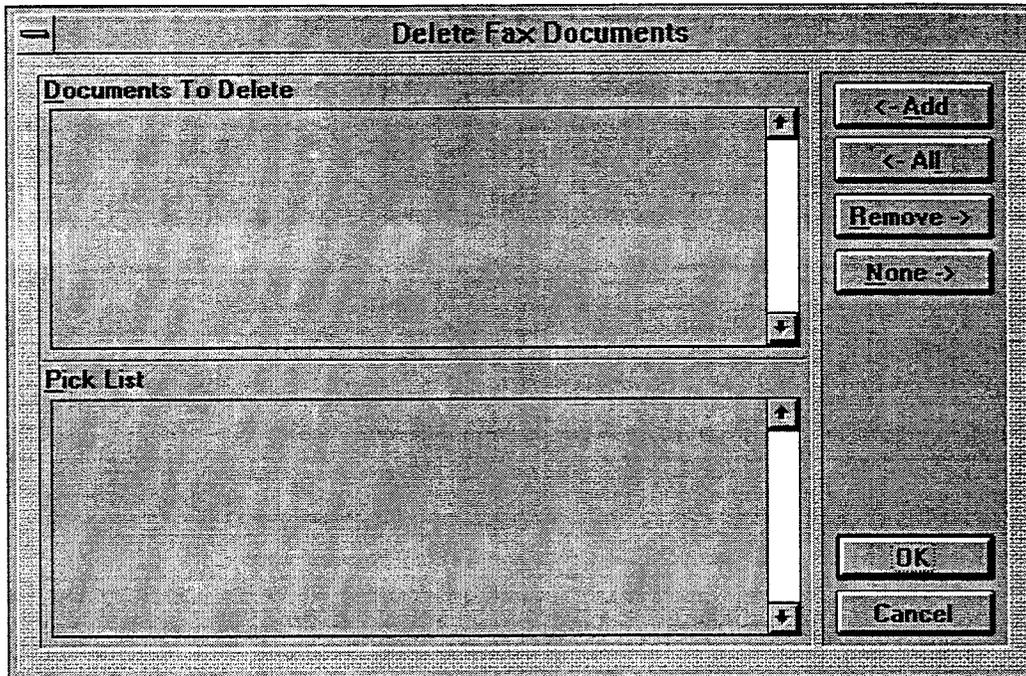
**18.73 REQUEST HISTORY:** This information cannot be programmed. It is shown as a reference to indicate

how many times it has been requested and the last date that the document was requested, since statistics were last cleared (see page 6-204). This includes requests that could not be delivered because of transmission errors.

**18.74 LAST MODIFICATION:** This information cannot be programmed. It shows you the date and time of the last modification to the document being programmed, since statistics were last cleared (see page 6-204). Or, if the document has not been modified, it shows the time that it was imported.

**18.75 IMAGE FILE SIZE:** This information cannot be programmed. It shows you the amount of disk space occupied by this document.

**18.76 OK/CANCEL:** When the programming is complete for this fax document, select OK to save the changes. Or, to exit without saving changes, select Cancel.



### Deleting Fax Documents

**18.77** When you select the Delete command button shown on page 6-169, this window appears. It allows you to delete selected fax documents.

**18.78 DOCUMENTS TO DELETE/PICK LIST:** The fax documents are listed in the Pick List box. To select the document to be deleted, use the following command buttons:

- **ADD/ALL:** Use the Add command button to move the highlighted document from the Pick List to the

Documents To Delete list, or use the All command button to place all unassigned documents in the Documents To Delete list.

- **REMOVE/NONE:** To remove a document from the Documents To Delete list, highlight it and select the Remove command button. Or, to remove all documents, use the None command button.

**18.79 OK/CANCEL:** When the Document To Delete list appears as desired, select the OK command button to delete the selected documents. Or, to exit without deleting any documents, select the Cancel command button.

### Fax Configuration

**18.80 FAX DELIVERY:** Program the following fields to determine how and when your faxes will be delivered:

- ALLOW INTERNATIONAL CALLS:** This field allows you to enable or disable international fax deliveries. If it is disabled, the prompt asks the caller to enter a 10-digit telephone number for their fax destination. If this field is enabled, the prompt gives international dialing instructions and allows international and domestic telephone numbers. The field defaults to *disabled*.
- OUTGOING ACCESS:** This is the outgoing trunk access code that the AXCESSORY Talk Message Notification/Retrieval application will use to place the outgoing fax delivery call. The access code must be a valid trunk code (ARS, individual trunk, or trunk group) and can contain Centrex or PBX codes with pauses, if necessary. This field can include up to 18 characters. Valid characters include digits 0-9, \* and #, and "P" for pause. This field defaults to trunk group 1 (9201).
- OUTGOING ACCESS TERMINATION:** This is the digit dialed by the AXCESSORY Talk to terminate the outgoing access code, if needed. This field can include up to 18 characters. Valid characters include digits 0-9, \* and #, and "P" for pause. This field defaults to #.

**NOTE:** The Fax On Demand feature uses User Group 1 and the Home Area Code for toll restriction information. Ensure that these are programmed correctly for outgoing fax delivery calls. Also ensure that the Message Notification/Retrieval application has the appropriate trunk access.

- START TIME/STOP TIME:** These fields determine the time period during which faxes will be sent to callers. If a caller requests a fax after the Stop Time, the system will not send the fax until the Start Time. To provide 24-hour fax service, set both fields to the same value. Both fields default to 5:00 PM.
- DAYS OF THE WEEK:** This sets the days of the week during which faxes will be sent to callers. If a caller requests a fax on a disabled day, the system will wait for the next enabled day to send the fax. At default, all days of the week are enabled. You cannot disable all seven days; at least one must be selected.

### 18.81 FAX FORMAT:

- **LOCAL FAX ID:** The Local Fax ID appears at the top of each page sent by the AXCESSORY Talk. The ID should include the telephone number of the AXCESSORY Talk and/or the company name. The ID can be up to 20 characters. Valid characters include upper-case letters, digits 0-9, and the plus sign (+).
- **COMPANY NAME:** The system places Company Name on the "From" line of the fax cover sheet. The company name can include up to 40 characters. Any character is allowed.
- **LOGO DOCUMENT:** After you have imported your company logo, you can assign that fax docu-

ment as the Logo Document for your fax cover sheets. (See page 5-26 for fax importing instructions.) Any fax document in the database can be designated as the logo document. The logo can be up to 5.5 inches tall. If desired, you can choose not to have a logo on your cover sheets by selecting "None."

**18.82 MISC. INFORMATION:** When you select the Timers command button, the window shown on the next page appears.

**18.83 OK/CANCEL:** When the programming is complete for this fax configuration, select OK to save the changes. Or, to exit without saving changes, select Cancel.

**Fax-On-Demand - Miscellaneous Information**

**Fax Retry Timer**  
10 min. (Default 10) (Range 1-255)

**Fax Retransmission Timer**  
1 min. (Default 1) (Range 1-255)

**Maximum Fax Delivery Attempts**  
5 (Default 5) (Range 1-15)

**Automatic Header Reduction**  
4 sixteenths of inches (Default 4) (Range 0-160)

**Fax Tone Wait Timer**  
40 sec. (Default 40) (Range 1-255)

**Maximum Fax Selections**  
10 (Default 10) (Range 1-20)

**Maximum Fax-On-Demand Library Size**  
0 megabytes (Default 0) (Range 0-255)

**Current Fax-On-Demand Library Size**  
0 bytes

**Percentage of Maximum Currently Used**  
None

Default OK Cancel

### Fax Miscellaneous Information

**18.84** Program the miscellaneous information for the fax feature as follows.

**18.85 FAX RETRY TIMER:** When the AXCESSORY Talk is unable to complete a fax delivery because the line is busy or there is no answer, it will wait until this timer expires to attempt the delivery again. The range for this field is 1-255 minutes. Default is 10 minutes.

**18.86 FAX RETRANSMISSION TIMER:** When the AXCESSORY Talk is unable to complete a fax delivery because the connection failed (for example, the receiving fax machine had a power failure), it will wait until this timer expires to attempt the delivery again. The range for this field is 1-255 minutes. Default is 1 minute.

**18.87 MAX. FAX DELIVERY ATTEMPTS:** This is the number of times the AXCESSORY Talk will attempt to send a fax when the number is busy, there is no answer, or there are transmission errors. If the system encounters unavailable resources (fax ports, documents, outgoing calls, or outgoing trunks) the attempt does not count toward the Maximum Fax Delivery At-

tempts. The allowed range for this field is 1-15 attempts. It defaults to 5 attempts.

**18.88 AUTOMATIC HEADER REDUCTION:** This tells the AXCESSORY Talk how much of each document you fax into the system must be removed to erase the sender information at the top of the document. If the fax machine you use to enter the documents does not place sender information at the top of the document, you can set this field to 0. You can reduce the header 0-160 tenths of an inch (0-16 inches). This field defaults to 4 tenths of an inch.

**18.89 FAX TONE WAIT TIMER:** This is the amount of time the AXCESSORY Talk will wait for fax tone before sending or receiving a document. If it does not receive fax tone before this timer expires, it will hang up. If the system was sending a fax, it will attempt the call again after the Fax Retry Timer expires. The range for this field is 1-255 seconds. Default is 40 seconds.

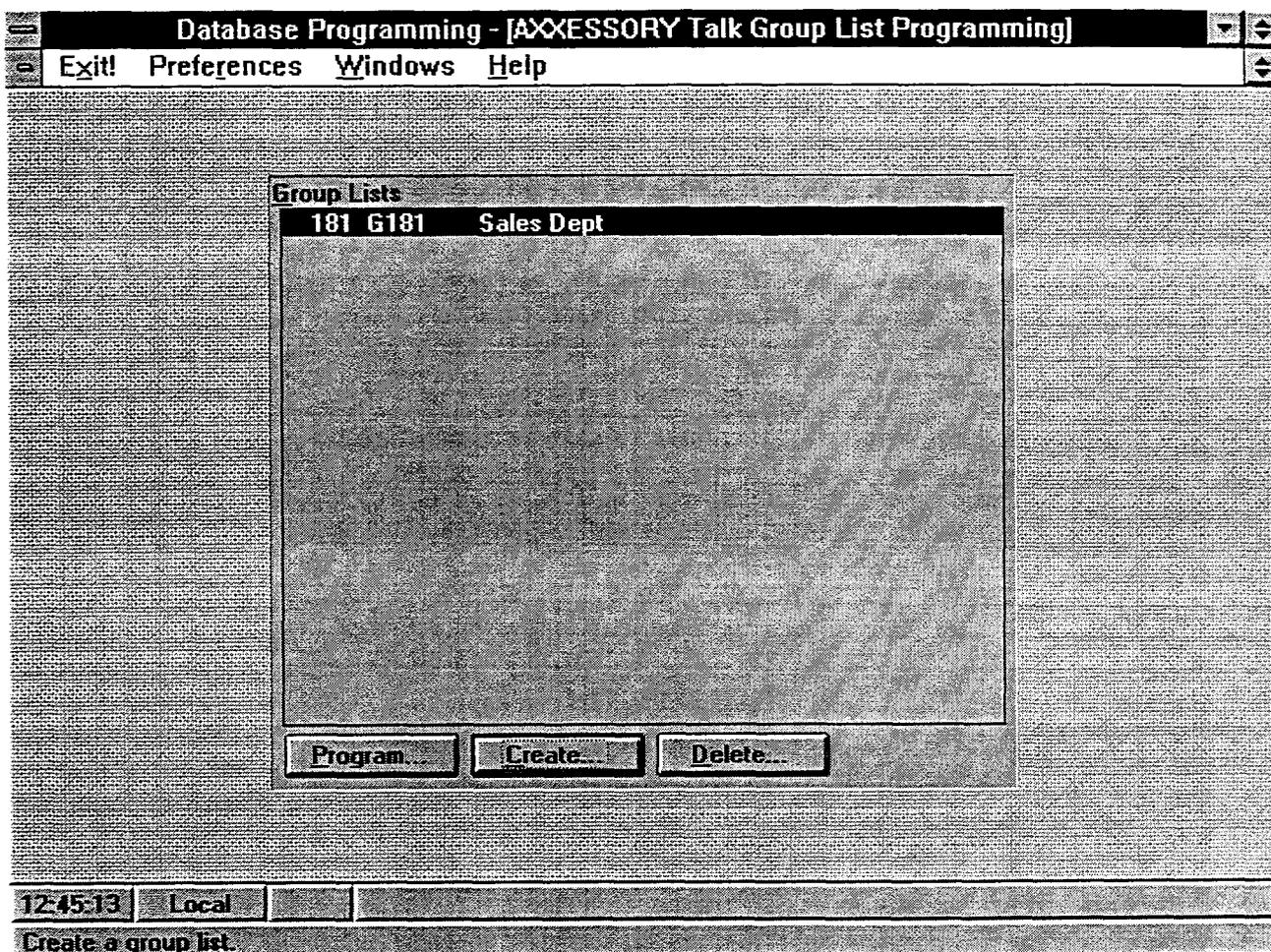
**18.90 MAXIMUM FAX SELECTIONS:** This determines the number of faxes a caller can select at a time. When the caller has selected the maximum number of documents, the AXCESSORY Talk prompts them for their fax telephone number. After entering the fax

delivery information, the caller can then go through the process again to request more documents without hanging up and calling in again. However, each series of requests will generate a separate outgoing call from the AXCESSORY Talk, each time the fax delivery information is entered by the caller. The allowed range for this field is 1-20 selections. It defaults to 10.

**18.91 MAXIMUM FAX LIBRARY SIZE:** This determines the amount of the AXCESSORY Talk hard disk space will be allotted for storing fax documents. The allowed range for this field is 0-255 megabytes; however, the actual maximum depends on the available disk space on the AXCESSORY Talk hard drive. It defaults to 0 megabytes and must be programmed to a

higher value before any fax documents can be imported. If the library size is reduced while there are documents stored in the library, the reduction will not affect existing documents (even if they now exceed the new maximum). However, new documents cannot be added unless there is sufficient disk space available.

**18.92 CURRENT FAX LIBRARY SIZE and FAX PERCENTAGE OF MAXIMUM CURRENTLY USED:** This shows the amount of disk space that is currently being used by the documents in the fax library and the percentage of the Maximum Fax Library Size that has been used. These fields cannot be programmed. They are shown for reference only.



#### D. GROUP LISTS

**18.93** This window is used for programming Voice Mail group lists. Group lists can be used by any Subscriber for sending messages to several mailboxes simultaneously. The parameters for programming group lists include the following:

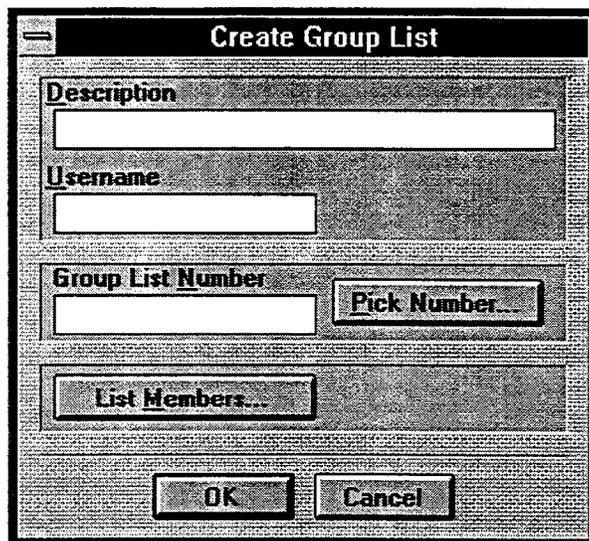
- Group list description
- Group list number
- Mailboxes included in the list

**18.94** A program planning sheet is located in Figure 6-31, on page 6-296.

**18.95 PROGRAM:** To program the parameters for a group list, highlight it in the Group Lists box and select the Program command button. A window appears as shown on the next page.

**18.96 CREATE:** When the Create command button is selected, a window appears as shown on the next page. *If the maximum number of group lists have already been programmed, a warning shows you that "You have already programmed the maximum number of group lists allowed."* Select the OK command button to return to the window shown above.

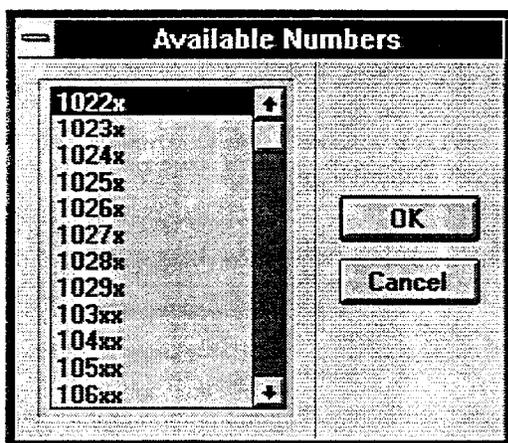
**18.97 DELETE:** To delete a group list, select the Delete command button. A window appears as shown on page 6-179.



**18.98 DESCRIPTION:** Enter a name for the group list, up to 20 characters, in the Description text box. Do not use Control characters.

**18.99 USERNAME:** To program a username, enter up to 10 characters in the Username text box. Do not use backslash (\), vertical slash (/), tilde (~), or Control characters in usernames.

**18.100 GROUP LIST NUMBER/AVAILABLE GROUP LIST NUMBERS:** To enter the group list number, either type the desired number in the text box or select the Available Group List Numbers command button. If you select the command button, the following window appears. (If you attempt to enter an invalid number, a number that begins with 0, or a number that is already assigned, you will see a warning window. Select OK to continue and then select a valid number.)

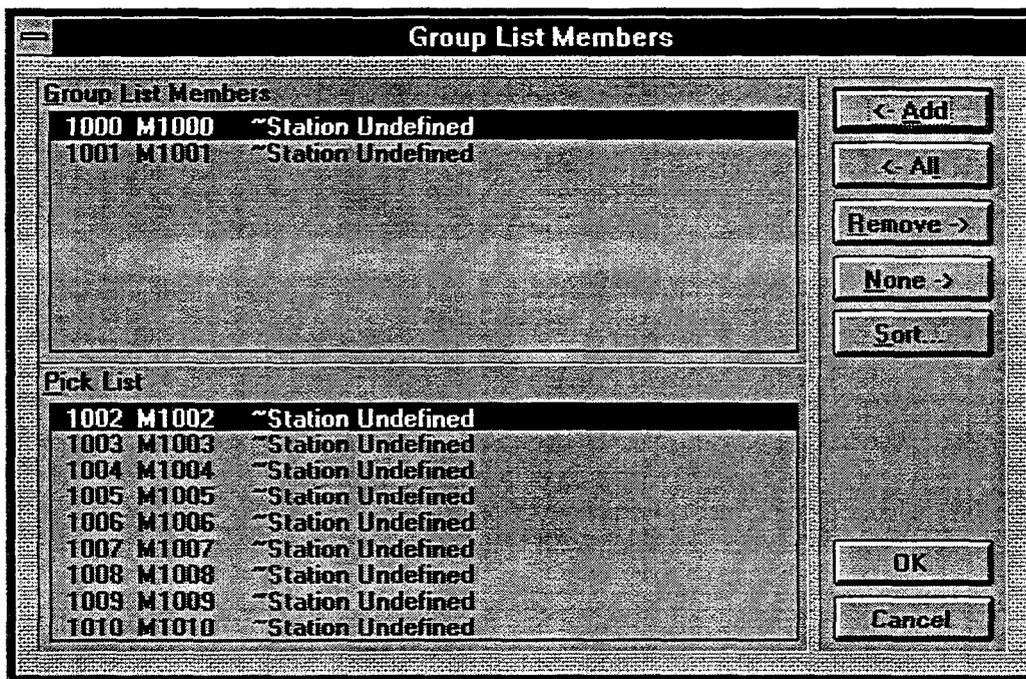


- **AVAILABLE NUMBERS:** This list box contains the available numbers. A number with Xs in it, such as 116XX or 12XXX, indicates that a series of numbers with that prefix are available. When selected, the prefix of the series (e.g., 116 or 12) is assigned to the application. To select a number, scroll the highlight bar in the list box to the desired number.
- **OK/CANCEL:** When the desired number is highlighted, select the OK command button. Or, to exit without changing the group list number, select the Cancel command button.

**18.101 LIST MEMBERS:** To determine the mailboxes that will be included in the group list, select the List Members command button. The window shown on the next page appears.

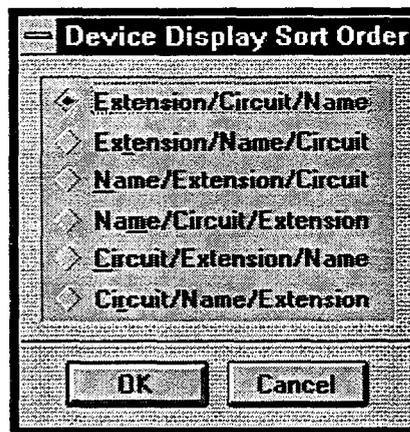
**18.102 OK:** When finished programming the group list, select the OK command button. If you did not assign mailboxes to this group list, you will receive a warning that says, "This group list does not contain any mailboxes. Is this correct? Select Yes to continue, or select No to return to the window shown above.

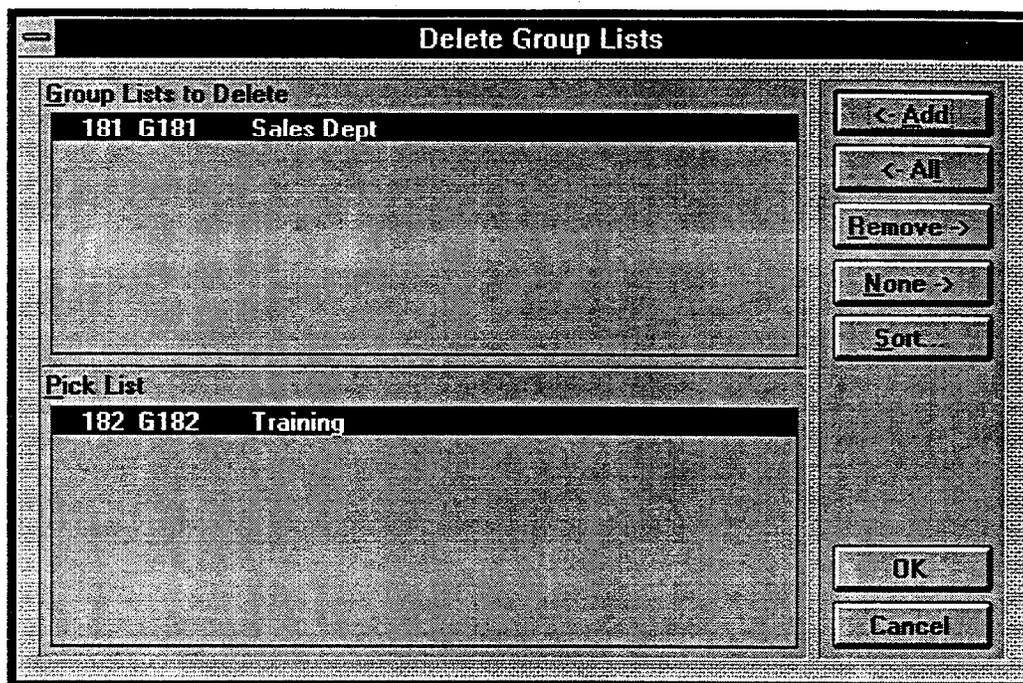
**18.103 CANCEL:** To exit without changing the group list, select the Cancel command button.



**18.104** The window shown above appears when the List Members command button is selected. To determine the mailboxes that will be included in the list, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted mailbox from the Pick List to the Group List Members list, or use the All command button to place all stations in the list.
- **REMOVE/NONE:** To remove a mailbox from the Group List Members list, highlight it and select the Remove command button. Or, to remove all mailboxes, use the None command button.
- **OK:** When the Group List Members list appears as desired, select the OK command button. If you attempt to add more mailboxes to a group list than the system allows, a warning appears, telling you that "The system allows only xxx mailboxes per group list. You currently have yyy mailboxes selected. Please remove zzz mailboxes from the group list." Select OK to return to the window shown above and reprogram the group list.
- **CANCEL:** To exit without changing the lists, select the Cancel command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.

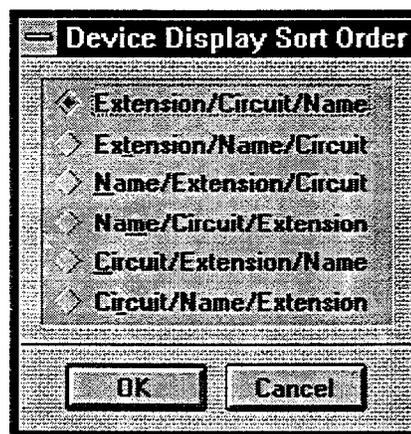


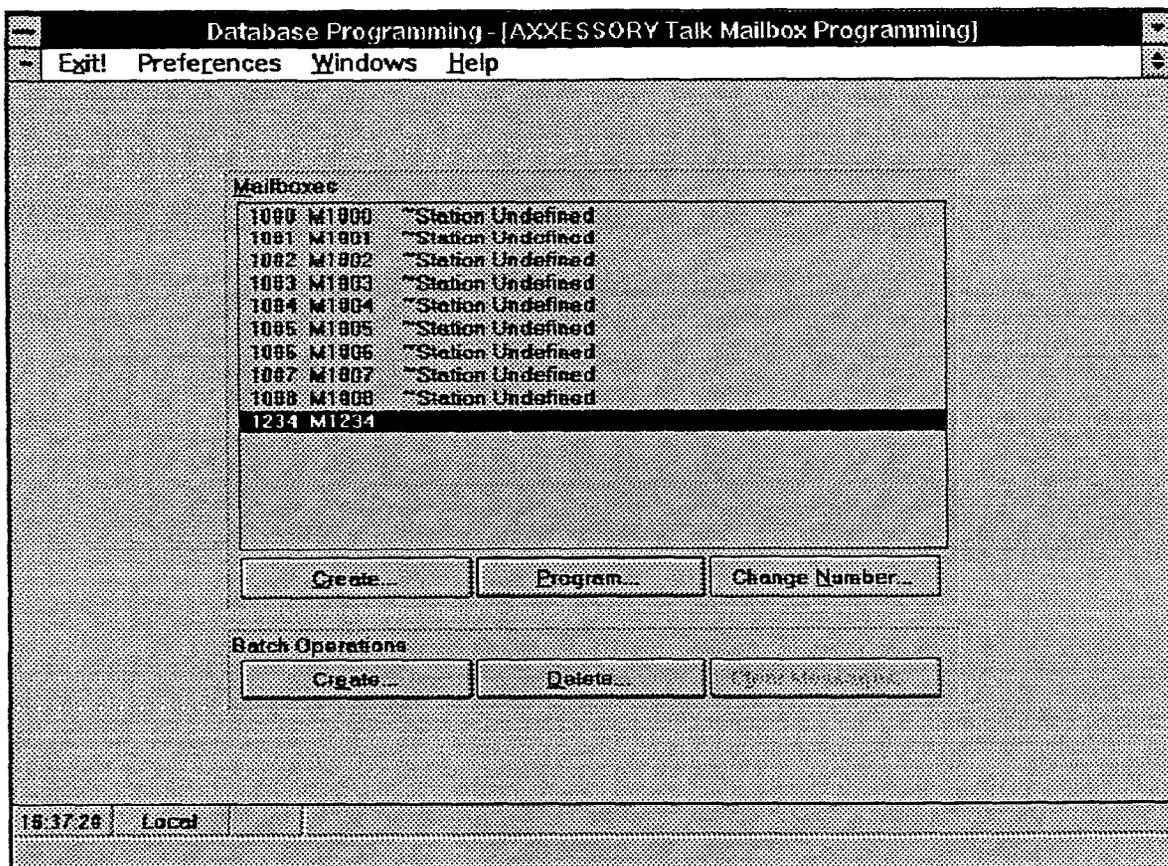


**18.105** The window shown above appears when the Delete command button is selected. To determine the group lists that will be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted group list from the Pick List to the Groups Lists To Delete list, or use the All command button to place all group lists in the list.
- **REMOVE/NONE:** To remove a group list from the Groups To Delete List, highlight it and select the Remove command button. Or, to remove all group lists, use the None command button.
- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. (A window appears that tells you that, "You are about to create delete group lists. Do you wish to continue?" Select Yes to continue, or No to leave the group lists unchanged.) To exit without changing the lists, select the Cancel command button.

- **SORT:** To change the way the list boxes are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.





**E. MAILBOX PROGRAMMING**

**18.106** A mailbox is a storage location on the AXCESSORY Talk PC hard disk which stores all messages that have been directed to it. A program planning sheet for this window is located in Figure 6-32, on page 6-297.

**18.107 MAILBOXES/PROGRAM:** The list box shows all existing mailboxes. To program a mailbox, highlight it and then select the Program command button. A window appears as on page 6-185.

**18.108 CREATE or CHANGE NUMBER:** (*Change Number applies to non-associated mailboxes only.*) To create a mailbox, select the Create command button below the Mailboxes list box. To change an existing mailbox number, highlight it and select Change Mailbox Number. The window shown on the next page appears.

**NOTE:** If you create a mailbox for an extension that currently has an extension ID, the system converts the

ID into a mailbox and eliminates the ID. If already initialized, the password and recorded name for the extension ID are retained and transferred over to the mailbox and the subscriber does not need to re-initialize.

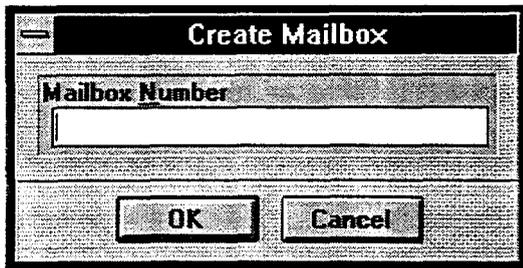
**18.109** The following command buttons are used for performing batch programming operations:

**18.110 CREATE:** To create several mailboxes simultaneously, select the Create command button in the Batch Operations area of the window. A window appears, as shown on page 6-182.

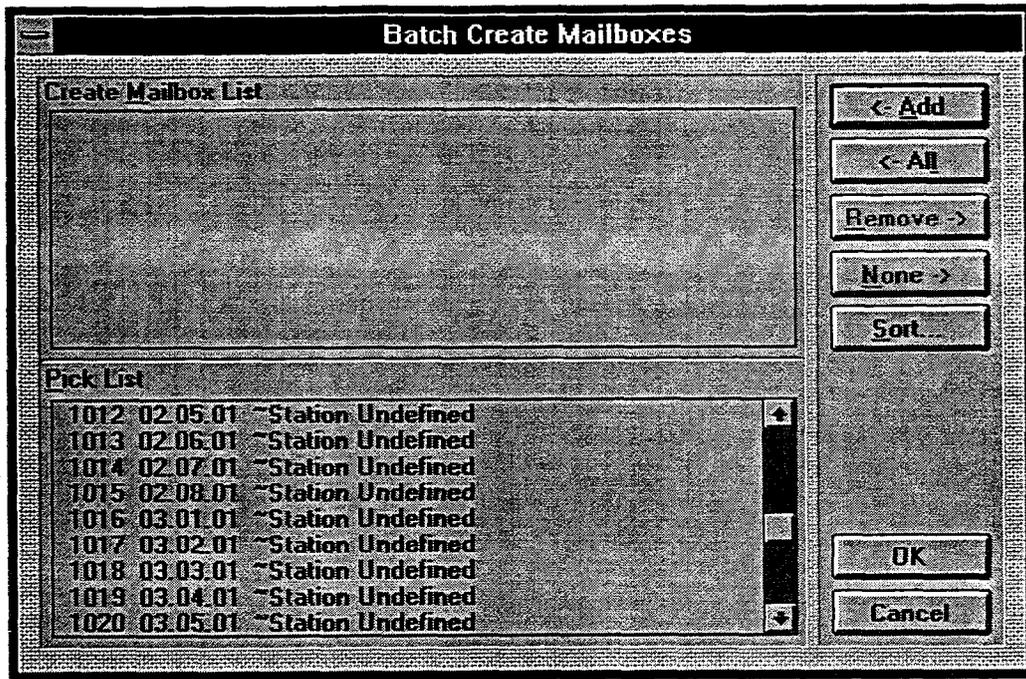
**18.111 DELETE:** To delete several mailboxes simultaneously, select the Delete command button in the Batch Operations area of the window. A window appears, as shown on page 6-183.

**18.112 CLEAR MESSAGES:** (*Cannot be used in stand-alone programming.*) To erase existing mailbox messages, select the Clear Messages command button. The window on page 6-184 appears.

### Creating Or Changing A Mailbox Number



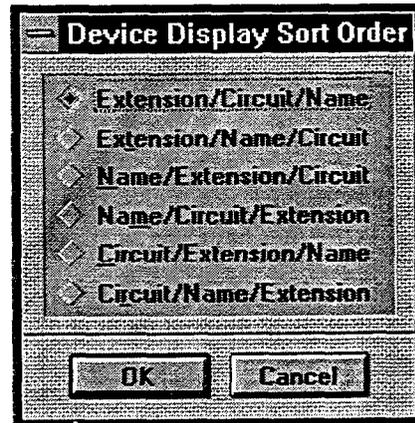
- **MAILBOX NUMBER:** Enter the desired mailbox number in the text box.
- **OK:** When finished, select OK. Selecting OK after creating a mailbox automatically displays the window shown on page 6-188. *If you entered an invalid number or a number that is already assigned, you will see a warning window. Select OK to continue and then select a valid number. If you change a mailbox number to a hunt group number that did not have a mailbox, a window appears that says, "The specified mailbox number corresponds to a system hunt group extension. Changing the mailbox number will associate the mailbox with the hunt group. Do you wish to continue?" Select OK to continue or Cancel to return to the window.*
- **CANCEL:** To exit without creating a mailbox, select the Cancel command button.



**Batch Creation Of Mailboxes**

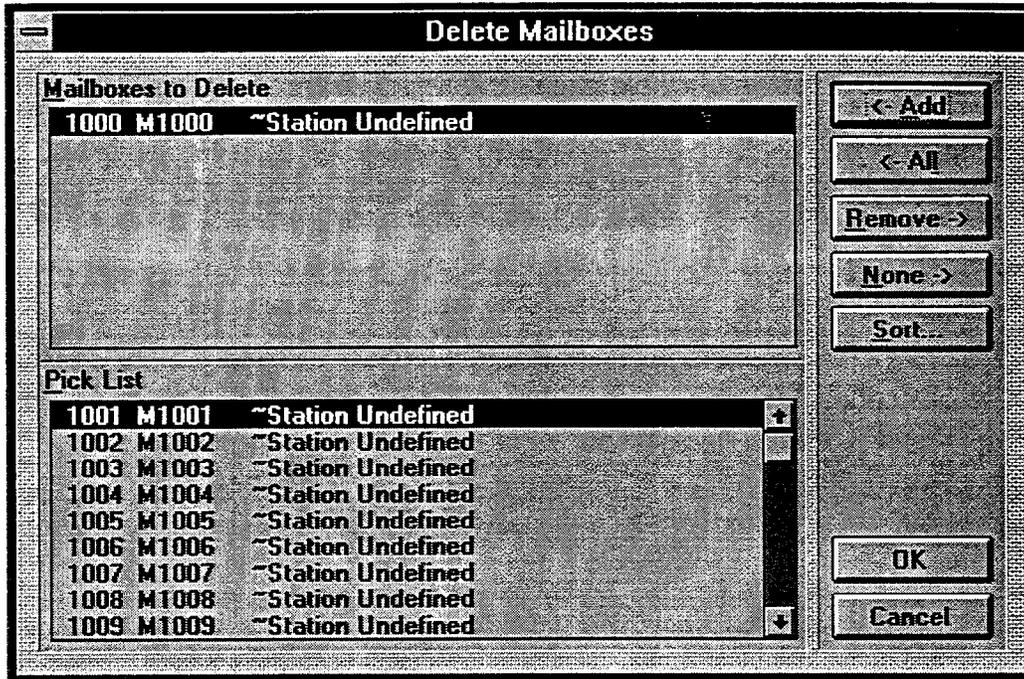
18.113 The window shown above appears when the Create command button in the Batch Operations section is selected. To determine the stations and hunt groups that will have mailboxes created for them, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted station or hunt group from the Pick List to the Create Mailbox List, or use the All command button to place all stations and hunt groups in the list.
- **REMOVE/NONE:** To remove a station or hunt group from the Create Mailbox List, highlight it and select the Remove command button. Or, to remove all stations and hunt groups, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Create Mailbox List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

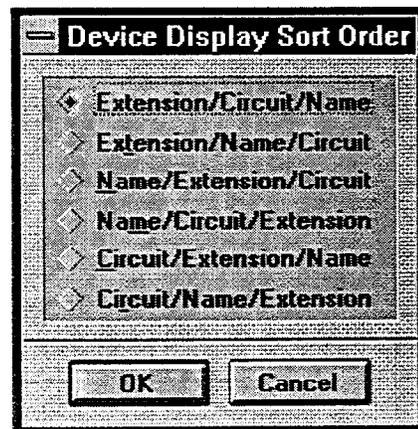
**NOTE:** When a large number of mailboxes have been created, it will take several minutes for the system to update the database and return to the Mailboxes programming window after you select the OK command button.



**Deleting Mailboxes**

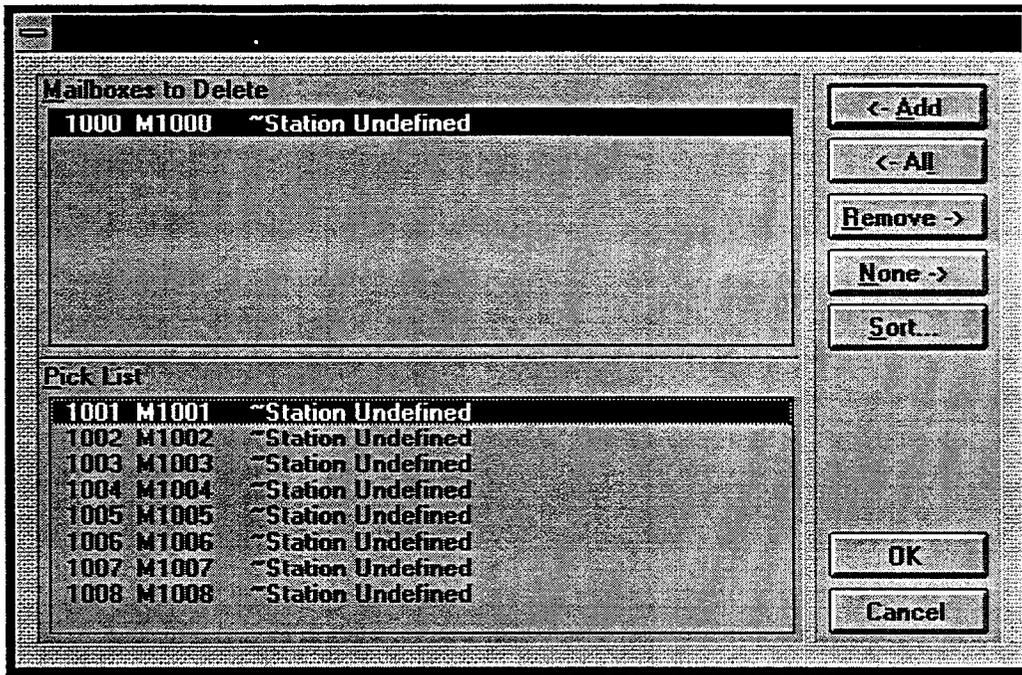
18.114 To delete one or more mailboxes, select the Delete command button. A window appears as shown above. To determine the mailboxes that will be deleted, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted mailbox from the Pick List to the Mailboxes To Delete list, or use the All command button to place all mailboxes in the list.
- **REMOVE/NONE:** To remove a mailbox from the Mailboxes To Delete list, highlight it and select the Remove command button. Or, to remove all mailboxes, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Mailboxes to Delete list box appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

**NOTE:** When a large number of mailboxes have been deleted, it will take several minutes for the system to update the database and return to the Mailboxes programming window after you select the OK command button.

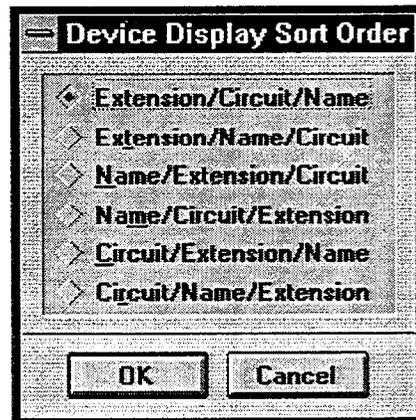


### Clearing Mailbox Messages

**18.115** The window shown above appears when the Clear Mailbox Messages command button is selected. To determine the mailboxes that will have their messages erased, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted mailbox from the Pick List to the Mailboxes To Clear list, or use the All command button to place all mailboxes in the list.
- **REMOVE/NONE:** To remove a mailbox from the Mailboxes To Clear list, highlight it and select the Remove command button. Or, to remove all mailboxes, use the None command button.
- **SORT:** To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command

button. Or, select the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Mailboxes to Clear list box appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.

## Programming A Mailbox

**18.116** The window shown on page 6-188 appears when the Program command button is selected. To program the parameters for a mailbox, use the following procedures. (This information can also be programmed through Individual Station Information, as described on page 6-29.)

**18.117** The programming window can be used for programming the following parameters for each mailbox.

- **Description and Username:** Each mailbox can have a description of up to 20 characters and a username of up to 10 characters. The description is used for providing first and last names for the mailbox directory. (For correct AXCESSORY Talk directory operation, enter the last name, followed by a comma and the first name.) Do not use backslash (\), vertical slash (/), or tilde (~) characters in usernames. Do not use Control characters in descriptions or usernames.
- **Message Notification Station:** Each mailbox has a station that will receive message notification whenever the mailbox receives a message. This is usually the same number as the mailbox. However, when a mailbox is shared by several stations, or belongs to a hunt group pilot number, a specific station must be designated to receive the message notification. If non-associated mailboxes are programmed, you must disable the Validate Mailbox feature (see the System Flags window on page 6-91) to allow station users to dial the non-associated mailbox numbers.

**NOTE:** If the mailbox is associated with a station, the Description, Username, and Message Notification Station fields are not accessible. If associated with a hunt group, the Description and Username fields are dimmed. These fields are automatically updated when modifications are made in Station Programming and System-Wide Features.

- **Dial-0 Destination Type and Dial-0 Destination:** Each mailbox is assigned an operator destination. When a caller presses  while listening to the mailbox's personal greeting or recording instructions, or while recording a non-subscriber message, the operator destination is called. The Dial-0 Destination can be one of the following types:
  - *Mailbox:* If the operator is a mailbox, the caller will hear the operator destination's personal greeting after pressing .
  - *Station extension number:* If the operator destination is an extension number, the caller will

hear the Automated Attendant transfer prompt while the call is placed to the extension number ("Please hold while I transfer your call to..."), unless it has been disabled at the mailbox. If the station user does not answer the caller will be asked if he wants to leave a message if the operator's extension has an associated mailbox. If the caller chooses not to leave a message, the call returns to the mail menu of the application being used (Call Routing Announcement, Voice Mail, or Auto Attendant).

- *Application extension number:* If the operator destination is an application's extension number, the call is transferred to that application's main menu.
  - *Operator:* If the operator destination is set to "Operator," the caller will be transferred to the operator destination that is programmed in the System Maintenance window, shown on page 6-211.
  - *None:* If the operator destination is set to "None," the  will be ignored.
  - **Primary/Alternate Remote Messaging Cascade:** Each station can have 9 Primary and/or 9 Alternate message notification cascades that include the following options:
    - *Notification Category:* Message notification can be set to place the notification call for each new message or only when priority messages are received. (This defaults to "each new message.")
    - *Call For Each New Message:* This determines whether the AXCESSORY Talk should attempt message notification every time a new message is received, or only when a message is received and no other messages are waiting to be picked up.
    - *Notification Start/Stop Time:* Message notification can be enabled for any time period, up to 24 hours per day. (Default is 8:00am to 5:00pm.) If start and stop times are the same, notification will be enabled 24 hours per day.
    - *Days Of Week:* Message notification can be set to place notification calls only on certain days. (This defaults to Monday through Friday.)
- Each cascade level includes the following options:
- *Enable Notification:* Each table can be enabled or disabled individually.
  - *Call Progress Detection:* This determines whether the AXCESSORY Talk will perform

- call progress detection after dialing the notification number and outgoing termination fields on outside calls. If it is enabled, the system will analyze call progress tones after sending the telephone number. If it is disabled, the system will assume the call has been answered, without analyzing tones. This should only be disabled in cases where call progress tones are not used (lighting a message lamp) or when the tones used by the destination cannot be recognized by the system (some pager destinations).
- *Notification Destination:* This indicates whether the notification call is going to an intercom or outside destination. This can also be programmed by the mailbox Subscriber.
  - *Notification Number:* This is the number (outside number or extension number) to be notified when the mailbox receives a message. It can contain up to 18 characters including digits (0–9, #, and \*) or P for pauses. (This number should not include pager display numbers; they are programmed below.)
  - *Notification Type:* The message notification number can be identified as a personal number (a person will answer the call) or a pager. (This defaults to “personal number.”)
  - *Pager Dial String:* This digit string can contain up to 54 characters. It should include any digits that the paging company requires when the call is answered, the pager LCD number, and the pager termination code, if needed. Valid entries include: any digit 0–9, #, \*, P for pause. Also, if you wish to have the pager show the number of the mailbox that placed the call, you can use an M in the dial string. To show the number of waiting messages for the mailbox, use an N. For example, if the Pager String is programmed as 9619000\*MN# and a pager call is placed by mailbox number 1234 which has 3 waiting messages, the pager display would show 9619000\*12343 (the # is used as a call termination digit).
  - *Outgoing Access:* This is used to identify the dial string used for selecting a trunk for placing remote notification calls.
  - *Outgoing Access Termination:* This is the dial string that the system uses to terminate an outgoing number.
  - *Number Of Call Attempts:* This determines how many times the AXCESSORY Talk will attempt to complete a call to this notification level before moving to the next level.
- *Number Called Busy Timer:* This timer defines the amount of time AXCESSORY Talk will wait between outgoing call attempts whenever a busy signal is encountered during a remote message notification attempt to a personal number or pager.
  - *Personal Number No Answer Timer:* This timer defines the amount of time AXCESSORY Talk will wait between outgoing call attempts whenever a message notification attempt to a personal number is unanswered.
  - *Pager Notification Retry Timer:* This is the amount of time AXCESSORY Talk will wait between outgoing call attempts when the notification number is a pager.
- **Password:** A password of up to 12 digits can be programmed for use by the subscriber when retrieving messages.
  - **Miscellaneous Information:** The miscellaneous parameters that can be programmed for each mailbox include the following. The information also include the length, in seconds, of the recorded name, primary greeting, and alternate greeting.
- *Mailbox Message Capacity:* The mailbox can be programmed to hold up to 600 minutes of messages or have unlimited message capacity. Default capacity is 30 minutes.
  - *Maximum Non-Subscriber Message Length:* Maximum non-subscriber messages can be set to a value between one minute and the Maximum Mailbox Message Capacity setting. Default length is 5 minutes.
  - *Maximum Outgoing Message Length:* The length of outgoing messages by this subscriber can be 1–120 minutes. Default length is 5 minutes.
  - *Greeting Selection:* The system greeting, the mailbox primary greeting, or the mailbox alternate greeting can be enabled. The greeting selection defaults to the system greeting.
  - *Play Recording Instructions:* If this option is enabled, the system prompt that tells the caller to leave a message after the beep will play after the primary or alternate greeting. If disabled, the beep will occur as soon as the primary or alternate greeting ends. In the default state, this option is enabled.

- *Auto Attendant Transfer Prompt:* This option determines whether the transfer prompt (“Please hold while your call is being transferred to...”) plays after a caller has entered the extension number of the station associated with this mailbox. This applies to calls transferred by Automated Attendant and Call Routing Announcement applications and transfers to the operator.
- *Envelope Settings:* The “envelope” announcement that is played before each message can be programmed to announce date and time, message source, and/or message length. The default envelope contains all information.
- *Directory Information:* The mailbox can have an unlisted number (not included in the mailbox directory but can be dialed if the caller knows the mailbox number) and/or it can be a private extension and mailbox number (extension and mailbox number are not announced in directory, but the number can be dialed). There are no private or unlisted numbers in the default state.
- **Subscriber Statistics:** You can check the following information.
  - Date and time of last log on
  - Number of new and saved messages
  - Mailbox percent full
  - Number of times mailbox was 80% full or full
  - Number of messages sent and received
  - Total length of new and saved messages
  - Number of times three bad passwords were entered
- **Mailbox Type:** The mailbox can be programmed as a “standard” mailbox that can send and receive messages or it can be a “receive only” mailbox. (In the default state, it is a standard mailbox.)
- **Mailbox Initialized:** The mailbox programming window has an indicator that shows whether the subscriber (mailbox owner) has initialized the mailbox and recorded a name in the company directory.

**18.118 DESCRIPTION/USERNAME:** *(Not programmable for associated mailboxes.)* Enter a description of up to 20 characters in the Description text box. This description is used in the mailbox directory and should be entered in the form "last name, first name" (with a comma and space separating the names). Enter a name of up to 10 characters in the Username text box. This is the name that will appear on keyset displays. Do not use backslash (\), vertical slash (/) or tilde (~) characters in usernames. Do not use Control characters in descriptions or usernames.

**18.119 MESSAGE NOTIFICATION STATION:** *(Not programmable for associated mailboxes.)* To select the station that will receive message notifications, select the Message Notification Station drop-down list box and scroll the highlight bar to the desired extension.

**18.120 DIAL-0 DESTINATION TYPE and DIAL-0 DESTINATION:** First select the desired extension type by scrolling through the Dial-0 Destination Type drop-down list box to the appropriate type. The options are: Extension, Mailbox, Operator, and None. Then, if Extension or Mailbox was selected, scroll through the Dial-0 Destination drop-down list box to the desired destination.

**18.121 ENABLE REMOTE MESSAGING:** To enable remote messaging, select this check box to place a check mark in it. To disable remote messaging, select it again to remove the check mark.

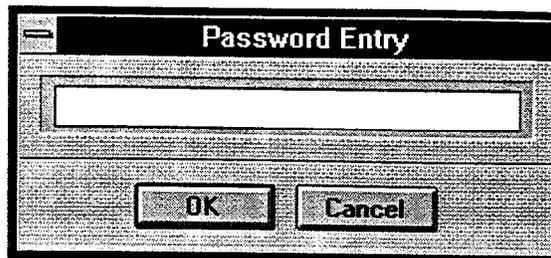
**18.122 PRIMARY/ALTERNATE MESSAGE NOTIFICATION:** If remote messaging is enabled, select either the Primary or Alternate Message Notification command button to program the remote messaging parameters. A window appears as shown on page 6-191.

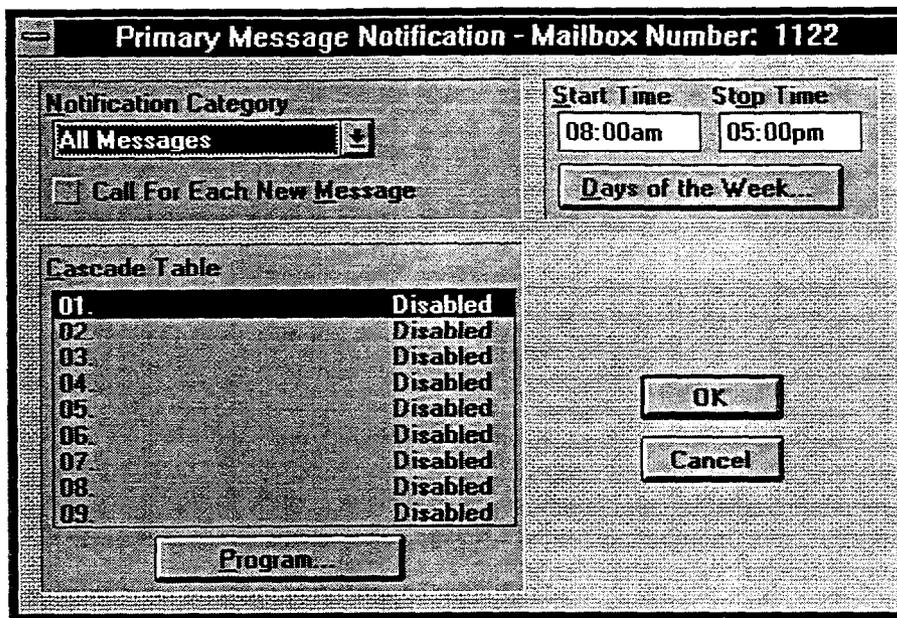
**18.123 MAILBOX TYPE:** To determine whether the mailbox type is Standard or Receive Only, select the Mailbox Type drop-down list box and scroll the highlight bar to the desired type.

**18.124 MISCELLANEOUS:** To program additional mailbox information, select the Miscellaneous button. A window appears as shown on page 6-193.

**18.125 SUBSCRIBER STATISTICS:** To view mailbox's statistics, select the Subscriber Statistics button. A window appears as shown on page 6-194.

**18.126 PASSWORD:** To program a password for the mailbox, select this command button. A window appears as shown below. Enter a password (up to 12 digits). Asterisks appear in place of the digits as the password is typed. Then select the OK command button. The window heading will change to "Password Validation" and you must retype the password exactly as before. If the entered passwords match, you will return to the Mailbox window, if not, you must re-enter the new password and verify it again. If you make a mistake while entering the password or wish to leave it unchanged, select the Cancel command button.





**Primary And Alternate Message Notification Programming**

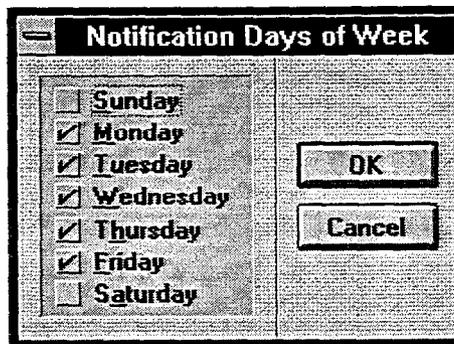
**18.127** This window appears when the Primary Message Notification or Alternate Message Notification command button is selected (shown on page 6-188). It allows you to set up the messaging parameters for the Primary or Alternate message cascade. Refer to page 5-14 in AXCESSORY TALK FEATURES for a detailed explanation of remote messaging and a sample notification cascade.

**18.128 NOTIFICATION CATEGORY:** Determine whether the notification number will be called whenever a new message is received (All Messages) or only when priority messages are received (Priority Only). Select the Notification Category drop-down list box and scroll the highlight bar to the desired option.

**18.129 CALL FOR EACH NEW MESSAGE:** This determines whether the AXCESSORY Talk should attempt message notification every time a new message is received, or only when a message is received and no other messages are waiting to be picked up. To enable the notification for each new message, select the check box to place a check in it. To disable the option, select the check box again.

**18.130 START TIME/STOP TIME:** Enter the time of day that notifications will begin in the Notification Start Time text box. Enter the time of day that notifications will end in the Notification Stop Time text box. Use 12-hour format followed by "am" or "pm," or use 24-hour format. For round-the-clock notification, set the start and stop times to the same value.

**18.131 DAYS OF THE WEEK:** To determine for which days of the week notifications will be enabled, select the Days of the Week command button. The following window appears. Select the check box(es) for the desired day(s). The check marks show the selected days. To remove a check mark, select the check box again. When finished select OK. Or, select Cancel to leave the days of the week unchanged.



**18.132 CASCADE TABLE/PROGRAM:** Each mailbox can have up to 18 notification Cascade Tables (9 Primary and 9 Alternate tables) that determine the numbers that will be called when a message is received. Program the tables in the order in which you want them accessed, beginning with table 01. If the AXCESSORY Talk cannot complete the message notification to table 01 it will use tables 02, 03, and cycle back to 01, if necessary, until it is able to complete the message notification or until the notification Stop Time.

**18.133 OK/CANCEL:** When message notification programming is complete, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

**18.134** This window appears when a Cascade Notification table has been selected for programming, as described on the preceding page.

**18.135 ENABLE NOTIFICATION:** To enable this notification table, select the Enable notification check box to place a check mark in it. To disable this table, select the check box again to remove the check mark.

**18.136 CALL PROGRESS DETECTION:** This checkbox determines whether the AXXESSORY Talk will perform call progress detection after dialing the notification number and outgoing termination fields on outside calls. If it is enabled, the system will analyze call progress tones after sending the telephone number. If it is disabled, the system will assume the call has been answered, without analyzing tones. This should only be disabled in cases where call progress tones are not used (lighting a message lamp) or when the tones used by the destination cannot be recognized by the system (some pager destinations). Select the check box to add or remove the check mark, as needed.

**18.137 NOTIFICATION DESTINATION:** This indicates whether the notification call is going to an intercom or outside destination. Select the drop-down list box and scroll to the appropriate selection. This can also be programmed by the mailbox Subscriber.

**18.138 NOTIFICATION NUMBER:** In the Notification Number text box, enter the number (outside number or extension number) to be notified when the mailbox receives a message. It can contain up to 18 characters including digits (0-9, #, and \*) or P for pauses. (This number should not include pager display numbers; they are programmed below.)

**18.139 NOTIFICATION TYPE:** Determine whether the notification is a Personal Number (that will be answered by a person) or Pager by selecting the Notification Type drop-down list box and scrolling the highlight bar to the desired option.

**18.140 PAGER DIAL STRING:** This digit string can contain up to 54 characters. It should include any digits that the paging company requires when the call is answered, the pager LCD number, and the pager termination code, if needed. Valid entries include: any digit 0-9, #, \*, P for pause. Also, if you wish to have the pager show the number of the mailbox that placed the call, you can use an M in the dial string. To show the number of waiting messages for the mailbox, use an N. For example, if the Pager String is programmed as 9619000\*MN# and a pager call is placed by mailbox number 1234 which has 3 waiting messages, the pager display would show 9619000\*12343 (the # is used as a call termination digit).

**18.141 OUTGOING ACCESS:** This text box is used to identify the dial string used for selecting a trunk for placing remote notification calls. The default for this field is Trunk Group 1 (9201). The maximum length is 18 digits. (Make sure that the Message notification application has outgoing access for the selected trunk group. See page 6-142.)

**18.142 OUTGOING ACCESS TERMINATION:** This text box contains the dial string that the system uses to terminate an outgoing number. The maximum length this dial string is 18 digits. At default, the setting is #.

**18.143 OK/CANCEL:** When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

**Level 01 - Timers**

**Number of Retries**  
1 (Default 1) (Range 1-1000)

**Number Called Busy**  
5 min. (Default 5) (Range 0-255)

**Personal Number No Answer**  
30 min. (Default 30) (Range 0-255)

**Pager Notification Retry**  
20 min. (Default 20) (Range 0-255)

Default OK Cancel

**18.144** This window appears when you select the Timers command button shown on page 6-191. It allows you to set the timer values for the notification cascade level being programmed. The timers are as follows.

**18.145 NUMBER OF CALL ATTEMPTS:** This determines how many times the AXCESSORY Talk will attempt to complete a call to this notification level before moving to the next level. The range is 1-1000 calls. The default is 1 call.

**18.146 NUMBER CALLED BUSY:** This timer defines the amount of time AXCESSORY Talk will wait between outgoing call attempts whenever a busy signal is encountered during a remote message notification attempt to a personal number or pager. The range for this timer is 0-255 minutes. The default is 5 minutes.

**18.147 PERSONAL NUMBER NO ANSWER:** This timer defines the amount of time AXCESSORY Talk will wait between outgoing call attempts whenever a message notification attempt to a personal number is unanswered. The range for this timer is 0-255 minutes. The default is 30 minutes.

**18.148 PAGER NOTIFICATION RETRY:** This is the amount of time AXCESSORY Talk will wait between outgoing call attempts when the notification number is a pager. The range for this timer is 0-255 minutes. The default is 20 minutes.

**18.149 DEFAULT:** To return the timers to default values, select the Default command button.

**18.150 OK/CANCEL:** When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

### Miscellaneous Mailbox Information Programming

**18.151** This window appears when the Miscellaneous command button is selected.

**18.152 MAXIMUM MAILBOX CAPACITY:** This is the amount of mailbox message storage available, in minutes. The default is 30 minutes. The range is 0–600 minutes. Enter the desired number in the text box. Enter 0 for unlimited capacity. *If you enter an invalid number, you will see a warning message. Select OK to continue.*

**18.153 MAXIMUM NON-SUBSCRIBER MESSAGE LENGTH:** This is the maximum length of time (in minutes) for non-subscriber mailbox messages. Default is 5 minutes. The range is 1 minute to the Maximum Mailbox Message Capacity value. Enter the new value in the text box. *If you enter an invalid number, you will see a warning message. Select OK to continue.*

**18.154 MAXIMUM OUTGOING MESSAGE LENGTH:** This is the maximum length for messages sent by the subscriber to another subscriber. The default is 5 minutes. The range is 1–120 minutes. Enter the new value in the text box. *If you enter an invalid number, you will see a warning message. Select OK to continue.*

**18.155 GREETING:** To determine the greeting callers will hear when they reach the mailbox, select the Greeting drop-down list box and scroll the highlight bar to the desired selection (Primary, Alternate, or System Greeting). **NOTE:** Even if re-programmed, the system greeting will continue to play until the greeting selected here has been recorded.

**18.156 PLAY RECORDING INSTRUCTIONS:** To disable the instructions that play after the primary or al-

ternate greeting, select the check box to remove the check mark. To enable the option, select the box again.

**18.157 AUTO ATT. TRANSFER PROMPT:** This check box determines whether the transfer prompt (“Please hold while your call is being transferred to...”) plays after a caller has entered the extension number of the station associated with this mailbox. This applies to transfers from Automated Attendant and Call Routing Announcement applications or transfers to the operator. To disable the prompt, select the check box to remove the check. To enable the prompt, select the box again.

**18.158 ENVELOPE SETTINGS:** To determine which elements will be included in the “envelope” that is played before each message, select the desired elements to place a check mark in their check boxes. To disable any element, select the check box again to remove the check mark.

**18.159 DIRECTORY INFORMATION:** If the mailbox will have an unlisted or private extension, select the desired check box to place a check mark in it. Or, to disable the option and remove the check mark, select the box again.

**18.160 RECORDED NAME LENGTH, PRIMARY GREETING LENGTH, and ALTERNATE GREETING LENGTH:** This section of the window displays the number of seconds used by the mailbox’s directory name recording and the length of the primary and alternate greetings. The information is shown for reference only. It is not programmable.

**18.161 OK/CANCEL:** When mailbox information programming is complete, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

| Subscriber Statistics - Mailbox Number: 183   |                    |
|-----------------------------------------------|--------------------|
| Date and Time of Last Logon:                  | None               |
| Number of New Messages:                       | 0                  |
| Number of Saved Messages:                     | 0                  |
| Mailbox Percent Full:                         | 0%                 |
| Number of Times Mailbox Was 80% Full:         | 0                  |
| Number of Times Mailbox Was Full:             | 0                  |
| Number of Messages Sent:                      | 0                  |
| Number of Messages Received:                  | 0                  |
| Total Length of New and Saved Messages:       | 0 hours, 0 minutes |
| Number of Times 3 Bad Passwords Were Entered: | 0                  |

OK

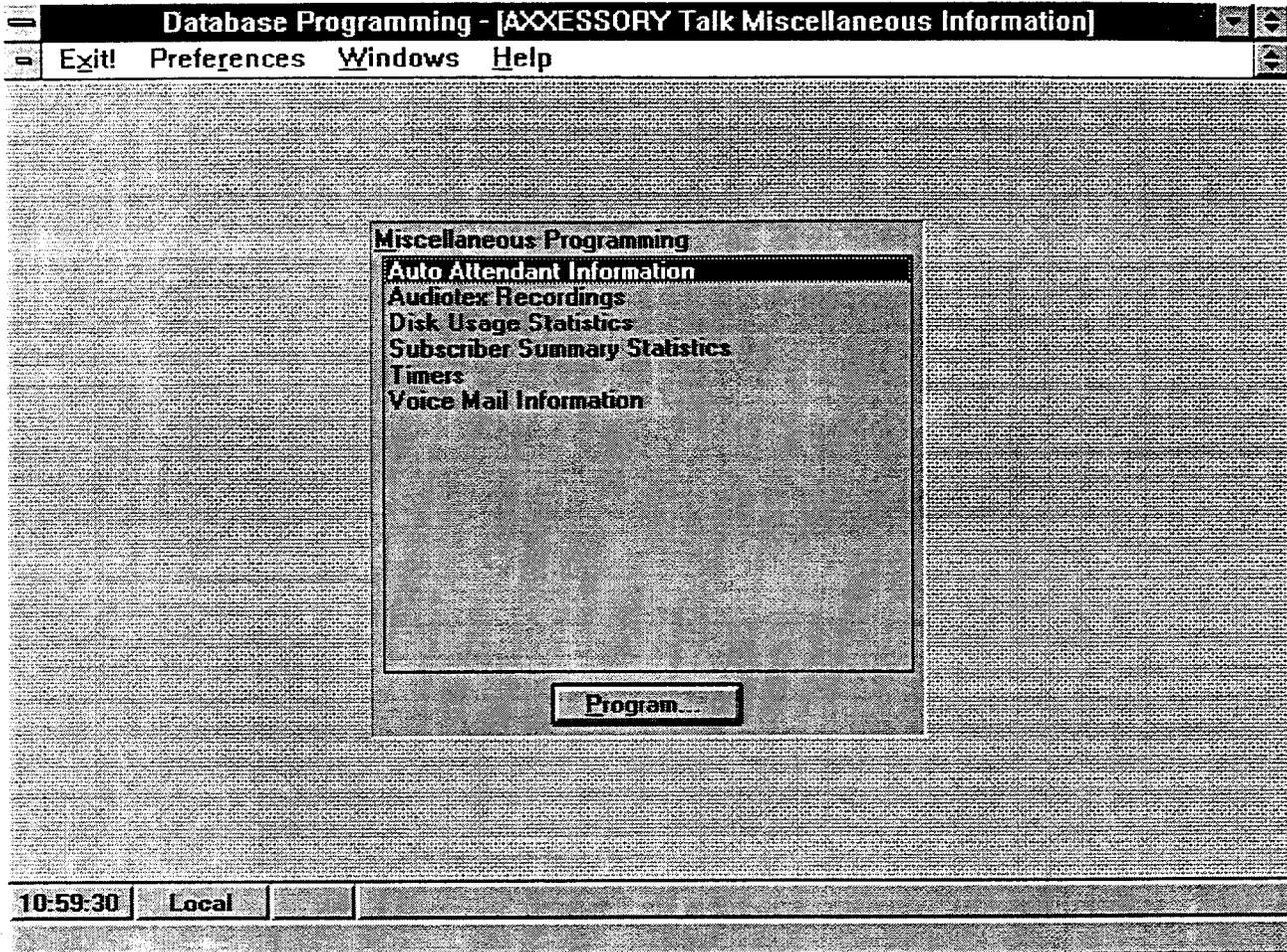
### Subscriber Statistics Report

**18.162** This window appears when the Subscriber Statistics command button is selected. It shows the following information for the selected mailbox.

**18.163** The statistics for this report reflect the period since the last date that the statistics were cleared. Statistics are cumulative and remain as such until cleared using the AXCESSORY Talk Report Programming window.

- **Date and Time of Last Logon:** At default, this displays "None." Once the subscriber logs on to the mailbox this field will reflect the most recent date and time of the last valid logon. (If the System Administrator makes any change to a subscriber's personal options from the System Administrator's mailbox, no change will be made to this field.)
- **Number of New Messages:** This is a count of the number of messages in a subscriber's new message queue. It is the same number that is reported to the subscriber when he or she logs in to the mailbox.
- **Number of Saved Messages:** This is a count of the number of messages stored in the saved message queue for the mailbox. It is the same number that is reported to the subscriber when he or she logs in to the mailbox.
- **Mailbox Percent Full:** This shows the actual percentage of maximum mailbox message capacity used.
- **Number of Times Mailbox Was More Than 80% Full:** This shows the number of times the mailbox reached 80% of its maximum message capacity.
- **Number of Times Mailbox Was Full:** This displays the number of times a mailbox reached its maximum message capacity.
- **Number of Messages Sent:** This is a count of the number of times a subscriber records and sends a message (to one mailbox or a group list of mailboxes), replies to a message sent by another subscriber, or forwards a message with comments.
- **Number of Messages Received:** This shows the number of messages a subscriber has received regardless of where the messages came from (subscriber, non-subscriber, or system).
- **Total Length of New and Saved Messages:** This is a combined total of the amount of time represented by the "Number of New Messages" and "Number of Saved Messages" fields.
- **Number of Times 3 Bad Passwords Were Entered:** This counter increases each time a single call includes three attempts to enter a mailbox and the caller uses an incorrect mailbox/password combination.

**18.164 OK:** When you are finished viewing the report, select the OK command button to exit.



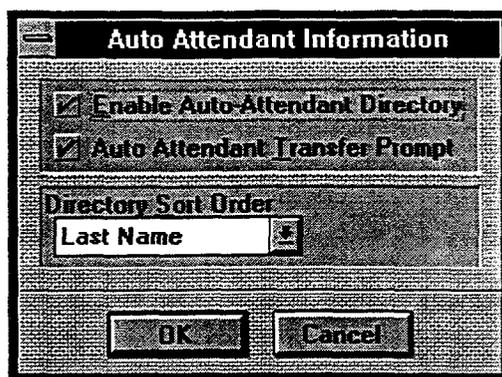
**F. AXCESSORY TALK MISCELLANEOUS INFORMATION**

18.165 The following information can be programmed and reports viewed using this window. A program planning sheet is located in Figure 6-33, on page 6-299.

- **Automated Attendant Information:** Enable/disable the directory and/or determine whether the directory is sorted by first or last name. Also determine whether the system automated attendant transfer prompt will play when calls are transferred to stations without mailboxes or extension IDs. The window is shown on the next page.
- **Audiotex Recordings:** Program descriptions for Audiotex Recordings (001-500). The window is shown on page 6-197.

- **Disk Usage Statistics:** Display a report that shows the status of the AXCESSORY Talk PC disk storage. The window is shown on page 6-198.
- **Subscriber Summary Statistics:** Display a report that shows mailbox statistics for all mailboxes combined. The window is shown on page 6-199.
- **Timers:** Program the timers that are used by the AXCESSORY Talk applications. The window is shown on page 6-200.
- **Voice Mail Information:** Select the System Administrator's mailbox, enable/disable the voice mail directory, determine the directory sort order, and set the volume for voice mail prompts. The window is shown on page 6-203.

**18.166 MISCELLANEOUS PROGRAMMING/PROGRAM:** To reach one of the options, highlight it in the list box and select the Program command button. The windows are shown on the pages listed above.



### Auto Attendant Information

**18.167** This window appears when Auto Attendant is highlighted and the Program command button is selected. It is used for determining whether the automated attendant application will use the mailbox and extension ID directory and how the directory is sorted.

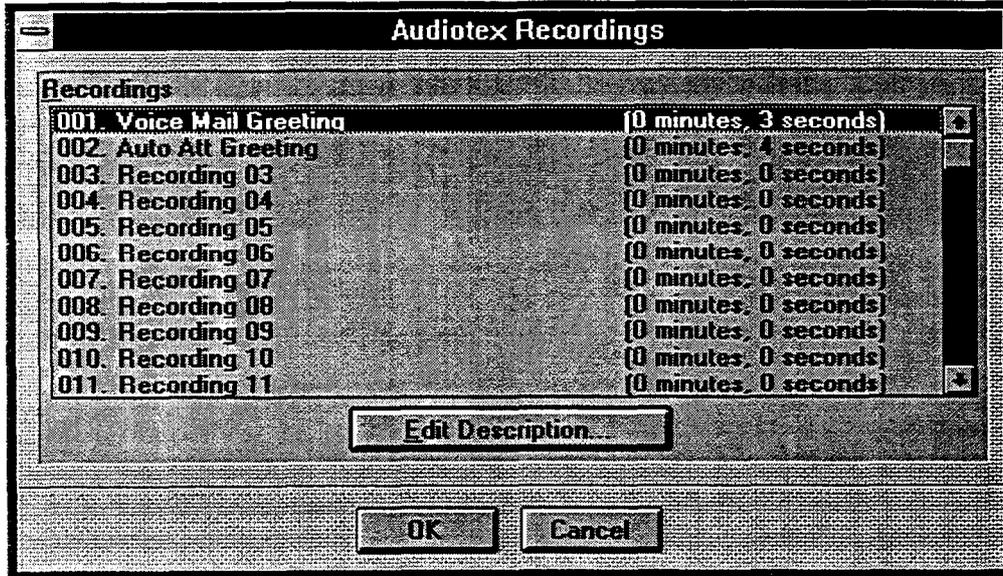
**18.168 ENABLE AUTO-ATTENDANT DIRECTORY:** To enable the directory, select this check box to place a check mark in it. To disable the directory, select it again to remove the check mark.

**18.169 AUTO ATT. TRANSFER PROMPT:** This check box determines whether the transfer prompt ("Please hold while your call is being transferred to...") plays after a caller has entered an extension number that

does not have an associated mailbox or extension ID. This applies to calls made through the Automated Attendant and Call Routing Announcement applications or transfers to the operator. To disable the prompt, select the check box to remove the check mark. To enable the prompt, select the box again.

**18.170 DIRECTORY SORT ORDER:** To determine whether the mailbox and extension ID descriptions in the directory will be sorted by first name or last name, select the drop-down list box and scroll the highlight bar to the desired option.

**18.171 OK/CANCEL:** When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.



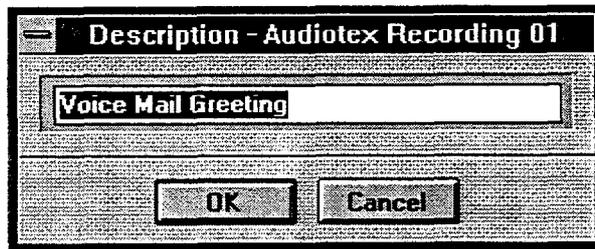
### Audiotex Recordings

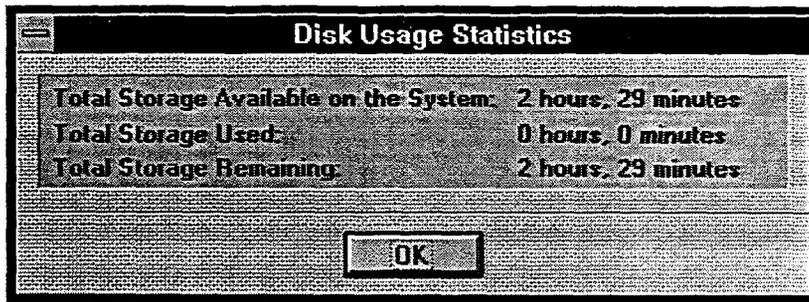
**18.172** This window appears when Audiotex Recordings is highlighted and the Program command button is selected.

**18.173 EDIT DESCRIPTION:** The Recordings list box shows the custom audiotex recordings (001-500) and their current descriptions and lengths. To change the description of a recording, highlight it in the list box and

select the Program Description command button. The following window appears. Enter the desired description, up to 20 characters, and select the OK command button. Or select the Cancel command button to leave the description unchanged.

**18.174 OK/CANCEL:** When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.





### Disk Usage Statistics

18.175 This window appears when Disk Usage Statistics is highlighted and the Program command button is selected. The report includes the following information:

- **Total Storage Available on the System:** This is the amount of disk space available on the AXCESSORY Talk PC.
- **Total Storage Used:** This is the disk space that has been used by the AXCESSORY Talk applications.

- **Total Storage Remaining:** This is the amount of disk space remaining in the AXCESSORY Talk PC. If the disk is nearly full, you can increase disk space by clearing the SMDR buffer or mailbox messages. If available disk space is frequently low, a larger-capacity disk drive should be installed in the AXCESSORY Talk PC.

18.176 **OK:** When finished, select the OK command button to exit.

| Subscriber Summary Statistics                      |                    |
|----------------------------------------------------|--------------------|
| Number of Mailboxes:                               | 5                  |
| Number of New Messages:                            | 0                  |
| Number of Saved Messages:                          | 0                  |
| Average Mailbox Percent Full:                      | 0                  |
| Number of Times Mailboxes Were More Than 80% Full: | 0                  |
| Number of Times Mailboxes Were Full:               | 0                  |
| Number of Mailboxes Currently More Than 80% Full:  | 0                  |
| Number of Mailboxes Currently Full:                | 0                  |
| Number of Messages Sent:                           | 0                  |
| Number of Messages Received:                       | 0                  |
| Total Length of New and Saved Messages:            | 0 hours, 0 minutes |
| Number of Times 3 Bad Passwords Were Entered:      | 0                  |

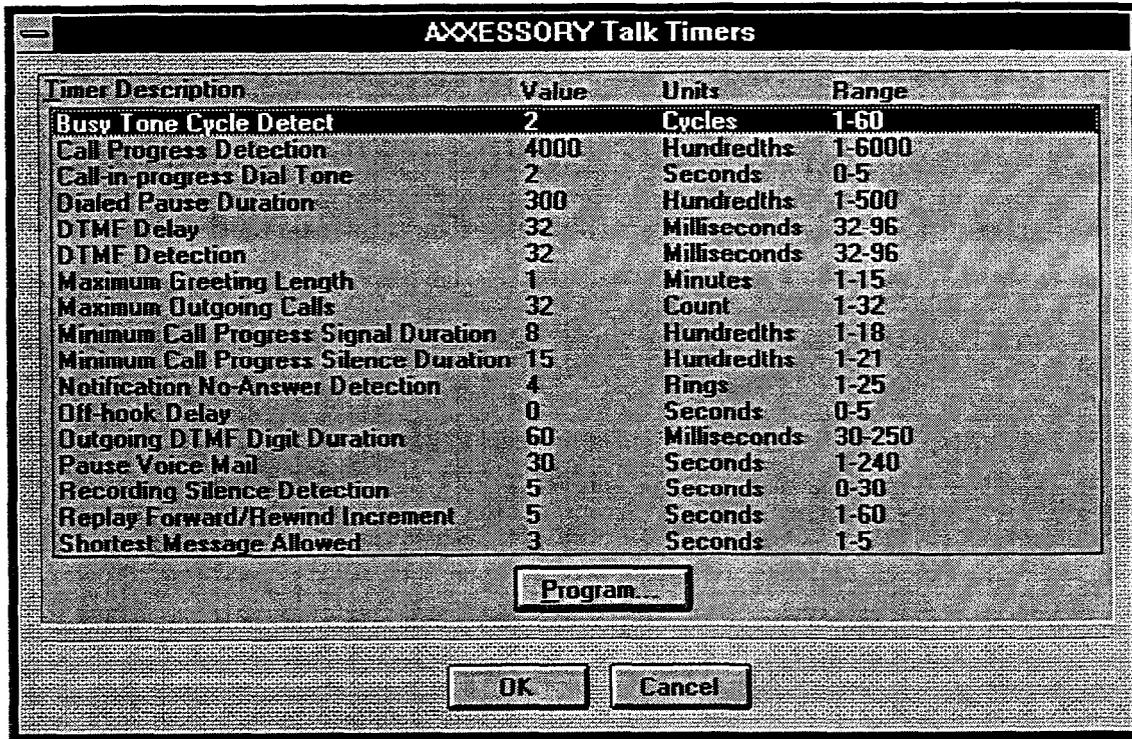
OK

### Subscriber Summary Statistics

18.177 This window appears when Subscriber Summary Statistics is highlighted and the Program command button is selected. It displays the following information. (Statistics continue to accumulate until cleared using the AXCESSORY Talk Report Programming window.)

- **Number of Mailboxes:** This shows the number of mailboxes that have been created in voice mail.
- **Number of New Messages:** This is the total of the number of messages in all subscriber's new message queues.
- **Number of Saved Messages:** This is the total of the number of messages stored in the saved message queues for all mailboxes.
- **Average Mailbox Percent Full:** This shows the average percentage of maximum message capacity used by all mailboxes.
- **Number of Times Mailboxes Were More Than 80% Full:** This shows the number of times any mailbox reached 80% of its maximum message capacity.
- **Number of Times Mailboxes Were Full:** This displays the number of times any mailbox reached its maximum message capacity.
- **Number of Mailboxes Currently More Than 80% Full:** This shows how many mailboxes are currently over 80% of their maximum message capacity.
- **Number of Mailboxes Currently Full:** This shows the number of mailboxes that are currently at their maximum capacity.
- **Number of Messages Sent:** This is a count of the number of times subscribers have recorded and sent messages (to one mailbox or a group list of mailboxes), replied to a message sent by another subscriber, or forwarded a message with comments.
- **Number of Messages Received:** This shows the number of messages that subscribers have received regardless of where the messages came from (subscriber, non-subscriber, or system).
- **Total Length of New and Saved Messages:** This is a combined total of the amount of time represented by the "Number of New Messages" and "Number of Saved Messages" fields.
- **Number of Times 3 Bad Passwords Were Entered:** This counter increases each time a single call includes three attempts to enter a mailbox and the caller uses an incorrect mailbox/password combination.

18.178 OK: When finished, select the OK command button to exit.



**AXCESSORY Talk Timers**

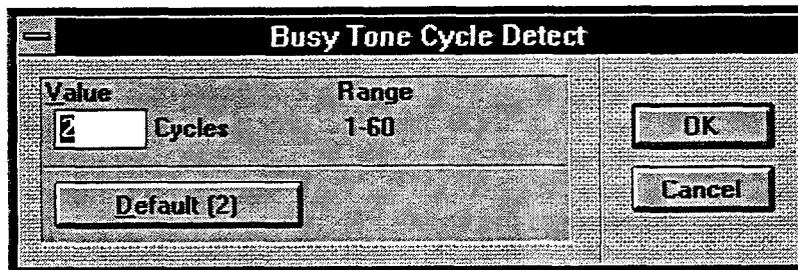
18.179 This window appears when Timers is highlighted and the Program command button is selected. The timers and their default values and ranges are shown on the next page.

18.180 **PROGRAM:** To program a timer, highlight it in the list box and select the Program command button. The window shown below appears.

- **VALUE:** Enter the desired value for the timer, within the valid range, as shown.

- **DEFAULT:** To return the timer to default value, select the Default command button. The button shows the default value.
- **OK/CANCEL:** When the timer is programmed correctly, select the OK command button. Or to exit without changing the timer, select the Cancel command button.

18.181 **OK/CANCEL:** When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.



**18.182** The following timers can be programmed for AXXESSORY Talk.

- **Busy Tone Cycle Detect:** This is the minimum number of cycles of tone the system needs to recognize busy, do-not-disturb, or reorder tones. When the AXXESSORY Talk PC does not recognize one of these tones, it will assume the call is answered. The range for this timer is 1–60 cycles. The default is 2 cycles.
- **Call-In-Progress Dial Tone:** This is the minimum duration of continuous dial tone that AXXESSORY Talk can recognize during an active call (for example, when a caller hangs up while connected to the voice mail application). To disable dial tone detection on active calls, set this timer to 0. The range for this timer is 0–5 seconds. The default is 2 seconds.
- **Call Progress Detection:** This determines the maximum length of time AXXESSORY Talk will wait for a call to be answered before aborting the attempted call. If it detects anything other than silence during this time, the system will consider the call answered. The range for this timer is 1–6000 hundredths of a second ( $1/100$  to 60 seconds). The default is 4000 hundredths (40 seconds).
- **Dialed Pause Duration:** This determines the length of pauses dialed by AXXESSORY Talk as part of feature codes, telephone numbers, and outgoing dialing strings. The range for this timer is 1–500 hundredths of a second ( $1/100$  to 5 seconds). The default is 300 hundredths (3 seconds).
- **DTMF Delay:** This determines the minimum duration of DTMF tones that can be recognized by AXXESSORY Talk when a recording is being played (for example, when a prompt or message is playing). The range for this timer is 32–96 milliseconds. The default is 32 milliseconds.
- **DTMF Detection:** This determines the minimum duration of DTMF tones that can be recognized by AXXESSORY Talk during playback functions (for example, when AXXESSORY Talk is silent and waiting for input). The range for this timer is 32–96 milliseconds. The default is 48 milliseconds.

**NOTE:** If either of the DTMF timers is changed, the new value will not take effect until AXXESSORY Talk is completely idle. Also note that changing the DTMF Delay or DTMF Detection timer value is a trade-off between improving DTMF detection and increasing the possibility that human voices will be detected as DTMF tones (this is called “talk off”). As the value of the timer is reduced, DTMF detection is

improved, but the possibility of talk off increases. As the value is increased, the possibility of talk off is reduced, but the possibility of DTMF detection problems is increased.

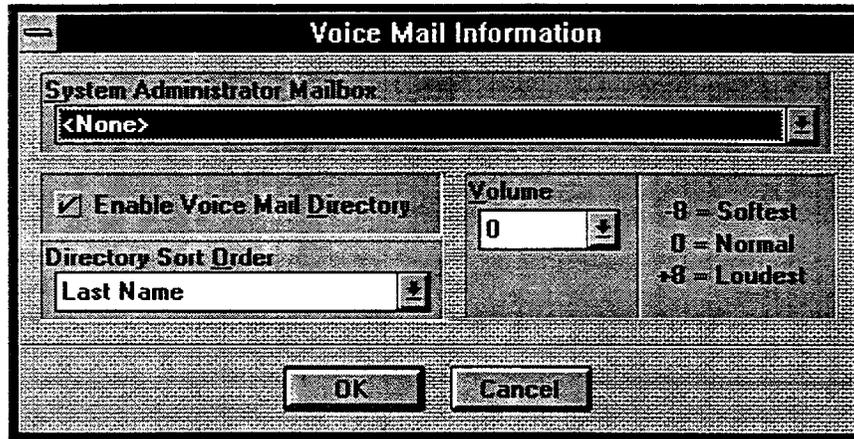
- **Maximum Greeting Length:** This is the maximum time allowed for all mailbox greetings and custom audiotex recordings. The range for this timer is 1–15 minutes. The default is 1 minute.
- **Maximum Outgoing Calls:** This is the number of outgoing message notification and fax delivery calls that can be made at one time by the Message Notification/Retrieval application. Note that the number of calls that can be made are also limited by the availability of intercom voice channels and outgoing trunks. The range for this field is 1 to the number of ports (maximum 32). The default is 2 calls.
- **Minimum Call Progress Signal Duration:** This timer determines the minimum duration of a period of sound necessary for AXXESSORY Talk to detect sound. That is, if a period of silence is broken by a burst of sound on the line and that sound is shorter than this timer, AXXESSORY Talk will ignore the sound. This timer applies to outgoing remote notification calls only. The range for this timer is 1–18 hundredth seconds. The default is 8 hundredths.
- **Minimum Call Progress Silence Duration:** This timer determines the minimum duration of a period of silence necessary for AXXESSORY Talk to detect silence. That is, if a period of sound is broken by silence and the silence is shorter than this timer, AXXESSORY Talk will ignore the silence. This timer applies to outgoing remote notification calls only. The range for this timer is 1–21 hundredth seconds. The default is 15 hundredths.
- **Notification No-Answer Detection:** This establishes the number of rings required before AXXESSORY Talk considers an attempt at remote messaging a “no-answer” condition. The range for this timer is 1–25 rings. The default is 4 rings.
- **Off-Hook Delay:** This determines how long AXXESSORY Talk should wait after coming off hook before playing the first prompt. The range for this timer is 0–5 seconds. The default is 0. However, the recommended minimum setting is 1 second to allow a pause before the prompts are played for outside callers, thereby assuring that no text is cut off. It is set to 0 to allow internal callers to hear the prompts immediately.
- **Outgoing DTMF Digit Duration:** This is the length of the DTMF tones (and inter-digit pauses) that are sent during remote notification to a pager or person-

al number. The range for this timer is 30–250 milliseconds. The default is 60 milliseconds. **NOTE:** If this timer is changed, the PC must be reset to update the PC with the new timer value.

- **Pause Voice Mail:** This timer defines the maximum amount of time that AXCESSORY Talk will pause during the playback of a message or recording. The range for this timer is 1–240 seconds. The default is 30 seconds.
- **Recording Silence Detection:** This timer determines how much silence is required to terminate a recording. If silence in recording exceeds this timer, the recording will automatically end. If lengthy silent pauses are included in any recordings, this timer

should be adjusted to allow them. The range for this timer is 0–30 seconds. The default is 5 seconds.

- **Replay Forward/Rewind Increment:** This timer determines the number of seconds a message or recording will be advanced or backed up when a user skips ahead or backward during a replay. The range for this timer is 1–60 seconds. The default is 5 seconds.
- **Shortest Message Allowed:** This is the length of the shortest message that will be accepted by AXCESSORY Talk. (Messages terminated with # are always allowed, regardless of length.) The range for this timer is 1–5 seconds. The default is 3 seconds.



### Voice Mail Information

**18.183** This window appears when Voice Mail Information is highlighted and the Program command button is selected. The voice mail parameters that are programmed in this window must be set up before the voice mail system is able to operate efficiently. These parameters include: defining a System Administrator's mailbox, enabling or disabling the voice mail directory, determining directory sorting order, and adjusting the AXXESSORY Talk audio volume.

**18.184 SYSTEM ADMINISTRATOR MAILBOX:** A System Administrator's mailbox is defined in order to record custom audiotex recordings for system applications created in Applications Programming, broadcast messages to all subscribers, and perform Mailbox and Group List maintenance. Select the System Administrator Mailbox drop-down list box and scroll to the desired mailbox.

**18.185 ENABLE VOICE MAIL DIRECTORY:** Select the Enable Voice Mail Directory check box to place a check mark in it and enable the voice mail directory. To disable the directory, select the check box again to remove the check mark.

**NOTE:** If the voice mail mailbox directory is disabled, callers using the voice mail system will not receive a system prompt giving the option to search the directory for the person they wish to speak to. If the dial pad key

normally associated with access to the mailbox directory is selected, the caller will be informed that the selection is invalid.

**18.186 DIRECTORY SORT ORDER:** Select the Directory Sort Order drop-down list box and scroll to the desired option (last name or first name) to determine the directory sorting order. This parameter also defines which system voice prompt will play when directing callers to spell a first or last name.

**18.187 VOLUME:** Select the Volume Level drop-down list to select the volume level for all of the voice channels used by the AXXESSORY Talk. Scroll the highlight bar to the desired volume level. (The text adjacent to the drop down list box specifies that -8 is the softest setting, 0 is standard, and +8 is the loudest.)

**NOTE:** When a caller, using voice mail, increases or decreases the volume during the call, the system volume level currently programmed does not change. Only the voice channel being used by the caller is temporarily altered. When the user has completed the call, the system resets the volume of the voice channel used to the setting currently established in the Volume Level drop-down list box.

**18.188 OK/CANCEL:** When finished, select the OK command button. Or, to exit without saving any changes, select the Cancel command button.

## G. AXCESSORY TALK REPORTS

**18.189** The AXCESSORY Talk system includes reporting capabilities to print reports to a printer or to a file for storage. The reports include Application and Channel Statistics, Directory Listings (by last name or first name or extension), and Group List reporting. A sample report is shown on page 6-207. The reports include the following information:

- **Application and Channel Statistics:** The following information appears individually for each application and as a summary for all applications.
  - *Description and extension number of the application:* The "description" field shows the programmed name for the application. (Call Routing Announcement applications are all listed together by extension.) The applications are listed in the following order: Message Notification/Retrieval, Voice Mail, Auto Attendant, and Call Routing Announcement. (Auto Attendant Recall applications are reported within the Auto Attendant information.)
  - *Incoming calls:* This shows the total number of calls received by that extension number. This is shown as a combined total for Call Routing Announcement applications.
  - *Outgoing calls:* This information is reported only for the Message Notification/Retrieval application. These are the remote message notification calls placed by the Voice Mail application.
  - *Connect minutes:* This shows the total time spent on incoming and outgoing calls (if any) combined. This is shown as a combined total for Call Routing Announcement applications.
  - *Minutes per call:* This is the average amount of time spent on each call in minutes and seconds. This is shown as a combined total for Call Routing Announcement applications.
  - *Transfers to Operator:* This shows the number of times a caller (within Voice Mail or Auto Attendant) presses the dial pad key 0 for operator access.
  - *Voice Mail messages left:* This appears in the summary section only. It shows how many voice mail messages were left in all mailboxes combined.

— *Channel statistics:* This portion includes data on the activity of all applications combined. It shows, in 30-minute segments, the total number of minutes and seconds that all of the AXCESSORY Talk voice channels were busy simultaneously. The detailed segments begin at 07:00 AM and conclude at 06:00 PM. The "Off Peak Hours" segment shows statistics for the remaining time period (6:00 PM to 7:00 AM). This section ends with a grand total of busy channel occurrences for each of the days being reported.

**NOTE:** If the number of voice channels programmed in database programming is greater than the number of actual channels available, the statistics reported will be based on the number available and not the programmed number.

- **Directory Listing Reports:** Directory Listings can be sorted by first name, last name, or extension/mailbox number. The listings show the description for the mailbox or extension ID, the mailbox/extension number, the message notification station (for mailboxes), and mailbox information. The mailbox information tells whether the mailbox is marked Private and/or Unlisted. (An X appears in the Mailbox field to indicate a mailbox that is neither Private nor Unlisted and a blank indicates that it is an extension ID.)
- **Fax Delivery Reports:** The Fax Delivery Report includes information for up to 200 fax delivery attempts. Each entry contains the date and time of the delivery attempt, the date and time the fax was requested, the delivery status (Successful, Busy, Call Failed, or Transmission Error), the fax telephone number, and the list of requested documents.
- **Fax Document Usage Reports:** This report lists all documents in the fax library by document number. Each entry shows the document number, description, how many times it was delivered to callers, the last request date, and the last revision date and time. (If the document has not been revised, it shows the import date and time.)
- **Group List Report:** The purpose of the Group List report is to provide the System Administrator with a printed copy of the system's group lists. The report identifies the group list number, the description for the list, and the mailboxes included in the group list.

**18.190** The programmer may establish automatic weekly reports that are sent to a printer on a selected day at a specified time. If desired, the programmer can also clear the system's statistics. If desired, manual reports may also be generated at any time without altering the weekly setup.

**18.191** To perform the programming for these reports select AXCESSORY Talk Report Programming from the AXCESSORY Talk menu. A program planning sheet is located in Figure 6-34, on page 6-301.

**18.192 OUTPUT DEVICE:** Select this drop-down list box to specify the report's output device (FILE or LPT1).

**18.193 OUTPUT FILE:** (Used only if the output device is "FILE.") Enter the name of the desired file in the File text box. The system will validate that the specified drive output is defined but will not validate that the path exists on the AXCESSORY Talk PC when this option is used. Instead, the database manager merely verifies that the file's syntax is correct (i.e., check for valid characters). However, it will not permit reports to be saved to the C: drive.

**18.194 MANUAL REPORT GENERATION:** The Manual Report Generation section of this window contains controls which allow you to determine the following for manually generated reports:

- **CLEAR SELECTED STATISTICS:** You can choose the statistics that will be cleared by placing a check in one of the following check boxes:
  - **APPLICATION AND CHANNEL:** This clears the information that is listed in the Application and Channel Statistics report only. See page 6-204 for a complete description of these statistics.
  - **FAX DELIVERY AND DOCUMENT:** This clears all statistics for the Fax Delivery report and the request count and last request date for the Fax Document Usage report. These reports are described on page 6-204.
  - **MAILBOX:** This clears all mailbox statistics, as shown in the mailbox and system statistics windows on pages 6-194, 6-198, and 6-199.

- **CLEAR STATISTICS:** (*Not available in Stand-Alone programming*) The Clear Statistics command button allows you to clear accumulated statistics from the system for the areas selected above. When you select the Clear Statistics command button, a window appears that reads, "You are about to clear all of the accumulated statistics. Do you wish to continue?" Select Yes to continue or select Cancel to leave the messages unchanged.
  - **PRINT REPORTS:** (*The "Print Reports" command button is only available if one of the report check boxes is marked, and is not available during a stand-alone programming session.*) When this command button is selected, a window appears that says, "You are about to print the selected reports. Do you wish to continue?" Select Yes to print the report or No to cancel the report. In a direct-connection programming session, as the printing starts, the terminal cursor changes to an hourglass and you must wait until the report is complete before proceeding. *If AXCESSORY Talk is unable to print the report, an error message will display that states, "AXCESSORY Talk is unable to print the selected reports."* If printing to a file, it suggests using another disk. If using a printer, it suggests that the printer may be off line or out of paper.
  - **MANUAL REPORT SELECTION:** The Manual Report Selection portion of the window contains check boxes that allow you to select what reports to print manually. To enable a report, select the check box to place a check mark in it. To disable the report, select it again to remove the check mark. The reports types are listed on page 6-204.
  - **DIRECTORY SORT ORDER:** (*Available only if Directory Listing Reports are selected.*) The Directory Sort Order drop down list boxes allow you to select First Name, Last Name, or Directory Number sorting order. Select the appropriate drop-down list box and scroll the highlight bar to the desired option.
- 18.195 AUTOMATIC REPORT GENERATION:**  
The Automatic Report Generation section of the window contains controls for establishing the day and time the system should automatically print reports, enabling automatic report printouts, clearing the system's statistics, and a list of the reports to print along with the option to sort the Directory Listing report.
- **PRINT DAY:** To select the day for printing automatic reports, select the Print Day drop-down list box and scroll the highlight bar to the desired day.
  - **PRINT TIME:** To select the time of day for printing automatic reports, select the Print Time drop-down list box and scroll the highlight bar to the desired time.
  - **ENABLE AUTOMATIC REPORTS:** To enable the automatic report option, select the check box to place a check mark in it. To disable automatic reports, select the check box again to remove the check mark.
  - **CLEAR SELECTED STATISTICS AFTER REPORTS PRINT:** These boxes are dimmed unless automatic reports are enabled. If you want statistics to be cleared every time an automatic report is printed, select the appropriate check boxes to place check marks in them. To retain the statistics, remove the check mark by selecting the check box again. The statistics that can be cleared include the following:
    - **APPLICATION AND CHANNEL:** This clears the information that is listed in the Application and Channel Statistics report only. See page 6-204 for a complete description of these statistics.
    - **FAX DELIVERY AND DOCUMENT:** This clears all statistics for the Fax Delivery report and the request count and last request date for the Fax Document Usage report. These reports are described on page 6-204.
    - **MAILBOX:** This clears all mailbox statistics, as shown in the mailbox and system statistics windows on pages 6-194, 6-198, and 6-199.
  - **AUTOMATIC REPORT SELECTION:** The Automatic Report Selection portion of the window contains check boxes that allow you to select what reports to print automatically. To enable a report, select the check box to place a check mark in it. To disable the report, select it again to remove the check mark. The reports types are listed on page 6-204.
  - **DIRECTORY SORT ORDER:** (*Available only if Directory Listing Reports are selected.*) The Directory Sort Order drop down list boxes allow you to select First Name, Last Name, or Directory Number sorting order. Select the appropriate drop-down list box and scroll the highlight bar to the desired option.

FIGURE 6-1. AXCESSORY TALK APPLICATION STATISTICS REPORT SAMPLE

APPLICATION STATISTICS

Date: xx/xx/xxxx

|                       | Day<br>Monxx |
|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| [description] (xxx)   |              |              |              |              |              |              |              |
| Incoming Calls        | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Outgoing Calls        | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Connect Minutes       | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Minutes / Call        | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Transfers to Operator | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| [Call Routing Ann.]   |              |              |              |              |              |              |              |
| [description] (xxx)   | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| [description] (xxx)   | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| [description] (xxx)   | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| [Call-Routing Totals] |              |              |              |              |              |              |              |
| Incoming Calls        | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Connect Minutes       | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Minutes / Call        | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Totals                |              |              |              |              |              |              |              |
| Incoming Calls        | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Connect Time (HH:MM)  | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Minutes / Call        | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Transfers to Operator | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| VM Msgs Left          | ---          | ---          | ---          | ---          | ---          | ---          | ---          |

Cumulative statistics since reports were last cleared on xx/xx/xxxx

Totals:

|                       |     |
|-----------------------|-----|
| Calls                 | xxx |
| Messages Left         | xxx |
| Transfers to Operator | xx  |

APPLICATION STATISTICS - CHANNEL ACTIVITY

Date: xx/xx/xxxx

|                                        | Day<br>Monxx |
|----------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| All channels busy:                     |              |              |              |              |              |              |              |
| 07:00 - 07:30 AM                       | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| 07:30 - 08:00                          | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| 08:00 - 08:30                          | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| ...                                    |              |              |              |              |              |              |              |
| 04:00 - 04:30                          | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| 04:30 - 05:00                          | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| 05:00 - 05:30                          | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| 05:30 - 06:00                          | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Off Peak Hours                         | ---          | ---          | ---          | ---          | ---          | ---          | ---          |
| Total hours/minutes all channels busy: | ---          | ---          | ---          | ---          | ---          | ---          | ---          |

FIGURE 6-2. AXCESSORY TALK DIRECTORY LISTING REPORT SAMPLES

DIRECTORY LISTING BY FIRST NAME

Date: xx/xx/xxxx

| <u>Description</u> | <u>Directory<br/>Number</u> | <u>Notification<br/>Station</u> | <u>Mailbox</u> |
|--------------------|-----------------------------|---------------------------------|----------------|
| ARTHUR GOODMAN     | 242                         |                                 | U              |
| LAB LAB            | 200                         |                                 |                |
| MARK FONTANA       | 272                         | 101                             | X              |
| MARK HARRIS        | 216                         | 100                             | P              |
| NORMA EATON        | 100                         | 100                             | X              |
| TODD LINEN         | 215                         | 100                             | P/U            |

DIRECTORY LISTING BY LAST NAME

Date: xx/xx/xxxx

| <u>Description</u> | <u>Directory<br/>Number</u> | <u>Notification<br/>Station</u> | <u>Mailbox</u> |
|--------------------|-----------------------------|---------------------------------|----------------|
| EATON, NORMA       | 100                         | 100                             | X              |
| FONTANA, MARK      | 272                         | 101                             | X              |
| GOODMAN, ARTHUR    | 242                         |                                 | U              |
| HARRIS, MARK       | 216                         | 100                             | P              |
| LAB, LAB           | 200                         |                                 |                |
| LINEN, TODD        | 215                         | 100                             | P/U            |

DIRECTORY LISTING BY DIRECTORY NUMBER

Date: xx/xx/xxxx

| <u>Directory<br/>Number</u> | <u>Notification<br/>Station</u> | <u>Mailbox</u> | <u>Description</u> |
|-----------------------------|---------------------------------|----------------|--------------------|
| 100                         | 100                             | X              | EATON, NORMA       |
| 200                         |                                 |                | LAB, LAB           |
| 215                         | 100                             | P/U            | LINEN, TODD        |
| 216                         | 100                             | P              | HARRIS, MARK       |
| 242                         |                                 | U              | GOODMAN, ARTHUR    |
| 272                         | 101                             | X              | FONTANA, MARK      |

**FIGURE 6-3. AXCESSORY TALK FAX DELIVERY REPORT SAMPLE**

FAX DELIVERY REPORT Date: xx/xx/xxxx

| <u>Delivery Date/Time</u>                                     | <u>Request Date/Time</u> | <u>Delivery Status</u> | <u>Fax Number</u> |
|---------------------------------------------------------------|--------------------------|------------------------|-------------------|
| 10-10-95 08:20:01<br>- 1000 Product List<br>- 1001 Price List | 10-10-95 08:19:26        | Busy                   | 6029401431        |
| 10-10-95 08:30:56<br>- 1000 Product List<br>- 1001 Price List | 10-10-95 08:19:26        | Successful             | 6029401431        |
| 10-10-95 08:52:13<br>- 1001 Price List                        | 10-10-95 08:52:45        | Transmission Error     | 6029611370        |
| 10-10-95 09:01:09<br>- 1001 Price List                        | 10-10-95 08:52:45        | Successful             | 6029611370        |

**FIGURE 6-4. AXCESSORY TALK FAX DOCUMENT USAGE REPORT SAMPLE**

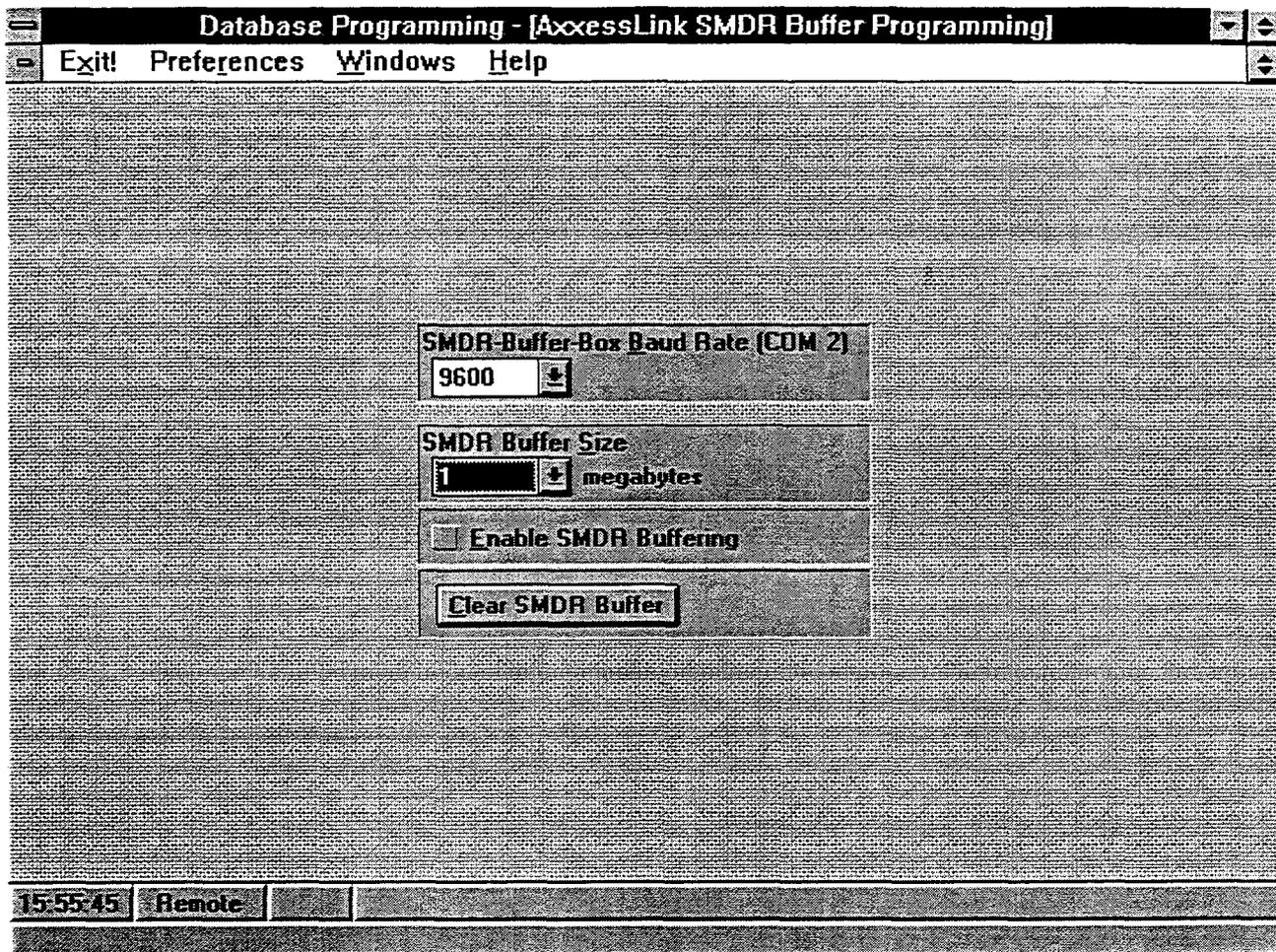
FAX DOCUMENT USAGE REPORT Date: xx/xx/xxxx

| <u>Document Number and Description</u> | <u>Requests</u> | <u>Last Rqst</u> | <u>Time Stamp</u> |
|----------------------------------------|-----------------|------------------|-------------------|
| 1000 Product List                      | 45              | 10-10-95         | 11-02-94 11:45    |
| 1001 Price List                        | 127             | 10-10-95         | 01-03-95 09:38    |
| 2000 Company Logo                      | 0               | None             | 11-01-94 14:20    |

**FIGURE 6-5. AXCESSORY TALK GROUP LIST REPORT SAMPLE**

GROUP LIST REPORT Date: xx/xx/xxxx

Group List Number: xxx  
 Name: [description]  
 Mailboxes: xxx [subscriber description]  
 xxx [subscriber description]



## H. SMDR BUFFER PROGRAMMING

**18.196** This window is displayed when AXCESSORY Talk SMDR Buffer Programming is selected from the AXCESSORY Talk menu. The following information can be programmed for the AXCESSORY Talk SMDR Buffering application. A program planning sheet is located in Figure 6-35, on page 6-302.

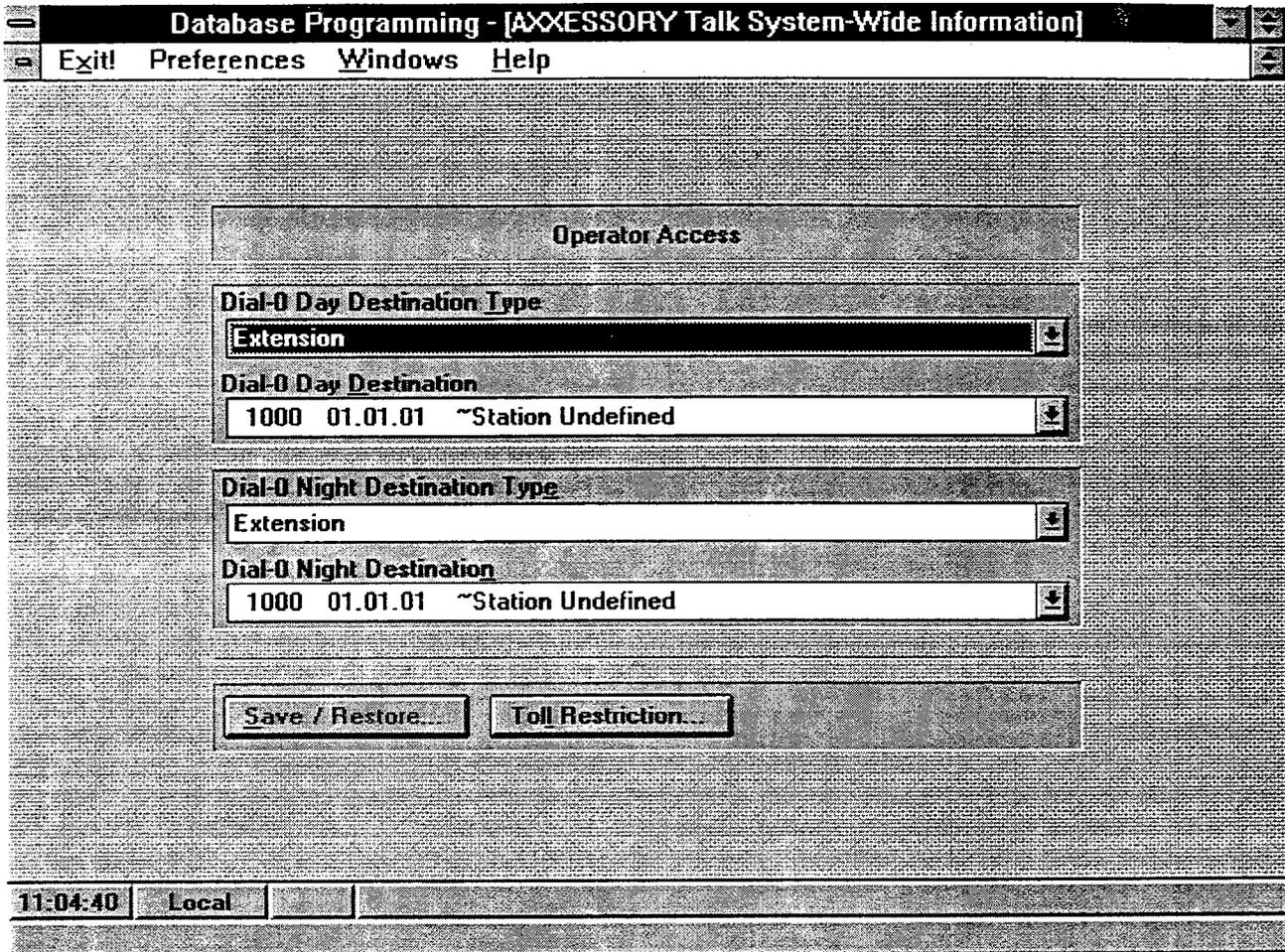
**18.197 SMDR BUFFER BOX BAUD RATE:** To determine the baud rate of output from the buffer box port (COM2), select this drop-down list box. The available baud rates are 300, 1200, 2400, 4800, and 9600.

**18.198 SMDR BUFFER SIZE:** To determine how much of the AXCESSORY Talk PC disk space will be devoted to SMDR buffering, select his drop-down list box and select the desired number of megabytes (0-255). *If you attempt to set the buffer size to a value higher than your available disk space, you will receive a warning message that says, "The AXCESSORY Talk PC did not have enough disk space to set the buffer size to XXX megabytes. The current buffer size is now 0*

*megabytes. Note: If there was data in the buffer, the data is still intact.";* select OK to continue and reset the buffer to a valid size. *If you change the size of the buffer, a window appears that tell you that the buffer will be cleared and asks if you want to continue. Select Yes to complete the resizing or select No to leave the buffer and buffer size unchanged.*

**18.199 ENABLE SMDR BUFFERING:** (*Buffer size must be greater than 0 for this check box to be selected.*) To enable the SMDR Buffering option, select the check box to place a check mark in it. To disable SMDR buffering, select the check box again to remove the check mark.

**18.200 CLEAR SMDR BUFFER:** (*Not available in stand-alone programming sessions.*) To clear the current SMDR buffer, select this command button. A window appears that asks if you are sure you want to clear the SMDR buffer. Select Yes to continue or select Cancel to leave the buffer unchanged. If you chose to clear, an information window will appear to tell you that the buffer has been cleared. Select OK to continue.



**I. AXCESSORY TALK SYSTEM-WIDE INFORMATION**

**18.201** This window is displayed when AXCESSORY Talk System-Wide Information is selected from the AXCESSORY Talk menu. It is used for programming the dial-0 operator destination for the Voice Mail and Automated Attendant applications (where calls are sent if the caller presses 0), for setting toll restrictions for outgoing remote messaging calls, and for saving/restoring the AXCESSORY Talk database. A program planning sheet is located in Figure 6-36, on page 6-302.

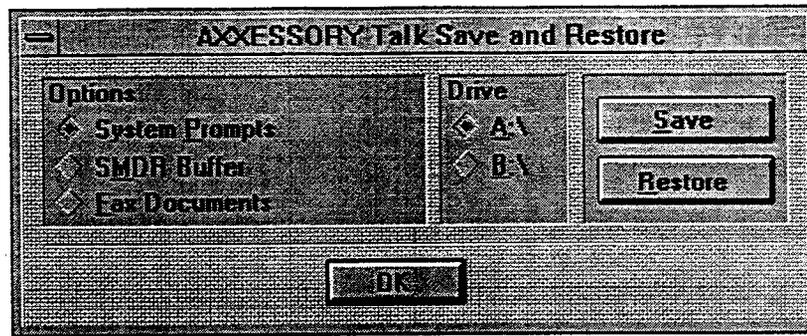
**18.202 DIAL-0 DESTINATION TYPE:** These drop-down list boxes are used for selecting the type of device that will be used for the day and night operator destinations. Select the appropriate drop-down list box and scroll the highlight bar to the desired type (Extension, Mailbox, or None). If "Mailbox" is selected, the system will automatically transfer the caller to a mailbox, specified in the dial-0 destination box below, when 0 is pressed. If "None" is selected, operator access will be denied from Voice Mail and Auto Attendant applications. If "Extension" is selected, any station, ap-

plication, or hunt group extension number or Call Attendant feature code (0) can be selected.

**18.203 DIAL-0 DESTINATION:** If day or night destination types are selected, these drop-down list boxes allow you to select the specific device that will serve as the operator destination. Select the appropriate drop-down list box and scroll the highlight bar to the desired device.

**18.204 SAVE/RESTORE:** (This command button is not available in Stand-Alone programming mode.) To save or restore the AXCESSORY Talk database, select this command button. The window shown on the next page appears.

**18.205 TOLL RESTRICTION:** (This command button is available only if a Message Notification/Retrieval application has been programmed.) Select this command button to determine the toll restrictions that will apply to remote message notification calls that are placed by AXCESSORY Talk ports. A window appears like the one used for Individual Station Programming. Refer to the instructions on page 6-42 and the window to which they refer.



**AXCESSORY Talk Save And Restore**

**18.206** This window appears when you select the Save/Restore command button shown on the preceding page.

**18.207** To ensure that you have enough diskettes for saving the data, check the Disk Usage Statistics report (as shown on page 6-198) to determine the number of minutes used for the prompts and messages. Each diskette will hold 5-6 minutes of prompts or messages. To calculate the number of diskettes needed, divide the number of minutes used (shown in the statistics) by 5.

**18.208 OPTIONS:** Determine which information you want to save or restore (System Prompts, SMDR Buffer, or Fax Documents). Selecting the desired option places a dot in the option button. (Refer to the Save/Restore information on the next page for further AXCESSORY Talk information.) The data included in the options are as follows:

| OPTION         | SAVE                                                                                    | RESTORE                                                                                                      |
|----------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| System Prompts | The system-generated prompts.                                                           | The system-generated prompts contained on the disk will overwrite the current prompts, if any.               |
| SMDR Buffer    | The current call record information in the SMDR buffer. The buffer will not be cleared. | The SMDR call records contained on the disk will overwrite the existing SMDR buffer contents.                |
| Fax Documents  | All fax documents in the database.                                                      | All fax documents contained on the disk will overwrite the current fax documents of the same number, if any. |

**18.209 DRIVE:** Determine which drive (on the AXCESSORY Talk PC) will be the save destination or restore source. Selecting the desired drive places a dot in the option button. *Be sure to place a diskette in the correct drive on the AXCESSORY Talk PC before selecting the Save or Restore command button.*

**18.210 SAVE or RESTORE:** Determine the operation you wish to perform and select the appropriate command button. The information will be saved or restored to the selected drive. The following windows may appear:

- A restore operation begins with a warning that the database is about to be overwritten with the new data. You are given the choice of allowing the overwrite (select Yes) or cancelling the restore process (select No). **NOTE:** Use a separate disk for each type of save (System Prompts, SMDR Buffer, and Fax Documents). Each time you perform a save operation, **ALL FILES** on the disk are erased and replaced with the new saved information.
- During a save or restore process, a window appears that shows the percentage of the database that has been copied. To cancel the save or restore operation, select the Cancel command button. **NOTE:** Cancelling a restore operation will cause the system to default the AXCESSORY Talk database.

**18.211 OK:** When finished with all AXCESSORY Talk save and restore operations, select the OK command button to return to the window shown on the preceding page.

**NOTE:** The AXCESSORY Talk applications will not be usable during a System Prompts save or restore and callers will receive reorder tones. This is necessary to prevent users from making new recordings and causing database errors.

## 19. SERVICE

19.1 When the Service command button is selected from the Database Programming Menu window, the list box shows the following options:

Database Save/Restore  
Message Print Programming  
Passwords  
Premium Feature Selection  
Report Programming [Customized]  
System Configuration  
System Serial Port Assignment  
System Serial Port Configuration  
T1 Diagnostics

19.2 Each of the options and their programming windows are described in detail in the following pages.

19.3 If you select any of the Service menu options when the AXXESSORY Talk PC is unable to communicate with the AXXESS System, a warning window will appear that says, "None of the system configuration changes will be made because Database Programming is unable to communicate with the AXXESSORY Talk PC." The system will not allow you to update the database through the Service options until the AXXESS and AXXESSORY Talk are communicating again.

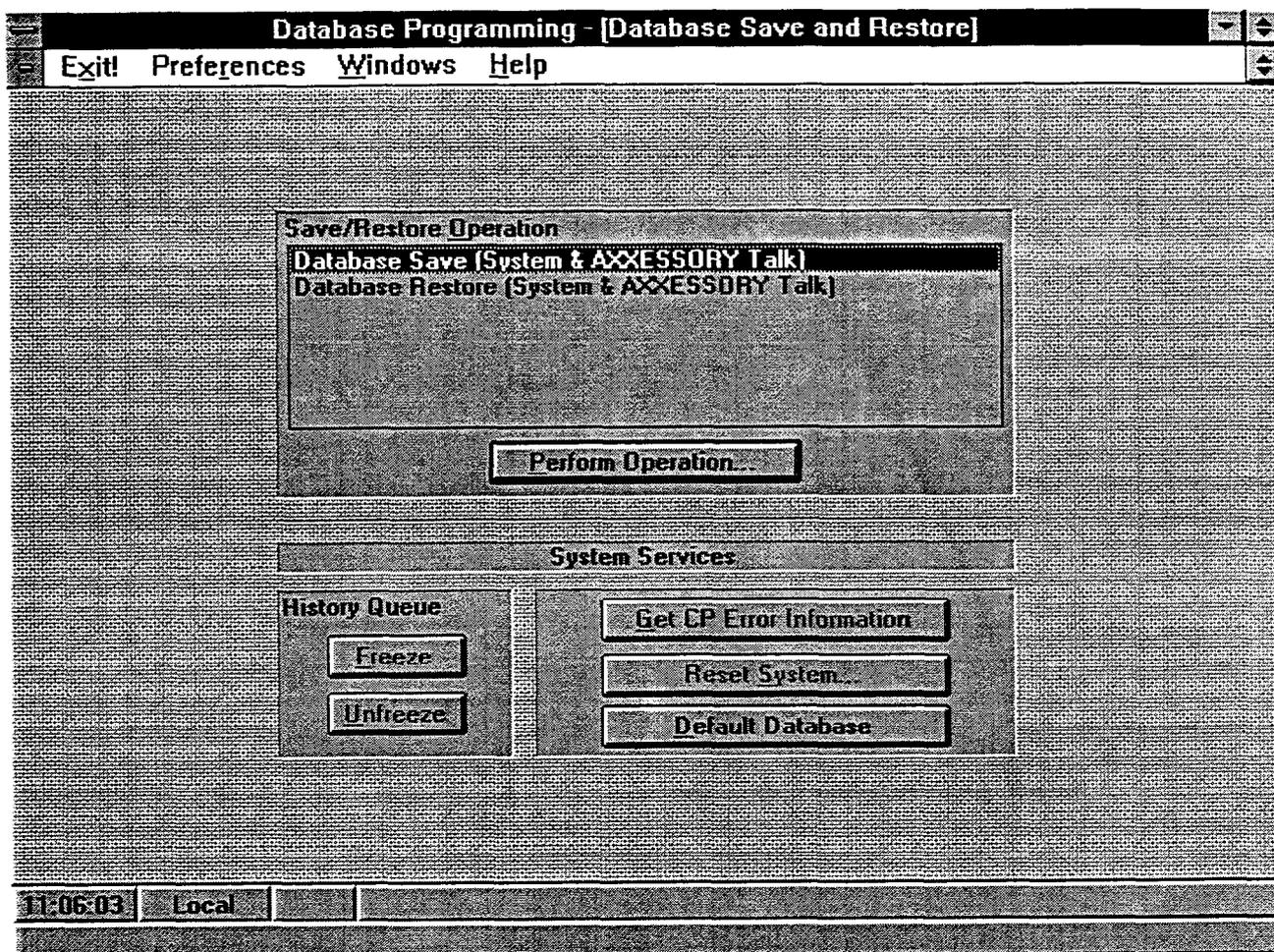
### A. DATABASE SAVE AND RESTORE

19.4 This program allows you to perform the following operations:

- **Save Database:** Information is sent from the system to the designated destination.
- **Restore Database:** Information is transferred from the designated source to the system. **NOTE:** You must use this operation to restore database files to a

system. The files are stored in an archive format and cannot be copied from system to system manually.

- **Freeze History Queue:** This option directs the system to "lock" the current state of the system fault history queue, which is a sequential list of all system commands and inputs. This list, when decoded, can be used to determine a series of events which may have resulted in an error. (This is not available in Stand-Alone programming sessions.)
- **Unfreeze History Queue:** This option directs the system to "unlock" the current state of the history queue, and resume event collection. (This is not available in Stand-Alone programming sessions.)
- **Get CP Error Information:** Engineering error messages are copied to the programming device for review by the Inter-Tel Engineering department. (This is not available in Stand-Alone programming sessions.)
- **Reset System:** (This is not available in Stand-Alone programming sessions.) A system reset is required to ensure proper system operation after any cards or devices are equipped or unequipped, an extension list is changed, a trunk group list is changed, or an extension number is changed. An immediate or delayed reset can be requested as you are exiting from the programming session (see page 6-22) or using this option. An immediate major system reset will terminate all calls and will end the programming session. However, a delayed system reset will check system activity at the scheduled time and wait for the system to become idle and any active programming session to end before allowing the reset to occur.
- **Default Database:** This option is used to restore the system and AXXESSORY Talk databases to default values.



19.5 To view the window shown above, select Save/Restore from the Database Programming Programming menu.

**19.6 SAVE/RESTORE OPERATION and PERFORM OPERATION:** The save/restore operations are shown in the screen above. The options that include Voice Data are not available in stand-alone programming sessions or on systems that do not have an operating AXCESSORY Talk. If the Voice Data options are used during a remote session, there must be someone on site who can insert and remove the AXCESSORY Talk Voice Data diskettes. *The Voice Data save/restore should be used any time significant changes are made to the AXCESSORY Talk and/or AXCESS databases to preserve the integrity of the databases. The options without Voice Data should be used for regular system back-ups only.* Select the operation you wish to perform by highlighting it in the Save/Restore Operation list box. Then select the Perform Operation command button. The window shown on page 6-216 appears. You may see one of the following messages:

- If the database being restored requires more Premium Feature units than the system can support, you will see a warning message and the system will be inoperative.
- If the database being restored contains AXCESSORY Talk information and the system does not have an operating AXCESSORY Talk, you will see a warning message and no AXCESSORY Talk information will be loaded during the restore operation.

**NOTE:** If the Database Restore feature is used during a remote programming session, all calls are disconnected except the modem connection. Before restoring the database, ensure that the circuit card being used for the modem connection will not be reconfigured during the restoration (changed to a different type of card).

**19.7 GET CP ERROR INFORMATION:** When this command button is selected engineering error messages are copied to the programming device for review by the Inter-Tel Engineering department. A window appears as shown on page 6-216 for Save/Restore. Follow

the instructions given for selecting a destination drive. Select OK to send the information to the selected destination. This operation automatically freezes and then unfreezes the history queue. If the history was frozen before this operation was performed, a window appears that asks if you want it unfrozen. Select Yes to unfreeze the history, or select No to leave it frozen.

**19.8 FREEZE/UNFREEZE HISTORY QUEUE:** To stop or start the fault history queue, select the Freeze or Unfreeze History Queue command button.

**19.9 DEFAULT DATABASE:** To return the call processing and AXXESSORY Talk databases to default values, select this command button. A window appears that warns that defaulting the database will overwrite the current database and asks if you wish to continue. Select Yes to default the database or select no to leave it unchanged. *Defaulting the database will end the programming session and drop all calls.*

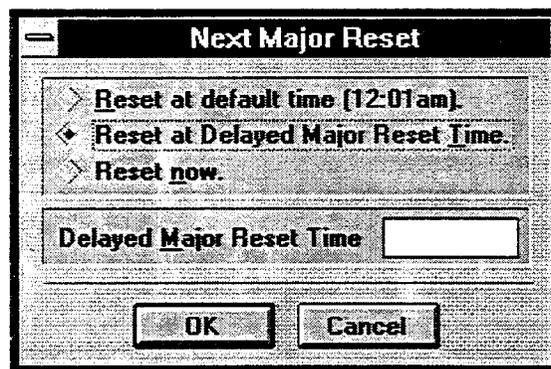
**19.10 RESET SYSTEM:** To perform a major reset, select the Reset System command button. When this button is selected, the window shown below will appear. (This window also appears when you are exiting from a programming session that requires a major system reset, as described on page 6–22.) You have the following options:

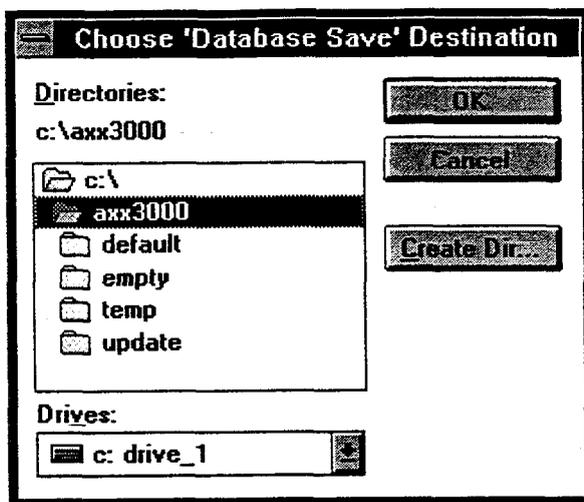
- **Reset at default time:** If the time shown on this line is an acceptable time for a major system reset, select this option button. When you select the OK command button, a window appears that asks you if you are sure you want to schedule a delayed reset. If you select Yes, the reset occurs at the time shown. If you select No, the window below will return.

- **Reset at Delayed Major Reset Time (only for this reset):** Selecting this option button allows you to change the time shown in the Delayed Major Reset Time text box. After selecting the option, move to the text box and enter the desired time. You can use 12- or 24-hour format. This will not change the default system reset time programmed in the Miscellaneous System-Wide Information window shown on page 6–88, but it will override it for this reset only. When you select the OK command button, a window appears that asks you if you are sure you want to schedule a delayed reset. If you select Yes, the reset occurs at the time shown in the text box. If you select No, the window below will return.
- **Reset now:** This option requests an immediate reset. If this option is selected, you will see a warning window when you select the OK command button. The window tells you that the reset will end the programming session and drop all calls, and it asks if you wish to continue. If you select Yes, the reset occurs immediately. If you select No, the window below will return.

**NOTE:** An immediate major system reset will terminate all calls and will end the programming session. However, a delayed system reset will check system activity at the scheduled time and wait for the system to become idle and any active programming session to end before allowing the reset to occur.

**19.11 OK/CANCEL:** When you are finished programming the reset, select the OK command button. Or, to exit without changing the reset information, select the Cancel command button.



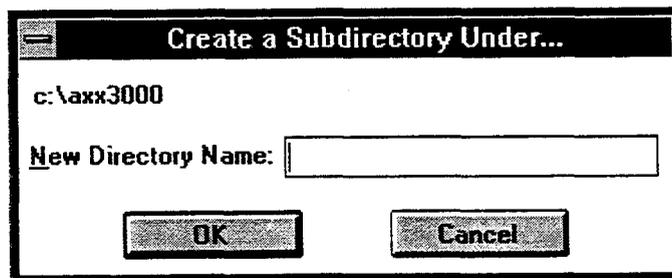


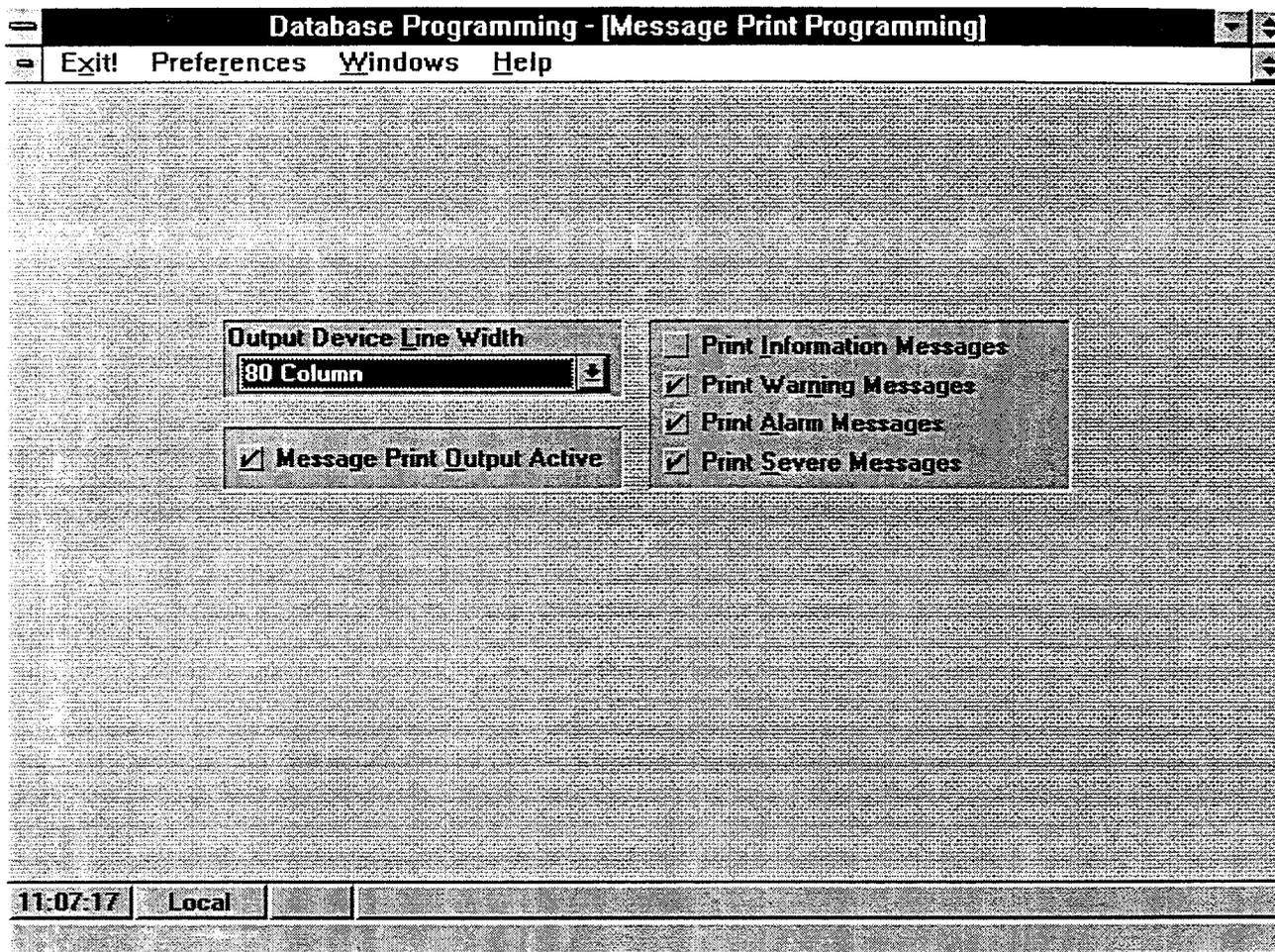
**19.12 DIRECTORIES/DRIVES:** The a: drive is the default destination directory. If you attempt to perform the operation without changing the directory and without placing a disk in the a: drive, the system will automatically change to the c: drive (as shown above). However, if you use this window to select a specific directory (on any drive) the system will *not* automatically change to the c: drive, but will attempt to use the specified directory. Select the destination drive (on the programming PC) to which you wish to send the database or error list, or the source of the database to be restored, by selecting the drive in the list box. To change drives, select the desired drive in the Drives drop-down list box.

**19.13 CREATE DIRECTORY:** To create a new directory on the programming PC drive for storing a system database, select the Create Dir command button. The following window appears. Enter the new directory name in the text box and then select the OK command button. Or select the Cancel command button to exit without creating the new directory.

**19.14 OK/CANCEL:** When the correct destination has been chosen, select the OK command button to start the Save or Restore. The following windows may appear:

- A system database restore operation begins with a window appears with a warning that the database is about to be overwritten with the new data. You are given the choice of allowing the overwrite (select Yes) or cancelling the restore process (select No).
- During a save or restore process, a window appears that shows the percentage of the database that has been copied. To cancel the save or restore operation, select the Cancel command button. The process may continue for several seconds before canceling, because it cannot abort until the file being used is completely transferred. **NOTE:** Canceling a restore operation will cause the system to default the database and terminate the programming session.
- During a save operation you may need to insert a second disk. If so, replace the first disk with a blank, formatted floppy disk.
- After performing a restore process in local programming mode (not via modem or direct connection), the options shown in the window on page 6-214 will not be updated to reflect the current AXCESSORY Talk status (available or unavailable) until you exit from and re-enter the window.





## B. MESSAGE PRINT PROGRAMMING

**19.15** System messages can be printed to give service personnel and Inter-Tel engineers information about system status during troubleshooting. The programmer may enable any combination of the error message types. (A program planning sheet is located in Figure 6-37, on page 6-303.) The available message types are:

- **Information Messages:** These messages give information concerning system operation.
- **Warning Messages:** The warnings in these messages indicate that a condition exists which may affect system performance.
- **Alarm Messages:** Alarm messages indicate that a minor alarm has occurred, but that general system operation was not affected.
- **Severe Messages:** These messages indicate that a severe error has occurred in the system.

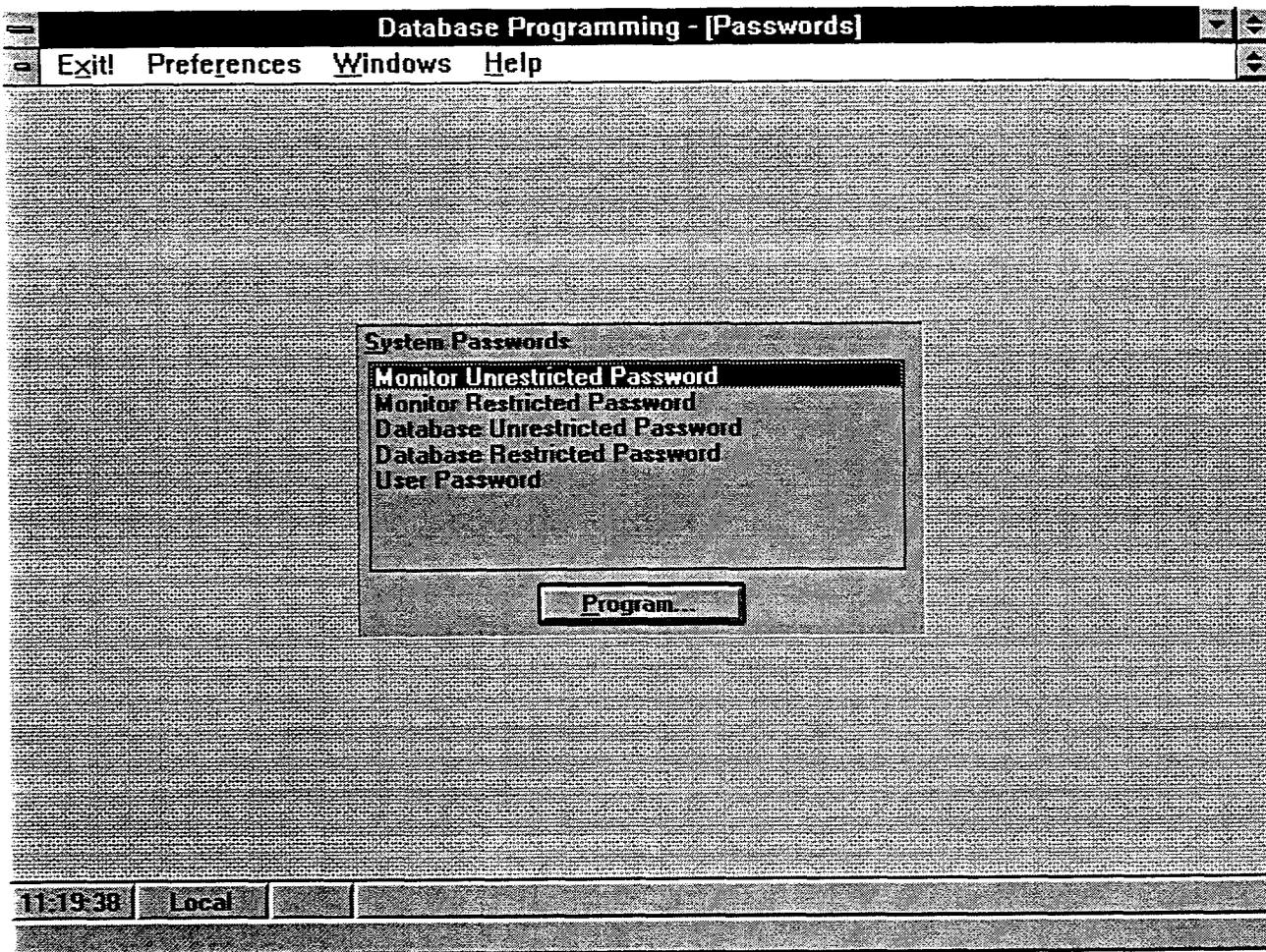
**19.16** Refer to FEATURES, page 4-113, or TROUBLESHOOTING, page 7-6, for more information regarding system messages and alarms.

**19.17** To reach the window shown above, select Message Print Programming from the Service menu.

**19.18 OUTPUT DEVICE LINE WIDTH:** To indicate whether the output device has 64, 80 or 132 character columns, select the drop-down list box and scroll to the desired column width. The selected width will appear in the closed drop-down list box.

**19.19 MESSAGE PRINT OUTPUT ACTIVE:** To activate the error/message reporting feature, place a check mark in the Error Message Output Active check box by selecting it. To disable the error/message reporting feature, remove the check mark by selecting the box again.

**19.20 PRINT OPTIONS:** These check boxes determine the types of error messages to be included in the error report. To activate a message, place a check mark in its check box. To disable the message, remove the check mark by selecting the box again.



## C. PASSWORDS

**19.21** To set passwords, select Passwords from the Service menu. The system database and the On-Line Monitor feature each can have two passwords assigned to them: Restricted and Unrestricted. A program planning sheet is located in Figure 6-38, on page 6-303.

- **User Password:** This password allows access to the AXCESSORY Talk programming screens, System Speed Dial, and the “Save” function of Database Save/Restore. In local mode, it also allows access to the “Restore” function. In remote sessions, it allows access to the “Freeze/Unfreeze” and “Get CP Error” functions.
- **Database Restricted:** When the Database Programming Restricted password is entered, the user *cannot* make changes in most of the AXCESS and AXCESSORY Talk databases. However, this password allows access to System Speed Dial, and the “Save” function of Database Save/Restore. In local

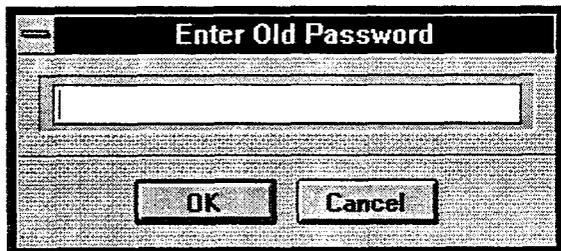
mode, it also allows access to the “Restore” function. In remote sessions, it allows access to the “Freeze/Unfreeze” and “Get CP Error” functions.

- **Database Unrestricted:** A user who enters the Database Programming Unrestricted password can make programming changes in any area.
- **Monitor Restricted:** When the Monitor Restricted password is entered, the user cannot perform a reset, post messages, send commands, reset cards, copy or initialize memory, or modify data.
- **Monitor Unrestricted:** When the Monitor Unrestricted password is used, the user can make changes in any area of the On-Line Monitor feature.

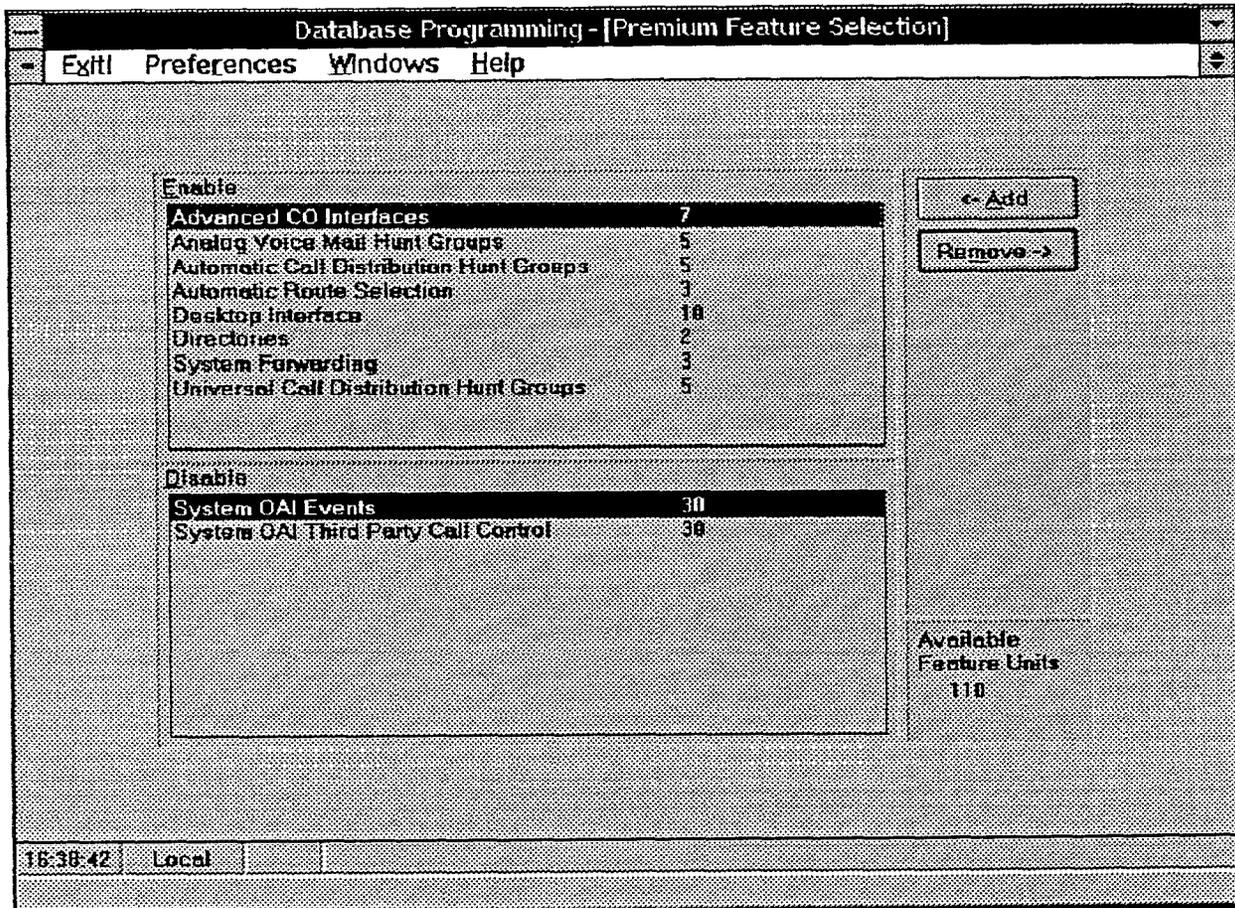
**19.22** If a restricted password is enabled for an application but its corresponding unrestricted password is not, a warning appears because that situation would allow unrestricted access to the programming application. Similarly, a warning will appear if there is a Monitor password programmed without a Database password.

The programmer must determine whether to leave the passwords programmed as they are (select OK) or go back and program the missing password (select Cancel).

**19.23 SYSTEM PASSWORDS:** Choose the password to be programmed by highlighting the desired line in the System Password list box and then selecting the Program command button. The following window will appear. Enter the old password. If the password is correct, the window header then changes to "Enter New Password." Enter the new password as described below.



- **PASSWORD:** Enter the password of up to 8 characters. The characters will not appear on the screen when typed. The system is not case sensitive; you may use upper or lower case characters. To remove an existing password, simply move the cursor to the text box and, without pressing any additional keys, press RETURN.
- **OK:** After typing the password, select the OK command button. The window heading will change to "Verify New Password" and you must retype the password as before. If the entered passwords match, you will return to the Password window, if not, you must re-enter the new password and verify it again.
- **CANCEL:** If you make a mistake while entering the password or wish to leave it unchanged, select the Cancel command button.



#### D. PREMIUM FEATURE SELECTION

**19.24** Select Premium Feature Selection from the Service menu to view the window shown above. It is used for enabling the special features of the AXXESS System. A program planning sheet is located in Figure 6-39, on page 6-304.

**19.25** The AXXESS System is available in "Basic" and "Premium" software packages, as described on pages 1-3 and 6-4. You must have a Premium package to assign the units for the premium features.

**19.26** The Premium Feature software package is available in four variations, depending on the PAL that is installed. The PAL provided with the software determines whether the software is MF or KF rated and how many premium features can be enabled on the system. The premium features are assigned "unit" values (shown in the window above). The PALs provide up to 100 units that may be used for enabling the premium

features. The premium features and their unit values are shown in the window above.

**19.27** In all default databases, all premium features are disabled.

**19.28 ADD:** To add a feature to the Enable list box, highlight it in the Disable list box and select the Add command button. The feature will move to the enable list if there are enough units remaining. (Note that the number of available feature units are shown at the bottom of the screen. Stand-alone programming sessions will always be allowed 100 units.)

**19.29 REMOVE:** To remove a feature from the Enable list, highlight it in the Enable list box and select the Remove command button. The feature will be moved to the Disable list box and the number of available feature units will be increased. (If you remove a feature after it has been programmed, the programming for that feature is preserved and will be in effect again if the feature is ever re-enabled.)

## E. CUSTOMIZED REPORT PROGRAMMING

**19.30** Customized reports are created by selecting the programming area to be reported and then selecting the information that will be included. When extension numbers are listed in a report, they can be sorted by name, extension number or circuit number. Reports can also be titled. The report types and their options include the following. Sample reports (with all options enabled) are shown in FEATURES beginning on page 4-115.

- **ARS Route Group Report:** If the ARS feature is enabled (see page 6-220), you can select the route groups that are listed in the report which may include any combination of the following items.
  - Route Group Dial Patterns
  - Route Group Dial Rules
  - Route Group Trunk Groups
- **Call Routing Report:** Select the call routing tables that will be listed in the report, showing their dialing patterns, names, and destinations.
- **CO Trunk Groups Report:** You select the trunk groups that are listed in the report which can include any combination of the following items.
  - Day Answer Access
  - Night Answer Access
  - Day Outgoing Access
  - Night Outgoing Access
  - Day Ring-In
  - Night Ring-In
  - Toll Restriction
  - Trunk List
- **Detailed Station Report:** You select the stations that are listed in the report which can include any combination of the following items.
  - Account Codes
  - Mailboxes (not available unless AXCESSORY Talk is enabled)
  - Miscellaneous Flags
  - Miscellaneous Information
  - Programmable Keys
  - Special Purpose Station
- System Forwarding (not available unless the feature is enabled, as described on page 6-220)
- Toll Restriction
- **General Station Report:** You select the stations that are listed in the report which can include any combination of the following items.
  - Attendant
  - Class Of Service
  - Equipment
  - Special Purpose Stations
- **Hunt Group Report:** You select the hunt groups that are listed in the report which can include any combination of the following items.
  - List of Stations
  - Timers
- **Individual Trunk Reports:** Selected trunks are listed with their type, circuit number, trunk group, and flags.
- **Keymap Report:** You select the keyset and DSS map groups and the map diagrams that are listed in the report which can include any combination of the following items.
  - Key Assignments
  - Station List
- **Phone List:** You select the stations, hunt groups and page zones that are included in the report.
- **Station Flags:** The report lists the stations that are assigned the station flags that you choose.
- **System Speed Dial Report:** The report lists the system speed-dial numbers that you choose.
- **System Timers Report:** The report lists the system timers that you choose.
- **T1 Report:** this report shows information for selected T1 Cards, including flags, error statistics, reference clock information, and/or error thresholds.
- **Toll Restriction Report:** You select the classes of service and/or user groups that are listed in the report which can include any combination of the following items.
  - COS Day List of Stations
  - COS Dialing Patterns

- COS Night List of Stations
- User Group Allowed Area Codes
- User Group Allowed Office Codes
- User Group Day List of Stations
- User Group Extended Area Codes
- User Group Night List of Stations
- User Group Restricted Area Codes
- User Group Restricted Office Codes

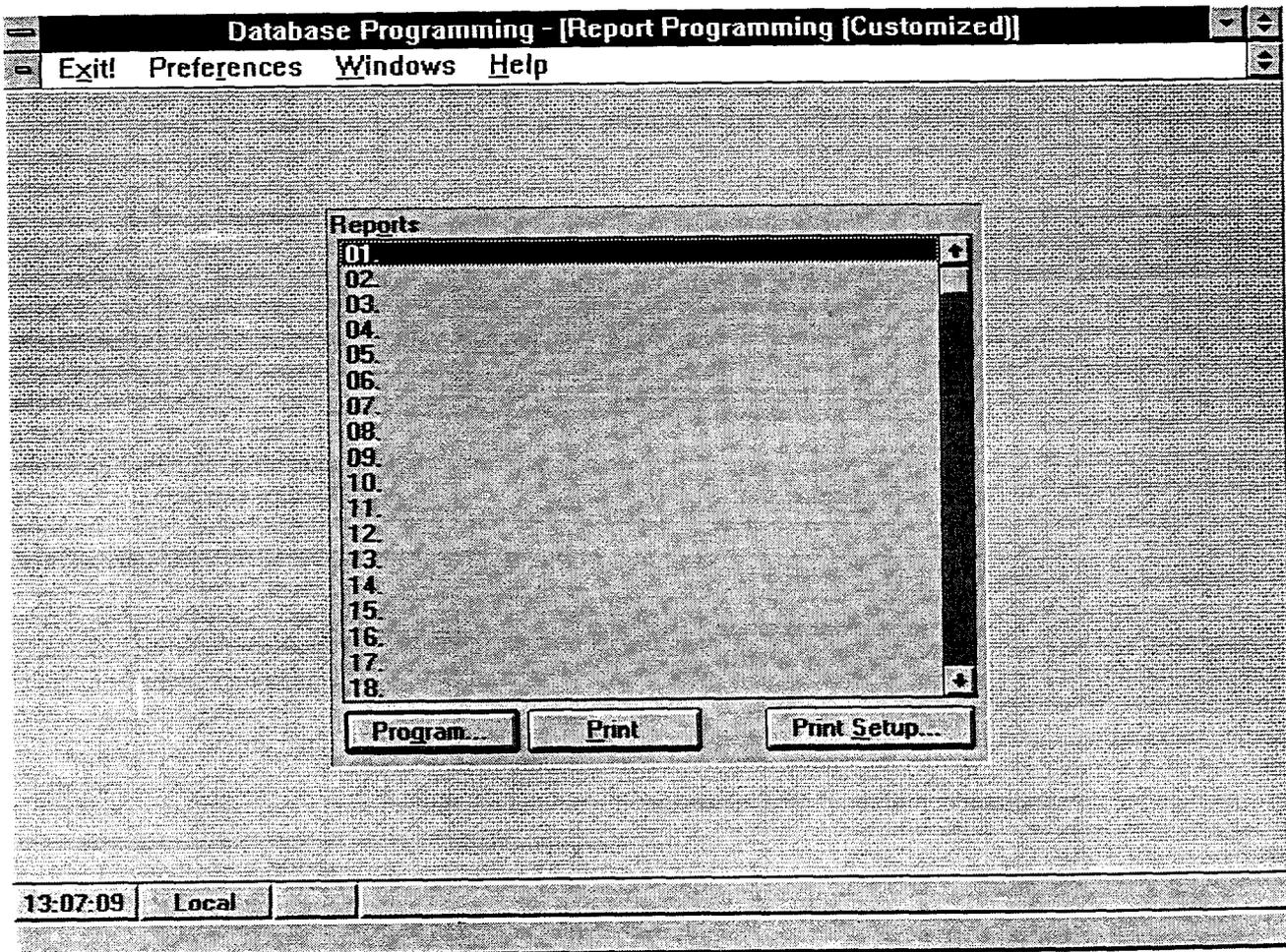
19.31 Reports can be sent to files on the PC or to a printer port.

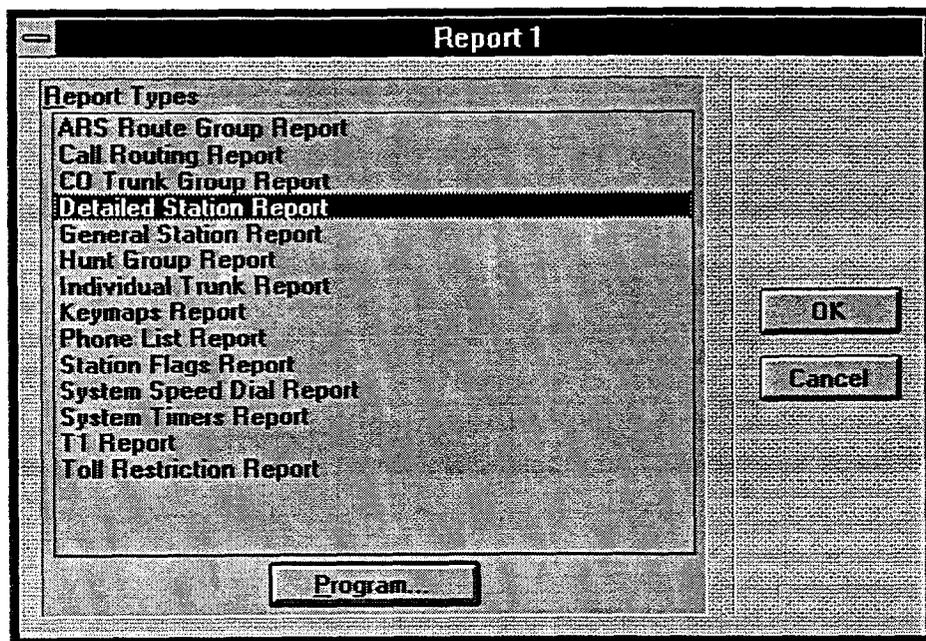
19.32 To reach the window shown below, select Report Programming (Customized) from the Service menu or enter the CREP command.

19.33 **REPORTS/PROGRAM:** Scroll through the list box until the desired report number is highlighted. The window shown on the following page appears for programming the report parameters.

19.34 **PRINT SETUP:** Select the Printer Setup command button to designate the destination printer port or PC file for the report. The window on page 6-230 appears.

19.35 **PRINT:** Select the Print command button to generate the selected report. A window appears as shown on page 6-231. The reports are presented in the formats shown on page 4-115. While the report is being printed, a window appears that contains a Cancel button. If you wish to halt the report, select the Cancel button.



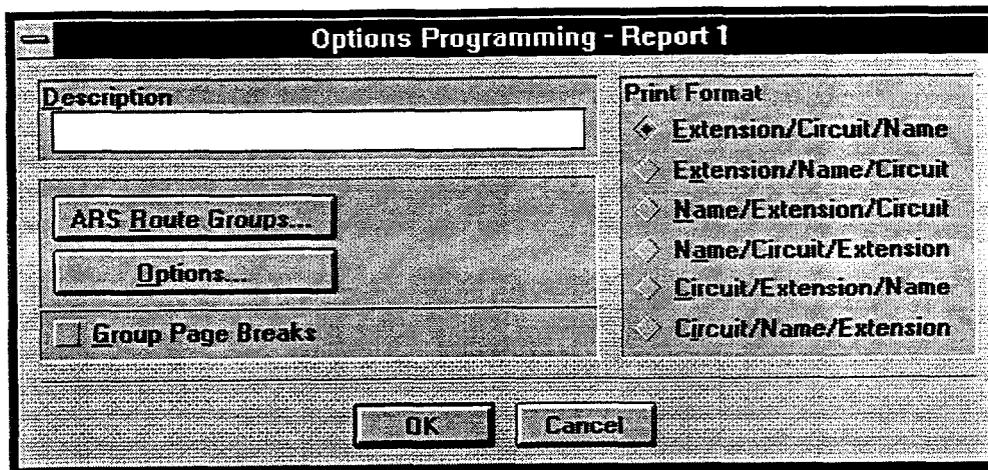


**19.36 REPORT TYPES/PROGRAM:** Begin programming by selecting the report type. Scroll through the list box until the desired report type is highlighted. Then select the Program command button to view the window that allow you to determine what elements are included in the report (user groups, stations, hunt groups, etc.). The windows are shown on the following pages:

- The window for ARS Route Group, CO Trunk Group, Detailed Station, General Station, Individual Trunks, Hunt Group, Station Flags, and T1, Toll Restriction Reports are all very similar. A representative window is shown on the next page.
- The window for Call Routing Tables is shown on page 6-225.

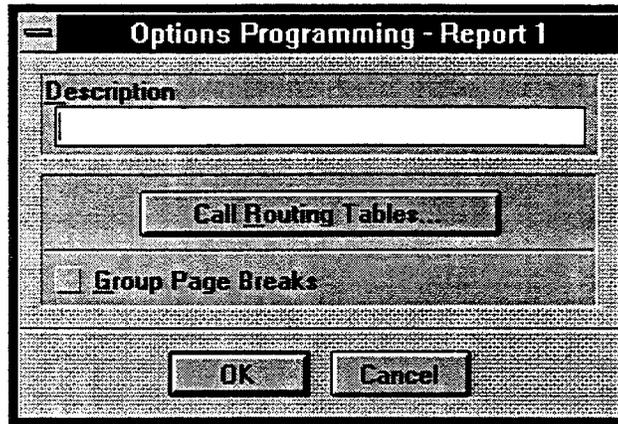
- The window for Keymap Reports is shown on page 6-226.
- The window for Phone List Reports is shown on page 6-227.
- The window for System Speed Dial and System Timer Reports is shown on page 6-228

**19.37 OK/CANCEL:** When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-222. Or, select the Cancel command button to return to the Report Programming window without saving the changes.



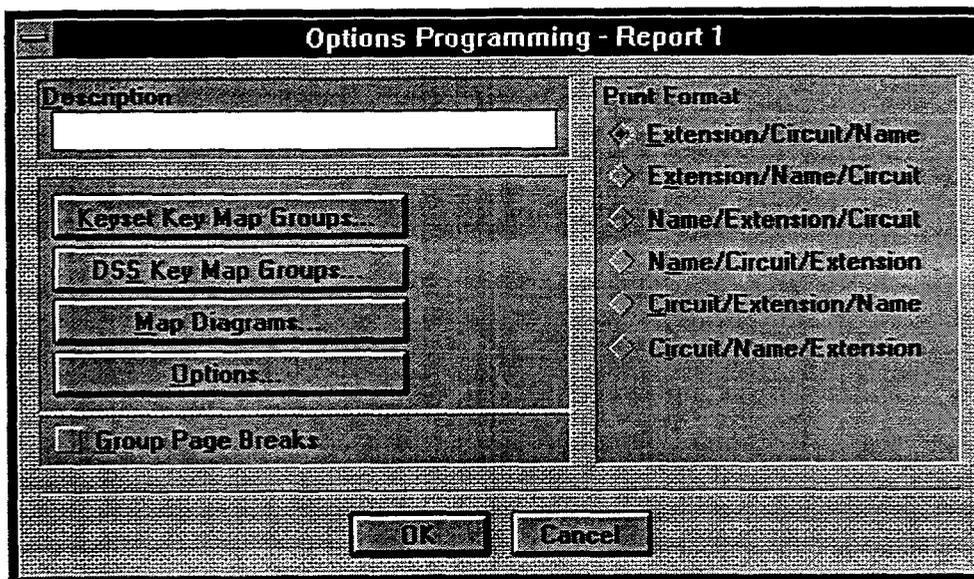
**19.38** This sample is similar to the windows is used for ARS Route Group, CO Trunk Group, Detailed Station, General Station, Individual Trunks, Hunt Group, T1, and Toll Restriction Reports. The Station Flags window is also similar, but has no Options button.

- **DESCRIPTION:** If you wish to name the report, enter the desired report name in the Description text box. The description will appear in the Reports list box shown in the window on page 6-222.
- **UNITS:** Depending on the report type selected, the “units” included in the report can be stations, hunt groups, trunks, ARS route groups etc. Selecting this command button allows you to select the units that will be included in the report. (The Toll Restriction Report window will have two command buttons — for Class of Service and User Groups.) When selected, a window like the one shown on page 6-229 appears.
- **OPTIONS:** Select the Options command button for a list box window (as shown on page 6-229) that shows the available options for each report type. (A complete list of report options is shown on page 6-221.)
- **GROUP PAGE BREAKS:** Select this check box to place a check mark in it if you wish to have each group (circuit board, map group, hunt group, etc.) on a separate page of the report.
- **PRINT FORMAT:** The devices included in the report can be sorted by extension number, circuit number, or name. Place a dot in the desired sorting method by selecting it.
- **OK/CANCEL:** When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-223. Or, select the Cancel command button to return to the Report Types window without saving the changes.



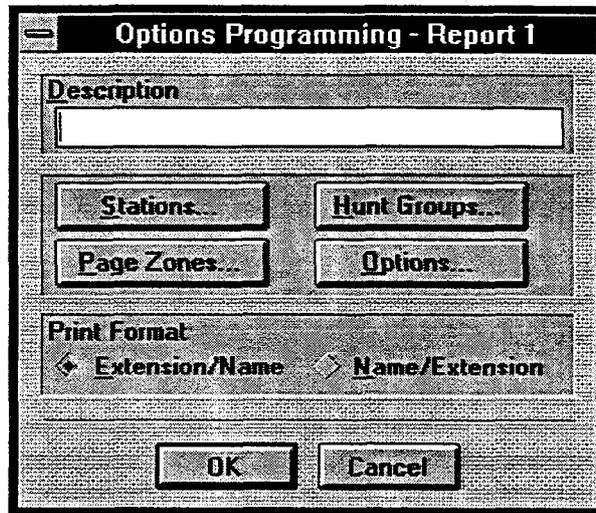
19.39 This window is used for Call Routing Table reports.

- **DESCRIPTION:** If you wish to name the report, enter the desired report name in the Description text box. The description will appear in the Reports list box shown in the window on page 6-222.
- **CALL ROUTING TABLES:** Select this command button to choose the call routing tables that will be included in the report. When selected, a window like the one shown on page 6-229 appears.
- **GROUP PAGE BREAKS:** Select this check box to place a check mark in it if you wish to have each group (circuit board, map group, hunt group, etc.) on a separate page of the report.
- **OK/CANCEL:** When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-223. Or, select the Cancel command button to return to the Report Types window without saving the changes.



19.40 This window is used for Key Map Reports.

- **DESCRIPTION:** If you wish to name the report, enter the desired report name in the Description text box. The description will appear in the Reports list box shown in the window on page 6-222.
- **KEYSET KEY MAP GROUPS, DSS MAP GROUPS, and MAP DIAGRAMS:** Select these command buttons to choose the map groups and diagrams that will be included in the report. When selected, a window like the one shown on page 6-229 appears.
- **OPTIONS:** Select the Options command button for a list box window (as shown on page 6-229) that shows the available options for the Key Map Reports. (A complete list of report options is shown on page 6-221.)
- **GROUP PAGE BREAKS:** Select this check box to place a check mark in it if you wish to have each group (circuit board, map group, hunt group, etc.) on a separate page of the report.
- **PRINT FORMAT:** The devices included in the report can be sorted by extension number, circuit number, or name. Place a dot in the desired sorting method by selecting it.
- **OK/CANCEL:** When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-223. Or, select the Cancel command button to return to the Report Types window without saving the changes.

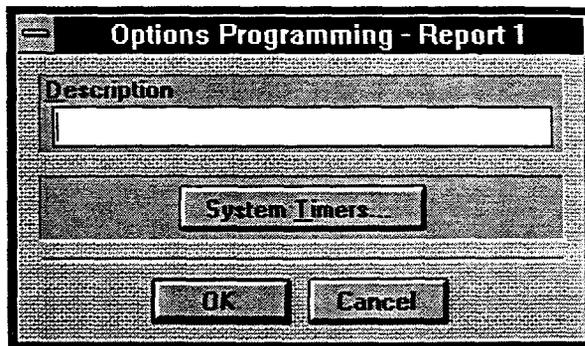
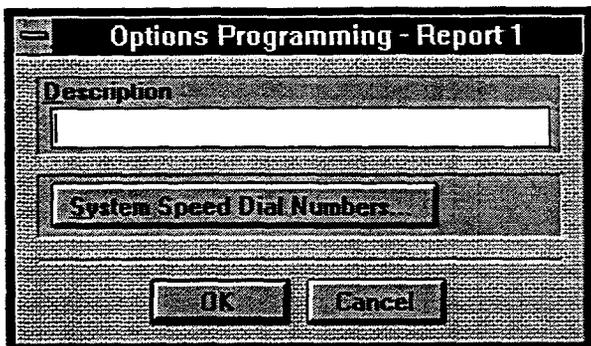


19.41 This window is used for Phone List Reports.

- **DESCRIPTION:** If you wish to name the report, enter the desired report name in the Description text box. The description will appear in the Reports list box shown in the window on page 6-222.
- **STATIONS, HUNT GROUPS, and PAGE ZONES:** Select these command buttons to choose the stations, hunt groups, and/or page zones that will be included in the report. When selected, a window like the one shown on page 6-229 appears.
- **OPTIONS:** Select the Options command button for a list box window (as shown on page 6-229) that

shows the available options for the Phone List report. (A complete list of report options is shown on page 6-221.)

- **PRINT FORMAT:** The devices included in the report can be sorted by extension number or name. Place a dot in the desired sorting method by selecting it.
- **OK/CANCEL:** When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-223. Or, select the Cancel command button to return to the Report Types window without saving the changes.

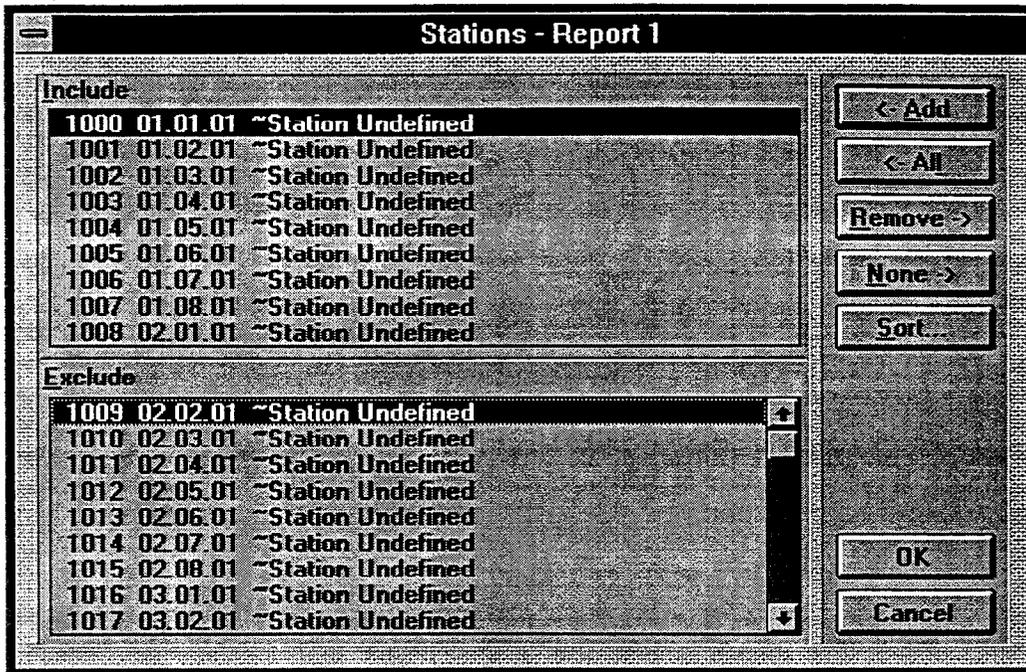


**19.42** These windows are used for System Speed Dial Number and System Timer Reports.

- **DESCRIPTION:** If you wish to name the report, enter the desired report name in the Description text box. The description will appear in the Reports list box shown in the window on page 6-222.
- **UNITS:** Depending on the report type selected, the units included in the report can be speed dial numbers or timers. Selecting this command button al-

lows you to select the units that will be included in the report. When selected, a window like the one shown on page 6-229 appears.

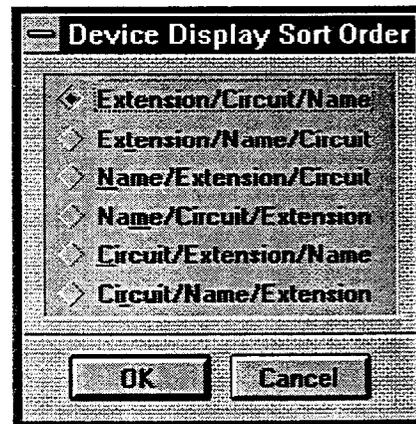
- **OK/CANCEL:** When report programming is completed, select the OK command button to save the information and return to the window shown on page 6-223. Or, select the Cancel command button to return to the Report Types window without saving the changes.



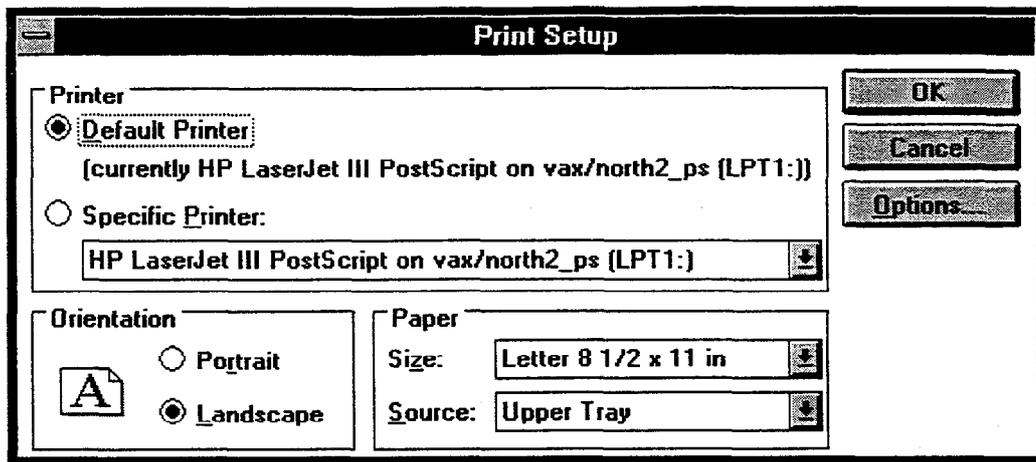
19.43 A window like the one shown above appears when a command button is selected from one of the Options Programming windows shown on the preceding pages. The windows for selecting units and options are similar. To determine the units or options that will be included in the report, use the following procedure:

- **ADD/ALL:** Use the Add command button to move the highlighted item from the Exclude list to the Include List, or use the All command button to place all items in the list.
- **REMOVE/NONE:** To remove an item from the Include list, highlight it and select the Remove command button. Or, to remove all items, use the None command button.
- **SORT:** (This button does not appear when an Options command button is selected.) To change the way the lists are sorted, select the Sort command button. The following window appears. Move the dot to the option button for the desired sorting order and then select the OK command button. Or, select

the Cancel command button to leave the sorting order unchanged.



- **OK/CANCEL:** When the Include List appears as desired, select the OK command button. Or, to exit without changing the lists, select the Cancel command button.



19.44 This window appears when the Print Set-Up command button (shown on page 6-222) is selected. Set the printer options as follows.

- **PRINTER:** Select the option button for the Default Printer, or select the Specific Printer option and use the drop-down list box to scroll to the desired printer.
- **ORIENTATION:** If applicable to the selected printer, determine whether you want the reports to print in portrait (narrow) or landscape (wide) mode by selecting the desired option button.
- **PAPER:** If applicable to the selected printer, select the Size and Source drop-down list boxes to scroll to the correct paper selections.
- **OPTIONS:** If your printer requires additional setup, refer to your Windows documentation and/or your printer manual to determine the options that are required for your printer and for the instructions to set them.
- **OK/CANCEL:** When your printer is set up, select the OK command button to save the printer options and return to the window shown on page 6-222. Or, to exit without saving any changes, select the Cancel command button.

**Print**

Printer: Default Printer (HP LaserJet III  
PostScript on vax/north2\_ps  
(LPT1:))

Print Range

All

Selection

Pages

From:  To:

Print Quality: 300 dpi

Copies: 1

Print to File

OK  
Cancel  
Setup...

**19.45** This window appears when you select the Print command button shown on page 6-222.

- **PRINTER/SETUP:** This shows the currently selected printer. If you would like to change printers, select the Setup command button to display the Print Set-Up window shown on the preceding page.
- **PRINT RANGE:** This is always set to "All," and cannot be changed.
- **PRINT QUALITY:** If your printer has the capability to change print quality, select this drop-down list box and scroll to the desired dots-per-inch (dpi) value.
- **PRINT TO FILE:** If you would prefer to print to a file, select this check box. A window will appear that contains a text box. Enter the output file name in the text box and select the OK command button. Or, select the Cancel command button to return to the window shown above.
- **COPIES:** Enter, in the Copies text box, the number of copies you wish to print.
- **OK/CANCEL:** When you are ready to print, select the OK command button. The report is automatically sent to the printer and the window on page 6-222 returns. Or, to cancel the print command, select the Cancel command button to return to the Report Programming window.

## F. SYSTEM CONFIGURATION

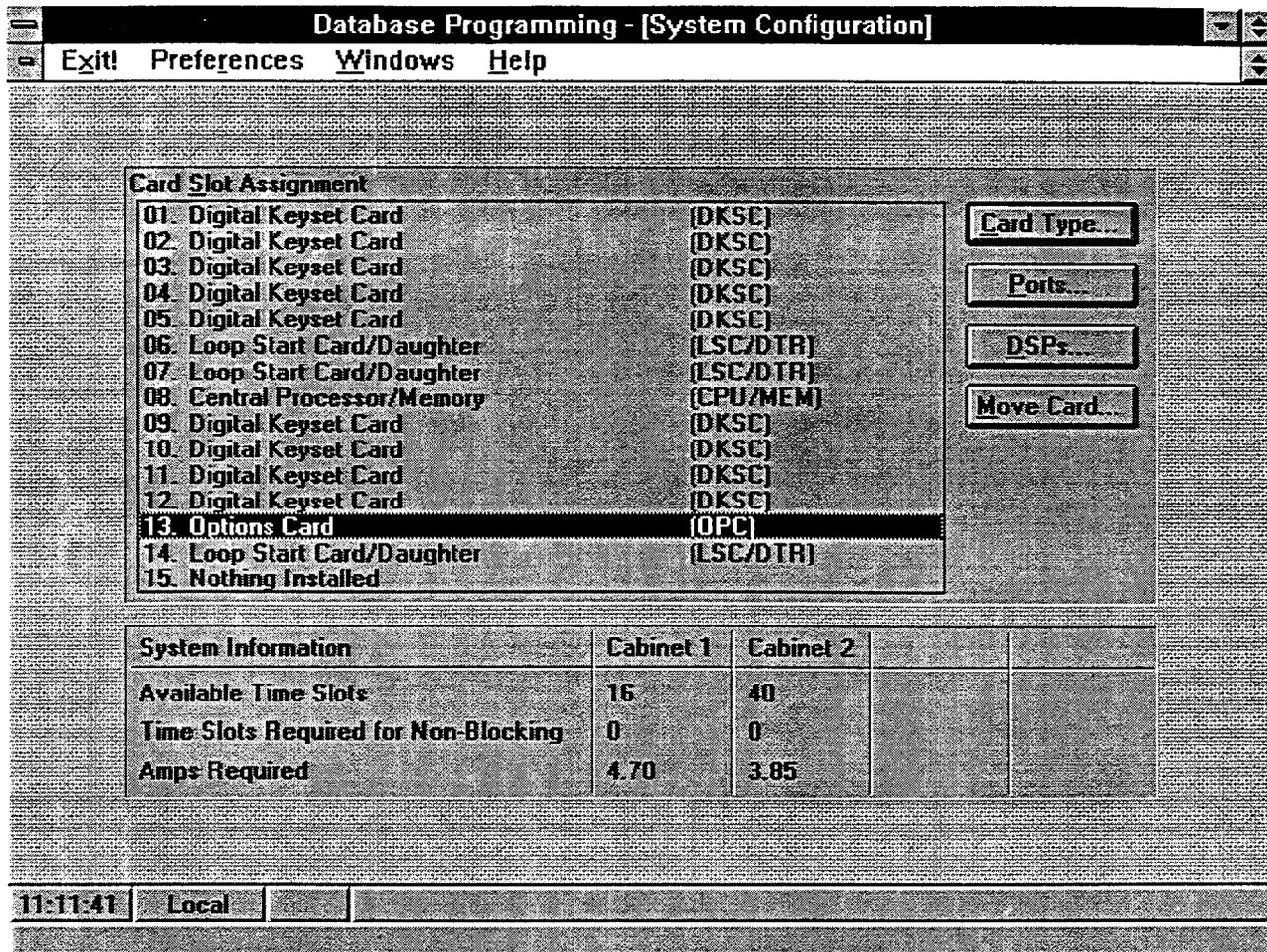
**19.46** System Configuration allows the programmer to designate the type of interface card that is installed in each of the card slots, and designate the circuits making up the card. In addition, there is information which informs the programmer of the number of timeslots which are required by the database configuration. This is done so that the programmer is aware of the number of timeslots in use by the system. Although the basic system configuration is non-blocking, certain configurations of Options card ports can lead to circumstances wherein more timeslots are assigned than are available, which may result in blocking if an attempt is made to use all resources at once. (Refer to page 2-5 in SPECIFICATIONS for further discussion of timeslot allotment.)

**19.47** Because the cardfile has universal slots — any type of card (except the CPUs) can be installed in any

slot — this program is needed to “tell” the database which type of card is in each slot. The only types of cards that can be programmed into card slot 8 are CPU/MEM and CPU020/PCM-D. One of these card types must be selected for this slot. The system programming will not allow an empty slot (or any other card type) in slot 8 and nothing can be programmed in slot 16.

**19.48** When changing the board type for equipped slots, existing circuits must first be reconfigured. Failure to redefine the associated circuits before inserting another type of interface board of a different device type will produce an error message.

**19.49** When you select System Configuration from the Service menu, the programming window appears as shown on the next page. A program planning sheet is located in Figure 6-40, on page 6-305.



**19.50 CARD SLOT ASSIGNMENT and CARD TYPE:** To configure a card slot for a particular type of card, first locate the desired card position in the Card Slot Assignment list box and highlight it. Then, select the Card Type command button. The window shown on page 6-235 appears.

**19.51 PORTS or DSPs:** (The DSPs button is available for the OPC card type only.) To configure the ports on the selected card, select the Port Programming command button. To program the DSPs on the Options card, select the DSP Programming command button. The window that appears depends on the type of card selected. Each window type is shown in the following pages. There are programming windows for:

- CPU Card — CPU020/PCM-D or CPU/MEM (page 6-236)

**NOTE:** If you upgrade a CPU or CPU/MEM to a CPU020/PCM-D card type, the slot *cannot be returned to the previous card type.*

- Digital Keypad Card — DKSC or DKSC-16 (page 6-237)
- Single-Line Card (page 6-240)
- Loop Start Card and Loop Start Card/Daughter (page 6-241)
- T1 Card (page 6-242)
- Options Card (page 6-243)

**19.52 SYSTEM INFORMATION:** The following system information is provided for reference purposes:

- **Available Timeslots:** This line tells you how many timeslots are available for use by the system resources. The available number decreases as the following resources are programmed:
  - OPC DTMF receivers
  - OPC Caller ID receivers
  - OPC conference circuits

- OPC standard speakerphone resources (Standard and Basic keysets on DKSC-16 cards will not use OPC speakerphone timeslots unless all resources on the DKSC-16 are unavailable at the time of the speakerphone request.)
- OPC enhanced speakerphone resources for Standard and Basic keysets on DKSC and DKSC-16 circuits
- DKSC, LSC, and SLC circuits
- Single-Line Adapters (SLAs)
- Modem Data Port Modules (MDPMs)

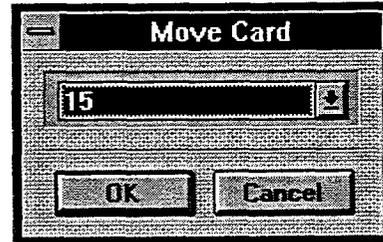
**NOTE:** Programming T1C and DKSC-16 resources does not reduce the number of available timeslots. These cards allocate their voice channel timeslots dynamically, on an as-needed basis, from the pool of available timeslots rather than requiring dedicated voice channels for each card.

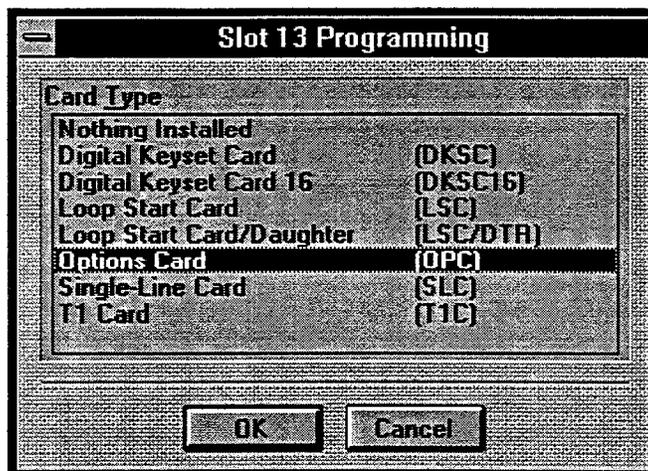
- **Timeslots Required for Non-Blocking:** This line shows how many of the available timeslots are required to support the DSP functions as programmed on all of the OPC cards combined. If this number is greater than the "Available Time Slots" number, voice channel blocking may occur.
- **Amps Required:** This information is provided to aid in selection of a power supply. Choose a power supply that is rated to provide *more than* the indicated requirement. The amperage requirement is based on the programmed system configuration.

Each card uses the following amperage for this calculation:

| CARD TYPE | REQUIRED AMPS |
|-----------|---------------|
| DKSC-16   | 1.28          |
| DKSC      | 0.64          |
| LSC       | 0.35          |
| OPC       | 0.30          |
| SLC       | 0.75          |
| T1C       | 0.40          |

**19.53 MOVE CARD:** This option is available only in stand-alone programming sessions and only if there is an available slot. If you wish to move a card from its assigned location in the cardfile to an available slot, highlight the card to be moved in the Slot Card Assignment list box. Then select the Move Card command button. The following window appears. The drop-down list box shows all available slots. Move the highlight bar to the desired slot. When the correct slot appears in the box, select the OK command button. Or, to leave the slot assignment unchanged, select the Cancel command button.

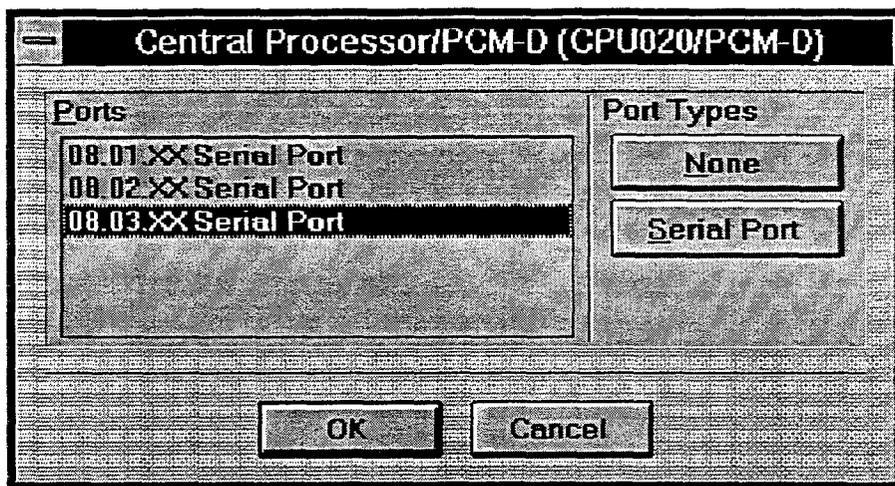




**19.54 CARD TYPE:** To select the type of card that will be assigned to the card slot, scroll to the desired card type in the list box. When a card is changed, one of the following may occur:

- When a card slot is modified to contain a DKSC, DKSC-16, or SLC the new stations will be included in all station “pick” lists in the database, except Keypad Map assignments. Keypads will be included in Keypad Map number 1 or 2, depending on the keypad type.
- If a DKSC-16 is changed to a DKSC, the device programming for circuits 1–8 will be preserved, but circuits 9–16 will be unequipped. If a DKSC is changed to a DKSC-16, circuits 1–8 will remain unchanged, and any previous programming for circuits 9–16 will be restored (they will be at default if they were never programmed).
- When a card slot is modified to contain a Loop Start Card (with or without a Daughter Card) or T1 Card the new ports will be included in the “Unused CO” trunk group.
- LSC and LSC/DTR loop start devices are compatible. If the card type is changed to a compatible type, the loop start trunk programming will be preserved.
- When a card slot is modified to Nothing Installed, or where the existing card type is changed to another card type, *all* reference to the stations or trunks that were on the card in that slot will be removed from *all* areas of the Database Manager (unless the card programming was first moved using the Move Card option.)
- If you upgrade a CPU or CPU/MEM to a CPU020/PCM-D card type, the slot *cannot be returned to the previous card type*. Also, a screen message reminds you to remove the NCC, because it is no longer required.
- The card slot that contains the Keypad card with the primary attendant’s station cannot be changed to another type of card or deleted until the attendant’s station is changed to another location on another Keypad card. If you attempt to do so, you will receive a warning message.

**19.55 OK/CANCEL:** When the card has been selected and configured, select the OK command button to return to the System Configuration window. Or, to leave the card slot programming unchanged, select the Cancel command button.



### CPU Card Configuration

**NOTE:** If you upgrade a CPU or CPU/MEM to a CPU020/PCM-D card type, the slot *cannot be returned to the previous card type*.

**19.56** The window shown above is used for configuring serial ports on a CPU/MEM or CPU020/PCM-D card. It appears when the CPU card is highlighted in the Card Type list box and the Port Programming command button is selected (shown on page 6-233).

**NOTE:** If you have changed from a CPU/MEM to a CPU020/PCM-D, the CPU serial port names will remain unchanged unless you disable and re-enable the

ports using this window, or manually change the names in Serial Port Configuration (page 6-245).

**19.57 PORTS:** The ports on the board and their current configurations are shown in the list box. To program a port, highlight it in the list box.

**19.58 PORT TYPES:** Select the desired option button to determine the type for the port that is highlighted in the list box. If the highlighted port will not be used, select None. To enable the port, select Serial Port.

**19.59 OK/CANCEL:** When the card configuration is as desired, select the OK command button. Or to exit without changing the configuration, select the Cancel command button.

## Digital Keypad Card Configuration

**19.60** When Digital Keypad Card is highlighted in the list box and the Port Programming command button is selected, the window shown on the next page appears.

**19.61** This window is used for configuring the DKSC and DKSC-16 card ports to support the various devices. DKSC/DKSC-16 capacities include the following:

- Keypad ports can be assigned for Single-Line Adapter (SLA) use. (Two single-line sets, two DID trunks, or one of each can be connected to an SLA on a DKSC or DKSC-16 port.) Refer to INSTALLATION, page 3–73, for special installation instructions.
- To support the Off-Hook Voice Announce feature, an Executive or Standard keypad can be equipped with a PCDDPM or a special OHVA Module. (See page 2–21 in SPECIFICATIONS for more information.) These keypad ports do not require special configuration programming.
- Up to 10 DSS/BLF units can be connected to Executive or Standard keypads with PCDDPMs. Each of those keypads can have single or tandem DSS/BLF Units in addition to using the Off-Hook Voice Announce feature that is available to all keypads with PCDDPMs. (See page 6–33 for keypad attached device programming information.)
- An Executive or Standard keypad with a PCDDPM (that does not have a DSS/BLF unit attached) can use a Desktop Interface device such as the AXCESSORY Connect or AXCESSORY ACD that has been developed for the AXCESS system. (See page 6–33 for keypad attached device programming information.)
- Executive or Standard keypad ports with PCDDPMs can be designated as system serial ports. (There can be up to eight system serial ports per system, including keypads, OPC, CPU, and MEM ports.) Keypad system serial ports can be used for system programming, SMDR report generation, and programming report generation. For proper serial port operation, the keypad circuit should also be programmed with camp-on tones disabled, extended ring cadence enabled, different alerting cadence disabled, and different ringback cadence disabled (see page 6–30).
- Modem Data Port Modules (MDPDMs) can be programmed for use on Executive or Standard keypads. (There can be up to 32 MDPDMs and/or single-line

sets on the system. If desired, a single-line set can be attached to an MDPDM. This uses one single-line circuit.) An Executive or Standard keypad with an MDPDM and a PCDDPM can use the off-hook voice announce and have a single-line set or data device connected.

**19.62** When multiple purposes are assigned to one DKSC port, the circuit numbers are assigned as follows:

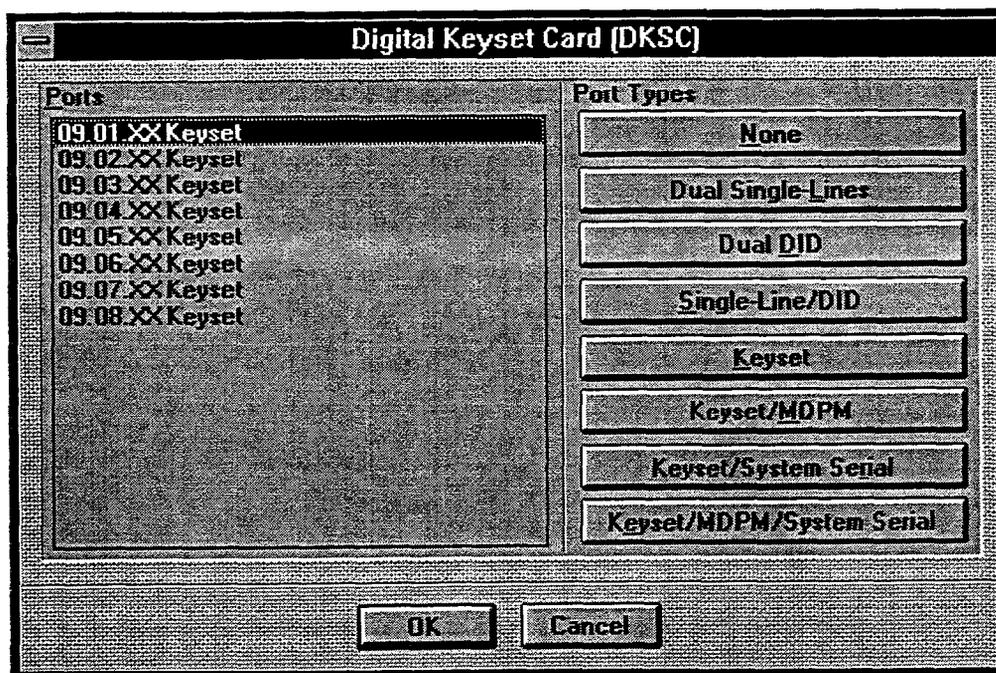
- **Dual Single-Line Sets on an SLA:** The single-line set circuit numbers are XX.XX.01 and XX.XX.02
- **Dual DID Trunks on an SLA:** The DID trunk circuit numbers are XX.XX.01 and XX.XX.02
- **Single-Line Set and DID trunk on an SLA:** The single-line set circuit number is XX.XX.01 and the DID trunk is XX.XX.02
- **Keypad Only:** XX.XX.01
- **Keypad with MDPDM:** The keypad is XX.XX.01 and the MDPDM is XX.XX.02
- **Keypad with System Serial Port:** The keypad is XX.XX.01 and the serial port is XX.XX.02.
- **Keypad with MDPDM and System Serial Port:** The keypad is XX.XX.01, the MDPDM is XX.XX.02, and the serial port is XX.XX.03.

**19.63** When a DKSC or DKSC-16 port is changed from single purpose (e.g., Keypad) to multiple purpose (e.g., Keypad with RS232 port), the database will retain all programming for the original single port and it will create new additional station(s) in all other applicable areas of programming. The original single port will retain its extension number; the new ports will have extension numbers assigned as you exit from this programming area.

**19.64** If a DKSC or DKSC-16 port is converted from Keypad to an SLA function, the keypad programming is erased and the two SLA circuits are at default values.

**19.65** If a DKSC or DKSC-16 port is changed from an SLA function to Keypad with MDPDM, the port programming for the SLA circuits is erased and the MDPDM is set at default values.

**19.66** If a DKSC-16 is changed to a DKSC, the device programming for circuits 1–8 will be preserved, but circuits 9–16 will be unequipped. If a DKSC is changed to a DKSC-16, circuits 1–8 will remain unchanged, and any previous programming for circuits 9–16 will be restored (they will be at default if they were never programmed).



**19.67 PORTS:** The ports on the board and their current configuration are shown in the Ports list box. To program a port, highlight it in the list box. To highlight several ports at once, press and hold the SHIFT key while using the arrow keys to lengthen or shorten the highlighted area; when you change the port type, all highlighted ports will be the same type.

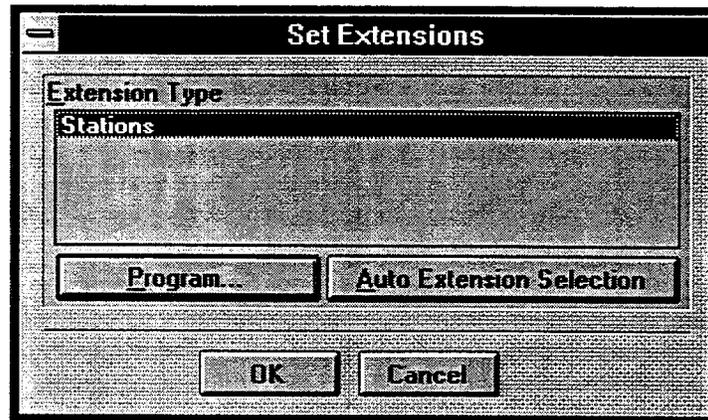
**19.68 PORT TYPES:** Select the desired option button to determine the port type for the port that is highlighted in the list box. The options are as follows:

- *None:* To disable the port, select the None option.
- *Dual Single-Lines:* If the port will be used for installing two single-line sets on an SLA, select this option.
- *Dual DID:* If the port will be used for installing two DID trunks on an SLA, select this option.
- *Single-Line/DID:* If the port will be used for installing one single-line set and one DID trunk on an SLA, select this option.
- *Keyset:* This option is selected if the port will be used for installing a keyset that does not have a DSS/

BLF Unit, will not be used as a serial port, and will not have a data device connection. (The keyset may have a PCDPM that is used only for off-hook voice announce.)

- *Keyset/MDPM:* If the port will support a keyset that is equipped with a PCDPM and an MDPM, but is used only for off-hook voice announce and a data device connection, select this option.
- *Keyset/System Serial:* To configure the port for a keyset with a system serial port, select the Keyset/System Serial option. (The keyset may also use its PCDPM for off-hook voice announce.)
- *Keyset/MDPM/System Serial:* To configure a port for a keyset with a PCDPM and a MDPM that will be used as a system serial port *and* for off-hook voice announce and a data device connection, select this option.

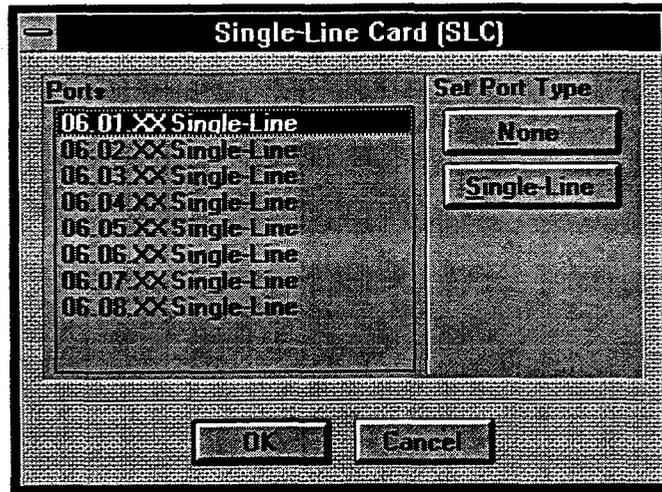
**19.69 OK/CANCEL:** When the card configuration is as desired, select the OK command button. Or to exit without changing the configuration, select the Cancel command button. *If you have added new stations*, a window appears as shown on the next page.



**19.70** This window appears if you have added any stations or trunks during configuration of a card. Program the new extension numbers as follows:

- **EXTENSION TYPE/PROGRAM:** The extension type will always be "Station" or "Individual Trunk." When you select the Program command button, a window appears like the one described on page 6-76. The list box will be labeled "Stations" or "Individual Trunks." Follow the instructions on that page for programming the extension numbers for the new stations or trunks.

- **AUTO EXTENSION SELECTION:** If you select the Auto Extension Selection command button, the extension numbers will be assigned automatically for the new stations. The System Configuration window appears momentarily and then you return to the Database Programming Menu.
- **OK/CANCEL:** When the new stations have been programmed, select OK to exit and save the changes. Or, select Cancel to exit without making any changes.

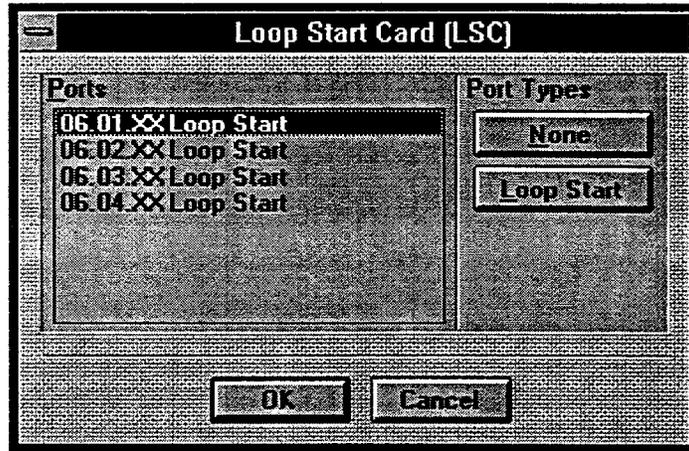


### Single-Line Card Configuration

**19.71 PORTS:** The ports on the board and their current configuration are shown in the Ports list box. To program a port, highlight it in the list box. To highlight several ports at once, press and hold the SHIFT key while using the arrow keys to lengthen or shorten the highlighted area; when you change the port type, all highlighted ports will be the same type.

**19.72 SET PORT TYPES:** Select the desired option button to determine the port type for the port that is highlighted in the list box. If the highlighted port will not be used, select None. To enable the port, select Single-Line.

**19.73 OK/CANCEL:** When the card configuration is as desired, select the OK command button. Or to exit without changing the configuration, select the Cancel command button. *If you have added new stations, a window appears as shown on page 6-239.*



### Loop Start Card Configuration

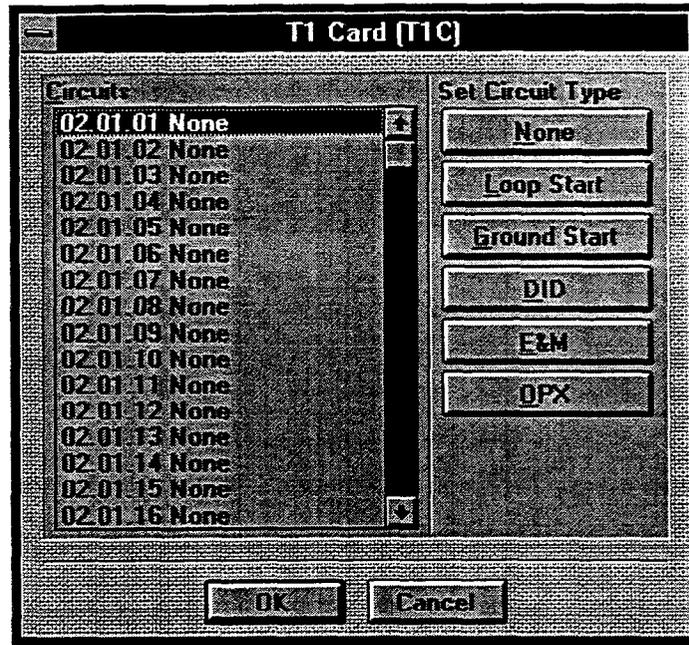
**19.74** This window is used for configuring a Loop Start Card, with or without a daughter card. It appears when the Loop Start Card or Loop Start Card/Daughter option is highlighted in the Card Type list box and the Port Configuration command button is selected (shown on page 6-233).

**19.75 PORTS:** The ports on the board and their current configuration are shown in the Loop Start or Loop Start/Daughter list box. To program a port, highlight it in the list box. To highlight several ports at once, press the SHIFT key while using the arrow keys to lengthen or

shorten the highlighted area; when you change the port type, all highlighted ports will be the same type.

**19.76 PORT TYPES:** Select the desired option button to determine the type for the port that is highlighted in the list box. If the highlighted port will not be used, select None. To enable the port, select Loop Start.

**19.77 OK/CANCEL:** When the card configuration is as desired, select the OK command button. Or to exit without changing the configuration, select the Cancel command button. *If you have added new trunks, a window appears as shown on page 6-239.*



### T1 Card Configuration

**19.78** This window is used for configuring a T1 Card. It appears when the T1 Card option is highlighted in the Card Type list box and the Port Configuration command button is selected (shown on page 6-233).

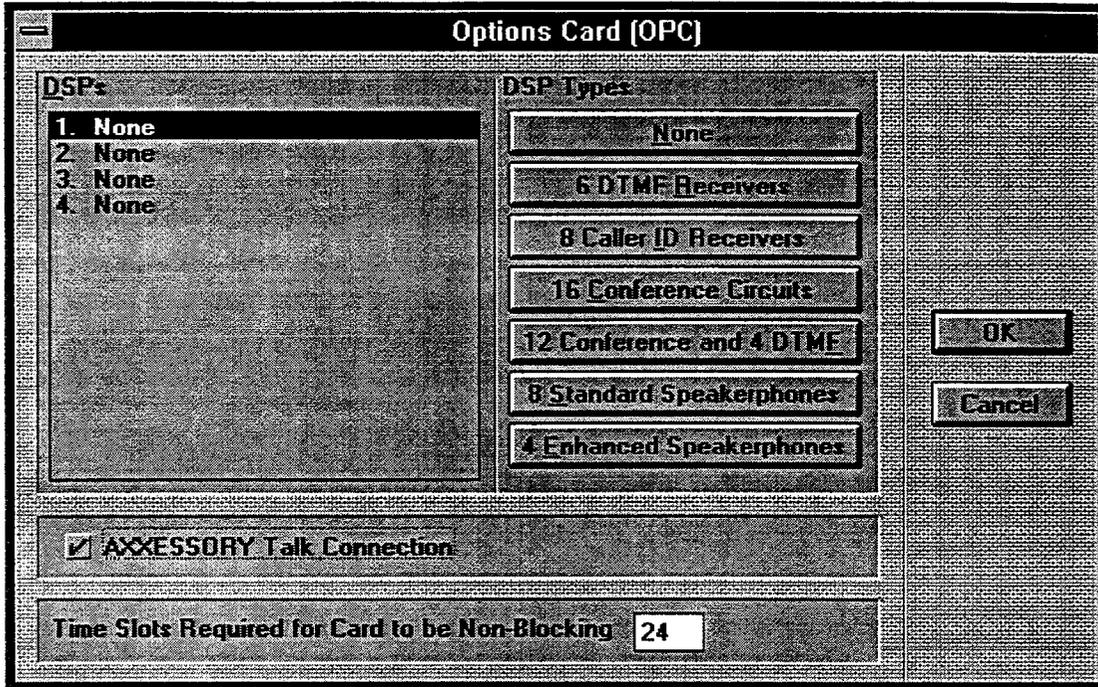
**19.79 CIRCUIITS:** The circuits on the board and their current configuration are shown in the Circuits list box. To program a circuit, highlight it in the list box. To highlight several circuits at once, press the SHIFT key while using the arrow keys to lengthen or shorten the highlighted area; when you change the circuit type, all highlighted circuits will be the same type.

**19.80 SET CIRCUIT TYPE:** Select the desired option button to determine the type for the circuit that is

highlighted in the list box. The following options are available:

- None
- Loop Start
- Ground Start
- DID
- E&M
- OPX

**19.81 OK/CANCEL:** When the card configuration is as desired, select the OK command button. Or to exit without changing the configuration, select the Cancel command button. *If you have added new trunks, a window appears as shown on page 6-239.*



### Options Card DSP Configuration

**19.82** An Options Card provides onboard Digital Signal Processors (DSPs). Each of the DSPs installed on the OPC board (up to four) may be configured as one of several available resources. (Caller information features require OPC programming to ensure that resources are available to support the features. Caller ID uses Caller ID receivers and DID/ANI uses DTMF receivers.) The Options Card can also be specified as having an AXCESSORY Talk PCM highway (OPC to AIC) connection to support additional ports.

**19.83** This window appears when Options Card is highlighted in the Card Type list box and the DSP Programming button is selected (see page 6-233).

**19.84 DSPs:** The DSPs on the board and their current configurations are shown in the DSPs list box. To program a DSP, highlight it in the list box.

**19.85 DSP TYPES:** Select the desired option button to determine the function of the highlighted DSP. Refer to SPECIFICATIONS and INSTALLATION for information regarding the equipment supported by these options. The options are as follows:

- **None:** If the DSP will not be used or is not equipped, select this option.
- **6 DTMF Receivers:** To enable six additional DTMF receivers place the dot in this option button.

- **8 Caller ID Receivers:** To enable eight receivers for Caller ID information, select this option.
- **16 Conference Circuits:** To enable 16 conference circuits, select this option.
- **12 Conference Circuits and 4 DTMF:** This enables 12 conference circuits and four DTMF receivers.
- **8 Standard Speakerphones:** Select this option to support eight standard shared speakerphone resources for use by Standard keysets.
- **4 Enhanced Speakerphones:** Select this option to support four shared enhanced speakerphone resources for use by Standard keysets.

**NOTE:** Each DKSC-16 has DSP resources to support up to 10 speakerphones at once for the keysets attached to it. The keysets on a DKSC-16 only use OPC speakerphone resources when the DKSC-16 resources are unavailable. DKSCs do not have onboard DSPs; their keysets require the OPC resources for speakerphones.

**19.86 AXCESSORY TALK CONNECTION:** If more than eight AXCESSORY Talk ports are equipped, place a check mark in this check box by selecting it. (Or, remove the check mark if the AXCESSORY Talk has eight or fewer ports.) The AXCESSORY Talk connection should be enabled on only the first OPC installed when there are multiple OPCs. When this option is enabled, you must connect the cable from the OPC to AIC. See page 3-74 for details.

**19.87 TIMESLOTS REQUIRED FOR CARD TO**

**NON-BLOCKING:** *This is used for reference only.*  
This tells you how many timeslots are needed to support the resources, as configured, to prevent voice channel blocking (including 24 timeslots for an AXCESSORY link connection, if enabled). (For further discussion of timeslots, see page 2-5 in SPECIFICATIONS.)

**19.88 OK/CANCEL:** When the card configuration is as desired, select the OK command button. Or to exit without changing the configuration, select the Cancel command button.

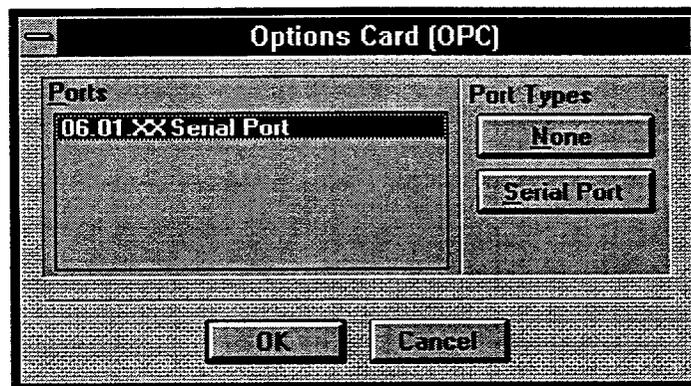
**Option Card Port Configuration**

**19.89** The window shown below is used for configuring serial ports on an Options card. It appears when the Options card is highlighted in the Card Type list box and the Port Programming command button is selected (shown on page 6-233).

**19.90 PORTS:** The ports on the board and their current configurations are shown in the list box. To program a port, highlight it in the list box.

**19.91 PORT TYPES:** Select the desired option button to determine the type for the port that is highlighted in the list box. If the highlighted port will not be used, select None. To enable the port, select Serial Port.

**19.92 OK/CANCEL:** When the card configuration is as desired, select the OK command button. Or to exit without changing the configuration, select the Cancel command button.



### G. SYSTEM SERIAL PORT CONFIGURATION

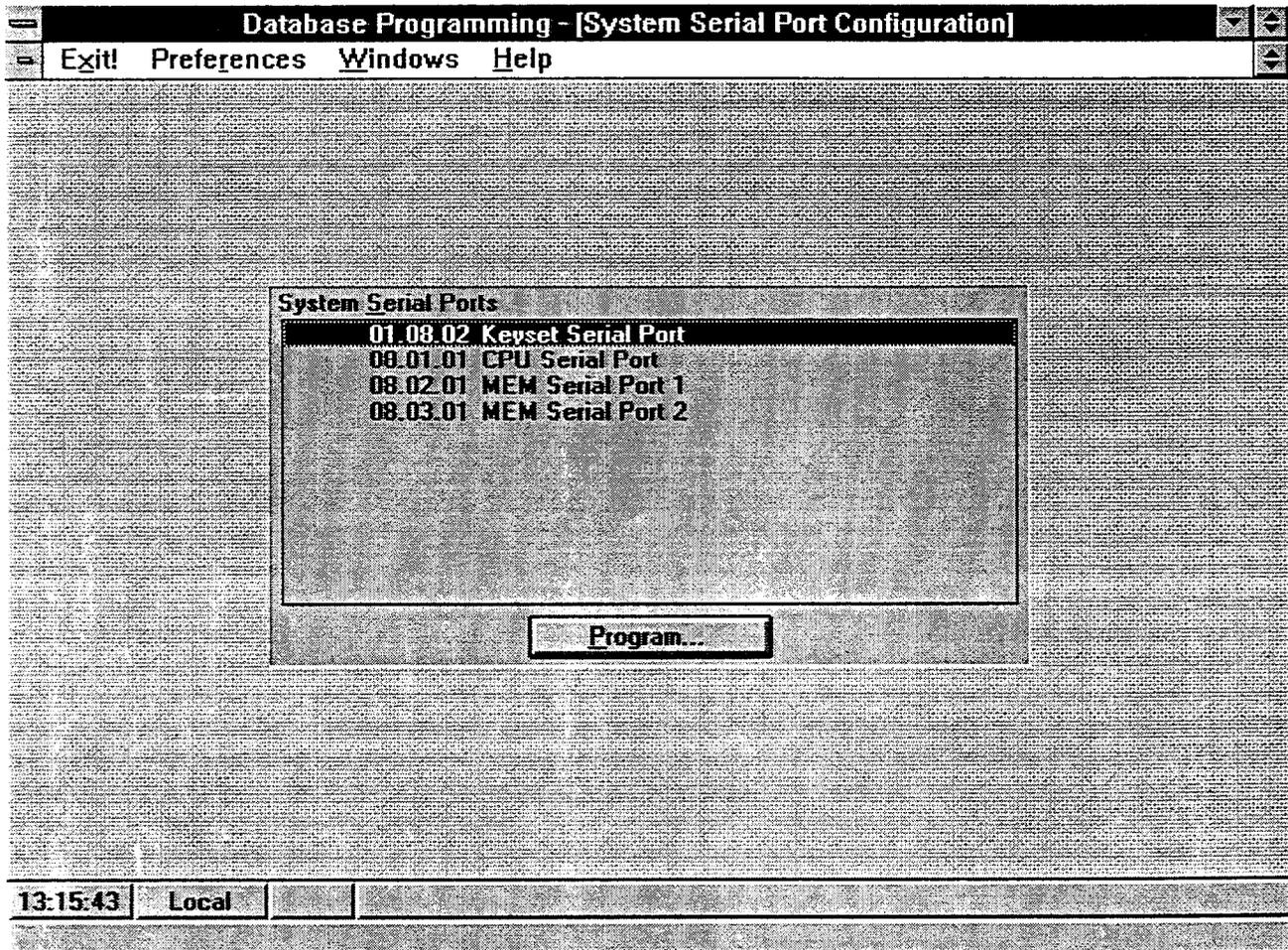
19.93 This window is used to set the baud rate and/or handshaking capabilities of the serial ports to match the configuration of external devices to which they will be attached (such as printers, PCs, etc.). It is viewed by selecting Serial Port Configuration from the Service menu. A program planning sheet is located in Figure 6-41, on page 6-310.

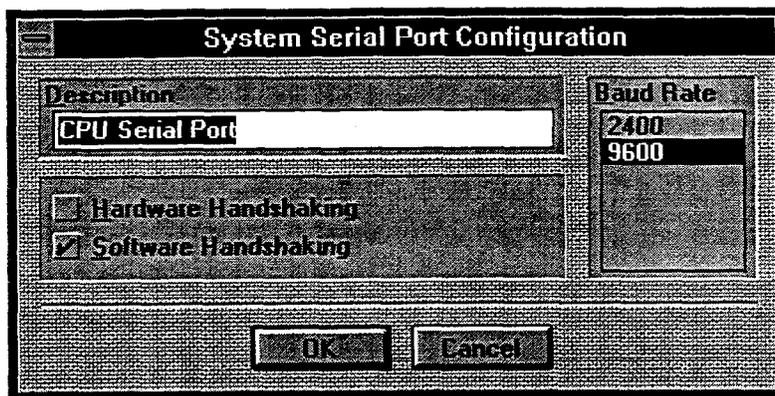
19.94 Serial ports are located on the CPU/MEM and CPU020/PCM-D cards. They can also be configured on the OPC and on Executive or Standard keysets with PCDPMs.

19.95 The list box in this window shows the serial ports that have been equipped through the System Configuration window. Note that all ports with a circuit number 08.XX.XX are located on the CPU/MEM or CPU020/PCM-D cards.

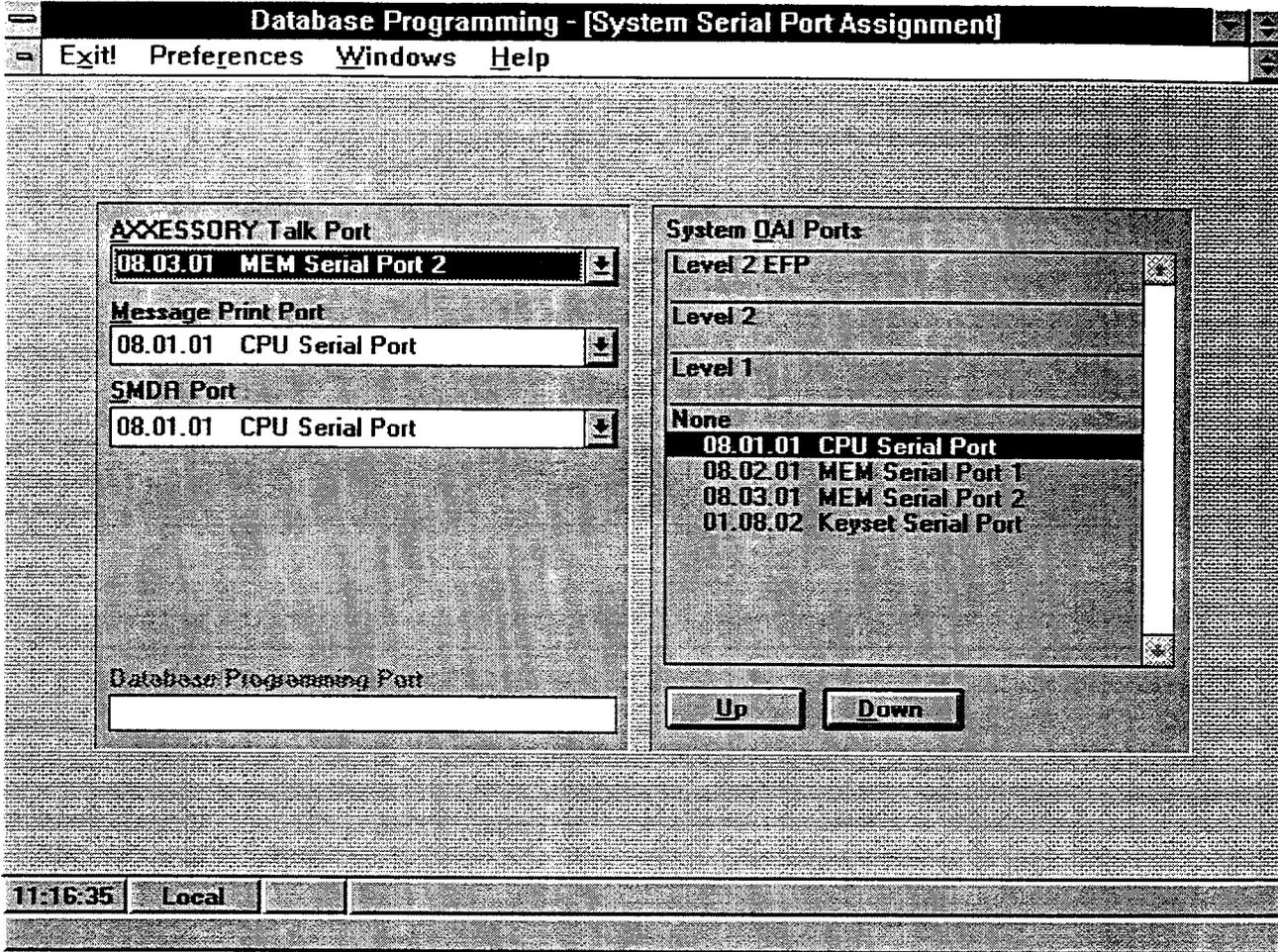
**NOTE:** If you have changed from a CPU/MEM to a CPU020/PCM-D, the CPU serial port names will remain unchanged unless you disable and re-enable the ports in CPU card configuration (6-236), or manually change the names in Serial Port Configuration below.

19.96 **SYSTEM SERIAL PORTS/PROGRAM:** Begin programming by selecting the desired serial port in the list box. Then select the Program command button. The window shown on the next page appears.





- **DESCRIPTION:** To change the description of the serial port, enter a name (up to 20 characters) in the Description text box.
- **BAUD RATE:** Only the baud rates specifically available to the particular device being programmed are shown in this box. To set the baud rate of the serial port, scroll the highlight bar to the desired setting in the Baud Rate list box.
- **HARDWARE HANDSHAKING:** If the device that is connected to the selected port supports handshaking on the RS-232-C connector, select the Hardware Handshaking check box to place a check mark in it. To remove the check mark and disable the handshaking, select the check box again. Refer to SPECIFICATIONS, page 2-30, for information about handshaking.
- **SOFTWARE HANDSHAKING:** If the device that is connected to the selected port supports software handshaking, select the Software Handshaking check box to place a check mark in it. To remove the check mark and disable the handshaking, select the check box again. Refer to SPECIFICATIONS, page 2-30, for more information.



## H. SYSTEM SERIAL PORT ASSIGNMENT

**19.97** This window is used for determining the functions of the system serial ports. To view it select Serial Port Assignment from the Service menu or use the SPA abbreviated command. Serial ports can be used for the following purposes:

- AXXESSORY Talk port
- SMDR port
- Message printing port
- System OAI ports (includes ACD hunt group serial ports)

**NOTE:** If you have changed from a CPU/MEM to a CPU020/PCM-D, the CPU serial port names will remain unchanged unless you disable and re-enable the ports in CPU card configuration (page 6-236), or manually change the names in Serial Port Configuration (page 6-245).

**19.98 AXXESSORY TALK PORT:** Select this drop-down list box to select the communications port that will

be used as the communications link to the AXXESSORY Talk PC. One of the following may occur:

- *If the communications port was previously programmed and you attempt to change it back to "None," a warning window will appear that states: "You have programmed the AXXESSORY Talk Communications Port to <None>. This action informs Database Programming that the system no longer includes AXXESSORY Talk. If you are not removing AXXESSORY Talk from the system, further database programming may result in IRREPARABLE CONFLICTS between the System and AXXESSORY Talk databases. Are you sure you want to set the AXXESSORY Talk Communications Port to <None>?" Select Yes if you actually want to disable the AXXESSORY Talk. Select No to leave the AXXESSORY Talk enabled.*
- *If you have selected a port that is already enabled for another function (such as SMDR), you will see a warning message; select a different port or disable the conflicting function.*

**19.99 MESSAGE PRINT PORT:** A list of available serial ports appears in the Message Print Port drop-down list box. Select the desired output port for the error reports by selecting the drop-down list box and scrolling to the desired port. The selected port will appear in the box when it is closed.

**19.100 SMDR PORT:** Select the desired output port for the SMDR by selecting the SMDR Port drop-down list box and scrolling to the desired port. The list box contains all enabled serial ports on the system.

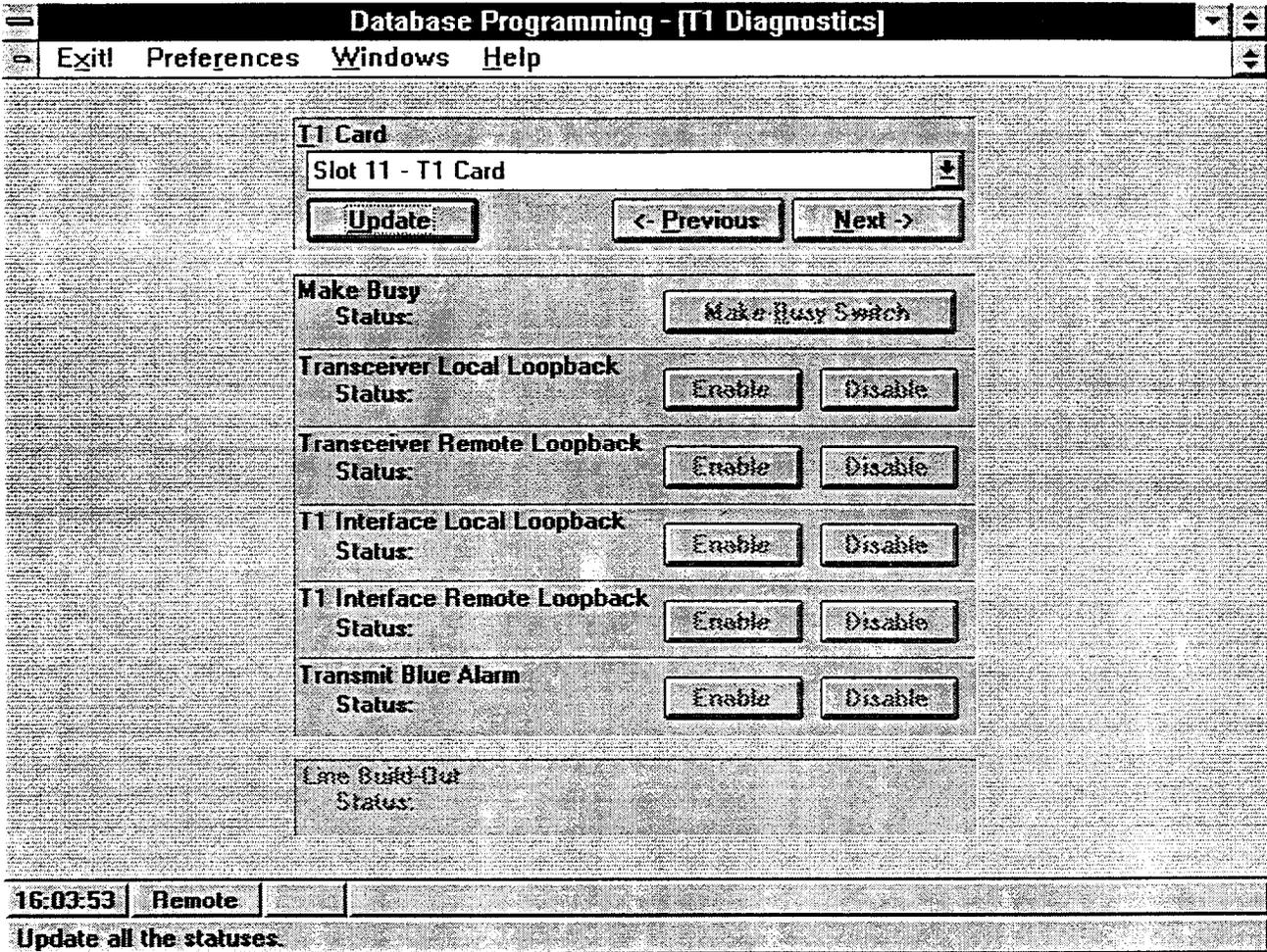
**19.101 DATABASE PROGRAMMING PORT:** (*This is not available in stand-alone programming sessions.*) This box identifies the port that is being used for database programming. It appears for reference purposes only and cannot be changed.

**19.102 SYSTEM OAI PORTS:** This list box contains four categories: Levels 1–3 and None. The serial ports in the “None” category are available for use by the other serial port functions. The three levels determine the system OAI protocol level used by the serial ports, as described below. Refer to the *System OAI Protocol Manual* for further information.

- *Level 1:* The AXXESS system protocol is running, using the RS-232C interface.
- *Level 2:* The TSAPI support enhanced protocol is running, using the RS-232C interface.
- *Level 2 w/EFP:* The TSAPI support enhanced protocol is running, with Inter-Tel EFP as the second layer protocol instead of RS-232C.

**NOTE:** These ports cannot be used as system programming serial ports even though you may be able to log on to them as such (the monitor displays “Awaiting ASAI Connection” and eventually times out). Also, *do not* assign all available ports to System OAI (leave at least one port for system programming).

**19.103 UP and DOWN:** To move a serial port to the desired list, highlight it and then select the Up or Down command button, as needed, to move it to the desired location. Or, to use the mouse, double-click on the desired serial port to select it. Then move the cursor to the correct position in the list and click the left mouse button again to move the selected serial port.



**I. T1 DIAGNOSTICS**

**19.104** This window is used for troubleshooting a T1 Card. It cannot be used in stand-alone programming mode. It is viewed by selecting T1 Diagnostics from the Service menu.

**19.105** The window shows the status of various conditions for the select T1 Card. If any conditions show "Unknown," you can select the Update command button to update the information. (Information is automatically updated whenever a new T1 Card is selected.)

**19.106 T1 CARD:** This drop-down list box contains all of the T1 Cards configured in the system. To select a T1 Card, scroll the highlight bar to the desired card or use the following command buttons:

- **PREVIOUS:** Use this command button to move up one line in the list box.

- **NEXT:** Use this command button to move down one line in the list box.

**19.107 UPDATE:** Select this command button to update the information shown in the window.

**19.108 MAKE BUSY SWITCH:** This command button can be used to busy-out all of the circuits. When it is selected, the status changes to Unknown. Use the update key to check the current status of the circuits (busy, unbusy, busying, timeout, off-line, or unknown).

**NOTE:** The T1 circuits should be busied out before any diagnostics procedures are performed. If not, the card will go into Red Alarm and drop all active calls.

**19.109 ENABLE/DISABLE:** These command buttons can be used for enabling and disabling the following T1 loopback diagnostics and alarm. During the tests, LED indications and error messages can be used to provide troubleshooting information.

- **Transceiver Local Loopback:** Allows you to check the transmission and reception of alarm conditions

generated by the T1 Card. This tests the transceiver chip on the T1C.

- **Transceiver Remote Loopback:** Allows you to check the transmission and reception of test patterns between the T1C and the public network. This tests the transceiver chip on the T1C.
- **T1 Interface Local Loopback:** Allows you to check the transmission and reception of alarm conditions between systems in a private T1 network. This tests the framing chip on the T1C.
- **T1 Interface Remote Loopback:** Allows you to check the transmission and reception of test patterns

conditions generated by the T1C. This tests the framing chip on the T1C.

- **Transmit Blue Alarm:** This sends a Blue alarm over the public or private network interface for testing purposes.

**NOTE:** If the T1 Loopback timeout timer expires during a loopback test, the loopback will be terminated automatically.

**19.110 LINE BUILD-OUT:** The line buildout value is shown for your reference. If the value has not yet been determined, it will show "Auto." If you select the Update command button, the correct status will display.

FIGURE 6-6. INDIVIDUAL STATION (STN — Pages 6-25 to 6-44)

TO USE: Make a copy of this page and the next page for each station in the system.

|                                                      |  |
|------------------------------------------------------|--|
| <b>Circuit number:</b>                               |  |
| <b>Extension number:</b>                             |  |
| <b>Description:</b>                                  |  |
| <b>Username:</b>                                     |  |
| <b>Account Code Type:</b>                            |  |
| Standard account code, if used                       |  |
| <b>Mailbox(es)</b> (See also Mailbox planning sheet) |  |

**Miscellaneous Flags:**

|                                |                            |
|--------------------------------|----------------------------|
| All Transient Displays         | Enabled <i>Or</i> Disabled |
| Alternate Keymap               | Enabled <i>Or</i> Disabled |
| Alternate Trans. Display Timer | Enabled <i>Or</i> Disabled |
| Auto Answer CO (Keyset)        | Enabled <i>Or</i> Disabled |
| Auto Answer IC (Keyset)        | Enabled <i>Or</i> Disabled |
| Camp-On Indications            | Enabled <i>Or</i> Disabled |
| Camp-On To ARS                 | Enabled <i>Or</i> Disabled |
| CO Reseize (Keyset)            | Enabled <i>Or</i> Disabled |
| DID/E&M Receive Busy           | Enabled <i>Or</i> Disabled |
| Different Alerting Cadence     | Enabled <i>Or</i> Disabled |
| Different Ringback Cadence     | Enabled <i>Or</i> Disabled |
| Do-Not-Disturb Allowed         | Enabled <i>Or</i> Disabled |
| DND Override (Keyset)          | Enabled <i>Or</i> Disabled |
| Extended Ring (Single-Line)    | Enabled <i>Or</i> Disabled |
| Handsfree (Keyset)             | Enabled <i>Or</i> Disabled |
| Headset (Keyset)               | Enabled <i>Or</i> Disabled |
| Hunt Group                     | Replace <i>Or</i> Remove   |
| Hunt Group Camp-On Audio       | Enabled <i>Or</i> Disabled |
| Immediate OHVA (Keyset)        | Enabled <i>Or</i> Disabled |
| OHVA Receive (Keyset)          | Enabled <i>Or</i> Disabled |
| OHVA Transmit                  | Enabled <i>Or</i> Disabled |
| OPX Gain Levels (Single-Line)  | Enabled <i>Or</i> Disabled |
| Page Mode (Keyset)             | Replace <i>Or</i> Remove   |
| Rec. Busy vs. Do-Not-Disturb   | Enabled <i>Or</i> Disabled |

|                           |                            |
|---------------------------|----------------------------|
| Redial Mode               | Dialed <i>Or</i> Saved     |
| Ring Intercom Always      | Enabled <i>Or</i> Disabled |
| Standard Tone Frequencies | Enabled <i>Or</i> Disabled |
| System Forwarding         | Enabled <i>Or</i> Disabled |

**Miscellaneous Station Information—**

|                             |  |
|-----------------------------|--|
| Attendant                   |  |
| Message Center              |  |
| Outgoing                    |  |
| Transfer Recall Destination |  |
| Voice Mail Extension        |  |
| Alt. Msg. Source            |  |
| Data Port Extension         |  |
| Speakerphone Type           |  |
| Attached Device             |  |
| Baud Rate                   |  |

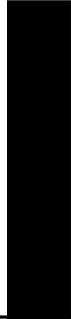
**Programmable Keys —**

|                            |    |
|----------------------------|----|
| Station Programmable Keys: | 1  |
|                            | 2  |
|                            | 3  |
|                            | 4  |
|                            | 5  |
|                            | 6  |
|                            | 7  |
|                            | 8  |
|                            | 9  |
|                            | 10 |
|                            | 11 |
| Standard Map Group         |    |
| Alternate Map Group        |    |
| DSS Key Map Group          |    |

FIGURE 6-6. INDIVIDUAL STATION (Continued)

**Special Purpose Stations —**

Fill in appropriate information if the station serves as any of the following special purpose stations:

|                |                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------|
| Message Center | List stations served:<br> |
| Attendant      | List stations served:                                                                                      |
| Administrator: | Yes or No                                                                                                  |
| House Phone    | Day Number:                                                                                                |
|                | Night Number:                                                                                              |

**System Forwarding —**

|                                                         |                                                                         |
|---------------------------------------------------------|-------------------------------------------------------------------------|
| <b>Forwarding Path 1: (Circle the desired options.)</b> |                                                                         |
| Station Condition:                                      | Busy<br>No Answer<br>DND<br>Immediate                                   |
| Sys Condition:                                          | Day<br>Night                                                            |
| Ring Principal:                                         | Yes or No                                                               |
| Call Type:                                              | Call Routing Table<br>Ring-in<br>Recall<br>IC Calls<br>DISA<br>Transfer |

|                                                         |                                                                         |
|---------------------------------------------------------|-------------------------------------------------------------------------|
| <b>Forwarding Path 2: (Circle the desired options.)</b> |                                                                         |
| Station Condition:                                      | Busy<br>No Answer<br>DND<br>Immediate                                   |
| Sys Condition:                                          | Day<br>Night                                                            |
| Ring Principal:                                         | Yes or No                                                               |
| Call Type:                                              | Call Routing Table<br>Ring-in<br>Recall<br>IC Calls<br>DISA<br>Transfer |
| <b>Forwarding Path 3: (Circle the desired options.)</b> |                                                                         |
| Station Condition:                                      | Busy<br>No Answer<br>DND<br>Immediate                                   |
| Sys Condition:                                          | Day<br>Night                                                            |
| Ring Principal:                                         | Yes or No                                                               |
| Call Type:                                              | Call Routing Table<br>Ring-in<br>Recall<br>IC Calls<br>DISA<br>Transfer |

FIGURE 6-6. INDIVIDUAL STATION (Continued)

Toll Restriction —

| SCOS                  | DAY       | NIGHT     |
|-----------------------|-----------|-----------|
| 00 Unrestricted       | Yes or No | Yes or No |
| 01 ARS Only           | Yes or No | Yes or No |
| 02 Deny Area/Office   | Yes or No | Yes or No |
| 03 Deny Operator      | Yes or No | Yes or No |
| 04 Deny Toll Access   | Yes or No | Yes or No |
| 05 Deny International | Yes or No | Yes or No |
| 06 Deny Equal Access  | Yes or No | Yes or No |
| 07 Deny Local Calls   | Yes or No | Yes or No |
| 08 Denied Numbers     | Yes or No | Yes or No |
| 09 Allowed Numbers    | Yes or No | Yes or No |
| 10                    |           |           |
| 11                    |           |           |
| 12                    |           |           |
| 13                    |           |           |
| 14                    |           |           |
| 15                    |           |           |
| 16                    |           |           |
| User Group Number     |           |           |

FIGURE 6-7. KEY ASSIGNMENTS — DSS (DSS — Page 6-48)

DSS KEYMAP NUMBER: \_\_\_\_\_ DESCRIPTION: \_\_\_\_\_

STATIONS: \_\_\_\_\_

Fill in the desired extension number on each key.

PAGE 1

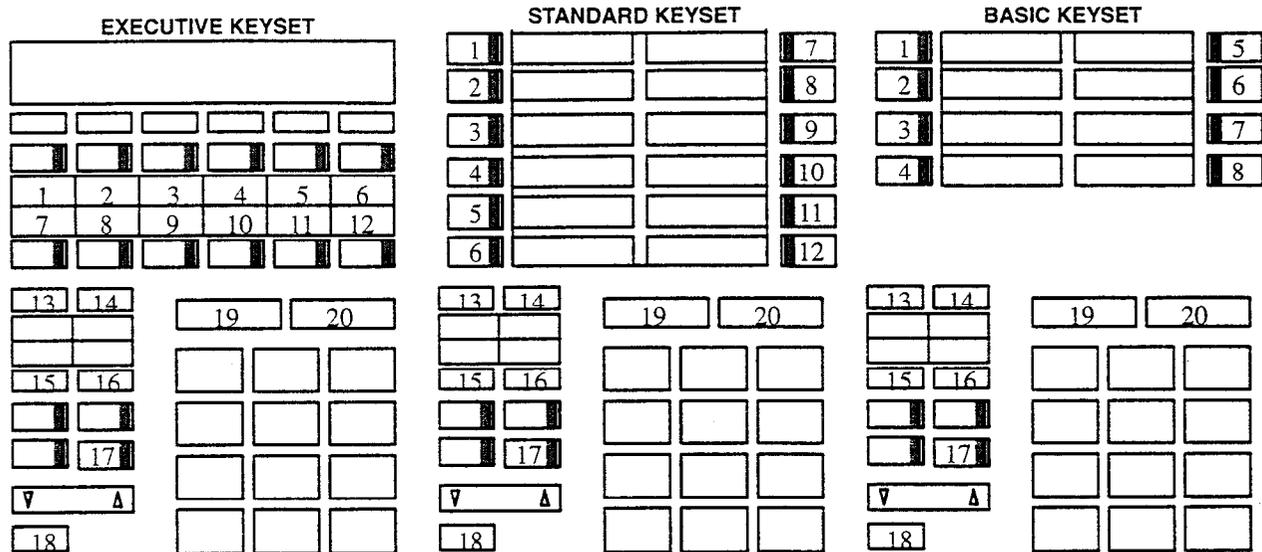
|                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> |
| <input type="text"/> |
| <input type="text"/> |
| <input type="text"/> |
| <input type="text"/> |
| <input type="text"/> |

PAGE 2

|                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> |
| <input type="text"/> |
| <input type="text"/> |
| <input type="text"/> |
| <input type="text"/> |
| <input type="text"/> |

FIGURE 6-8. KEY ASSIGNMENTS — STATIONS (KEY — Page 6-52)

TO USE: This page shows the key numbering scheme and the default values of the keys. The next page contains a chart that can be filled in for each key map.



The keys are numbered to show which keys corresponding on the three key maps. (When a key is changed on one map, the corresponding key on other keyset type is automatically changed to match.) Blank keys are not programmable. The keys are defined as follows in the default key maps:

| KEY | EXEC/STAND KEYSETS             | BASIC KEYSETS                  |
|-----|--------------------------------|--------------------------------|
| 1   | Call Key 1                     | Call Key 1                     |
| 2   | Call Key 2                     | Call Key 2                     |
| 3   | Call Key 3                     | Call Key 3                     |
| 4   | Call Key 4                     | Call Key 4                     |
| 5   | IC (Intercom)                  | IC (Intercom)                  |
| 6   | Prog. Key 1:<br>Do-Not-Disturb | Prog. Key 1:<br>Do-Not-Disturb |
| 7   | Prog. Key 2:<br>Undefined      | Prog. Key 2:<br>Undefined      |
| 8   | Prog. Key 3:<br>Undefined      | Prog. Key 3:<br>Undefined      |
| 9   | Prog. Key 4:<br>Undefined      | N/A                            |
| 10  | Prog. Key 5:<br>Undefined      | N/A                            |

| KEY | EXEC/STAND KEYSETS                 | BASIC KEYSETS                       |
|-----|------------------------------------|-------------------------------------|
| 11  | Prog. Key 6:<br>Undefined          | N/A                                 |
| 12  | Prog. Key 7:<br>Conference         | N/A                                 |
| 13  | Prog. Key 8:<br>Individual Hold    | Prog. Key 8:<br>Individual Hold     |
| 14  | Prog. Key 9:<br>Transfer To Ring   | Prog. Key 9:<br>Transfer To Ring    |
| 15  | Prog. Key 10:<br>System Speed Dial | Prog. Key 10:<br>Station Speed Dial |
| 16  | Prog. Key 11:<br>Redial            | Prog. Key 11:<br>Redial             |
| 17  | Forward                            | Forward                             |
| 18  | SPCL                               | SPCL                                |
| 19  | Answer                             | Answer                              |
| 20  | Outgoing                           | Outgoing                            |

FIGURE 6-8. KEY ASSIGNMENTS (Continued)

TO USE: Enter the key definition for each key in each of the keyset key maps (01-15). Refer to the maps on the previous page for key locations.

| KEY | MAP 1 | MAP 2 | MAP 3 | MAP 4 | MAP 5 | MAP 6 | MAP 7 | MAP 8 | MAP 9 | MAP 10 | MAP 11 | MAP 12 | MAP 13 | MAP 14 | MAP 15 |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| 1   |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 2   |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 3   |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 4   |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 5   |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 6   |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 7   |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 8   |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 9   |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 10  |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 11  |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 12  |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 13  |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 14  |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 15  |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 16  |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 17  |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 18  |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 19  |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |
| 20  |       |       |       |       |       |       |       |       |       |        |        |        |        |        |        |

FIGURE 6-9. STATION MISCELLANEOUS FLAGS (SFEA — Page 6-58)

| FEATURE                        | STATIONS WITH FEATURE ENABLED |
|--------------------------------|-------------------------------|
| All Transient Displays         |                               |
| Alternate Keymap               |                               |
| Alternate Trans. Display Timer |                               |
| Auto Answer CO (keyset)        |                               |
| Auto Answer IC (keyset)        |                               |
| Camp-On Indications            |                               |
| Camp-On to ARS                 |                               |
| CO Reseize (keyset)            |                               |
| DID/E&M Receive Busy           |                               |
| Different Alerting Cadence     |                               |
| Different Ringback Cadence     |                               |
| Do-Not-Disturb Allowed         |                               |
| DND Override (keyset)          |                               |
| Extended Ring (single-line)    |                               |
| Handsfree (keyset)             |                               |
| Headset (keyset)               |                               |
| Hunt Group                     |                               |
| Immediate OHVA (keyset)        |                               |
| OHVA Receive (keyset)          |                               |
| OHVA Transmit                  |                               |
| OPX Gain Levels (single-line)  |                               |
| Page Mode (keyset)             |                               |
| Rec. Busy vs. Do-Not-Disturb   |                               |
| Redial Mode                    |                               |
| Ring Intercom Always           |                               |
| Standard Tone Frequencies      |                               |
| System Forwarding              |                               |

FIGURE 6-10. ACCOUNT CODES (ACCT — Page 6-60)

Length of all account codes is \_\_\_\_\_ (3-12) digits.

STANDARD ACCOUNT CODES:

|     |       |     |       |     |       |     |       |
|-----|-------|-----|-------|-----|-------|-----|-------|
| 001 | _____ | 130 | _____ | 168 | _____ | 116 | _____ |
| 002 | _____ | 131 | _____ | 169 | _____ | 117 | _____ |
| 003 | _____ | 132 | _____ | 170 | _____ | 118 | _____ |
| 004 | _____ | 133 | _____ | 171 | _____ | 119 | _____ |
| 005 | _____ | 134 | _____ | 172 | _____ | 120 | _____ |
| 006 | _____ | 135 | _____ | 173 | _____ | 121 | _____ |
| 007 | _____ | 136 | _____ | 174 | _____ | 122 | _____ |
| 008 | _____ | 137 | _____ | 175 | _____ | 123 | _____ |
| 009 | _____ | 138 | _____ | 176 | _____ | 124 | _____ |
| 100 | _____ | 139 | _____ | 177 | _____ | 125 | _____ |
| 101 | _____ | 140 | _____ | 178 | _____ | 126 | _____ |
| 102 | _____ | 141 | _____ | 179 | _____ | 127 | _____ |
| 103 | _____ | 142 | _____ | 180 | _____ | 128 | _____ |
| 104 | _____ | 143 | _____ | 181 | _____ | 129 | _____ |
| 105 | _____ | 144 | _____ | 182 | _____ | 130 | _____ |
| 106 | _____ | 145 | _____ | 183 | _____ | 131 | _____ |
| 107 | _____ | 146 | _____ | 184 | _____ | 132 | _____ |
| 108 | _____ | 147 | _____ | 185 | _____ | 133 | _____ |
| 109 | _____ | 148 | _____ | 186 | _____ | 134 | _____ |
| 110 | _____ | 149 | _____ | 187 | _____ | 135 | _____ |
| 111 | _____ | 150 | _____ | 188 | _____ | 136 | _____ |
| 112 | _____ | 151 | _____ | 189 | _____ | 137 | _____ |
| 113 | _____ | 152 | _____ | 100 | _____ | 138 | _____ |
| 114 | _____ | 153 | _____ | 101 | _____ | 139 | _____ |
| 115 | _____ | 154 | _____ | 102 | _____ | 140 | _____ |
| 116 | _____ | 155 | _____ | 103 | _____ | 141 | _____ |
| 117 | _____ | 156 | _____ | 104 | _____ | 142 | _____ |
| 118 | _____ | 157 | _____ | 105 | _____ | 143 | _____ |
| 119 | _____ | 158 | _____ | 106 | _____ | 144 | _____ |
| 120 | _____ | 159 | _____ | 107 | _____ | 145 | _____ |
| 121 | _____ | 160 | _____ | 108 | _____ | 146 | _____ |
| 122 | _____ | 161 | _____ | 109 | _____ | 147 | _____ |
| 123 | _____ | 162 | _____ | 110 | _____ | 148 | _____ |
| 124 | _____ | 163 | _____ | 111 | _____ | 149 | _____ |
| 125 | _____ | 164 | _____ | 112 | _____ | 150 | _____ |
| 126 | _____ | 165 | _____ | 113 | _____ | 151 | _____ |
| 127 | _____ | 166 | _____ | 114 | _____ | 152 | _____ |
| 128 | _____ | 167 | _____ | 115 | _____ | 153 | _____ |
| 129 | _____ |     |       |     |       |     |       |

FIGURE 6-10. ACCOUNT CODES (Continued)

STANDARD ACCOUNT CODES *continued.*

|     |       |     |       |     |       |     |       |
|-----|-------|-----|-------|-----|-------|-----|-------|
| 154 | _____ | 180 | _____ | 206 | _____ | 232 | _____ |
| 155 | _____ | 181 | _____ | 207 | _____ | 233 | _____ |
| 156 | _____ | 182 | _____ | 208 | _____ | 234 | _____ |
| 157 | _____ | 183 | _____ | 209 | _____ | 235 | _____ |
| 158 | _____ | 184 | _____ | 210 | _____ | 236 | _____ |
| 159 | _____ | 185 | _____ | 211 | _____ | 237 | _____ |
| 160 | _____ | 186 | _____ | 212 | _____ | 238 | _____ |
| 161 | _____ | 187 | _____ | 213 | _____ | 239 | _____ |
| 162 | _____ | 188 | _____ | 214 | _____ | 240 | _____ |
| 163 | _____ | 189 | _____ | 215 | _____ | 241 | _____ |
| 164 | _____ | 190 | _____ | 216 | _____ | 242 | _____ |
| 165 | _____ | 191 | _____ | 217 | _____ | 243 | _____ |
| 166 | _____ | 192 | _____ | 218 | _____ | 244 | _____ |
| 167 | _____ | 193 | _____ | 219 | _____ | 245 | _____ |
| 168 | _____ | 194 | _____ | 220 | _____ | 246 | _____ |
| 169 | _____ | 195 | _____ | 221 | _____ | 247 | _____ |
| 170 | _____ | 196 | _____ | 222 | _____ | 248 | _____ |
| 171 | _____ | 197 | _____ | 223 | _____ | 249 | _____ |
| 172 | _____ | 198 | _____ | 224 | _____ | 250 | _____ |
| 173 | _____ | 199 | _____ | 225 | _____ | 251 | _____ |
| 174 | _____ | 200 | _____ | 226 | _____ | 252 | _____ |
| 175 | _____ | 201 | _____ | 227 | _____ | 253 | _____ |
| 176 | _____ | 202 | _____ | 228 | _____ | 254 | _____ |
| 177 | _____ | 203 | _____ | 229 | _____ | 255 | _____ |
| 178 | _____ | 204 | _____ | 230 | _____ | 256 | _____ |
| 179 | _____ | 205 | _____ | 231 | _____ |     | _____ |

STATIONS WITH STANDARD ACCOUNT CODES:

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FIGURE 6-10. ACCOUNT CODES (Continued)

FORCED ACCOUNT CODES:

|     |       |     |       |     |       |     |       |
|-----|-------|-----|-------|-----|-------|-----|-------|
| 001 | _____ | 130 | _____ | 168 | _____ | 116 | _____ |
| 002 | _____ | 131 | _____ | 169 | _____ | 117 | _____ |
| 003 | _____ | 132 | _____ | 170 | _____ | 118 | _____ |
| 004 | _____ | 133 | _____ | 171 | _____ | 119 | _____ |
| 005 | _____ | 134 | _____ | 172 | _____ | 120 | _____ |
| 006 | _____ | 135 | _____ | 173 | _____ | 121 | _____ |
| 007 | _____ | 136 | _____ | 174 | _____ | 122 | _____ |
| 008 | _____ | 137 | _____ | 175 | _____ | 123 | _____ |
| 009 | _____ | 138 | _____ | 176 | _____ | 124 | _____ |
| 100 | _____ | 139 | _____ | 177 | _____ | 125 | _____ |
| 101 | _____ | 140 | _____ | 178 | _____ | 126 | _____ |
| 102 | _____ | 141 | _____ | 179 | _____ | 127 | _____ |
| 103 | _____ | 142 | _____ | 180 | _____ | 128 | _____ |
| 104 | _____ | 143 | _____ | 181 | _____ | 129 | _____ |
| 105 | _____ | 144 | _____ | 182 | _____ | 130 | _____ |
| 106 | _____ | 145 | _____ | 183 | _____ | 131 | _____ |
| 107 | _____ | 146 | _____ | 184 | _____ | 132 | _____ |
| 108 | _____ | 147 | _____ | 185 | _____ | 133 | _____ |
| 109 | _____ | 148 | _____ | 186 | _____ | 134 | _____ |
| 110 | _____ | 149 | _____ | 187 | _____ | 135 | _____ |
| 111 | _____ | 150 | _____ | 188 | _____ | 136 | _____ |
| 112 | _____ | 151 | _____ | 189 | _____ | 137 | _____ |
| 113 | _____ | 152 | _____ | 100 | _____ | 138 | _____ |
| 114 | _____ | 153 | _____ | 101 | _____ | 139 | _____ |
| 115 | _____ | 154 | _____ | 102 | _____ | 140 | _____ |
| 116 | _____ | 155 | _____ | 103 | _____ | 141 | _____ |
| 117 | _____ | 156 | _____ | 104 | _____ | 142 | _____ |
| 118 | _____ | 157 | _____ | 105 | _____ | 143 | _____ |
| 119 | _____ | 158 | _____ | 106 | _____ | 144 | _____ |
| 120 | _____ | 159 | _____ | 107 | _____ | 145 | _____ |
| 121 | _____ | 160 | _____ | 108 | _____ | 146 | _____ |
| 122 | _____ | 161 | _____ | 109 | _____ | 147 | _____ |
| 123 | _____ | 162 | _____ | 110 | _____ | 148 | _____ |
| 124 | _____ | 163 | _____ | 111 | _____ | 149 | _____ |
| 125 | _____ | 164 | _____ | 112 | _____ | 150 | _____ |
| 126 | _____ | 165 | _____ | 113 | _____ | 151 | _____ |
| 127 | _____ | 166 | _____ | 114 | _____ | 152 | _____ |
| 128 | _____ | 167 | _____ | 115 | _____ | 153 | _____ |
| 129 | _____ |     |       |     |       |     |       |

FIGURE 6-10. ACCOUNT CODES (Continued)

FORCED ACCOUNT CODES *continued:*

|     |       |     |       |     |       |     |       |
|-----|-------|-----|-------|-----|-------|-----|-------|
| 154 | _____ | 180 | _____ | 206 | _____ | 232 | _____ |
| 155 | _____ | 181 | _____ | 207 | _____ | 233 | _____ |
| 156 | _____ | 182 | _____ | 208 | _____ | 234 | _____ |
| 157 | _____ | 183 | _____ | 209 | _____ | 235 | _____ |
| 158 | _____ | 184 | _____ | 210 | _____ | 236 | _____ |
| 159 | _____ | 185 | _____ | 211 | _____ | 237 | _____ |
| 160 | _____ | 186 | _____ | 212 | _____ | 238 | _____ |
| 161 | _____ | 187 | _____ | 213 | _____ | 239 | _____ |
| 162 | _____ | 188 | _____ | 214 | _____ | 240 | _____ |
| 163 | _____ | 189 | _____ | 215 | _____ | 241 | _____ |
| 164 | _____ | 190 | _____ | 216 | _____ | 242 | _____ |
| 165 | _____ | 191 | _____ | 217 | _____ | 243 | _____ |
| 166 | _____ | 192 | _____ | 218 | _____ | 244 | _____ |
| 167 | _____ | 193 | _____ | 219 | _____ | 245 | _____ |
| 168 | _____ | 194 | _____ | 220 | _____ | 246 | _____ |
| 169 | _____ | 195 | _____ | 221 | _____ | 247 | _____ |
| 170 | _____ | 196 | _____ | 222 | _____ | 248 | _____ |
| 171 | _____ | 197 | _____ | 223 | _____ | 249 | _____ |
| 172 | _____ | 198 | _____ | 224 | _____ | 250 | _____ |
| 173 | _____ | 199 | _____ | 225 | _____ | 251 | _____ |
| 174 | _____ | 200 | _____ | 226 | _____ | 252 | _____ |
| 175 | _____ | 201 | _____ | 227 | _____ | 253 | _____ |
| 176 | _____ | 202 | _____ | 228 | _____ | 254 | _____ |
| 177 | _____ | 203 | _____ | 229 | _____ | 255 | _____ |
| 178 | _____ | 204 | _____ | 230 | _____ | 256 | _____ |
| 179 | _____ | 205 | _____ | 231 | _____ |     | _____ |

FIGURE 6-10. ACCOUNT CODES (Continued)

| FORCED ACCOUNT CODE TYPE           | STATIONS WITH FORCED ACCOUNT CODE TYPE |
|------------------------------------|----------------------------------------|
| All Calls Validated                |                                        |
| All Calls Non-Validated            |                                        |
| Local Toll Calls Validated         |                                        |
| Local Toll Calls Non-Validated     |                                        |
| Long Distance Toll Calls Validated |                                        |
| Long Distance Calls Non-Validated  |                                        |
| No Account Code                    |                                        |

FIGURE 6-11. AUTOMATIC ROUTE SELECTION (ARS — Page 6-64)

Route Groups:

| NO. | DESCRIPTION | TRUNK GROUPS | DIAL RULES | DIAL PATTERNS |
|-----|-------------|--------------|------------|---------------|
| 01  |             |              |            |               |
| 02  |             |              |            |               |
| 03  |             |              |            |               |
| 04  |             |              |            |               |
| 05  |             |              |            |               |
| 06  |             |              |            |               |
| 07  |             |              |            |               |
| 08  |             |              |            |               |
| 09  |             |              |            |               |
| 10  |             |              |            |               |
| 11  |             |              |            |               |
| 12  |             |              |            |               |
| 13  |             |              |            |               |
| 14  |             |              |            |               |
| 15  |             |              |            |               |
| 16  |             |              |            |               |

Dial Rules:

- |                                  |              |
|----------------------------------|--------------|
| 1 Echo Equal Access              | 9 Add _____  |
| 2 Echo Toll Field                | 10 Add _____ |
| 3 Echo 3 Digits After Toll Field | 11 Add _____ |
| 4 Echo Local Address             | 12 Add _____ |
| 5 (Add #) Add _____              | 13 Add _____ |
| 6 Add _____                      | 14 Add _____ |
| 7 Add _____                      | 15 Add _____ |
| 8 Add _____                      | 16 Add _____ |

**FIGURE 6-12. DO-NOT-DISTURB AND REMINDER MESSAGES  
(DND, REM, OR MESG — Page 6-71)**

**Do-Not-Disturb Messages:**

| DEFAULT MESSAGE               | NEW MESSAGE                      |
|-------------------------------|----------------------------------|
| MESSAGE 01 (DO-NOT-DISTURB)   | (THIS MESSAGE CANNOT BE CHANGED) |
| MESSAGE 02 (LEAVE A MESSAGE)  |                                  |
| MESSAGE 03 (IN MEETING UNTIL) |                                  |
| MESSAGE 04 (IN MEETING)       |                                  |
| MESSAGE 05 (ON VACATION 'TIL) |                                  |
| MESSAGE 06 (ON VACATION)      |                                  |
| MESSAGE 07 (CALL ME AT)       |                                  |
| MESSAGE 08 (AT THE DOCTOR)    |                                  |
| MESSAGE 09 (ON A TRIP)        |                                  |
| MESSAGE 10 (ON BREAK)         |                                  |
| MESSAGE 11 (OUT OF TOWN 'TIL) |                                  |
| MESSAGE 12 (OUT OF OFFICE)    |                                  |
| MESSAGE 13 (OUT UNTIL)        |                                  |
| MESSAGE 14 (WITH A CLIENT)    |                                  |
| MESSAGE 15 (WITH A GUEST)     |                                  |
| MESSAGE 16 (UNAVAILABLE)      |                                  |
| MESSAGE 17 (IN CONFERENCE)    |                                  |
| MESSAGE 18 (AWAY FROM DESK)   |                                  |
| MESSAGE 19 (GONE HOME)        |                                  |
| MESSAGE 20 (OUT TO LUNCH)     |                                  |

FIGURE 6-12. DO-NOT-DISTURB AND REMINDER MESSAGES (Continued)

Reminder Messages:

| DEFAULT MESSAGE                | NEW MESSAGE |
|--------------------------------|-------------|
| MESSAGE 01 (MEETING):          |             |
| MESSAGE 02 (STAFF MEETING):    |             |
| MESSAGE 03 (SALES MEETING):    |             |
| MESSAGE 04 (CANCEL MEETING):   |             |
| MESSAGE 05 (APPOINTMENT):      |             |
| MESSAGE 06 (PLACE CALL):       |             |
| MESSAGE 07 (CALL CLIENT):      |             |
| MESSAGE 08 (CALL CUSTOMER):    |             |
| MESSAGE 09 (CALL HOME):        |             |
| MESSAGE 10 (CALL CORPORATE):   |             |
| MESSAGE 11 (CALL ENGINEERING): |             |
| MESSAGE 12 (CALL MARKETING):   |             |
| MESSAGE 13 (CALL ACCOUNTING):  |             |
| MESSAGE 14 (CANCEL DND):       |             |
| MESSAGE 15 (CANCEL CALL FWD):  |             |
| MESSAGE 16 (TAKE MEDICATION):  |             |
| MESSAGE 17 (MAKE RESERVATION): |             |
| MESSAGE 18 (REVIEW SCHEDULE):  |             |
| MESSAGE 19 (LUNCH):            |             |
| MESSAGE 20 (REMINDER):         |             |



**FIGURE 6-14. EXTENSIONS, USERNAMES, AND FEATURE  
CODES (EXT, FEAT, OR NAME — Page 6-75)**

**FEATURE CODES:**

- \_\_\_\_\_ Account Code — All Calls Following (391)
- \_\_\_\_\_ Account Code — Optional (390)
- \_\_\_\_\_ ACD Agent Login (326)
- \_\_\_\_\_ ACD Agent Logout (327)
- \_\_\_\_\_ ACD Agent Toggle (328)
- \_\_\_\_\_ ACD Agent Wrap-Up Terminate (329)
- \_\_\_\_\_ Answer (351)
- \_\_\_\_\_ Auto CO Access On/Off (360)
- \_\_\_\_\_ Auto IC Access On/Off (361)
- \_\_\_\_\_ Automatic Route Selection (9200)
- \_\_\_\_\_ Automatic Trunk Answer (350)
- \_\_\_\_\_ Background Music On/Off (313)
- \_\_\_\_\_ Call Attendant (0)
- \_\_\_\_\_ Call Forward — All Calls (355)
- \_\_\_\_\_ Call Forward — Busy (357)
- \_\_\_\_\_ Call Forward — If No Answer or Busy (358)
- \_\_\_\_\_ Call Forward — No Answer (356)
- \_\_\_\_\_ Clear System Alarm (9850)
- \_\_\_\_\_ CO Hookflash (330)
- \_\_\_\_\_ Conference (5)
- \_\_\_\_\_ Data (340)
- \_\_\_\_\_ Default Station (394)
- \_\_\_\_\_ Directory (307)
- \_\_\_\_\_ Display Time/Date (300)
- \_\_\_\_\_ Do-Not-Disturb (370)
- \_\_\_\_\_ Do-Not-Disturb Cancel (371)
- \_\_\_\_\_ Do-Not-Disturb On/Off (372)
- \_\_\_\_\_ Do-Not-Disturb Override (373)
- \_\_\_\_\_ Emergency Calls (911)
- \_\_\_\_\_ Enhanced Speakerphone Enable (310)
- \_\_\_\_\_ Feature Key Default (395)
- \_\_\_\_\_ Handsfree On/Off (319)
- \_\_\_\_\_ Headset Disable (316)
- \_\_\_\_\_ Headset Enable (315)
- \_\_\_\_\_ Headset On/Off (317)
- \_\_\_\_\_ Hold — Individual (336)
- \_\_\_\_\_ Hold — System (335)
- \_\_\_\_\_ Hunt Group Remove (322)
- \_\_\_\_\_ Hunt Group Remove/Replace (324)
- \_\_\_\_\_ Hunt Group Replace (323)
- \_\_\_\_\_ Message (365)
- \_\_\_\_\_ Message — Cancel (366)
- \_\_\_\_\_ Message — Cancel Current (368)
- \_\_\_\_\_ Message — Silent (367)
- \_\_\_\_\_ Mute On/Off (314)
- \_\_\_\_\_ Night Ring On/Off (9860)
- \_\_\_\_\_ Outgoing Calls (8)
- \_\_\_\_\_ Page (7)
- \_\_\_\_\_ Page On/Off (325)
- \_\_\_\_\_ Program Baud Rate (393)
- \_\_\_\_\_ Program Keys (397)
- \_\_\_\_\_ Program Station Data (9802)
- \_\_\_\_\_ Program System Speed Dial (9801)
- \_\_\_\_\_ Queue Request (6)
- \_\_\_\_\_ Redial (380)
- \_\_\_\_\_ Reminder Message (305)
- \_\_\_\_\_ Reminder Message Cancel (306)
- \_\_\_\_\_ Reverse Transfer (4)
- \_\_\_\_\_ Review Keys (396)
- \_\_\_\_\_ Ring Intercom Always On/Off (377)
- \_\_\_\_\_ Ring Tone Selection (398)
- \_\_\_\_\_ Seize Device (9973)
- \_\_\_\_\_ Set Time/Date (9800)
- \_\_\_\_\_ Station Monitor (321)
- \_\_\_\_\_ Station Speed Dial (382)
- \_\_\_\_\_ Station Speed Dial Program (383)
- \_\_\_\_\_ Switch Keymap (399)
- \_\_\_\_\_ System Forward Disable (353)
- \_\_\_\_\_ System Forward Enable (352)
- \_\_\_\_\_ System Forward On/Off (354)
- \_\_\_\_\_ System History — Freeze (9993)
- \_\_\_\_\_ System History — Unfreeze (9998)
- \_\_\_\_\_ System Speed Dial (381)
- \_\_\_\_\_ Transfer To Hold (346)
- \_\_\_\_\_ Transfer To Ring (345)





**FIGURE 6-14. EXTENSIONS, USERNAMES, AND FEATURE CODES (Continued)**

**PAGE PORTS:**

| ZONE | DESCRIPTION | DEFAULT EXT | NEW EXT |
|------|-------------|-------------|---------|
| 1    |             | 91000       |         |

**PAGE ZONES:**

| ZONE | DESCRIPTION | DEFAULT EXT | NEW EXT |
|------|-------------|-------------|---------|
| 1    |             | 960         |         |
| 2    |             | 961         |         |
| 3    |             | 962         |         |
| 4    |             | 963         |         |
| 5    |             | 964         |         |
| 6    |             | 965         |         |
| 7    |             | 966         |         |
| 8    |             | 967         |         |
| 9    |             | 968         |         |
| 10   |             | 969         |         |







FIGURE 6-15. HUNT GROUPS (HUNT — Page 6-80)

TO USE: (Make sufficient copies of this page and fill in information for each hunt group.)

|                       |                                                   |
|-----------------------|---------------------------------------------------|
| Hunt Group Number:    |                                                   |
| Extension Number:     |                                                   |
| Announcement Station: |                                                   |
| Overflow Station:     |                                                   |
| Description:          |                                                   |
| Username:             |                                                   |
| Recall Destination:   |                                                   |
| Analog Voice Mail?    | Yes or No                                         |
| ACD?                  | Yes or No                                         |
| Priority Level:       |                                                   |
| Search Type:          | Linear or Distributed or Longest Idle or Balanced |
| Supervisor(s):        |                                                   |
| Serial Port(s):       |                                                   |

Timers:

| TIMER                | DEFAULT     | RANGE   | NEW VALUE |
|----------------------|-------------|---------|-----------|
| No Answer Advance    | 18 seconds  | 1-255   |           |
| Announcement         | 18 seconds  | 1-255   |           |
| Overflow             | 72 seconds  | 1-255   |           |
| Recall               | 180 seconds | 1-65535 |           |
| ACD Wrap-Up Duration | 15 seconds  | 1-65535 |           |

Stations:

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FIGURE 6-16. MISC. SYSTEM-WIDE INFORMATION (MISC OR SYS — Page 6-87)

|                                       |  |
|---------------------------------------|--|
| Primary Attendant Station:            |  |
| DISA Security Code Failure Limit:     |  |
| DISA Invalid Extension Failure Limit: |  |
| System Delayed Major Time:            |  |
| AXCESSORY Talk Communications Port:   |  |

**Home Area Codes:**

|                     |  |
|---------------------|--|
| Home Area Code:     |  |
| Local Area Code #2: |  |
| Local Area Code #3: |  |
| Local Area Code #4: |  |

**Number Plan Area Flags:**

|                                                  |           |
|--------------------------------------------------|-----------|
| Office Codes Used As Area Codes:                 | Yes or No |
| Area Codes used As Office Codes:                 | Yes or No |
| Toll Digit Allowed On Local Calls:               | Yes or No |
| Toll Digit Required On Toll Long Distance Calls: | Yes or No |

**Emergency:**

|                      |  |
|----------------------|--|
| Emergency Extension: |  |
| Emergency Number:    |  |

**System Flags:**

|                                               |                    |
|-----------------------------------------------|--------------------|
| Alternate keyset menu display                 | Yes or No          |
| Audible message indication for SL sets        | Yes or No          |
| Broadcast alarms to all attendants            | Yes or No          |
| Broadcast station off-hook alarms             | Yes or No          |
| Caller information used on keyset displays    | Yes or No          |
| DISA transfer tone                            | Ring or Music      |
| Drop incomplete outgoing calls                | Yes or No          |
| Handsfree announce on system forward transfer | Yes or No          |
| Music-on-hold for IC calls                    | Yes or No          |
| OHVA enable                                   | Yes or No          |
| Ring flash on DSS lamps                       | Yes or No          |
| SLC ring zones                                | Yes or No          |
| System speed dial override toll restriction   | Yes or No          |
| Time display format                           | 12-hour or 24-hour |
| Transfer audio for IC calls                   | Ring or Music      |
| UCD station monitor indications               | Yes or No          |
| Voice mailbox number validation               | Yes or No          |

FIGURE 6-17. PAGE ZONES (PAGE — Page 6-93)

---

| ZONE | DESCRIPTION | KEYSETS AND TRUNKS |
|------|-------------|--------------------|
| 0    |             |                    |
| 1    |             |                    |
| 2    |             |                    |
| 3    |             |                    |
| 4    |             |                    |
| 5    |             |                    |
| 6    |             |                    |
| 7    |             |                    |
| 8    |             |                    |
| 9    |             |                    |





FIGURE 6-20. SYSTEM TIMERS (TIMR — Page 6-99)

| TIMER                                     | DEFAULT | RANGE               | NEW VALUE |
|-------------------------------------------|---------|---------------------|-----------|
| Abandoned Call                            | 10      | 1-255 minutes       |           |
| Camp-On                                   | 3       | 1-255 seconds       |           |
| Camp-On Tone                              | 15      | 5-255 seconds       |           |
| CO Reseize                                | 3       | 1-15 seconds        |           |
| Dial Initiation                           | 15      | 5-30 seconds        |           |
| DID Disconnect Recognition                | 150     | 2-500 milliseconds  |           |
| DID Inpulse-dial Inter-digit Pause Recog. | 240     | 2-500 milliseconds  |           |
| DID Off-hook Debounce                     | 10      | 2-500 milliseconds  |           |
| DID On-hook Debounce                      | 12      | 2-500 milliseconds  |           |
| DID Post-Seize Delay                      | 64      | 2-500 milliseconds  |           |
| DID Post-Signal Delay                     | 30      | 2-500 milliseconds  |           |
| DID Pre-Signal Delay                      | 100     | 2-500 milliseconds  |           |
| DID Ready Timeout                         | 4000    | 2-65000 millisec.   |           |
| DID Seizure Recognition                   | 30      | 2-500 milliseconds  |           |
| DID Signal Hold                           | 200     | 2-500 milliseconds  |           |
| Disconnect Wait After Dialing             | 20      | 1-60 seconds        |           |
| DKTS Alternate Transient Display          | 10      | 1-255 tenths        |           |
| DKTS Secondary Ext. Key Alerting Tone     | 6       | 1-1000 seconds      |           |
| DTMF Digit Duration/Pause                 | 60      | 30-255 milliseconds |           |
| E&M Answer Recognition                    | 4500    | 2-20000 millisec.   |           |
| E&M Dial Delay                            | 70      | 2-500 milliseconds  |           |
| E&M Dial Delay Hold                       | 140     | 2-500 milliseconds  |           |
| E&M Dialing Wait After Hookflash          | 3000    | 2-20000 millisec.   |           |
| E&M Disconnect Flash Duration             | 2000    | 2-20000 millisec.   |           |
| E&M Disconnect Recognition                | 15000   | 2-40000 millisec.   |           |
| E&M False Signal Debounce                 | 50      | 2-500 milliseconds  |           |
| E&M Handshake Timeout                     | 5000    | 2-20000 millisec.   |           |
| E&M Hookflash Duration                    | 600     | 2-10000 millisec.   |           |
| E&M Hookflash Recognition                 | 300     | 2-10000 millisec.   |           |
| E&M Inpulse-dial Inter-digit Pause Recog. | 300     | 2-10000 millisec.   |           |
| E&M Off-Hook Debounce                     | 10      | 2-500 milliseconds  |           |
| E&M On-Hook Debounce                      | 10      | 2-500 milliseconds  |           |
| E&M Outpulse-dial Inter-digit Pause       | 700     | 2-10000 millisec.   |           |
| E&M Outpulse-dial Inter-pulse Pause       | 40      | 2-500 millisec.     |           |
| E&M Post-Seize Delay                      | 65      | 2-500 milliseconds  |           |

FIGURE 6-20. SYSTEM TIMERS (Continued)

| TIMER                                   | DEFAULT | RANGE               | NEW VALUE |
|-----------------------------------------|---------|---------------------|-----------|
| E&M Post-Signal Delay                   | 30      | 2-500 milliseconds  |           |
| E&M Pulse Hold                          | 60      | 2-500 milliseconds  |           |
| E&M Ready Timeout                       | 4000    | 2-20000 millisecc.  |           |
| E&M Receive Handshake Delay             | 20      | 2-500 milliseconds  |           |
| E&M Seizure Debounce                    | 2       | 2-500 milliseconds  |           |
| E&M Transmit Handshake                  | 100     | 2-500 milliseconds  |           |
| E&M Wait for Dial Tone                  | 1000    | 2-20000 millisecc.  |           |
| E&M Wink Hold                           | 214     | 2-500 milliseconds  |           |
| E&M Wink Timeout                        | 350     | 2-500 milliseconds  |           |
| Forward No Answer                       | 15      | 3-255 seconds       |           |
| GS Dialing Wait After Connect           | 30      | 1-50 tenths         |           |
| GS Tip-Ground Debounce                  | 50      | 10-500 milliseconds |           |
| GS Transition Delay                     | 10      | 10-500 milliseconds |           |
| Hold                                    | 60      | 0-255 seconds       |           |
| Hold — Alternate                        | 180     | 0-1000 seconds      |           |
| Inactivity Alarm                        | 60      | 10-255 seconds      |           |
| Interdigit — Long                       | 15      | 2-255 seconds       |           |
| Interdigit — Short                      | 4       | 2-30 seconds        |           |
| LS Caller ID Relay Hold                 | 2500    | 2-4000 milliseconds |           |
| LS Caller ID Ring Idle                  | 500     | 2-4000 milliseconds |           |
| LS Dialing Wait After Connect           | 15      | 1-50 tenths         |           |
| LS/GS CO Hookflash                      | 60      | 2-1000 hundredths   |           |
| LS/GS CO-CO Disconnect                  | 35      | 2-1000 hundredths   |           |
| LS/GS Dialing Disconnect                | 120     | 2-1000 hundredths   |           |
| LS/GS Dialing Wait After Hookflash      | 30      | 2-199 tenths        |           |
| LS/GS IC-CO Disconnect                  | 60      | 2-1000 hundredths   |           |
| LS/GS Inter-ring Silence                | 60      | 1-250 tenths        |           |
| LS/GS Loop Current Debounce             | 100     | 2-500 milliseconds  |           |
| LS/GS Outpulse-dial Inter-digit Pause   | 700     | 2-1500 milliseconds |           |
| Outpulse-dial Inter-pulse Pause         | 40      | 2-500 milliseconds  |           |
| LS/GS Outpulse-dial Pulse Hold Duration | 60      | 2-500 milliseconds  |           |
| LS/GS Ring Frequency — High Boundary    | 100     | max. 1000 Hertz     |           |
| LS/GS Ring Frequency — Low Boundary     | 15      | min. 4 Hertz        |           |
| LS/GS Trunk Ring Detection              | 5       | 1-250 tenths        |           |
| Message Wait                            | 5       | 1-255 seconds       |           |
| Off-Hook Voice Announce Screening       | 5       | 1-255 seconds       |           |

FIGURE 6-20. SYSTEM TIMERS (Continued)

| TIMER                                    | DEFAULT | RANGE               | NEW VALUE |
|------------------------------------------|---------|---------------------|-----------|
| Page                                     | 15      | 0-255 seconds       |           |
| Pause Dialing Digit Length               | 3       | 1-15 seconds        |           |
| Queue Callback                           | 15      | 10-255 seconds      |           |
| Recall                                   | 60      | 10-255 seconds      |           |
| SL Disconnect Flash Duration             | 15      | 1-250 tenths        |           |
| SL Hookflash Maximum                     | 12      | 2-20 tenths         |           |
| SL Hookflash Minimum                     | 2       | 1-10 tenths         |           |
| SL Inpulse-dial Inter-digit Pause        | 300     | 2-1500 milliseconds |           |
| SL Wait For Disconnect                   | 2       | 1-60 seconds        |           |
| System Forward Advance                   | 15      | 2-255 seconds       |           |
| System Forward Initiate                  | 15      | 2-255 seconds       |           |
| T1 Busyout Switch Timeout                | 60      | 10-10000 seconds    |           |
| T1 Loopback Timeout                      | 600     | 10-10000 seconds    |           |
| Transfer — Attendant                     | 30      | 10-255 seconds      |           |
| Transfer — Available                     | 20      | 10-255 seconds      |           |
| Transfer — AXCESSORY Talk                | 20      | 10-255 seconds      |           |
| Transfer — Busy                          | 24      | 10-255 seconds      |           |
| Trunk Key Debounce                       | 3       | 1-30 seconds        |           |
| UCD Station Monitor Indication Frequency | 15      | 1-255 seconds       |           |
| Unsupervised CO                          | 5       | 1-255 minutes       |           |
| Valid Call                               | 15      | 1-60 seconds        |           |
| Voice Mail Dial Delay                    | 5       | 1-250 tenths        |           |

FIGURE 6-21. TOLL RESTRICTION (TOLL — Page 6-108)

CLASSES OF SERVICE:

| COS | DESCRIPTION   | DIALING PATTERNS | A/R | DAY LIST | NIGHT LIST |
|-----|---------------|------------------|-----|----------|------------|
| 00  |               |                  |     |          |            |
| 01  |               |                  |     |          |            |
| 02  | See next page |                  |     |          |            |
| 03  |               |                  |     |          |            |
| 04  |               |                  |     |          |            |
| 05  |               |                  |     |          |            |
| 06  |               |                  |     |          |            |
| 07  |               |                  |     |          |            |
| 08  |               |                  |     |          |            |
| 09  |               |                  |     |          |            |
| 10  |               |                  |     |          |            |
| 11  |               |                  |     |          |            |
| 12  |               |                  |     |          |            |
| 13  |               |                  |     |          |            |
| 14  |               |                  |     |          |            |
| 15  |               |                  |     |          |            |
| 16  |               |                  |     |          |            |

FIGURE 6-21. TOLL RESTRICTION (Continued)

USER GROUPS FOR COS 2:

USER GROUP 1: Description: \_\_\_\_\_

| DAY LIST | NIGHT LIST | ALLOWED AREA CODES | RESTRICTED AREA CODES | EXTENDED AREA CODES | OFFICE CODES |
|----------|------------|--------------------|-----------------------|---------------------|--------------|
|          |            |                    |                       |                     |              |
|          |            |                    |                       |                     |              |
|          |            |                    |                       |                     |              |
|          |            |                    |                       |                     |              |

USER GROUP 2: Description: \_\_\_\_\_

| DAY LIST | NIGHT LIST | ALLOWED AREA CODES | RESTRICTED AREA CODES | EXTENDED AREA CODES | OFFICE CODES |
|----------|------------|--------------------|-----------------------|---------------------|--------------|
|          |            |                    |                       |                     |              |
|          |            |                    |                       |                     |              |
|          |            |                    |                       |                     |              |
|          |            |                    |                       |                     |              |

USER GROUP 3: Description: \_\_\_\_\_

| DAY LIST | NIGHT LIST | ALLOWED AREA CODES | RESTRICTED AREA CODES | EXTENDED AREA CODES | OFFICE CODES |
|----------|------------|--------------------|-----------------------|---------------------|--------------|
|          |            |                    |                       |                     |              |
|          |            |                    |                       |                     |              |
|          |            |                    |                       |                     |              |
|          |            |                    |                       |                     |              |

FIGURE 6-21. TOLL RESTRICTION (Continued)

TOLL STRINGS:

| CHARACTER | DIGIT STRING(S) |
|-----------|-----------------|
| S         |                 |
| R         |                 |
| T         |                 |
| I         |                 |
| Q         |                 |





**FIGURE 6-24. T1 PROGRAMMING (T1 — Page 6-131)**

Make copies of this page and fill in the information for each T1 Card:

|                               |                                                                                       |
|-------------------------------|---------------------------------------------------------------------------------------|
| <b>Card Slot Number:</b>      |                                                                                       |
| <b>Framing Type:</b>          | D4 Superframe <i>or</i> ESF                                                           |
| <b>Zero-Code Suppression:</b> | AMI (Bit 7) <i>or</i> B8ZS <i>or</i> None                                             |
| <b>Line Build Out:</b>        | 0 dB (DSX-1) <i>or</i> -7.5 dB <i>or</i> -15 dB <i>or</i> -22.5 dB <i>or</i> Auto     |
| <b>Reference Clock:</b>       | Slave To Public Net. <i>or</i> Slave To Private Net. <i>or</i> Master To Private Net. |

**Error Thresholds:**

|                                          | NUMBER/HOUR | NUMBER/DAY | NEW VALUE |
|------------------------------------------|-------------|------------|-----------|
| BPV (Bipolar Violations)                 | 53,360      | 133,400    |           |
| Controlled Slips                         | 2           | 4          |           |
| CRC-6 (Cyclic Redundancy Check)          | 53,184      | 132,960    |           |
| ES (Errored Seconds)                     | 259         | 648        |           |
| OOF/COFA (Out-of-frame)                  | 7           | 17         |           |
| SES (Severely Errored Seconds)           | 40          | 100        |           |
| TODV (Transmit One's Density Violations) | 2           | 4          |           |
| UAS (Unavailable Seconds)                | 10          | 10         |           |

FIGURE 6-25. TRUNK GROUPS (TRNK — Page 6-136)

TO USE: (Duplicate and fill in this form for each trunk group.)

| FIELD                    | INFORMATION                                                     |
|--------------------------|-----------------------------------------------------------------|
| Description              |                                                                 |
| Username                 |                                                                 |
| One-Way Incoming Only    | Yes or No                                                       |
| Enable Hookflash         | Yes or No                                                       |
| Search Algorithm         | Linear or Distributed                                           |
| Music-On-Hold            | Music or Silence or Tick Tones                                  |
| Audio On Transfer        | Music or Ringback                                               |
| Day Ring-In              | Call Routing Table or Single or DISA or Multiple                |
|                          | Call Routing Table, Extension(s) or DISA Code:                  |
| Day Answer Access        | Stations:                                                       |
| Day Outgoing Access      | Stations:                                                       |
| Night Ring-In            | Call Routing Table or Single or DISA or Multiple                |
|                          | Call Routing Table, Extension(s) or DISA Code:                  |
| Night Answer Access      | Stations:                                                       |
| Night Outgoing Access    | Stations:                                                       |
| Trunk List               | Trunks:                                                         |
| Day Class Of Service     |                                                                 |
|                          | User Group if COS 2:                                            |
| Night Class Of Service   |                                                                 |
|                          | User Group if COS 2:                                            |
| Subject To Toll Restrict | Yes or No                                                       |
| Exempt From ARS Only     | Yes or No                                                       |
| Assigned Call Cost       | Free Local Toll-Local Toll-Long Distance Operator/International |
| Absorbed Digits          | Yes or No                                                       |
|                          | If yes, String or Pattern(s):                                   |
| PBX Line                 | Yes or No                                                       |

FIGURE 6-26. CALL COST (COST — Page 6-147)

| CALL COST TYPE         | RATE IN \$ PER MINUTE |
|------------------------|-----------------------|
| Local Call             |                       |
| 7-Digit Toll           |                       |
| 10-Digit Toll          |                       |
| Operator/International |                       |
| Incoming Call          |                       |

| MULTIPLICATIVE FACTOR | DISCOUNT RATE |
|-----------------------|---------------|
| Local Call            |               |
| 7-Digit Toll          |               |

FIGURE 6-27. STATION MESSAGE DETAIL RECORDING (SMDR — Page 6-149)

|                                                 |           |
|-------------------------------------------------|-----------|
| Output Port                                     |           |
| Output Active?                                  | Yes or No |
| Suppress Absorbed Digits?                       | Yes or No |
| Suppress Equal Access Digits?                   | Yes or No |
| Suppress Toll Digits?                           | Yes or No |
| Suppress All Caller Numbers?                    | Yes or No |
| Display Elapsed Time In Seconds If <999999 sec? | Yes or No |
| Record All Incoming Calls                       | Yes or No |
| Record All Local Calls                          | Yes or No |
| Record All Free Calls                           | Yes or No |
| Record All Ring-In Diagnostics                  | Yes or No |
| Record All Toll Local Calls                     | Yes or No |
| Record All Toll Long Distance Calls             | Yes or No |
| Record All Operator/International Calls         | Yes or No |
| Record All DISA Calls                           | Yes or No |
| Record All Conference Calls                     | Yes or No |
| Record All DID/DNIS Calls                       |           |
| List of stations to be included in SMDR:        |           |

**FIGURE 6-28. AXCESSORY TALK APPLICATION (APPL OR AAPP — Page 6-152)**

**APPLICATIONS AND NODES:** *(Duplicate and fill in this form for each AXCESSORY Talk Application and Call Routing Announcement Node.)*

| FIELD                                                                       | INFORMATION                           |
|-----------------------------------------------------------------------------|---------------------------------------|
| Extension                                                                   |                                       |
| Description                                                                 |                                       |
| Username                                                                    |                                       |
| Day Greeting                                                                |                                       |
| Night Greeting                                                              |                                       |
| Attendant                                                                   |                                       |
| Time Slot Group                                                             |                                       |
| Transfer Recall Destination                                                 |                                       |
| <b>Digit Translation</b><br>(Enter action and, if applicable, destination.) | 1:                                    |
|                                                                             | 2:                                    |
|                                                                             | 3:                                    |
|                                                                             | 4:                                    |
|                                                                             | 5:                                    |
|                                                                             | 6:                                    |
|                                                                             | 7:                                    |
|                                                                             | 8:                                    |
|                                                                             | 9:                                    |
|                                                                             | 0:                                    |
|                                                                             | *:                                    |
|                                                                             | #:                                    |
|                                                                             | Timeout: _____ Timer value: _____ sec |

FIGURE 6-28. AXCESSORY TALK APPLICATION (Continued)

TIME SLOT GROUPS:

| GROUP NO. | DESCRIPTION | VOICE CHANNELS |
|-----------|-------------|----------------|
| 01        |             |                |
| 02        |             |                |
| 03        |             |                |
| 04        |             |                |
| 05        |             |                |
| 06        |             |                |
| 07        |             |                |
| 08        |             |                |
| 09        |             |                |
| 10        |             |                |





**FIGURE 6-30. AXCESSORY TALK FAX (Continued)**

**FAX CONFIGURATION**

**Fax Delivery:** Program the following fields to determine how and when your faxes will be delivered:

|                              |  |
|------------------------------|--|
| Allow International Calls?   |  |
| Outgoing Access Trunk Code:  |  |
| Outgoing Access Termination: |  |
| Start Time:                  |  |
| Stop Time:                   |  |
| Days Of The Week:            |  |

**Fax Format:**

|                |  |
|----------------|--|
| Local Fax ID:  |  |
| Company Name:  |  |
| Logo Document: |  |

**Fax Miscellaneous Information:**

|                                |  |
|--------------------------------|--|
| Maximum Fax Delivery Attempts: |  |
| Fax Retry Timer:               |  |
| Fax Retransmission Timer:      |  |
| Maximum Fax Selections:        |  |
| Maximum Fax Library Size:      |  |
| Fax Tone Wait Timer:           |  |
| Automatic Header Reduction:    |  |



**FIGURE 6-32. AXCESSORY TALK MAILBOX  
 (MAIL, AMAIL, OR AMB — Page 6-180)**

TO USE: (Make sufficient copies of this page and fill in information for each mailbox.)

| FIELD                           | INFORMATION                                                         |
|---------------------------------|---------------------------------------------------------------------|
| Mailbox Number                  | Associated?    Yes or No    Number:                                 |
| Description                     |                                                                     |
| Username                        |                                                                     |
| Message Notification Station    |                                                                     |
| Password                        |                                                                     |
| Mailbox Type                    | Standard or Receive Only                                            |
| Enable Remote Messaging?        | Yes or No                                                           |
| Primary Message Notification:   | Notification Category:    All Messages or Priority Only             |
|                                 | Call For Each New Message? Yes or No                                |
|                                 | Start Time:                      Stop Time:                         |
|                                 | Days of the Week:    Sun    Mon    Tue    Wed    Thu    Fri    Sat  |
|                                 | Remote Notification Tables (see next page)                          |
| Alternate Message Notification: | Notification Category:    All Messages or Priority Only             |
|                                 | Call For Each New Message? Yes or No                                |
|                                 | Start Time:                      Stop Time:                         |
|                                 | Days of the Week:    Sun    Mon    Tue    Wed    Thu    Fri    Sat  |
|                                 | Remote Notification Tables (see next page)                          |
| Miscellaneous                   | Maximum Mailbox Message Capacity (1-120 minutes):                   |
|                                 | Maximum Non-Subscriber Message Length (1 min.-Max. Capacity):       |
|                                 | Maximum Outgoing Message Length (1-120 minutes):                    |
|                                 | Greeting: Primary or Alternate or System                            |
|                                 | Play Recording Instructions: Yes or No                              |
|                                 | Envelope Settings: Date/Time – Message Source – Message Length      |
|                                 | Directory Information: Unlisted No.    Private Ext. and Mailbox No. |

See next page for Remote Notification Table programming.

FIGURE 6-32. AXCESSORY TALK MAILBOX (Continued)

TO USE: (Make sufficient copies of this page and fill in information for the mailbox notification tables. Each mailbox can have 9 Primary and 9 Alternate cascade tables.)

Remote Notification Cascade Tables For Mailbox Number \_\_\_\_\_

Remote Notification: PRIMARY or ALTERNATE

|                       |                                                         |
|-----------------------|---------------------------------------------------------|
| Cascade Table # _____ | Enabled: Yes or No                                      |
|                       | Call Progress Detection? Yes or No                      |
|                       | Call For Each New Message? Yes or No                    |
|                       | Notification Destination: Intercom (IC) or Outside (CO) |
|                       | Notification Number:                                    |
|                       | Notification Type: Personal or Pager                    |
|                       | Pager Dial String:                                      |
|                       | Outgoing Access:                                        |
|                       | Outgoing Access Termination:                            |
|                       | Number of Call Attempts:                                |
|                       | Number Called Busy Timer:                               |
|                       | Personal Number No Answer Timer:                        |
|                       | Pager Notification Retry Timer:                         |
|                       | Cascade Table # _____                                   |
|                       | Call Progress Detection? Yes or No                      |
|                       | Call For Each New Message? Yes or No                    |
|                       | Notification Destination: Intercom (IC) or Outside (CO) |
|                       | Notification Number:                                    |
|                       | Notification Type: Personal or Pager                    |
|                       | Pager Dial String:                                      |
|                       | Outgoing Access:                                        |
|                       | Outgoing Access Termination:                            |
|                       | Number of Call Attempts:                                |
|                       | Number Called Busy Timer:                               |
|                       | Personal Number No Answer Timer:                        |
|                       | Pager Notification Retry Timer:                         |

**FIGURE 6-33. AXCESSORY TALK MISCELLANEOUS  
 (AMSC OR AMISC — Page 6-195)**

**AUTO ATTENDANT INFORMATION:**

|                                         |                         |
|-----------------------------------------|-------------------------|
| <b>Enable Auto Attendant Directory?</b> | Yes or No               |
| <b>Directory Sort Order</b>             | Last Name or First Name |

**TIMERS:**

| TIMER                                  | DEFAULT | RANGE               | NEW VALUE |
|----------------------------------------|---------|---------------------|-----------|
| Busy Tone Cycle Detect                 | 2       | 1-60 cycles         |           |
| Call Progress Detection                | 4000    | 1-6000 hundredths   |           |
| Call-In-Progress Dial Tone             | 2       | 0-5 seconds         |           |
| Dialed Pause Duration                  | 300     | 1-500 hundredths    |           |
| DTMF Delay                             | 32      | 16-240 milliseconds |           |
| DTMF Detect                            | 48      | 16-240 milliseconds |           |
| Maximum Greeting Length                | 1       | 1-15 minutes        |           |
| Minimum Call Progress Signal Duration  | 8       | 1-100 hundredths    |           |
| Minimum Call Progress Silence Duration | 15      | 1-100 hundredths    |           |
| Notification No-Answer Detection       | 4       | 1-25 rings          |           |
| Number Called Busy                     | 5       | 1-255 minutes       |           |
| Off-Hook Delay                         | 1       | 0-5 seconds         |           |
| Outgoing DTMF Digit Duration           | 60      | 3-250 milliseconds  |           |
| Pager Notification Retry               | 20      | 1-255 minutes       |           |
| Pause Voice Mail                       | 30      | 1-240 seconds       |           |
| Personal Number No Answer              | 30      | 1-255 minutes       |           |
| Replay Forward/Rewind Increment        | 5       | 1-60 seconds        |           |
| Shortest Message Allowed               | 3       | 1-5 seconds         |           |

**VOICE MAIL INFORMATION:**

|                                     |                         |
|-------------------------------------|-------------------------|
| <b>System Administrator Mailbox</b> |                         |
| <b>Enable Voice Mail Directory</b>  | Yes or No               |
| <b>Directory Sort Order</b>         | Last Name or First Name |
| <b>Volume</b>                       |                         |



FIGURE 6-34. AXCESSORY TALK REPORT (AREP — Page 6-204)

| FIELD                        | INFORMATION                                                                 |
|------------------------------|-----------------------------------------------------------------------------|
| Output Device                |                                                                             |
| File                         |                                                                             |
| Manual Report Generation:    | Application and Channel Statistics?    Yes <i>or</i> No                     |
|                              | Directory Listing Reports?                Yes <i>or</i> No                  |
|                              | Group List Report?                          Yes <i>or</i> No                |
|                              | Directory Sort Order:                        Last Name <i>or</i> First Name |
| Automatic Report Generation: | Print Day:                                                                  |
|                              | Print Time:                                                                 |
|                              | Enable Automatic Reports?                Yes <i>or</i> No                   |
|                              | Clear Statistics After Reports Print?    Yes <i>or</i> No                   |
|                              | Application and Channel Statistics?    Yes <i>or</i> No                     |
|                              | Directory Listing Reports?                Yes <i>or</i> No                  |
|                              | Group List Report?                          Yes <i>or</i> No                |
|                              | Directory Sort Order:                        Last Name <i>or</i> First Name |

**FIGURE 6-35. AXCESSORY TALK SMDR REPORT BUFFER**  
(ASMDR — Page 6-210)

| FIELD                     | INFORMATION |
|---------------------------|-------------|
| Enable SMDR Buffering?    | Yes or No   |
| SMDR Buffer Box Baud Rate |             |
| SMDR Buffer Size          |             |

**FIGURE 6-36. AXCESSORY TALK SYSTEM-WIDE INFORMATION**  
(ASYS — Page 6-211)

Operator Access:

| FIELD                         | INFORMATION                  |  |
|-------------------------------|------------------------------|--|
| Dial-0 Day Destination Type   | Extension or Mailbox or None |  |
| Dial-0 Day Destination        |                              |  |
| Dial-0 Night Destination Type | Extension or Mailbox or None |  |
| Dial-0 Night Destination      |                              |  |

Toll Restriction for Remote Messaging:

| TOLL RESTRICTION COS  | DAY       | NIGHT     |
|-----------------------|-----------|-----------|
| 00 Unrestricted       | Yes or No | Yes or No |
| 01 ARS Only           | Yes or No | Yes or No |
| 02 Deny Area/Office   | Yes or No | Yes or No |
| 03 Deny Operator      | Yes or No | Yes or No |
| 04 Deny Toll Access   | Yes or No | Yes or No |
| 05 Deny International | Yes or No | Yes or No |
| 06 Deny Equal Access  | Yes or No | Yes or No |
| 07 Deny Local Calls   | Yes or No | Yes or No |
| 08 Denied Numbers     | Yes or No | Yes or No |
| 09 Allowed Numbers    |           |           |
| User Group Number     |           |           |

FIGURE 6-37. MESSAGE PRINT (MPP — Page 6-217)

| FIELD                        | INFORMATION                  |
|------------------------------|------------------------------|
| Message Print Output Port    |                              |
| Output Device Line Width     | 64 or 80 or 132 (characters) |
| Message Print Output Active? | Yes or No                    |
| Print Information Messages?  | Yes or No                    |
| Print Warning Messages?      | Yes or No                    |
| Print Alarm Messages?        | Yes or No                    |
| Print Severe Messages?       | Yes or No                    |

FIGURE 6-38. PASSWORDS (PASS — Page 6-218)

|                                    |  |
|------------------------------------|--|
| Applications Restricted Password   |  |
| Applications Unrestricted Password |  |
| Monitor Restricted Password        |  |
| Monitor Unrestricted Password      |  |
| User Password                      |  |

FIGURE 6-39. PREMIUM FEATURE SELECTION (PREM — Page 6-220)

| FEATURE                             | UNITS REQUIRED | ENABLED?  |
|-------------------------------------|----------------|-----------|
| Advanced CO Interfaces              | 7              | Yes or No |
| Analog Voice Mail Hunt Groups       | 5              | Yes or No |
| ACD Hunt Groups                     | 5              | Yes or No |
| Automatic Route Selection           | 3              | Yes or No |
| Desktop Interface                   | 10             | Yes or No |
| Directories                         | 2              | Yes or No |
| System OAI Events                   | 30             | Yes or No |
| System OAI Third Party Call Control | 30             | Yes or No |
| System Forwarding                   | 3              | Yes or No |
| UCD Hunt Groups                     | 5              | Yes or No |

FIGURE 6-40. SYSTEM CONFIGURATION (CNFG OR CONF — Page 6-232)

SYSTEM CARD SLOTS:

| SLOT | BOARD TYPE |
|------|------------|
| 1    |            |
| 2    |            |
| 3    |            |
| 4    |            |
| 5    |            |
| 6    |            |
| 7    |            |
| 8    | CPU        |
| 9    |            |
| 10   |            |
| 11   |            |
| 12   |            |
| 13   |            |
| 14   |            |
| 15   |            |
| 16   | NOT USED   |

OPTIONS CARD (OPC):

Axxessory Talk Connection?

Yes or No

| DSP | DSP TYPE |
|-----|----------|
| 1   |          |
| 2   |          |
| 3   |          |
| 4   |          |

FIGURE 6-40. SYSTEM CONFIGURATION (Continued)

KEYSET CARDS (DKSC): *(Make a copies of these charts and fill in for each DKSC.)*

SLOT NUMBER: \_\_\_\_\_

| CIRCUIT | CIRCUIT TYPE |
|---------|--------------|
| __01.XX |              |
| __02.XX |              |
| __03.XX |              |
| __04.XX |              |
| __05.XX |              |
| __06.XX |              |
| __07.XX |              |
| __08.XX |              |

SLOT NUMBER: \_\_\_\_\_

| CIRCUIT | CIRCUIT TYPE |
|---------|--------------|
| __01.XX |              |
| __02.XX |              |
| __03.XX |              |
| __04.XX |              |
| __05.XX |              |
| __06.XX |              |
| __07.XX |              |
| __08.XX |              |

SLOT NUMBER: \_\_\_\_\_

| CIRCUIT | CIRCUIT TYPE |
|---------|--------------|
| __01.XX |              |
| __02.XX |              |
| __03.XX |              |
| __04.XX |              |
| __05.XX |              |
| __06.XX |              |
| __07.XX |              |
| __08.XX |              |

FIGURE 6-40. SYSTEM CONFIGURATION (Continued)

SINGLE-LINE CARDS (SLC): *(Make a copies of these charts and fill in for each SLC.)*

SLOT NUMBER: \_\_\_\_\_

| CIRCUIT | CIRCUIT TYPE |
|---------|--------------|
| __01.XX |              |
| __02.XX |              |
| __03.XX |              |
| __04.XX |              |
| __05.XX |              |
| __06.XX |              |
| __07.XX |              |
| __08.XX |              |

SLOT NUMBER: \_\_\_\_\_

| CIRCUIT | CIRCUIT TYPE |
|---------|--------------|
| __01.XX |              |
| __02.XX |              |
| __03.XX |              |
| __04.XX |              |
| __05.XX |              |
| __06.XX |              |
| __07.XX |              |
| __08.XX |              |

SLOT NUMBER: \_\_\_\_\_

| CIRCUIT | CIRCUIT TYPE |
|---------|--------------|
| __01.XX |              |
| __02.XX |              |
| __03.XX |              |
| __04.XX |              |
| __05.XX |              |
| __06.XX |              |
| __07.XX |              |
| __08.XX |              |

**FIGURE 6-40. SYSTEM CONFIGURATION (Continued)**

**TRUNK CARDS (LSC and LSC/DTR):** Make a copies of these charts and fill in for each LSC or LSC/DTR.

**SLOT NUMBER:** \_\_\_\_\_

| CIRCUIT       | CIRCUIT TYPE |
|---------------|--------------|
| __01.XX (LSC) |              |
| __02.XX (LSC) |              |
| __03.XX (LSC) |              |
| __04.XX (LSC) |              |
| __05.XX (DTR) |              |
| __06.XX (DTR) |              |
| __07.XX (DTR) |              |
| __08.XX (DTR) |              |

**SLOT NUMBER:** \_\_\_\_\_

| CIRCUIT       | CIRCUIT TYPE |
|---------------|--------------|
| __01.XX (LSC) |              |
| __02.XX (LSC) |              |
| __03.XX (LSC) |              |
| __04.XX (LSC) |              |
| __05.XX (DTR) |              |
| __06.XX (DTR) |              |
| __07.XX (DTR) |              |
| __08.XX (DTR) |              |

**SLOT NUMBER:** \_\_\_\_\_

| CIRCUIT       | CIRCUIT TYPE |
|---------------|--------------|
| __01.XX (LSC) |              |
| __02.XX (LSC) |              |
| __03.XX (LSC) |              |
| __04.XX (LSC) |              |
| __05.XX (DTR) |              |
| __06.XX (DTR) |              |
| __07.XX (DTR) |              |
| __08.XX (DTR) |              |

FIGURE 6-40. SYSTEM CONFIGURATION (Continued)

T1 CARDS (T1C): *Make a copies of these charts and fill in for each T1C.*

SLOT NUMBER: \_\_\_\_\_

| CIRCUIT | CIRCUIT TYPE |
|---------|--------------|
| __XX.01 |              |
| __XX.02 |              |
| __XX.03 |              |
| __XX.04 |              |
| __XX.05 |              |
| __XX.06 |              |
| __XX.07 |              |
| __XX.08 |              |
| __XX.09 |              |
| __XX.10 |              |
| __XX.11 |              |
| __XX.12 |              |
| __XX.13 |              |
| __XX.14 |              |
| __XX.15 |              |
| __XX.16 |              |
| __XX.17 |              |
| __XX.18 |              |
| __XX.19 |              |
| __XX.20 |              |
| __XX.21 |              |
| __XX.22 |              |
| __XX.23 |              |
| __XX.24 |              |

FIGURE 6-41. SERIAL PORT CONFIGURATION (SPP OR PORT — Page 6-245)

| CIRCUIT NO. | DESCRIPTION     | BAUD RATE | HARDWARE HANDSHAKE? | SOFTWARE HANDSHAKE? |
|-------------|-----------------|-----------|---------------------|---------------------|
| 08.01.01    | CPU Serial Port |           | Yes or No           | Yes or No           |
|             |                 |           | Yes or No           | Yes or No           |
|             |                 |           | Yes or No           | Yes or No           |
|             |                 |           | Yes or No           | Yes or No           |
|             |                 |           | Yes or No           | Yes or No           |
|             |                 |           | Yes or No           | Yes or No           |
|             |                 |           | Yes or No           | Yes or No           |
|             |                 |           | Yes or No           | Yes or No           |

FIGURE 6-42. SERIAL PORT ASSIGNMENT (SPA — Page 6-245)

| CIRCUIT NO. | DESCRIPTION     | ASSIGNMENT |
|-------------|-----------------|------------|
| 08.01.01    | CPU Serial Port |            |
|             |                 |            |
|             |                 |            |
|             |                 |            |
|             |                 |            |
|             |                 |            |
|             |                 |            |
|             |                 |            |

# TROUBLESHOOTING

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## NOTICE

Some of the cards and cables inside the AXXESSORY Talk PC may have been spot-glued into place to help prevent them from working loose during shipment. To remove one of these cards or cables from the PC (if necessary), first break the glue seal by gently wiggling the connector with a pair of pliers.

## 1. INTRODUCTION

**1.1** This section of the manual describes the troubleshooting procedures to follow in the event of a system or station instrument malfunction. System repair is limited to replacing parts (keysets, circuit cards, cables, power supply, etc.).

## 2. TROUBLESHOOTING CHECKLIST

**2.1** To save time, perform the troubleshooting procedures in the following order:

- (1) Check for proper light-emitting diode (LED) indications on the circuit cards (refer to Figure 7-1 on the following pages).
- (2) Check the alarm message output (see pages 7-6 to 7-9).
- (3) Isolate the problem and refer to the appropriate troubleshooting chart (refer to page 7-11).

## 3. LIGHT-EMITTING DIODE (LED) INDICATIONS

**3.1** LEDs on the front edge of the circuit cards indicate specific functions. Figure 7-1 starting on page 7-3 lists the various LEDs and describes their purposes.

3.2 If the CPU ACTIVE LED on the CPU/MEM or CPU020/PCM-D Card is flashing (or if referred to this page to isolate a problem), follow these procedures to check the system voltages:

- (1) Turn OFF the AC power.

**CAUTION**

Always turn OFF the AC POWER before removing or inserting the CPU/MEM or CPU020/PCM-D Card.

- (2) Remove the CPU/MEM or CPU020/PCM-D Card and check to make sure that all of the components on the card are properly seated and that no pins are bent. Also, check to make sure that the two parts of the combined card are securely attached, and make sure that the connectors and stand-offs are properly aligned and seated.
- (3) Wait 10 seconds and re-insert the card.
- (4) Turn ON the AC power.
- (5) If the CPU ACTIVE LED is still flashing (or if the problem still persists):

- a. Observe the LEDs on the front of the power supply unit. All of the LEDs should be lit. *If any of the LEDs are blinking or are unlit*, the power supply is defective and the entire unit must be replaced (see page 3-32 or page 3-39 for details).

**NOTE:** A blinking LED indicates that an overly high voltage has been detected. A lit LED merely indicates that there is some voltage present (as shown in the table below); it does not, however, indicate whether the voltage level is acceptable. To determine the exact voltage level present, perform step 5b.

| <u>VOLTAGE</u> | <u>LED</u> | <u>OUTPUT</u>   |
|----------------|------------|-----------------|
| +5VDC          | OFF        | ≤ 1V            |
|                | ON         | > 1V & < 6.5V   |
|                | BLINKING   | ≥ 6.5V          |
| -5VDC          | OFF        | ≥ -1V           |
|                | ON         | < -1V & > -6.5V |
|                | BLINKING   | ≤ -6.5V         |
| +24VDC         | OFF        | ≤ 1V            |
|                | ON         | > 1V & < 29V    |
|                | BLINKING   | ≥ 29V           |

- b. Measure the following system voltages as outlined on page 3-35 or page 3-41. A digital voltmeter of ±0.5% accuracy is required. Insert the "common" voltmeter probe into the ground point and insert the other probe into the desired voltage test point. (Refer to Figure 3-19 on page 3-31 or Figure 3-23 on page 3-38 for voltage test point locations.)

| <u>VOLTAGE</u> | <u>TOLERANCE</u> |
|----------------|------------------|
| -5VDC          | ±5%              |
| +5VDC          | ±5%              |
| +24VDC         | ±5%              |

- (6) Perform *one* of the following steps:

- a. *If the system voltages are not within the specified limits*, replace the defective power supply unit.

**CAUTION**

*DO NOT* attempt to adjust the power supply voltages. Damage caused by unauthorized voltage adjustment will not be covered by the warranty.

- b. *If the system voltages are correct and the CPU ACTIVE LED is still flashing*, try another card.

**NOTE:** If possible, use the save/restore program to save the customer's database before replacing the CPU/MEM or CPU020/PCM-D Card (see page 6-213 in PROGRAMMING). It can then be restored (loaded) into a new CPU/MEM or CPU020/PCM-D Card if necessary. Make sure that the database back-up battery on the new CPU/MEM or CPU020/PCM-D Card has a charge of at least 3.3VDC and that the battery back-up jumper strap is in the ON position (see page 3-43 in INSTALLATION).

- c. *If the system voltages are correct and the CPU ACTIVE LED is properly lit, yet the problem still persists*, contact Customer Support for assistance.

FIGURE 7-1. LIGHT-EMITTING DIODE (LED) INDICATIONS

| LOCATION                                     | LED                   | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU/MEM Card<br><br>CPU020/PCM-D Card        | CPU Active            | Lit green to show that the main processor is operating properly. If flashing at least once every five seconds, refer to paragraph 3.2 on page 7-2 for troubleshooting procedures. If unlit, check for improper connection (i.e., cabling, card seating, power supply, etc.); if still unlit, try another card.<br><br><b>NOTE:</b> If flashing slower than once every five seconds, remove the battery back-up jumper strap, turn off the system power for thirty seconds, replace the strap, and turn the power back on. If still flashing, refer to paragraph 3.2 on page 7-2 for troubleshooting procedures. |
|                                              | Database Error        | Lit red when a database error has caused the system to return to default values. When the system is first installed, the LED will remain lit until the clock is initialized through database programming (or other database programming is performed).<br><br><b>NOTE:</b> If a CPU020/PCM-D software upload fails while in progress (see page 3-60), the Database Error (red) and Minor Alarm (yellow) LEDs blink rapidly (ten times per second) and the PC displays the reason for the failure.                                                                                                               |
|                                              | Minor Alarm           | Lit yellow when a minor alarm has occurred. The light goes out when the alarm message is cleared as described in FEATURES on page 4-107.<br><br><b>NOTE:</b> If a CPU020/PCM-D software upload fails while in progress (see page 3-60), the Database Error (red) and Minor Alarm (yellow) LEDs blink rapidly (ten times per second) and the PC displays the reason for the failure.                                                                                                                                                                                                                             |
|                                              | External Clock Active | The system is receiving clock signals from an external source (e.g., from the public network via a T1 Card).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                              | Battery Off           | Lit red when the battery back-up strap on the CPU/MEM or CPU020/PCM-D Card is placed in the OFF position. Will not light if the strap is not attached to any pins. Also, will not light if the strap is in the ON position, but no battery is installed.                                                                                                                                                                                                                                                                                                                                                        |
| Digital Keypad Card (8-port and new 16-port) | Card On-Line          | Lit green to show functional readiness (i.e., the card is communicating properly with the rest of the system). If unlit, check for improper connection; if still unlit, try another card or another card slot.                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                              | Circuit Busy          | Lit yellow to indicate that at least one of the eight circuits is busy (i.e., connected to a voice channel). Unlit when all the circuits are idle.                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Single-Line Card                             | Card Active           | Lit green to show functional readiness (i.e., the card is communicating properly with the rest of the system). If unlit, check for improper connection; if still unlit, try another card or another card slot.                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                              | Circuit Busy          | Lit yellow to indicate that at least one of the eight circuits is busy (i.e., connected to a voice channel). Unlit when all the circuits are idle.                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

FIGURE 7-1. LIGHT-EMITTING DIODE (LED) INDICATIONS (CONT'D)

| LOCATION        | LED          | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Loop Start Card | Card On-Line | Lit green to show functional readiness (i.e., the card is communicating properly with the rest of the system). If unlit, check for improper connection; if still unlit, try another card or another card slot.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | Circuit Busy | Lit yellow to indicate that at least one of the four circuits (eight if an LSC-D is attached) is busy (i.e., connected to a voice channel). Unlit when all the circuits are idle.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Options Card    | Card On-Line | Lit green to show functional readiness (i.e., the card is communicating properly with the rest of the system). If unlit, check for improper connection; if still unlit, try another card or another card slot.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                 | Circuit Busy | Lit yellow to indicate that at least one of the card's resources is busy. Unlit when all the resources are idle.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| T1 Card         | Card On-Line | Lit green to show that the primary processor on the card is active and is communicating properly with the rest of the system. If unlit, check for improper connection; if still unlit, return the card for repair.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                 | Circuit Busy | Lit yellow to indicate that at least one of the T1 circuits is busy. Unlit when all the resources are idle.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                 | Red Alarm    | Flashes when the T1 Card has detected some type of red alarm error condition for at least two to three seconds (e.g., loss of the T1 signal), either internally or from outside the system. All calls on the card are dropped and all attendant stations display ALARM #114 CALL TECHNICIAN. Check the error message output (see page 7-10); then attempt to correct the problem. When the card receives a clean signal for 10 to 20 seconds, the Red Alarm LED is unlit and normal call processing resumes.<br><br><b>NOTE:</b> If, while the Red Alarm LED is flashing, the T1 Card detects a receive signal, it transmits a yellow alarm to outside the system. If the card detects a loss of receive signal, it transmits a blue alarm to outside the system. |
|                 | Yellow Alarm | Flashes when the T1 Card has detected (is receiving) a yellow alarm error condition (e.g., a red alarm error condition from outside the system or a loss of frame synchronization). If the yellow alarm condition occurs for less than two to three seconds, normal call processing continues and no calls are dropped. However, if the yellow alarm condition lasts more than two or three seconds, the card goes into a red alarm condition (see above).<br><br><b>NOTE:</b> If this LED is the only one on the card that is flashing, it may indicate a database programming inconsistency. Check the alarm message and field service diagnostic output for a programming conflict; then correct the problem.                                                  |

FIGURE 7-1. LIGHT-EMITTING DIODE (LED) INDICATIONS (CONT'D)

| LOCATION            | LED                       | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| T1 Card (continued) | Blue Alarm                | Flashes when the T1 Card has detected (is receiving) a blue alarm error condition (i.e., a stream of continuous ones from outside the system). This "keep alive" signal, also called Alarm Indication Signal (AIS), is sent from the remote site when it is in a yellow or red alarm condition. If the blue alarm condition occurs for less than two to three seconds, normal call processing continues and no calls are dropped. However, if the blue alarm condition lasts more than two or three seconds, the card goes into a red alarm condition (see above). |
|                     | Providing Reference Clock | Lit green to show that the card is providing the system with the clock timing necessary to control all communication components in the system (i.e., the entire system is synchronized to the card). Unlit when another card is providing the system reference clock.<br><br><b>NOTE:</b> When this LED is lit on one of the T1 Cards in the system, the External Clock Active LED on the CPU/MEM or CPU020/PCM-D Card should also be lit.                                                                                                                         |
|                     | Card Halted               | Lit red to show that the card has detected an unrecoverable error and has halted the primary processor. The card will not function properly; return the card for repair.                                                                                                                                                                                                                                                                                                                                                                                           |

## 4. ALARM MESSAGES

4.1 System alarm messages can be printed to give service personnel information about system status during troubleshooting. The programmer may enable printing for any combination of the following system message types: information messages, warning messages, alarm messages, and severe messages. (Refer to FEATURES, page 4-113, and PROGRAMMING, page 6-217, for more information.)

4.2 Minor alarm messages can be programmed to appear on all administrator stations' displays or on the primary attendant's display only. (Refer to PROGRAMMING, page 6-91, for details.) Also, when a minor alarm has occurred, the MINOR ALARM LED on the CPU/MEM or CPU020/PCM-D Card is lit yellow. (For additional information on responding to and clearing minor alarm messages, refer to page 4-107 in FEATURES.)

4.3 Major alarm messages will appear on all affected display keysets, regardless of programming. (Refer to page 7-9 for more information.)

4.4 Some of the possible alarm messages, along with their associated troubleshooting procedures, are outlined in the following sections.

**NOTE:** If a procedure suggests replacing the CPU/MEM or CPU020/PCM-D Card, first try using the save/restore program to save the customer's database (see page 6-213 in PROGRAMMING). It can then be restored (loaded) into a new CPU/MEM or CPU020/PCM-D Card, if necessary. Make sure that the database back-up battery on the new CPU/MEM or CPU020/PCM-D Card has a charge of at least 3.3VDC and that the battery back-up jumper strap is in the ON position (see page 3-43 in INSTALLATION).

### A. MINOR ALARMS THAT ARE USER CORRECTABLE

4.5 Minor alarm numbers 000-019 are reserved for AXXESS problems that can be corrected without calling service personnel. These alarm messages (as they appear in the error message printout) currently include:

- **000 Alarm Cleared** — The alarm was automatically cleared, or an administrator entered the Clear Alarm feature code (9850).
- **010 Device x.y.z 'xxxxx' Is Off Hook** — The indicated station is off hook and the Inactivity Alarm timer has expired. (The station's display shows STATION OFF HOOK, and the station's associated key on DSS/BLF Units and other keyset speed-dial keys

flutters continuously.) Locate the station and place the handset back in its cradle.

**NOTE:** Calls being transmitted over the secondary voice path are not affected or interrupted by an off-hook alarm condition. Also, there is a system option to disable this alarm, if desired.

- **011 Emergency Call Made By Device x.y.z 'xxxxx'** — A user at the indicated station dialed the Emergency Call feature code (911).
  - **012 SMDR Printer Off-Line** — The system has been unable to write to the SMDR printer for at least five minutes. The indicated printer or serial port is not functioning properly. Make sure the printer is turned on and has plenty of paper and ribbon. Check to see that the interface cable and power cord are properly connected.
  - **013 Message Printer Off-Line** — The system has been unable to write to the Message Print printer for at least five minutes. The indicated printer or serial port is not functioning properly. Make sure the printer is turned on and has plenty of paper and ribbon. Check to see that the interface cable and power cord are properly connected.
  - **014 Real-Time Clock Needs To Be Set** — The system real-time clock on the CPU/MEM or CPU020/PCM-D Card has not been initialized or has been corrupted. Set the system time and date from an administrator station.
  - **015 Hardware Real-Time Clock Inoperative** — During normal operation, the system has detected that the real-time clock circuitry on the CPU/MEM or CPU020/PCM-D Card is not operating properly. The system is now using a software clock, which may not be as accurate. Check to make sure that all of the components on the card are properly seated and that no pins are bent. If the problem persists, replace the card and return it for repair.
- 4.6 Minor alarm numbers 020-039 are reserved for AXXESSORY Talk PC problems that can be corrected without calling service personal. (**NOTE:** Even though an AXXESSORY Talk PC alarm has been registered, the AXXESS System itself may still be functioning properly.) These alarm messages (as they appear in the error message printout) currently include:
- **020 AXXESSORY Talk: Printer Off-Line** — The system has been unable to write to the AXXESSORY Talk PC printer for at least one minute. The AXXESSORY Talk PC printer or parallel port is not functioning properly. Make sure the printer is turned on and has plenty of paper and ribbon. Check to see that the interface cable and power cord are properly connected.

- **021 AXXESSORY Talk: Voice Mail Storage 80% Full** — The portion of the AXXESSORY Talk PC hard disk reserved for voice mail is 80% full. Have the users delete all old messages. If the alarm continues to occur, it may be necessary to install a larger hard disk.
- **022 AXXESSORY Talk: Voice Mail Storage 100% Full** — The portion of the AXXESSORY Talk PC hard disk reserved for voice mail is completely full and cannot accept any new messages until more disk space is made available. Have the users delete all old messages. If the alarm continues to occur, either increase the assigned disk space or install a larger hard disk.

**NOTE:** In order to send out a broadcast message to all users telling them to delete their old messages, it is necessary to first clear up some disk space by deleting some existing messages.

- **023 AXXESSORY Talk: SMDR Storage 80% Full** — The portion of the AXXESSORY Talk PC hard disk reserved for SMDR is 80% full. Empty the SMDR buffer using the Inside Track call accounting software. If the alarm continues to occur, empty the buffer more often or increase the size of the buffer.

**NOTE:** Changing the SMDR buffer size discards all stored SMDR records.

- **024 AXXESSORY Talk: SMDR Storage 100% Full** — The portion of the AXXESSORY Talk PC hard disk reserved for SMDR is completely full. The oldest SMDR records are discarded as new ones arrive. Empty the SMDR buffer using the Inside Track call accounting software. If the alarm continues to occur, empty the buffer more often or increase the size of the buffer.

**NOTE:** Changing the SMDR buffer size discards all stored SMDR records.

## B. MINOR ALARMS REQUIRING ATTENTION FROM SERVICE PERSONNEL

4.7 Minor alarm numbers 100–199 are reserved for AXXESS problems that require attention from service personnel. These alarm messages (as they appear in the error message printout) currently include:

- **100 Device x.y.z 'xxxx' Reset Due To Excessive Data Errors** — The indicated keyset has detected an unusually large number of data errors from the corresponding DKSC and has been reset (dropping any active call). If the resets continue, the system will “lock out” the keyset. The data errors may be caused

by a defective keyset (perform keyset self-test), defective wiring, defective station cable, or a defective Digital Keyset Card.

- **101 Device x.y.z 'xxxx' Reset Due To Excessive Hardware Failures** — The indicated keyset has been reset (dropping any active call) because the corresponding DKSC has detected an unusually large number of hardware errors. If the resets continue, the system will “lock out” the keyset. The hardware errors may be caused by a defective keyset (perform keyset self-test), defective wiring, defective station cable, or a defective Digital Keyset Card.
- **102 Logical Port nn Tx Interrupt Is Not Operational** — The indicated serial port (nn) has a transmit interrupt problem. Replace the component that has the defective serial port (CPU/MEM Card, CPU020/PCM-D Card, OPC, or PCDPM) and return it for repair.
- **103 Logical Port nn Clock Is Not Operational** — The indicated serial port (nn) has a clock problem. Replace the component that has the defective serial port (CPU/MEM Card, CPU020/PCM-D Card, OPC, or PCDPM) and return it for repair.
- **104 CPU: Database Corruption** — The system database stored in battery-backed memory on the CPU/MEM or CPU020/PCM-D Card appears to be corrupt. Although it may be corrupt, try saving the database onto backup disks (but not on top of a previously known-good database). Turn off the system AC power and turn it back on. The system should default the database and the red DATABASE ERROR LED on the CPU/MEM or CPU020/PCM-D Card should be lit. Initialize the system clock through database programming (or do some other database programming) to turn off the LED. Then turn the system power off and back on again. *If the database does not default the second time*, the CPU/MEM or CPU020/PCM-D Card may be okay. Try restoring the database. If the restore is not successful, restore an older version of the database. *If the database defaults the second time*, replace the defective CPU/MEM or CPU020/PCM-D Card and return it for repair. Then try restoring the database in the new CPU/MEM or CPU020/PCM-D Card. If the restore is not successful, restore an older version of the database.
- **105 CPU: Write-Protect Is Not Operational** — The circuitry that prevents the software or hardware from accidentally writing to the database is no longer functioning properly. Replace the CPU/MEM or CPU020/PCM-D Card and return it for repair.
- **106 CPU: Real-Time Clock Is Not Operational** — During power-up, the system has detected that the

real-time clock circuitry on the CPU/MEM or CPU020/PCM-D Card is not functioning properly. The system is now using a software clock, which may not be as accurate. Check to make sure that all of the components on the card are properly seated and that no pins are bent. If this does not solve the problem, replace the card and return it for repair.

- **107 CPU: Watchdog Is Not Operational** — The watchdog circuitry on the CPU/MEM or CPU020/PCM-D Card is not functioning properly. Replace the CPU/MEM or CPU020/PCM-D Card and return it for repair.
- **108 CPU: Interval Timer Is Intermittent** — The interval timer on the CPU/MEM or CPU020/PCM-D Card is not functioning properly. Replace the CPU/MEM or CPU020/PCM-D Card and return it for repair.
- **109 CPU: Watchdog Expired During Minor Reset** — When the system attempted a minor reset, it did not recover and refresh the watchdog timer, so the hardware watchdog assumed the system was down. Check the error message output, note the circumstances under which the message(s) occurred, and contact Customer Support for assistance.
- **110 CPU: Database Feature Bundling Error** — The system has detected an inconsistency between the PAL on the CPU/MEM or CPU020/PCM-D Card (i.e., the hardware information about the number of feature bundling units available) and the information stored in the database. When the problem is detected, the system automatically defaults the database to the basic feature configuration. (This will prevent a computer “hacker” from stealing feature units.) This alarm also occurs when attempting to restore a database that has more features enabled than the PAL allows. In database programming, enable the appropriate number of features. If the problem persists, try another PAL. If the problem still persists, replace the CPU/MEM or CPU020/PCM-D Card and return it for repair.
- **111 CPU: Battery Backed Memory Too Low** — The system has detected a battery-backed memory problem. Either the database is so large that the battery-backed memory cannot store further information (such as message requests, reminder messages, queue requests, hardware configuration changes, etc.) or there is a system software problem. Cancel all message requests, reminder messages, and queue requests. If this does not solve the problem, try saving the faulty database (for possible future evaluation) and contact Customer Support for assistance.

- **112 CPU: Running Low On System Dynamic Memory (Heap)** — The system has detected a dynamic memory problem. Either there is so much call handling activity that the dynamic memory on the CPU/MEM or CPU020/PCM-D Card is running low or there is a software problem. The system uses “dynamic” memory for performing call handling functions, storing temporary information, etc. Each device in the system (CO trunk, keyset, single-line set, AXCESSORY Talk PC port, etc.) requires some dynamic memory. In addition, each call that is currently active requires some dynamic memory.

When the first memory-low threshold is met (currently set to less than 160k free), the system starts forcing multiple CO ring-ins to ring only at the primary attendant since ringing one station will consume less dynamic memory than ringing several stations. The alarm and a delayed major reset are activated at this time.

If the condition persists and the second low-memory threshold is met (currently set to less than 60k free), the system starts to prevent new calls from being made. CO ring-ins are ignored, and station users cannot make calls (they see an ALL CIRCUITS BUSY display). The alarm and a delayed major reset are activated at this time.

If the condition persists and no dynamic memory is available, the system immediately performs a major reset (drops all active calls) to free up the dynamic memory.

If the customer's configuration has multiple trunks ringing into multiple stations and/or has multiple all-ring hunt groups with large numbers of stations in them, it can consume a lot of dynamic memory each time a call rings in because the call “fans out” to make one call to each device in the list. Try reducing the number of stations in each multiple ring-in group. If the problem still persists, contact Customer Support for further assistance.

- **114 T1 Card [dd] In Red Alarm** — The indicated T1 Card has detected some type of red alarm error condition for at least two to three seconds (e.g., loss of the T1 signal), either internally or from outside the system. All calls on the card are dropped. Check the alarm message and field service diagnostic output; then attempt to correct the problem.
- **115 Alarm History Frozen Due To System Exception** — The system has frozen the call processing history automatically because a system exception has occurred. Save the database and the CP Error Information and contact Inter-Tel Customer Support for further assistance.

4.8 Minor alarm numbers 200–299 are reserved for AXCESSORY Talk PC problems that require attention from service personnel. (NOTE: Even though an AXCESSORY Talk PC alarm has been registered, the AXCESS System itself may still be functioning properly.) These alarm messages (as they appear in the error message printout) currently include:

- **200 AXCESSORY Talk: Hard Drive Failure** — The system has detected a possible AXCESSORY Talk PC hard disk failure. If the problem persists, save the current database (if possible) and replace the hard disk.
- **201 AXCESSORY Talk: Channel(s) Failure** — The system has detected a failure of one or more of the voice channels between the AXCESS System and the AXCESSORY Talk PC. If the problem persists, check the cabling between the two and reboot the PC. If the problem still persists, check for a defective Audio Interface Card, Voice Processing Card, CPU/MEM Card, CPU020/PCM-D Card, or Options Card.
- **202 AXCESSORY Talk: Database Corruption** — The AXCESSORY Talk applications database stored on the PC's hard disk appears to be corrupt. Reboot the PC. If the problem persists, try saving both the AXCESS and AXCESSORY Talk databases (for possible future evaluation), then restore older valid versions or reprogram manually. (It is possible to restore just the AXCESS database and then reprogram the AXCESSORY Talk database, if desired.) If the problem still persists, try replacing the hard disk. If this does not solve the problem, contact Customer Support for further assistance.
- **203 AXCESSORY Talk: Communications Link Down** — The system has detected a loss of communications between the AXCESS System and the AXCESSORY Talk PC. This alarm is generated whenever the PC crashes or is rebooted, the RS-232-C cable is disconnected, or a communications channel is rendered inoperable (e.g., due to a bad serial port or RS-232-C cable). First verify that the problem still exists by placing a call to a valid voice mail extension number.

If any message other than "xxxxx IS UNPLUGGED" is displayed, the communications link is now okay. If not, check the RS-232-C cable and make sure it properly connected, and verify that the AXCESSORY Talk PC communications port is still enabled and set to 9600 baud and software handshaking. If the problem persists, reboot the AXCESSORY Talk PC. If the communications link is

still down, reboot the AXCESS System. (NOTE: This will drop all calls). If rebooting both systems does not clear the problem, replace the RS-232-C cable or replace the component that has the defective serial port (CPU/MEM Card, CPU020/PCM-D Card, or Disk Controller Combination Card) and return it for repair.

- **204 AXCESSORY Talk: Version Mismatch** — The version of software on the AXCESSORY Talk PC is not compatible with the version of software on the AXCESS System. Upgrade one or both to the appropriate version.

4.9 If any other alarm messages are encountered, note the circumstances under which the message(s) occurred and contact Customer Support.

### C. MAJOR ALARMS THAT REQUIRE IMMEDIATE ATTENTION

4.10 If a system-wide failure is detected, a MAJOR ALARM message appears on all display keysets. If the major alarm message appears only on a group of keysets, their associated Keypad Card may have failed. If the major alarm message appears on a single keypad, the keypad or its cabling may be defective.

4.11 Since major alarms indicate that all or part of the system is inoperative, they require immediate attention from service personnel. When a system-wide major alarm occurs, do the following:

- (1) Attempt to reset the system by using the reset switch on the CPU/MEM or CPU020/PCM-D Card or by using the programming PC (see PROGRAMMING, page 6–213). If the system does not recover from the alarm, continue to the next step.
- (2) Turn OFF the AC POWER for at least ten seconds and then turn it ON again.
- (3) If the system still does not recover from the alarm, check the system voltages as outlined on page 7–2. Using the troubleshooting charts beginning on page 7–11, try to isolate the defective part(s). If it is determined that the CPU/MEM or CPU020/PCM-D Card (or any other part) is faulty, return it for repair and include any indicated error messages in the problem description.

NOTE: When returning a faulty card, indicate all applicable error messages on the material return authorization (MRA) tag. For more information on returning equipment, see page 7–42.

#### **D. T1 ALARMS**

**4.12** When a T1 Card's Red Alarm LED is flashing, check the error message output to see if any of the following error conditions have been detected:

- (1) *Alarm 1, Receiver Loss of Signal from Network:* The card is not properly receiving the T1 signal from the public network. Check for improper connection. If the problem persists, contact the T1 provider.
- (2) *Alarm 2, Transmitter Loss of Signal from T1 Card to Network:* The card is not properly transmitting the T1 signal to the public network. Check for improper connection. If the problem persists, replace the card and return it for repair.
- (3) *Alarm 3, Receiving Yellow Alarm:* The card is receiving a yellow alarm error condition from outside the system. Check for improper connection or wiring. If the problem persists, contact the T1 provider.
- (4) *Alarm 4, Receiving Blue Alarm:* The card is receiving a blue alarm error condition (also called Alarm Indication Signal [AIS]) from outside the system. Check for improper connection or wiring. If the problem persists, contact the T1 provider.
- (5) *Alarm 5, T1 Signal Out-of-Frame:* There is a problem with the master/slave synchronization or the framing scheme. Check database programming, and check for improper connection or wiring. If the problem persists, contact the T1 provider.
- (6) *Alarm 6, Severely Errored Seconds:* Indicates that one or more severe errors have been detected for at least one second. Check for improper connection or wiring. If the problem persists, contact the T1 provider.
- (7) *Alarm 7, Transmitting Blue Alarm:* If error condition (1) above is detected (loss of receive signal), the card sends out a blue alarm signal.
- (8) *Alarm 8, Remote Loopback State:* Currently reserved for engineering diagnostic purposes only.

## 5. TROUBLESHOOTING CHARTS

5.1 The simplified troubleshooting charts located on the following pages list symptoms, possible causes, and corrective actions for problems. Look up the problem in the appropriate chart and perform the corrective actions in the order given. The troubleshooting procedures for correcting equipment failures have been divided into six categories:

- A. System
- B. CO Trunks
- C. Features
- D. Keysets
- E. Single-Line Sets
- F. DSS/BLF Units
- G. AXXESSORY Talk PC and Applications

**NOTE:** Throughout the troubleshooting section of the manual, there are numerous references to replacing the defective part and returning it for repair. However, before returning any part, proper troubleshooting procedures should be used to verify that the part is actually defective. For example, if a Digital Keypad Card (DKSC) appears to be defective, swap it with a "known good" DKSC presently installed in the system. If the problem follows the suspect card, it can be considered defective. For more information on returning defective equipment, refer to page 7-42.

### A. SYSTEM

5.2 If the problem involves one of the following system features, refer to Figure 7-2 on pages 7-13 through 7-16.

- Repeated occurrence of all calls in progress dropping.
- All keysets are inoperative.
- Database restore aborts before finishing.
- DISA is inoperative.
- Unable to interface with a computer call-up device.
- Remote maintenance modem cannot communicate properly with the system.
- No music-on-hold/background music.
- RFI/EMI present over conversations.
- Faulty DID numbers displayed at attendant stations.
- DID numbers routed before all digits are dialed.

### B. CO TRUNKS

5.3 If the problem involves one of the following CO trunk symptoms, refer to Figure 7-3 on pages 7-17 through 7-21.

- CO trunk inoperative throughout the system.
- Cannot obtain CO dial tone.
- Low volume on all CO trunks.
- Cannot break CO dial tone.
- Cannot place an outgoing call.
- Other station conversations can be heard on the CO trunk.
- Calls are dropped during conversation or when answered.
- CO trunk cannot be reseeded.
- Noise on CO trunk at all stations.
- T1 trunks have frequent "Controlled Slip" and "Out-Of-Frame" errors
- CO trunk remains seized after the call is ended.

### C. FEATURES

5.4 For problems involving the following features, refer to Figure 7-4 on pages 7-22 to 7-25.

- Feature does not appear to work properly.
- Cannot transfer CO or intercom calls to other stations.
- Cannot transfer calls to outside numbers.
- Cannot transfer incoming CO calls or place them on hold.
- Cannot initiate a conference.
- Redial feature is inoperative.
- Cannot initiate a page.
- House phone is inoperative.
- Cannot initiate a call forward.
- Calls do not follow requested forward.
- Station is not receiving hunt group calls.
- Station is not receiving pages.
- Station cannot be placed in do-not-disturb.

### D. KEYSETS

5.5 If problems involve keysets or their optional equipment, refer to Figure 7-5 on pages 7-26 through 7-30.

- Keypad is inoperative.
- A group of eight keysets is inoperative.
- LCD is inoperative.
- Headset is inoperative.
- Keypad squeals when placing and/or receiving calls.
- Cannot break CO dial tone.

- Data device not operating properly.
- Data noise when the keyset is off hook.
- Cannot obtain intercom dial tone.
- Cannot break intercom dial tone.
- Cannot place an intercom call.
- LRA not operating properly.
- Cannot receive off-hook voice announce calls.
- Cannot place off-hook voice announce calls.
- Erratic keyset operation.

### **E. SINGLE-LINE SETS**

**5.6** The following problems are discussed in Figure 7-6 on pages 7-31 through 7-33.

- Single-line set is inoperative.
- A group of single-line sets is inoperative.
- Single-line set will not ring.
- Ring trip is not provided to a group of single-line sets.
- AC ringer-equipped single-line sets will not ring.
- Cannot obtain intercom dial tone.
- Cannot place an intercom call.
- Cannot break CO dial tone.
- Cannot place off-hook voice announce calls.
- Single-line sets not receiving audio message waiting indications.

### **F. DSS/BLF UNITS**

**5.7** For the following DSS/BLF Unit problems, refer to Figure 7-7 on pages 7-34 and 7-35.

- DSS/BLF Unit is inoperative.
- Incorrect LED indications.
- Calls are transferred to the wrong station.
- Cannot place immediate off-hook voice announce calls.

### **G. AXXESSORY TALK PC AND APPLICATIONS**

**5.8** The following AXXESSORY Talk PC and/or AXXESSORY Talk applications problems are outlined in Figure 7-8 on pages 7-36 through 7-41.

- AXXESS System unable to communicate over voice channels with AXXESSORY Talk PC.
- System programming PC unable to communicate with AXXESSORY Talk PC.
- ASCII-type programming terminal unable to communicate with AXXESSORY Talk PC.
- Automated attendant not responding properly.
- Automated attendant not receiving incoming calls; callers routed to primary attendant instead.
- Automated attendant indicates that an extension number is invalid even though it exists on the AXXESS System.
- Automated attendant transfers calls directly to voice mail without trying the extension number first.
- Unable to access desired AXXESSORY Talk application.
- AXXESSORY Talk Applications are slow.
- AXXESSORY Talk PC is programmed with 12-32 voice channels, but no more than eight calls at a time are accepted.
- When power is turned on, the AXXESSORY Talk PC does not boot up properly (and may beep).
- Both internal and remote users have no message notification after receiving voice messages in their mailboxes.
- Audio volume levels from AXXESSORY Talk applications (such as voice mail and automated attendant) are too low or too high.
- No audio from AXXESSORY Talk applications (such as voice mail and automated attendant).
- Station has message waiting indication from voice mail, but associated mailbox has no message.
- Unable to record any voice mail greetings or messages and/or unable to hear any voice prompts.
- Fax On Demand feature not working properly.

**NOTE:** If an AXXESSORY Talk applications problem cannot be resolved, Customer Support may instruct the installer on how to use the diagnostics software. Also, for additional troubleshooting procedures and important diagnostic information, refer to the new voice processing system diagnostics manual, which will be published at a later date.

FIGURE 7-2. SYSTEM TROUBLESHOOTING CHART

| SYMPTOM                                               | PROBABLE CAUSE                                                                                                              | CORRECTIVE ACTION                                                                                                                |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Repeated occurrence of all calls in progress dropping | AC line is not isolated and dedicated                                                                                       | Have isolated, dedicated line installed. Refer to page 3-4 in INSTALLATION for details.                                          |
|                                                       | Defective power supply                                                                                                      | Refer to INSTALLATION, page 3-35 or 3-41, to perform the power supply electrical test. Replace the power supply if faulty.       |
|                                                       | KSU located near a strong magnetic field or other potential source of interference (copy machines, power transformer, etc.) | Relocate the KSU a minimum of 20 feet from any equipment that is a potential source of interference.                             |
|                                                       | IC-CO/CO-CO Disconnect timer(s) need(s) adjustment                                                                          | See <i>dialed digits</i> field in SMDR, page 4-112 in FEATURES. Set timer(s) to a higher value. Refer to PROGRAMMING, page 6-99. |
|                                                       | Defective CPU/MEM or CPU020/PCM-D Card                                                                                      | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                   |

NOTE: The central office must provide a minimum of 18mA loop current.

| SYMPTOM                                                                                                                           | PROBABLE CAUSE                                                                                             | CORRECTIVE ACTION                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All keysets in the system are inoperative; no LED indication when a trunk or call key is pressed; +24V measurement is not present | Open or loose connection in the cable between the power supply and the KSU backplane, or a defective cable | Turn off the AC power. Check to see that the backplane-to-power supply interface cable is properly connected. Repair or replace the power supply, the cable, and/or the backplane if the connection is faulty.        |
|                                                                                                                                   | Defective power supply or connector                                                                        | Use a voltmeter to check the +24VDC voltage on the KSU backplane or power supply. If the voltage is not +24VDC $\pm 5\%$ , replace the power supply and/or the cable.                                                 |
|                                                                                                                                   | Defective DKSC                                                                                             | Remove all DKSCs from the KSU. Replace the DKSCs one at a time and check the system voltages on the KSU backplane or power supply (refer to page 7-2), until the defective card is isolated. Replace the faulty card. |
|                                                                                                                                   | Defective KSU Backplane                                                                                    | Check the system voltages on the KSU backplane (refer to page 7-2). Replace the KSU assembly or the KSU backplane if necessary.                                                                                       |

| SYMPTOM                                  | PROBABLE CAUSE                                                                | CORRECTIVE ACTION                     |
|------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------|
| Database restore aborts before finishing | PC's power saver feature shuts down the PC and severs the communications link | Disable the PC's power saver feature. |

FIGURE 7-2. SYSTEM TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM          | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                         |
|------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| DISA inoperative | User error                             | Refer to FEATURES, page 4-37, for correct procedures.                                                                     |
|                  | Telephone not compatible               | User must dial in from a DTMF telephone.                                                                                  |
|                  | Programming error                      | Ensure that the trunk group is identified correctly as a day or night DISA trunk group. Refer to PROGRAMMING, page 6-136. |
|                  | Defective trunk card                   | Replace the associated card.                                                                                              |
|                  | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                            |

**NOTE:** Due to the natural characteristics of the CO trunk, the volume level of DTMF tones transmitted over the trunk may be substantially reduced before reaching the Inter-Tel AXXESS System. This natural degradation in tone volume may adversely affect the reliability of the DISA feature. Other factors which can affect DISA performance are CO trunk noise and the quality and strength of the DTMF tones generated by the off-premises phone itself.

| SYMPTOM                                                                                                  | PROBABLE CAUSE                                                                                            | CORRECTIVE ACTION                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unable to interface with computer call-up device (banking machine, answering machine, auto dialer, etc.) | Equipment being called is defective                                                                       | Ensure that the called equipment is functioning correctly.                                                                                                                                      |
|                                                                                                          | DTMF digit duration/pause specifications of called equipment is incompatible with Inter-Tel AXXESS System | Check with the equipment manufacturer for DTMF digit duration/pause specifications. Adjust DTMF Digit Duration/Pause timer. (Refer to page 6-99 in PROGRAMMING.) Default value is 6/100 second. |
|                                                                                                          | CO trunk is designated for dial-pulse signaling                                                           | CO trunk must be designated as DTMF. Refer to page 6-125 in PROGRAMMING.                                                                                                                        |
|                                                                                                          | Defective trunk card                                                                                      | Replace the associated trunk card.                                                                                                                                                              |
|                                                                                                          | Defective CPU/MEM or CPU020/PCM-D Card                                                                    | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                  |

| SYMPTOM                                                              | PROBABLE CAUSE                             | CORRECTIVE ACTION                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Remote maintenance modem cannot communicate properly with the system | Optional modem kit not installed correctly | Refer to the instructions included with the modem kit. Also, refer to the information on page 2-31 in SPECIFICATIONS.                                                                                                                                                        |
|                                                                      | Some modems need a special setup command   | Program the modem with the setup command string "ATEØQ1SØ=1&W" per the modem manufacturer's instructions. If this setup command does not work, try configuring the modem into dumb mode where it ignores commands and doesn't issue responses (if this option is available). |

FIGURE 7-2. SYSTEM TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                              | PROBABLE CAUSE                                                        | CORRECTIVE ACTION                                                                                                                                                                             |
|----------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No music-on-hold/back-ground music (external music source connected) | External music source turned off or inoperative                       | Check the external music source for proper operation. Refer to INSTALLATION, page 3-88.                                                                                                       |
|                                                                      | Programming error                                                     | Programmer can determine whether a user hears music when placed on hold by another station or camps on to a resource. In the default state, this is enabled. Refer to PROGRAMMING, page 6-92. |
|                                                                      | Defective cable between music source and CPU/MEM or CPU020/PCM-D Card | Repair or replace the cable. Check to see that the proper connector was used. Refer to SPECIFICATIONS, page 2-10.                                                                             |
|                                                                      | Defective CPU/MEM or CPU020/PCM-D Card                                | Replace the defective card.                                                                                                                                                                   |

| SYMPTOM                            | PROBABLE CAUSE                                       | CORRECTIVE ACTION                                                                                                                                                                                                                                                                                               |
|------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RFI/EMI present over conversations | AC power source or grounding incorrect               | Verify that the AC circuit is isolated and dedicated and check for proper grounding (see pages 3-4 and 3-34 in INSTALLATION).                                                                                                                                                                                   |
|                                    | Grounding point is source of RFI/EMI                 | While the system is running on AC power, temporarily remove the grounding wire to see if it is the source of the RFI/EMI. See page 3-34 in INSTALLATION for proper grounding requirements.                                                                                                                      |
|                                    | AC power source is causing RFI/EMI                   | If an external battery back-up power source is installed, switch system operation to battery back-up power by unplugging the power source's AC power cord (with grounding wire connected to KSU). If RFI/EMI stops, the AC power source is the cause. Install an RFI/EMI filter or equivalent on the AC outlet. |
|                                    | Trunk from central office is picking up interference | At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to check for interference. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company.                                                        |

**NOTE:** For further RFI/EMI troubleshooting assistance *while on site*, certified technicians should contact Customer Support with the following information:

1. Modulation — AM, FM, or other
2. Frequency of the interfering station (in Hz)
3. Broadcast power
4. Distance between KSU and broadcast antenna
5. Who hears RFI:
  - Outside call — inside party only?
  - Outside call — outside party only?
  - Outside call — both parties?
  - Intercom call — one or both parties?
6. Type of instrument(s) on which RFI is heard — Standard Digital Keypad, Executive Digital Keypad, or single-line DTMF set

FIGURE 7-2. SYSTEM TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                            | PROBABLE CAUSE                                                                                                              | CORRECTIVE ACTION                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Faulty DID numbers displayed at attendant stations | User error (after dialing the correct 3- or 4-digit "base" number, the user entered incorrect or incomplete "start" digits) | Only valid DID "start" digits can be properly processed by the system.                                                                                                                                                                                                                                                          |
|                                                    | Programming error                                                                                                           | Ensure that all valid DID numbers have been programmed to ring in to the appropriate locations. (See page 6-130 in PROGRAMMING.)                                                                                                                                                                                                |
|                                                    | Defective DID trunk from central office (the system is receiving incomplete or mutilated DID "start" digits)                | At the DKSC block, remove the bridging clips for the trunk. On the system side of the block, use a test set to verify the DID trunk connection and the system's ability to accept and process valid digits. Also, move the trunk to a known good DKSC circuit. If the problem follows the trunk, contact the telephone company. |
|                                                    | Defective SLA, DKSC, or TIC                                                                                                 | Replace the associated SLA, DKSC, or TIC.                                                                                                                                                                                                                                                                                       |

| SYMPTOM                                         | PROBABLE CAUSE                                                                | CORRECTIVE ACTION                                                                                                                                                                                                                |
|-------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DID numbers routed before all digits are dialed | Non-programmable system timer expiring before CO completes digit transmission | The AXXESS System allows seven seconds for DID input. After seven seconds, the system routes the call based on information received to that point. The Central Office must complete DID digit transmission within seven seconds. |

**FIGURE 7-3. CO TRUNK TROUBLESHOOTING CHART**

| SYMPTOM                                    | PROBABLE CAUSE                                                      | CORRECTIVE ACTION                                                                                                                                                                                                                                                           |
|--------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO trunk inoperative throughout the system | Defective CO trunk from central office                              | At the associated CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company. |
|                                            | Trunk is dedicated to a secondary carrier requiring an access code  | Verify the type of CO trunk. Instruct users to dial access code if required.                                                                                                                                                                                                |
|                                            | Defective cabling or mis-wired amphenol connector on the trunk card | Using a test set, ensure presence and correct location of the CO trunk at the associated CO block.                                                                                                                                                                          |
|                                            | Programming error                                                   | Ensure that the trunk is assigned to the correct trunk group and stations have been given access to it. See page 6-136 in PROGRAMMING.                                                                                                                                      |
|                                            | Defective trunk card                                                | Replace the associated trunk card.                                                                                                                                                                                                                                          |
|                                            | Defective CPU/MEM or CPU020/PCM-D Card                              | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                                                                              |

| SYMPTOM                    | PROBABLE CAUSE                                | CORRECTIVE ACTION                                                                                                                                                                                                                                                                                                                               |
|----------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot obtain CO dial tone | If reorder tone is heard, programming error   | Ensure that keyset has outgoing access. Refer to page 6-142 in PROGRAMMING.<br><br>Check to see if the keyset is programmed for ARS only. Refer to pages 6-42 and 6-108 in PROGRAMMING. If so, check ARS programming, page 6-64 in PROGRAMMING.<br><br>Ensure trunk is assigned to the correct trunk group. Refer to page 6-136 in PROGRAMMING. |
|                            | If progress tone is heard, user error         | System is programmed to expect a forced account code. Refer to PROGRAMMING, pages 6-27 and 6-60.                                                                                                                                                                                                                                                |
|                            | Selected trunk is designated as incoming-only | Cannot dial out on an incoming-only trunk.                                                                                                                                                                                                                                                                                                      |
|                            | Defective trunk card                          | Replace the associated trunk card.                                                                                                                                                                                                                                                                                                              |
|                            | Defective CPU/MEM or CPU020/PCM-D Card        | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                                                                                                                                                  |

FIGURE 7-3. CO TRUNK TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                | PROBABLE CAUSE                                                                   | CORRECTIVE ACTION                                                                                                                                                                                                                                                |
|--------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Low volume on all CO trunks; cannot break CO dial tone | Defective trunk card                                                             | Measure the system voltages. If not within tolerance, remove all trunk cards and check voltages again. If the voltages return to normal, replace the cards one at a time until the defective card is isolated and replaced.                                      |
|                                                        | Defective CO trunk from central office                                           | At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company. |
|                                                        | Open or loose connection in the cable between the power supply and the backplane | If, with all trunk cards removed, the system voltages are still not within tolerance, turn off the system and check the cable and connector with an ohmmeter. Replace or repair the faulty cable.                                                                |
|                                                        | Defective power supply                                                           | With all trunk cards removed, measure the system voltages. If not within tolerance, replace the power supply.                                                                                                                                                    |
|                                                        | Hybrid balance mismatch                                                          | Select the balance network — normal or short — that best matches the trunk's impedance. See PROGRAMMING, page 6-125.                                                                                                                                             |

NOTE: See also keyset problems on page 7-27.

| SYMPTOM                   | PROBABLE CAUSE                                    | CORRECTIVE ACTION                                                                                                                                                                                                                                                |
|---------------------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot break CO dial tone | CO circuit is programmed for wrong signaling type | Ensure that CO trunk and CO circuit use same type signaling (DTMF or dial pulse). See PROGRAMMING, page 6-125.                                                                                                                                                   |
|                           | Defective CO trunk from central office            | At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company. |
|                           | Timer error                                       | If trunk is DTMF, the DTMF Digit Duration/Pause timer setting may not be compatible with the trunk. See PROGRAMMING, page 6-99.                                                                                                                                  |
|                           | Defective trunk card                              | Replace the associated trunk card.                                                                                                                                                                                                                               |
|                           | Defective CPU/MEM or CPU020/PCM-D Card            | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                                                                   |

NOTE: See also keyset problems on page 7-27.

FIGURE 7-3. CO TRUNK TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                                | PROBABLE CAUSE                                | CORRECTIVE ACTION                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot place an outgoing call: CO dial tone is present: intercom works | Programming error                             | Check station class of service (COS). See PROGRAMMING, pages 6-42 and 6-108. Check that equal access and absorbed digit programming for the trunk group are correct. See PROGRAMMING, page 6-136. If using ARS, check ARS programming on page 6-64 in PROGRAMMING. |
|                                                                        | Defective CO trunk from central office        | At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company.   |
|                                                                        | Defective station instrument                  | Replace the station instrument and/or perform the keyset self-test as outlined in INSTALLATION, page 3-63.                                                                                                                                                         |
|                                                                        | Selected trunk is designated as incoming-only | Cannot dial out on an incoming-only trunk.                                                                                                                                                                                                                         |
|                                                                        | Defective trunk card                          | Replace the associated trunk card.                                                                                                                                                                                                                                 |
|                                                                        | Defective CPU/MEM or CPU020/PCM-D Card        | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                                                                     |

| SYMPTOM                                                              | PROBABLE CAUSE                                                     | CORRECTIVE ACTION                                                                                                                                                                                                         |
|----------------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other station conversations can be heard on the CO trunk (crosstalk) | Defective CO trunk(s)                                              | Isolate the trunk(s) with crosstalk by removing the bridging clips from the CO block. On the telco side of the block, attach a test set to each trunk and check for crosstalk. If present, contact the telephone company. |
|                                                                      | Defective cabling or miswired amphenol connector on the trunk card | Using a test set, ensure presence and correct location of the CO trunk at the associated CO block.                                                                                                                        |
|                                                                      | Defective station card                                             | Replace the associated station card.                                                                                                                                                                                      |
|                                                                      | Defective trunk card                                               | Replace the associated trunk card.                                                                                                                                                                                        |
|                                                                      | Defective CPU/MEM or CPU020/PCM-D Card                             | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                            |

FIGURE 7-3. CO TRUNK TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                              | PROBABLE CAUSE                                                        | CORRECTIVE ACTION                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Outside calls dropped during conversation or upon answering CO trunk | User error (trunk key being pressed after initial connection is made) | Instruct users not to press the trunk key while on a call. Or, if necessary, set the CO Reseize timer to a higher value. Default value is 3 seconds. See page 6-99 in PROGRAMMING. Or, program the station to disallow CO reseize. See PROGRAMMING, pages 6-30 and 6-58. |
|                                                                      | Defective CO trunk from central office                                | At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company.         |
|                                                                      | Insufficient loop current supplied by central office                  | Central office must supply 18mA minimum loop current.                                                                                                                                                                                                                    |
|                                                                      | IC-CO Disconnect timer value is set too short                         | Ensure timer value is long enough to ignore normal interruptions in CO loop current. Default value is 0.6 seconds. See page 6-99 in PROGRAMMING.                                                                                                                         |
|                                                                      | Defective station instrument                                          | Replace the station instrument and/or perform the keyset self-test as outlined in INSTALLATION, page 3-63.                                                                                                                                                               |
|                                                                      | Defective trunk or station card                                       | Replace the associated card.                                                                                                                                                                                                                                             |
|                                                                      | Defective CPU/MEM or CPU020/PCM-D Card                                | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                                                                           |

| SYMPTOM                     | PROBABLE CAUSE                   | CORRECTIVE ACTION                                                                                                                                                                                                                                       |
|-----------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO trunk cannot be reseized | CO Reseize feature is disabled   | Check station programming as described on pages 6-30 and 6-58 in PROGRAMMING. If the CO Reseize option has been disabled, the user cannot reseize a trunk until it has been disconnected by hanging up or pressing another trunk key.                   |
|                             | CO Reseize timer is set too high | Set the timer to a lower timer value. Default value is 3 seconds. See page 6-99 in PROGRAMMING.                                                                                                                                                         |
|                             | User error                       | If the station is programmed with the validate account codes option and the user enters an invalid Account Code For All Calls Following, calls will not be allowed at the station until the code is removed or reprogrammed. See page 4-71 in FEATURES. |

FIGURE 7-3. CO TRUNK TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                           | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                                                                                                                                                                |
|-----------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Noise on CO trunk at all stations | Defective CO trunk                     | At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company. |
|                                   | Defective trunk card                   | Replace the associated trunk card.                                                                                                                                                                                                                               |
|                                   | Defective power supply                 | Refer to INSTALLATION, page 3-35 or 3-41, to perform the power supply electrical test. Replace the power supply if faulty.                                                                                                                                       |
|                                   | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                                                                   |

| SYMPTOM                                                             | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                                                                         |
|---------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| T1 trunks have frequent "Controlled Slip" and "Out-Of-Frame" errors | Line Build-Out (LBO) setting incorrect | Use T1 Diagnostics to determine the current LBO status. Refer to page 6-249 in PROGRAMMING. Then use T1 Programming to change the setting. See page 6-131 in PROGRAMMING. |
|                                                                     | Defective T1 trunk                     | Check for improper connection. If the problem persists, contact the T1 provider.                                                                                          |
|                                                                     | Defective TIC                          | Replace the associated T1 card.                                                                                                                                           |

| SYMPTOM                                             | PROBABLE CAUSE                                     | CORRECTIVE ACTION                                                                                                                                                                                                                                                |
|-----------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO trunk remains seized after a call has been ended | Characteristic of some ESS central offices         | Central office must provide disconnect signal. Or, install a trunk release module available from most supply houses.                                                                                                                                             |
|                                                     | IC-CO or CO-CO Disconnect timer value set too long | Central office disconnect signal was not detected by IC-CO or CO-CO Disconnect timer. Default value of the IC-CO timer is 0.6 seconds; the CO-CO timer is 0.35 seconds. See page 6-99 in PROGRAMMING.                                                            |
|                                                     | Defective CO trunk                                 | At the CO block, remove the bridging clips for the trunk. On the telco side of the block, use a test set to verify the CO trunk connection. Also, move the CO trunk to a known good CO circuit. If the problem follows the trunk, contact the telephone company. |
|                                                     | Defective station instrument                       | Replace the station instrument and/or perform the keyset self-test as outlined in INSTALLATION, page 3-63.                                                                                                                                                       |
|                                                     | Defective trunk card                               | Replace the associated trunk card.                                                                                                                                                                                                                               |
|                                                     | Defective CPU/MEM or CPU020/PCM-D Card             | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                                                                   |

FIGURE 7-4. FEATURE TROUBLESHOOTING CHART

| SYMPTOM                        | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                                                                                           |
|--------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Feature does not work properly | User error                             | Refer to FEATURES for procedures. Also, ensure that the feature is available on the software package installed.                                                                             |
|                                | Programming error                      | Check feature code programming. Refer to PROGRAMMING, page 6-75. Also, check user-programmable feature key programming. Refer to FEATURES, page 4-54, and PROGRAMMING, pages 6-35 and 6-56. |
|                                | Defective station instrument           | Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-63.                                                                                 |
|                                | Defective station card                 | Replace the associated station card.                                                                                                                                                        |
|                                | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                              |

| SYMPTOM                                                | PROBABLE CAUSE                                 | CORRECTIVE ACTION                                                                                           |
|--------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Cannot transfer CO or intercom calls to other stations | User error (e.g., wrong feature code)          | Refer to FEATURES, page 4-75, for procedures.                                                               |
|                                                        | Called station is in do-not-disturb            | A station in do-not-disturb cannot receive transferred calls.                                               |
|                                                        | Call transferred to an illegal intercom number | Use only valid intercom numbers.                                                                            |
|                                                        | Defective station instrument                   | Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-63. |
|                                                        | Defective CPU/MEM or CPU020/PCM-D Card         | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.              |

| SYMPTOM                                  | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                              |
|------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------|
| Cannot transfer calls to outside numbers | User error (e.g., wrong feature code)  | Refer to FEATURES, page 4-75, for procedures.                                                  |
|                                          | Programming error                      | Check trunk access and toll restriction.                                                       |
|                                          | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty. |

FIGURE 7-4. FEATURE TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                 | PROBABLE CAUSE                                                        | CORRECTIVE ACTION                                                                                                                                                                           |
|---------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot transfer incoming CO calls or place them on hold | User error                                                            | Refer to FEATURES, page 4-75, for procedures.                                                                                                                                               |
|                                                         | User error (trunk key being pressed after initial connection is made) | Set the CO Reseize timer to a higher value. Default value is 3 seconds. See page 6-99 in PROGRAMMING. Or, program the station to disallow CO Reseize. See PROGRAMMING, pages 6-30 and 6-58. |
|                                                         | Programming error                                                     | Check user-programmable feature key programming. Refer to FEATURES, page 4-54, and PROGRAMMING, pages 6-35 and 6-56.                                                                        |

| SYMPTOM                      | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                           |
|------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Cannot initiate a conference | User error                             | Refer to FEATURES, page 4-79, for correct procedures.                                                       |
|                              | System capacity exceeded               | Refer to the maximum system capacities on page 1-8 in OVERVIEW.                                             |
|                              | Defective station instrument           | Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-63. |
|                              | Defective station card                 | Replace the associated station card.                                                                        |
|                              | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.              |

| SYMPTOM                                | PROBABLE CAUSE                                     | CORRECTIVE ACTION                                                                                           |
|----------------------------------------|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Last number redial feature inoperative | User error                                         | Refer to FEATURES, page 4-94, for procedures. Keyset may be programmed for last number saved.               |
|                                        | System speed-dial number identified as non-display | A system speed-dial number identified as non-display cannot be redialed.                                    |
|                                        | Defective station instrument                       | Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-63. |
|                                        | Defective CPU/MEM or CPU020/PCM-D Card             | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.              |

FIGURE 7-4. FEATURE TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                | PROBABLE CAUSE                                                                | CORRECTIVE ACTION                                                                                                        |
|------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Cannot initiate a page | User error                                                                    | Refer to FEATURES, page 4-96, for correct procedures.                                                                    |
|                        | All stations in the paging zone are busy, or a voice channel is not available | Reorder tone is heard. Wait several seconds and then attempt to place the page again. Paging requires a voice channel.   |
|                        | All stations in the paging zone are in do-not-disturb                         | Reorder tone is heard if all stations in the zone are in do-not-disturb and if external paging for the zone is disabled. |
|                        | No stations are programmed to receive pages                                   | Reorder tone is heard. Check paging assignment. Refer to page 6-93 in PROGRAMMING.                                       |
|                        | Defective station instrument                                                  | Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-63.              |
|                        | Defective CPU/MEM or CPU020/PCM-D Card                                        | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                           |

| SYMPTOM                                               | PROBABLE CAUSE                             | CORRECTIVE ACTION                                                                                                                                                                                                  |
|-------------------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| House phone is not working properly or is inoperative | User error                                 | Incoming calls take precedence over outgoing calls. Refer to FEATURES, page 4-93.                                                                                                                                  |
|                                                       | Programming error (database)               | Ensure that the station is designated as a house phone. Refer to page 6-37 in PROGRAMMING. Also, make sure the station has been assigned the proper COS and trunk access. See pages 6-42 and 6-108 in PROGRAMMING. |
|                                                       | Programming error (database or speed-dial) | Ensure that the correct numbers are in appropriate day number and night number (speed-dial) locations. Refer to page 4-89 in FEATURES.                                                                             |

| SYMPTOM                        | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                                                                                                                                                                                                                           |
|--------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot initiate a call forward | User error                             | Refer to FEATURES, page 4-85, for correct procedures.                                                                                                                                                                                                                                                                       |
|                                | User attempting illegal forward        | Stations are not allowed to set call forward if it forms an unconditional loop, the receiving station is in do-not-disturb, or an invalid intercom number is dialed. COS and outgoing access are checked when a call is forwarded to an outside telephone number. Also, ARS cannot be used to forward to an outside number. |
|                                | Defective station instrument           | Replace the station instrument and/or perform the keyset self-test as described in INSTALLATION, page 3-63.                                                                                                                                                                                                                 |
|                                | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                                                                                                                              |

FIGURE 7-4. FEATURE TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                                                                           |
|------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Calls will not forward | User error                             | Refer to FEATURES, page 4-85, for procedures.                                                                                                                               |
|                        | Illegal forward                        | Conditional forwards (i.e., if busy, if unanswered) may form an undetected loop. If a call forward request forms a conditional loop, the call returns to the first station. |
|                        | Defective station card                 | Replace the associated station card.                                                                                                                                        |
|                        | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                              |

| SYMPTOM                                | PROBABLE CAUSE    | CORRECTIVE ACTION                                                                                                                                     |
|----------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Station not receiving hunt group calls | User error        | Hunt group calls may have been halted using the Hunt Group Remove feature code (see page 4-14 in FEATURES). Or, the station may be in do-not-disturb. |
|                                        | Programming error | Check hunt group programming. Refer to page 6-80 in PROGRAMMING.                                                                                      |

| SYMPTOM                        | PROBABLE CAUSE    | CORRECTIVE ACTION                                                                                                                    |
|--------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Station is not receiving pages | User error        | Pages may have been halted using the Page Remove feature code (see page 4-96 in FEATURES). Or, the station may be in do-not-disturb. |
|                                | Programming error | Check page zone programming for the station. See PROGRAMMING, page 6-93.                                                             |

| SYMPTOM                                    | PROBABLE CAUSE    | CORRECTIVE ACTION                                                                                       |
|--------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------|
| Station cannot be placed in do-not-disturb | User error        | Refer to page 4-97 in FEATURES for correct procedures.                                                  |
|                                            | Programming error | Station is programmed to disallow do-not-disturb. See PROGRAMMING, pages 6-30 and 6-58.                 |
|                                            | Defective keyset  | Perform the keyset self-test as described in INSTALLATION, page 3-63, and replace the keyset if faulty. |

FIGURE 7-5. KEYSSET TROUBLESHOOTING CHART

| SYMPTOM                                                                                                                      | PROBABLE CAUSE                                                                                  | CORRECTIVE ACTION                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Keyset inoperative; LED indication present while any key with an LED is held down; reorder tone is heard when key is pressed | Programming error (circuit identified as dual single-line sets (SLA); no reorder tone is heard) | Identify the circuit for keyset use, not dual single-line sets (SLA). Refer to page 6-237 in PROGRAMMING.                                                                                            |
|                                                                                                                              | System lockout caused by excessive data errors (displays SYSTEM LOCKOUT)                        | Remove and replace the line cord to reset the keyset.                                                                                                                                                |
|                                                                                                                              | Defective cabling or connections                                                                | Ensure that all cables are correctly connected to the modular jack as shown in Figure 3-1 on page 3-8 in INSTALLATION. Check for loose or open connections in the station cabling and the line cord. |
|                                                                                                                              | Defective keyset                                                                                | Perform the keyset self-test as described in INSTALLATION, page 3-63, and replace the keyset if faulty.                                                                                              |
|                                                                                                                              | Defective DKSC                                                                                  | Replace the associated DKSC.                                                                                                                                                                         |
|                                                                                                                              | Defective CPU/MEM or CPU020/PCM-D Card                                                          | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                       |

| SYMPTOM                                                                            | PROBABLE CAUSE                                      | CORRECTIVE ACTION                                                                                                                                                                                        |
|------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Keyset inoperative; no LED indication when any key is pressed; no audio is present | Open or defective thermistor on the associated DKSC | If a short causes a thermistor to open, it automatically closes when the short is removed. Replace DKSC if the thermistor is faulty.                                                                     |
|                                                                                    | Defective keyset                                    | Perform the keyset self-test as described in INSTALLATION, page 3-63, and replace the keyset if faulty.                                                                                                  |
|                                                                                    | Defective cabling or connections                    | Ensure that 30VDC is present at the modular jack and polarity is correct. Check for loose or open connections in the station cabling and the line cord. Refer to Figure 3-1 on page 3-8 in INSTALLATION. |
|                                                                                    | Defective DKSC                                      | Replace the associated DKSC.                                                                                                                                                                             |

| SYMPTOM                                                                                                                               | PROBABLE CAUSE                                                                | CORRECTIVE ACTION                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A group of 8 or 16 keysets inoperative; no LED indication when a trunk key is held down; all affected keysets are located on one DKSC | Defective station amphenol connector or cable attached to the associated DKSC | Remove the cable from the card. Using an ohmmeter, verify the pinout of the cable. (Refer to the information on pages 3-20 to 3-25 in INSTALLATION.) Ensure that 30VDC is present at the modular jack and polarity is correct. Check for loose or open connections in the station cabling and the line cord. |
|                                                                                                                                       | Defective DKSC                                                                | Replace the associated DKSC.                                                                                                                                                                                                                                                                                 |
|                                                                                                                                       | Defective receptacle on the KSU backplane                                     | Replace the KSU backplane.                                                                                                                                                                                                                                                                                   |

FIGURE 7-5. KEYSSET TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                               | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                         |
|-------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------|
| LCD inoperative; otherwise, keyset functions normally | Defective LCD Unit or LCD ribbon cable | Replace the LCD Unit or ribbon cable. Refer to page 3-61 in INSTALLATION. |
|                                                       | Improper installation                  | Refer to INSTALLATION, page 3-61.                                         |
|                                                       | Defective ribbon cable connector       | Replace the keyset.                                                       |

| SYMPTOM                      | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                                                       |
|------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Optional headset inoperative | User error                             | Ensure the enable headset feature code (315) was entered. Check feature code programming to see if code was changed. Refer to page 6-75 in PROGRAMMING. |
|                              | Incorrect or defective headset         | Ensure the headset contains a dynamic microphone, or a carbon microphone and an external AC power source. Replace headset if necessary.                 |
|                              | Defective keyset                       | Try another keyset.                                                                                                                                     |
|                              | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                          |

| SYMPTOM                                                                                                           | PROBABLE CAUSE             | CORRECTIVE ACTION                                                                     |
|-------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------|
| Keyset squeals on outside calls or when receiving a handsfree intercom call from a single-line station (feedback) | Speaker volume is too loud | Reduce feedback by lowering speaker volume using keyset volume controls.              |
|                                                                                                                   | Poor acoustics             | Poor acoustics can cause poor quality on handsfree calls. Try placing a private call. |

**NOTE:** A two- to four-wire converter is used during communication between keysets and single-line stations. Reflection is a normal characteristic of these converters. Feedback on intercom calls is eliminated when the single-line station user places a private intercom call by pressing the pound (#) key before dialing the intercom number or by entering the ring intercom always feature code — 377 (provided the keyset user does not press the SPKR key to respond).

| SYMPTOM                   | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                       |
|---------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------|
| Cannot break CO dial tone | Defective keyset                       | Perform the keyset self-test as described in INSTALLATION, page 3-63, and replace the keyset if faulty. |
|                           | Defective trunk card                   | Replace defective trunk card.                                                                           |
|                           | Defective DKSC                         | Replace the associated DKSC.                                                                            |
|                           | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.          |

**NOTE:** See also CO trunk problems on page 7-18.

FIGURE 7-5. KEYSSET TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                | PROBABLE CAUSE                                                     | CORRECTIVE ACTION                                                                                                                  |
|--------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Data device connected to keyset not operating properly | User error                                                         | Refer to manufacturer's operating instructions.                                                                                    |
|                                                        | Secondary voice path busy                                          | The keyset will not transmit data calls when the secondary voice path or speakerphone are in use. Refer to page 4-101 in FEATURES. |
|                                                        | Problem with data device                                           | Disconnect data device and check operation according to the manufacturer's instructions.                                           |
|                                                        | PCDPM, MDPM, or AC transformer not installed properly or defective | Check installation and connections. Refer to INSTALLATION, pages 3-67 and 3-70. Replace if defective.                              |
|                                                        | Defective keyset                                                   | Try another keyset.                                                                                                                |
|                                                        | Defective DKSC                                                     | Replace the associated DKSC.                                                                                                       |
|                                                        | Defective CPU/MEM or CPU020/PCM-D Card                             | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                     |

| SYMPTOM                              | PROBABLE CAUSE   | CORRECTIVE ACTION            |
|--------------------------------------|------------------|------------------------------|
| Data noise in any off-hook condition | Defective keyset | Try another keyset.          |
|                                      | Defective DKSC   | Replace the associated DKSC. |

| SYMPTOM                                                         | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                       |
|-----------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------|
| Cannot obtain intercom dial tone; no tone heard; CO trunk works | Defective keyset                       | Perform the keyset self-test as described in INSTALLATION, page 3-63, and replace the keyset if faulty. |
|                                                                 | Defective DKSC                         | Replace the associated DKSC.                                                                            |
|                                                                 | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.          |

| SYMPTOM                         | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                       |
|---------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------|
| Cannot break intercom dial tone | Defective keyset                       | Perform the keyset self-test as described in INSTALLATION, page 3-63, and replace the keyset if faulty. |
|                                 | Defective DKSC                         | Replace the associated DKSC.                                                                            |
|                                 | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.          |

FIGURE 7-5. KEYSSET TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                                                                     | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                       |
|-------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------|
| Cannot place intercom call; intercom dial tone is present, but reorder tone is heard when call is attempted | User error                             | Invalid intercom number or improper dialing procedure. See FEATURES, page 4-58, for procedures.         |
|                                                                                                             | Defective keyset                       | Perform the keyset self-test as described in INSTALLATION, page 3-63, and replace the keyset if faulty. |
|                                                                                                             | Defective DKSC                         | Replace the associated DKSC.                                                                            |
|                                                                                                             | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.          |

| SYMPTOM                                      | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                                                                                                                                                               |
|----------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot receive off-hook voice announce calls | Programming error                      | Ensure that the system option for off-hook voice announce is enabled (PROGRAMMING, page 6-91), that the called keyset is programmed to receive OHVA calls, and that the calling keyset is programmed to transmit OHVA calls (PROGRAMMING, pages 6-31 and 6-58). |
|                                              | User error                             | The called station is a single-line set or a keyset that is programmed not to receive OHVA calls. Or, the called keyset user may have blocked the OHVA call. See FEATURES, page 4-65, for details.                                                              |
|                                              | Secondary voice path busy              | The keyset will not receive off-hook voice announce calls when the secondary voice path or speakerphone are in use. Refer to FEATURES, page 4-65.                                                                                                               |
|                                              | Defective PCDPM or OHVA Module         | Check installation and connections. Refer to INSTALLATION, pages 3-65 and 3-67. Replace if defective.                                                                                                                                                           |
|                                              | Defective keyset                       | Perform the keyset self-test as described in INSTALLATION, page 3-63, and replace the keyset if faulty.                                                                                                                                                         |
|                                              | Defective DKSC                         | Replace the associated DKSC.                                                                                                                                                                                                                                    |
|                                              | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                                                                  |

**FIGURE 7-5. KEYSSET TROUBLESHOOTING CHART (CONT'D)**

| <b>SYMPTOM</b>                             | <b>PROBABLE CAUSE</b>                  | <b>CORRECTIVE ACTION</b>                                                                                                                                                                                                                                        |
|--------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot place off-hook voice announce calls | Programming error                      | Ensure that the system option for off-hook voice announce is enabled (PROGRAMMING, page 6-91), that the called keyset is programmed to receive OHVA calls, and that the calling keyset is programmed to transmit OHVA calls (PROGRAMMING, pages 6-31 and 6-58). |
|                                            | User error                             | The called station is a single-line set or a keyset that is programmed not to receive OHVA calls. Or, the called keyset user may have blocked the OHVA call. Refer to page 4-65 in FEATURES for more information.                                               |
|                                            | Secondary voice path busy              | The called keyset cannot receive off-hook voice announce calls when its secondary voice path or speakerphone are in use. Refer to FEATURES, page 4-65.                                                                                                          |
|                                            | Defective keyset                       | Perform the keyset self-test as described in INSTALLATION, page 3-63, and replace the keyset if faulty.                                                                                                                                                         |
|                                            | Defective DKSC                         | Replace the associated DKSC.                                                                                                                                                                                                                                    |
|                                            | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                                                                  |

| <b>SYMPTOM</b>                                   | <b>PROBABLE CAUSE</b>                  | <b>CORRECTIVE ACTION</b>                                                                                                                                                                                 |
|--------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Erratic keyset operation (lamp status incorrect) | Station cable exposed to interference  | Ensure proper station cable runs. Refer to INSTALLATION, page 3-7.                                                                                                                                       |
|                                                  | Station loop limits exceeded           | Perform the station loop resistance test as outlined on page 3-26 in INSTALLATION.                                                                                                                       |
|                                                  | Defective cabling or connections       | Ensure that 24VDC is present at the modular jack and polarity is correct. Check for loose or open connections in the station cabling and the line cord. Refer to Figure 3-1 on page 3-8 in INSTALLATION. |
|                                                  | Defective keyset                       | Perform the keyset self-test as described in INSTALLATION, page 3-63, and replace the keyset if faulty.                                                                                                  |
|                                                  | Programming error                      | Ensure that the proper key map has been assigned to the keyset. See PROGRAMMING, pages 6-35 and 6-52.                                                                                                    |
|                                                  | Defective DKSC                         | Replace the associated DKSC.                                                                                                                                                                             |
|                                                  | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                           |

FIGURE 7-6. SINGLE-LINE SET TROUBLESHOOTING CHART

| SYMPTOM                                | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                 |
|----------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------|
| Single-line set completely inoperative | Defective set                          | Replace the single-line set.                                                                      |
|                                        | Defective cabling                      | Check amphenol connector and station cabling. Refer to INSTALLATION, pages 3-20 and 3-23 to 3-25. |
|                                        | Defective SLC, SLA, DKSC, or TIC       | Replace the associated SLC, SLA, DKSC, or TIC.                                                    |
|                                        | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.    |

| SYMPTOM                                           | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                              |
|---------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------|
| Single-line set inoperative; talk battery present | Defective set                          | Replace the single-line set.                                                                   |
|                                                   | Defective SLC, SLA, or DKSC            | Replace the associated SLC, SLA, or DKSC.                                                      |
|                                                   | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty. |

| SYMPTOM                                                             | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                              |
|---------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------|
| Single-line set inoperative; calls ring in; talk battery is present | Defective set                          | Replace the single-line set.                                                                   |
|                                                                     | Defective SLC, SLA, or DKSC            | Replace the associated SLC, SLA, or DKSC.                                                      |
|                                                                     | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty. |

| SYMPTOM                                                                                | PROBABLE CAUSE                    | CORRECTIVE ACTION                                                             |
|----------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------------|
| A group of single-line sets is inoperative; all are on the same SLC, SLA, DKSC, or TIC | Loose amphenol connector or cable | Ensure connector or cable is securely attached to the SLC, SLA, DKSC, or TIC. |
|                                                                                        | Defective SLC, SLA, DKSC, or TIC  | Replace the associated SLC, SLA, DKSC, or TIC.                                |

FIGURE 7-6. SINGLE-LINE SET TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                                                              | PROBABLE CAUSE                                                | CORRECTIVE ACTION                                                                              |
|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Single-line set will not ring for CO or intercom calls; talk battery is present; calls can be placed | Single-line set ring jumper strap not set for correct ringing | Set the single-line set's ring jumper strap for AC ringing. Refer to INSTALLATION, page 3-73.  |
|                                                                                                      | Defective set                                                 | Replace the set.                                                                               |
|                                                                                                      | Defective SLC, SLA, or DKSC                                   | Replace the associated SLC, SLA, or DKSC.                                                      |
|                                                                                                      | Defective CPU/MEM or CPU020/PCM-D Card                        | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty. |

| SYMPTOM                                                                                   | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                                                                   |
|-------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ring trip is not provided to a group of single-line sets; outgoing calls are not affected | Proper voltage absent from SLA or DKSC | Defective connection or incorrect installation of SLA or DKSC. Using a voltmeter, measure the voltage at the DKSC block. Refer to installation, pages 3-20 to 3-25. |
|                                                                                           | Defective cabling                      | Using a voltmeter, measure the input at the amphenol connector. Refer to Figure 3-16 on page 3-25 in INSTALLATION.                                                  |
|                                                                                           | Defective SLC, SLA, or DKSC            | Replace the associated SLC, SLA, or DKSC.                                                                                                                           |

| SYMPTOM                                                                                                                                                                       | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| A group of AC ringer-equipped single-line sets will not ring for CO or intercom calls; talk battery is present; calls can be placed; all stations are on the same SLA or DKSC | Defective power supply                 | Refer to INSTALLATION, page 3-35 or 3-41, to perform the power supply electrical test. Replace the power supply if faulty. |
|                                                                                                                                                                               | Defective SLC, SLA, or DKSC            | Replace the associated SLC, SLA, or DKSC.                                                                                  |
|                                                                                                                                                                               | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                             |

| SYMPTOM                                                                                                             | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| No AC ringer-equipped single-line set will ring for CO or intercom calls; talk battery present; calls can be placed | Defective power supply                 | Refer to INSTALLATION, page 3-35 or 3-41, to perform the power supply electrical test. Replace the power supply if faulty. |
|                                                                                                                     | Defective SLC, SLA, or DKSC            | Replace the associated SLC, SLA, or DKSC.                                                                                  |
|                                                                                                                     | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                             |

**FIGURE 7-6. SINGLE-LINE SET TROUBLESHOOTING CHART (CONT'D)**

| SYMPTOM                                             | PROBABLE CAUSE                                                           | CORRECTIVE ACTION                                                                                                      |
|-----------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Cannot obtain intercom dial tone; no sound is heard | Either a DTMF decoder, voice channel, or tone generator is not available | Single-line station user will hear busy tones when any of the necessary resources are not available. User may camp on. |
|                                                     | Defective set                                                            | Replace the single-line set.                                                                                           |
|                                                     | Defective SLC, SLA, or DKSC                                              | Replace the associated SLC, SLA, or DKSC.                                                                              |
|                                                     | Defective CPU/MEM or CPU020/PCM-D Card                                   | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                         |

| SYMPTOM                                                               | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                              |
|-----------------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------|
| Cannot place intercom call; dial tone present, but reorder tone heard | User error                             | Try the call again. User may have dialed an invalid number.                                    |
|                                                                       | Defective set                          | Replace the single-line set.                                                                   |
|                                                                       | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty. |

| SYMPTOM                   | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                              |
|---------------------------|----------------------------------------|------------------------------------------------------------------------------------------------|
| Cannot break CO dial tone | Defective set                          | Replace the single-line set.                                                                   |
|                           | Defective SLC, SLA, or DKSC            | Replace the associated SLC, SLA, or DKSC.                                                      |
|                           | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty. |

**NOTE:** See also CO trunk problems on page 7-18.

| SYMPTOM                                    | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                                                                   |
|--------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot place off-hook voice announce calls | Programming error                      | Ensure that the system option for off-hook voice announce is enabled (PROGRAMMING, page 6-91) and that the station is programmed to transmit (pages 6-31 and 6-58). |
|                                            | User error                             | Called station is a single-line set or a keyset that is not equipped with a secondary voice path.                                                                   |
|                                            | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                      |

| SYMPTOM                                                          | PROBABLE CAUSE    | CORRECTIVE ACTION                                                                                     |
|------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------|
| Single-line sets not receiving audio message waiting indications | Programming error | Message waiting indication option must be enabled in the database. Refer to page 6-91 in PROGRAMMING. |

FIGURE 7-7. DSS/BLF UNIT TROUBLESHOOTING CHART

| SYMPTOM                                                                  | PROBABLE CAUSE                             | CORRECTIVE ACTION                                                                           |
|--------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------|
| DSS/BLF Unit inoperative; no LED indication present while key is pressed | Defective cabling or improper installation | Check for loose or open connections. Refer to INSTALLATION, page 3-71.                      |
|                                                                          | AC transformer unplugged or defective      | Check the transformer. Replace if defective.                                                |
|                                                                          | Defective PCDPM                            | Check installation and connections. Refer to INSTALLATION, page 3-67. Replace if defective. |
|                                                                          | Defective DSS/BLF Unit                     | Replace the DSS/BLF Unit.                                                                   |

| SYMPTOM                                                               | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                                                               |
|-----------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DSS/BLF Unit inoperative; LED indication present while key is pressed | Programming error                      | Circuit is identified for keyset use, not as a DSS/BLF Unit. Refer to page 6-237 in PROGRAMMING. Also, check DSS/BLF key assignments in PROGRAMMING, page 6-48. |
|                                                                       | Defective DSS/BLF Unit                 | Replace the DSS/BLF Unit.                                                                                                                                       |
|                                                                       | Defective DKSC                         | Replace the associated DKSC.                                                                                                                                    |
|                                                                       | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                  |

| SYMPTOM                                | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                              |
|----------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------|
| DSS/BLF Unit LED indications incorrect | Programming error                      | Check DSS/BLF key assignments in PROGRAMMING, page 6-48.                                       |
|                                        | Defective DSS/BLF Unit                 | Replace the DSS/BLF Unit.                                                                      |
|                                        | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty. |
|                                        | Cable exposed to interference          | Refer to INSTALLATION, page 3-7, for correct cabling procedures.                               |

| SYMPTOM                                    | PROBABLE CAUSE    | CORRECTIVE ACTION                                               |
|--------------------------------------------|-------------------|-----------------------------------------------------------------|
| Calls are transferred to the wrong station | User error        | Refer to FEATURES, page 4-53, for procedures.                   |
|                                            | Programming error | Check DSS/BLF key assignments. Refer to PROGRAMMING, page 6-48. |

FIGURE 7-7. DSS/BLF UNIT TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                                      | PROBABLE CAUSE                         | CORRECTIVE ACTION                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot place immediate off-hook voice announce calls (using the DSS/BLF key) | Programming error                      | Ensure that the system option for off-hook voice announce is enabled, that the immediate off-hook voice announce option is enabled, that the DSS/BLF station is programmed to transmit, and that the called keyset is programmed to receive. Refer to pages 6-31, 6-58, and 6-91 in PROGRAMMING. |
|                                                                              | User error                             | The called station is a single-line set or a keyset that is programmed not to receive OHVA calls. Or, the called keyset user may have blocked the OHVA call. Refer to page 4-65 in FEATURES for more information.                                                                                |
|                                                                              | Defective keyset                       | Perform the keyset self-test as described in INSTALLATION, page 3-63, and replace the keyset if faulty.                                                                                                                                                                                          |
|                                                                              | Defective DSS/BLF Unit                 | Perform the DSS/BLF Unit self-test as described in INSTALLATION, page 3-71, and replace the DSS/BLF Unit if faulty.                                                                                                                                                                              |
|                                                                              | Defective DKSC                         | Replace the associated DKSC.                                                                                                                                                                                                                                                                     |
|                                                                              | Defective CPU/MEM or CPU020/PCM-D Card | Refer to pages 7-1 and 7-2 for LED and system voltage information. Replace the card if faulty.                                                                                                                                                                                                   |

FIGURE 7-8. AXXESSORY TALK TROUBLESHOOTING CHART

| SYMPTOM                                                                                                                                                  | PROBABLE CAUSE                                                                 | CORRECTIVE ACTION                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AXXESS System unable to communicate over voice channels with AXXESSORY Talk PC (see page 5-3 in AXXESSORY TALK FEATURES for a detailed list of symptoms) | Programming error                                                              | Make sure the appropriate time slot group (number of AXXESSORY Talk voice channels) is assigned to each AXXESSORY Talk application. Voice channels are used for processing calls between the AXXESS System and the AXXESSORY Talk PC. See AXXESSORY TALK FEATURES, page 5-2, and PROGRAMMING, page 6-164. |
|                                                                                                                                                          | Loose or defective cabling between the AXXESS System and the AXXESSORY Talk PC | Check the cabling connecting the system to the PC. The CPU connection controls ports 1-8; the OPC connection controls ports 9-32.                                                                                                                                                                         |
|                                                                                                                                                          | Incorrect strap settings on the AIC or one or more of the VPCs                 | Ensure that the AIC and all VPCs have their jumper straps set in the proper positions. See pages 3-74 and 3-75 in INSTALLATION.                                                                                                                                                                           |
|                                                                                                                                                          | Defective AIC or VPC                                                           | Replace the defective card.                                                                                                                                                                                                                                                                               |

| SYMPTOM                                                                                                                                                                                           | PROBABLE CAUSE                                                                          | CORRECTIVE ACTION                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System programming PC unable to communicate with AXXESSORY Talk PC (the monitor may display a message about being unable to communicate with or losing its connection with the AXXESSORY Talk PC) | Programming error                                                                       | AXXESSORY Talk programming cannot be accessed until an AXXESSORY Talk communications port has been established. See PROGRAMMING, pages 6-23 and 6-87. If using one of the serial ports on the MEM Card, ensure that the CPU Card has been configured to include the MEM Card. See PROGRAMMING, page 6-232. |
|                                                                                                                                                                                                   | Loose or defective RS-232-C cabling between the AXXESS System and the AXXESSORY Talk PC | Check the RS-232-C cabling connecting the system to COM1 on the PC.                                                                                                                                                                                                                                        |
|                                                                                                                                                                                                   | Defective CPU, MEM, or Disk Controller Combination Card                                 | Replace the defective card.                                                                                                                                                                                                                                                                                |

| SYMPTOM                                                           | PROBABLE CAUSE                                                                       | CORRECTIVE ACTION                                                                                  |
|-------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Monitor and keyboard unable to communicate with AXXESSORY Talk PC | Loose or defective cabling between the AXXESSORY Talk PC and the monitor or keyboard | Check the cabling connecting the PC to the monitor or keyboard.                                    |
|                                                                   | Monitor is wrong type for the Monitor Card installed in the PC                       | Make sure the monitor is the proper type (generally VGA) for the Monitor Card installed in the PC. |
|                                                                   | Defective monitor or keyboard                                                        | Replace the defective monitor or keyboard.                                                         |
|                                                                   | Defective Monitor Card or PC Motherboard                                             | Replace the defective card.                                                                        |

FIGURE 7-8. AXCESSORY TALK TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                     | PROBABLE CAUSE                                              | CORRECTIVE ACTION                                                                                                                                                                                        |
|---------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Automated attendant not responding properly | User error                                                  | The caller must use a DTMF phone to enter digits. Refer to AXCESSORY TALK FEATURES, page 5-4.                                                                                                            |
|                                             | DTMF tones not being interpreted correctly (see NOTE below) | If numbers appear to be misdialed frequently, due to trunk noise or other problems, use the digit translation feature as described on page 5-6 in AXCESSORY TALK FEATURES and page 6-157 in PROGRAMMING. |
|                                             | Programming error                                           | Automated attendant station(s) must be designated in the database. Refer to PROGRAMMING, pages 6-152 and 6-195.                                                                                          |
|                                             | Defective AIC, VPC, or hard disk                            | Replace the defective PC component.                                                                                                                                                                      |

**NOTE:** Due to the natural characteristics of the CO trunk, the volume level of DTMF tones transmitted over the trunk may be substantially reduced before reaching the Inter-Tel AXCESS System. This natural degradation in tone volume may adversely affect the reliability of the automated attendant feature. Other factors which can affect automated attendant performance are CO trunk noise, the quality of the recording device, and the quality and strength of the DTMF tones generated by the calling phone itself.

| SYMPTOM                                                                                       | PROBABLE CAUSE                                                        | CORRECTIVE ACTION                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Automated attendant not receiving incoming calls; callers routed to primary attendant instead | Programming error                                                     | Ensure that the desired trunks (in day and/or night mode) are programmed to ring in directly to the proper automated attendant extension number. See AXCESSORY TALK FEATURES, page 5-4, and PROGRAMMING, page 6-152. |
|                                                                                               | Loose or defective cabling between the AXCESS System and AXX. Talk PC | Check the cabling connecting the system to the PC.                                                                                                                                                                   |
|                                                                                               | Defective AIC or VPC                                                  | Replace the defective card.                                                                                                                                                                                          |

| SYMPTOM                                                                                               | PROBABLE CAUSE                                                            | CORRECTIVE ACTION                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Automated attendant indicates that an extension number is invalid even though it exists on the system | The extension does not have an assigned mailbox or an extension ID number | Extension ID numbers provide the automated attendant application a means for transferring calls to extensions which do not have mailboxes. See PROGRAMMING, page 6-166. |

| SYMPTOM                                                                                              | PROBABLE CAUSE    | CORRECTIVE ACTION                                                                                       |
|------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------|
| Automated attendant transfers calls directly to voice mail without trying the extension number first | Programming error | Make sure the mailbox is associated with a corresponding extension number. See PROGRAMMING, page 6-185. |

FIGURE 7-8. AXCESSORY TALK TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                                                                                                                                                     | PROBABLE CAUSE                                                                  | CORRECTIVE ACTION                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Unable to access desired AXCESSORY Talk application (intercom callers hear reorder tones and see a CALL CANNOT BE COMPLETED display; outside callers are rerouted to the primary attendant) | The number of call attempts exceed the ports available through the VPCs         | If the problem persists, it may be necessary to purchase and install additional VPCs.                 |
|                                                                                                                                                                                             | Loss of RS-232-C connection between the AXCESS System and the AXCESSORY Talk PC | Check the RS-232-C cabling connecting the system to COM1 on the PC.                                   |
|                                                                                                                                                                                             | AXCESSORY Talk processing has slowed down and call processing has timed out     | If the problem continues to occur, even during periods of low activity, reboot the AXCESSORY Talk PC. |

| SYMPTOM                                                                                                                                                                                                            | PROBABLE CAUSE                                   | CORRECTIVE ACTION                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unable to access desired AXCESSORY Talk application (intercom callers see a XXXXX IS BUSY display and camp on until a voice channel is available; outside callers hear ringing until a voice channel is available) | All programmed voice channels are currently busy | Make sure the appropriate time slot group (number of AXCESSORY Talk voice channels) is assigned to each AXCESSORY Talk application. Voice channels are used for processing calls between the AXCESS System and the AXCESSORY Talk PC. See AXCESSORY TALK FEATURES, page 5-2, and PROGRAMMING, page 6-164. |

| SYMPTOM                                                                                                                                                                                 | PROBABLE CAUSE                                                                                                | CORRECTIVE ACTION                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Unable to access desired AXCESSORY Talk application (intercom callers hear reorder tones and see a XXXXX IS UNAVAILABLE display; outside callers are rerouted to the primary attendant) | A database save or restore is in progress, the PC is being reset, or the PC is starting up for the first time | Try again within five or ten minutes. |

| SYMPTOM                                                                                                                                                                               | PROBABLE CAUSE                                                                                                                                             | CORRECTIVE ACTION                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Unable to access desired AXCESSORY Talk application (intercom callers hear reorder tones and see a XXXXX IS UNPLUGGED display; outside callers are rerouted to the primary attendant) | The AXCESSORY Talk PC power switch is off, the cabling between the system and the PC is disconnected or defective, or the AXCESSORY Talk PC is inoperative | Check to make sure the AXCESSORY Talk PC power switch is on, and check the cabling connecting the system to the PC. |

FIGURE 7-8. AXCESSORY TALK TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                                                              | PROBABLE CAUSE                                                          | CORRECTIVE ACTION                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AXCESSORY Talk applications are slow (e.g., voice prompts are slow and display messages are delayed) | The AXCESSORY Talk PC's high-speed (turbo) processor mode is turned off | For optimal performance, the AXCESSORY Talk PC is configured with the high-speed (turbo) mode <i>always</i> enabled. Do <i>not</i> disable the turbo mode setting. |

| SYMPTOM                                                                                                        | PROBABLE CAUSE                                                               | CORRECTIVE ACTION                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AXCESSORY Talk PC is programmed with 12-32 voice channels, but no more than eight calls at a time are accepted | The OPC is not programmed to have an AXCESSORY Talk connection               | Configure the OPC to have an AXCESSORY Talk connection. See PROGRAMMING, page 6-243.                                                                                                                    |
|                                                                                                                | The number of programmed voice channels is less than the available hardware  | Make sure the appropriate time slot group (number of AXCESSORY Talk voice channels) is assigned to each AXCESSORY Talk application. See AXCESSORY TALK FEATURES, page 5-2, and PROGRAMMING, page 6-164. |
|                                                                                                                | Loose or defective cabling between the AXCESSORY Talk AIC and the AXCESS OPC | Check the AIC-to-OPC cabling.                                                                                                                                                                           |
|                                                                                                                | Defective AIC or OPC                                                         | Replace the defective card.                                                                                                                                                                             |

| SYMPTOM                                                                  | PROBABLE CAUSE                                                                                                       | CORRECTIVE ACTION                                                                                                                                                                                     |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| When power is turned on, the AXCESSORY Talk PC does not boot up properly | Diskette in floppy drive                                                                                             | Ensure that the PC is not trying to boot off a diskette in the floppy drive.                                                                                                                          |
|                                                                          | The two-pin AIC-to-reset switch cable is not connected properly                                                      | Be sure that pin 1 marked on each end of the cable matches pin 1 on the AIC and the PC Motherboard. (If connected incorrectly, the PC will be reset continuously or will not boot up at all.)         |
|                                                                          | The DB-25 modular adapter (supplied with the AXCESSORY Talk PC) is still connected to the COM2 serial port on the PC | Remove the DB-25 modular adapter when not being used                                                                                                                                                  |
|                                                                          | The AXCESSORY Talk PC's high-speed (turbo) processor mode is turned off                                              | The AXCESSORY Talk PC boots up much faster in turbo mode. Before shipping, the PC is configured with the high-speed (turbo) mode <i>always</i> enabled. Do <i>not</i> disable the turbo mode setting. |
|                                                                          | The keyboard is removed, but the keyboard option in the PC's CMOS set-up routine is set to "installed"               | Before removing the keyboard from the PC, always be sure to set the keyboard option to "not installed" in the Standard CMOS Setup program.                                                            |

FIGURE 7-8. AXCESSORY TALK TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                                                                                                                               | PROBABLE CAUSE                                                                  | CORRECTIVE ACTION                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| When power is turned on, the AXCESSORY Talk PC beeps once (for two seconds) and does not boot up properly. (See note below for a list of possible AIC driver errors.) | Incorrect DIP switch or jumper strap settings on the Audio Interface Card (AIC) | Ensure that the AIC DIP switches and jumper straps are set in the proper positions. Refer to step 4 on page 3-74 in INSTALLATION.                                                                                   |
|                                                                                                                                                                       | Incorrect strap settings on one or more of the VPCs                             | Ensure that all VPCs have their jumper straps set in the proper positions. Refer to step 5 on page 3-75 in INSTALLATION.                                                                                            |
|                                                                                                                                                                       | Software problem                                                                | The PC should be used for AXCESSORY Talk applications only. If necessary, delete any unneeded peripheral software and re-install the AXCESSORY Talk applications software as outlined in INSTALLATION on page 3-85. |
|                                                                                                                                                                       | Defective AIC, VPC, or PC                                                       | Replace the defective card(s) or the PC.                                                                                                                                                                            |

**NOTE:** If the corrective actions listed above do not solve the problem, connect a monitor and keyboard to see which AIC driver error is being generated, as listed below, and then contact Customer Support.

| ERROR NO. | MEANING                                                                                                               |
|-----------|-----------------------------------------------------------------------------------------------------------------------|
| AIC0000   | No AIC address specified.                                                                                             |
| AIC0001   | Invalid AIC address specified. Valid addresses fall in the range from 200 through 3F8.                                |
| AIC0002   | The driver did not find an AIC at address <card address>.                                                             |
| AIC0003   | The driver was unable to initialize AIC. This problem may indicate an I/O address conflict or a problem with the AIC. |

| SYMPTOM                                                                                                       | PROBABLE CAUSE                                                     | CORRECTIVE ACTION                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Both internal and remote users have no message notification after receiving voice messages in their mailboxes | The Message Notification/Retrieval application has not been set up | The system must be programmed with the Message Notification/Retrieval application in order to allow voice mail message notification and quick mailbox access. See PROGRAMMING, page 6-152. |

| SYMPTOM                                                                                                                   | PROBABLE CAUSE    | CORRECTIVE ACTION                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------|
| Audio volume levels from AXCESSORY Talk applications (such as voice mail and automated attendant) are too low or too high | Programming error | To adjust the volume level for all of the voice channels used by the AXCESSORY Talk PC, refer to PROGRAMMING, page 6-203. |

FIGURE 7-8. AXCESSORY TALK TROUBLESHOOTING CHART (CONT'D)

| SYMPTOM                                                                                            | PROBABLE CAUSE                                                                               | CORRECTIVE ACTION                                                                                                              |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| No audio from AX-<br>XCESSORY Talk applications<br>(such as voice mail and<br>automated attendant) | Loose or defective cabling<br>between the AXCESSORY<br>Talk AIC and the AXCESS<br>CPU or OPC | Check the AIC-to-CPU/OPC cabling.                                                                                              |
|                                                                                                    | Incorrect strap settings on<br>one or more of the Voice<br>Processing Cards (VPCs)           | Ensure that all VPCs have their jumper straps set<br>in the proper positions. Refer to step 5 on page<br>3-75 in INSTALLATION. |
|                                                                                                    | Defective AIC, CPU, or<br>OPC                                                                | Replace the defective card.                                                                                                    |

| SYMPTOM                                                                                                | PROBABLE CAUSE                                                                       | CORRECTIVE ACTION                                                                                                              |
|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Unable to record any voice<br>mail greetings or messages<br>and/or unable to hear any<br>voice prompts | Incorrect strap settings on<br>one or more of the Voice<br>Processing Cards (VPCs)   | Ensure that all VPCs have their jumper straps set<br>in the proper positions. Refer to step 5 on page<br>3-75 in INSTALLATION. |
|                                                                                                        | Loose/defective cabling be-<br>tween the AXCESSORY<br>Talk AIC and the CPU or<br>OPC | Check the AIC-to-CPU/OPC cabling.                                                                                              |
|                                                                                                        | Loose/defective cabling be-<br>tween the AIC and the VPCs                            | Check the AIC-To-VPC cabling.                                                                                                  |
|                                                                                                        | Defective VPC                                                                        | Replace the VPC.                                                                                                               |

| SYMPTOM                                       | PROBABLE CAUSE                                          | CORRECTIVE ACTION                                                                                                                                                                                                       |
|-----------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fax On Demand feature not<br>working properly | Programming error.                                      | User group 1 and the home area code tables must<br>be programmed before using the Fax On Demand<br>feature. A fax library must also be established. See<br>page 5-9 in AXCESSORY TALK FEATURES for<br>more information. |
|                                               | Incorrect switch or jumper<br>settings on the Fax Card. | Ensure that the switches and jumpers are set in the<br>proper positions. Refer to step 8 on page 3-76 in<br>INSTALLATION.                                                                                               |
|                                               | Defective Fax Card                                      | Replace the Fax Card.                                                                                                                                                                                                   |

## 6. CUSTOMER SUPPORT

### A. TECHNICAL SUPPORT

6.1 If problems persist when installing or servicing Inter-Tel equipment: While *on site* and *with the proper troubleshooting tools* available, *certified technicians* may contact Inter-Tel's Customer Support Department for assistance. They can be reached from 7:00A.M. to 5:00P.M. Mountain Standard Time at 602-961-9000 or 1-800-669-5858.

### B. EMERGENCY ASSISTANCE

6.2 After office hours and on weekends, call 602-961-0277 and leave your message with the voice mail service. A Customer Support Product Specialist will return your call as soon as possible, usually within an hour. Please remember that this is an emergency number for *critical system problems only*. Sales ques-

tions, equipment orders, etc., can only be handled during normal business hours.

## 7. DEFECTIVE UNIT RETURN POLICY

7.1 For complete information on returning equipment, refer to the *current* Inter-Tel *Customer Service Policy* (document part no. 835.1065). This document includes specific information on the following subjects: warranty, procedures to follow when returning equipment, equipment damaged in shipment, insurance, repair policy, and advance replacement policy.

**NOTE:** Some of the cards and cables inside the AXCESSORY Talk PC may have been spot-glued into place to help prevent them from working loose during shipment. To remove one of these cards or cables from the PC (if necessary), first break the glue seal by gently wiggling the connector with a pair of pliers.

# REPLACEMENT PARTS

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## 1. INTRODUCTION

1.1 This section provides the information necessary to order and stock replacement parts for the Inter-Tel AXCESS System.

- Part number(s) of equipment ordered
- Quantity required

## 2. ORDERING PROCEDURE

2.1 When ordering equipment for the Inter-Tel AXCESS System, provide the following information to the order processing clerk:

- Company name
- Purchase order number
- Required date of shipment

## 3. REPLACEMENT PARTS LIST

3.1 Figure 8-1 lists authorized parts available for replacement on the Inter-Tel AXCESS System.

## 4. RECOMMENDED SPARE PARTS

4.1 *It is mandatory that spare parts be kept on hand to ensure the best possible customer service.*

4.2 Figure 8-2 on page 8-4 lists the quantities of spare parts recommended to adequately maintain and service ten Inter-Tel AXCESS Systems.

**FIGURE 8-1. REPLACEMENT PARTS**

| <u>DESCRIPTION</u>                                                        | <u>PART NUMBER</u> |
|---------------------------------------------------------------------------|--------------------|
| <b>Station Instruments</b>                                                |                    |
| Basic Digital Keypad (or Terminal) — non-display .....                    | 520.4000           |
| Standard Digital Keypad (or Terminal) — non-display .....                 | 550.4300           |
| Standard Digital Keypad (or Terminal) — display .....                     | 550.4000           |
| Executive Digital Keypad (or Terminal) — display .....                    | 550.4100           |
| Digital DSS/BLF Unit (includes AC transformer & PCDPM-To-DSS cable) ..... | 550.4200           |
| <b>Original KSU and Power Supply Parts</b>                                |                    |
| KSU Assembly (with backplane and power supply unit) .....                 | 550.1000           |
| KSU Backplane .....                                                       | 550.1001           |
| Power Supply Unit .....                                                   | 550.0102           |
| Backplane-To-Power Supply Interface Cable .....                           | 813.1580           |
| Backplane Termination Resistor .....                                      | 831.5570           |
| KSU Expansion Cable .....                                                 | 813.1576           |

FIGURE 8-1. REPLACEMENT PARTS (CONT'D)

DESCRIPTION PART NUMBER

**New-Style KSU and Power Supply Parts**

|                                                               |          |
|---------------------------------------------------------------|----------|
| KSU Assembly (with backplane and power supply unit) . . . . . | 550.1200 |
| KSU Assembly (with backplane only) . . . . .                  | 550.1300 |
| KSU Backplane . . . . .                                       | 550.1002 |
| Power Supply Unit — 6 Amp . . . . .                           | 550.0104 |
| Power Supply Unit — 9 Amp . . . . .                           | 550.0110 |
| Backplane Termination Resistor (same as original) . . . . .   | 831.5570 |
| KSU Expansion Cable (same as original) . . . . .              | 813.1576 |

**Circuit Cards**

|                                                         |          |
|---------------------------------------------------------|----------|
| CPU Card . . . . .                                      | 550.2000 |
| MEM Card . . . . .                                      | 550.2100 |
| CPU020/PCM-D Card . . . . .                             | 550.9003 |
| Options Card . . . . .                                  | 550.2600 |
| Digital Keypad Card — 8-Port . . . . .                  | 550.2200 |
| Digital Keypad Card — 16-Port . . . . .                 | 550.2250 |
| Single-Line Adapter (includes AC transformer) . . . . . | 550.2500 |
| Single-Line Card . . . . .                              | 550.2101 |
| Lamp Option Card . . . . .                              | 550.2102 |
| Loop Start Card . . . . .                               | 550.2300 |
| Loop Start Daughter Card . . . . .                      | 550.2301 |
| T1 Card . . . . .                                       | 550.2730 |
| Network Clock Card . . . . .                            | 550.2732 |

**Software**

|                                                                      |          |
|----------------------------------------------------------------------|----------|
| <i>Premium</i> Software for CPU/MEM (13 ROMs and one PAL) . . . . .  | 827.8346 |
| <i>Premium</i> Software for CPU020/PCM-D (one floppy disk) . . . . . | 827.8347 |
| MF-Rated 15-Unit PAL . . . . .                                       | 827.8350 |
| MF-Rated 25-Unit PAL . . . . .                                       | 827.8351 |
| MF-Rated 50-Unit PAL . . . . .                                       | 827.8352 |
| MF-Rated 75-Unit PAL . . . . .                                       | 827.8353 |
| MF-Rated 100-Unit PAL . . . . .                                      | 827.8354 |
| KF-Rated 15-Unit PAL . . . . .                                       | 827.8356 |
| KF-Rated 25-Unit PAL . . . . .                                       | 827.8357 |
| KF-Rated 50-Unit PAL . . . . .                                       | 827.8358 |
| KF-Rated 75-Unit PAL . . . . .                                       | 827.8359 |
| KF-Rated 100-Unit PAL . . . . .                                      | 827.8360 |
| Database Programming Software (two floppy disks) . . . . .           | 827.8348 |
| AXCESSORY Talk Applications Software (five floppy disks) . . . . .   | 827.8349 |
| * MEM Card Software (three components) . . . . .                     | 828.1278 |
| * Options Card Software (two components) . . . . .                   | 828.1279 |
| ** T1 Card Software (two components) . . . . .                       | 828.1333 |

\* The MEM Card and each Options Card must be equipped with special software components that allow the cards to work with version 2 or higher system software.

\*\* Older T1 Cards must be equipped with special software components that allow the cards to work with the new version 3 system software (as well as all older versions of system software).

FIGURE 8-1. REPLACEMENT PARTS (CONT'D)

| DESCRIPTION                                                                                                                         | PART NUMBER |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>AXXESSORY Talk PC</b>                                                                                                            |             |
| IBM-486 (or compatible) Personal Computer (PC) Assembly . . . . .                                                                   | 550.5124    |
| PC Chassis with Power Supply . . . . .                                                                                              | 550.5123    |
| Power Supply . . . . .                                                                                                              | 691.0100    |
| PC Motherboard (80486 without memory) . . . . .                                                                                     | 550.5126    |
| 8MB SIMM . . . . .                                                                                                                  | 821.1052    |
| Floppy Disk Drive (3 1/2-inch double-sided/high-density) . . . . .                                                                  | 550.5111    |
| Hard Disk Drive — 405 MB . . . . .                                                                                                  | 550.5119    |
| Hard Disk Drive — 540 MB . . . . .                                                                                                  | 550.5118    |
| Disk Controller Card (with serial & parallel ports) . . . . .                                                                       | 691.3007    |
| Floppy Disk-To-Controller Interface Cable . . . . .                                                                                 | 813.1105    |
| Hard Disk-To-Controller Interface Cable . . . . .                                                                                   | 813.1557    |
| Audio Interface Card (AIC) . . . . .                                                                                                | 550.2800    |
| Voice Processing Card (VPC) — 4 Port . . . . .                                                                                      | 550.3006    |
| Voice Processing Card (VPC) — 8 Port . . . . .                                                                                      | 550.5121    |
| Voice Processing Card (VPC) — 16 Port . . . . .                                                                                     | 550.5120    |
| Monitor Card — VGA . . . . .                                                                                                        | 440.5069    |
| Optional Fax Card . . . . .                                                                                                         | 550.5122    |
| AIC-To-Reset Switch Interface Cable . . . . .                                                                                       | 813.1588    |
| AIC-To-VPC Interface Cable . . . . .                                                                                                | 813.1586    |
| AIC-To-CPU/OPC Interface Cable . . . . .                                                                                            | 813.1587    |
| Optional SMDR Retrieval Cable Kit (includes items below) . . . . .                                                                  | 828.1282    |
| Line Cord (standard, two-pair, reversing) . . . . .                                                                                 | 813.1592    |
| DB9 Modular Adapter (female, non-reversing, four-wire)<br>— MOD-TAP® part no. 08-988-610-00 . . . . .                               | 804.2420    |
| DB25 Modular Adapter (female, reversing, four-wire)<br>— MOD-TAP® part no. 06-986-G99-33 . . . . .                                  | 804.2425    |
| Optional Diagnostics Kit (includes items below) . . . . .                                                                           | 550.5117    |
| Monitor . . . . .                                                                                                                   | 440.5080    |
| Keyboard . . . . .                                                                                                                  | 440.5081    |
| Optional PC Wall-Mount Shelf (fits most PC models) . . . . .                                                                        | 691.3109    |
| <b>NOTE:</b> Depending on the specific model of PC being used, some of the parts and part numbers listed above could vary somewhat. |             |
| <b>Miscellaneous Equipment</b>                                                                                                      |             |
| Digital Signal Processor (DSP) Chip . . . . .                                                                                       | 834.2328    |
| DSP PAL Chip — for an OPC with one DSP installed . . . . .                                                                          | 827.8023    |
| DSP PAL Chip — for an OPC with two DSPs installed . . . . .                                                                         | 827.8024    |
| DSP PAL Chip — for an OPC with three DSPs installed . . . . .                                                                       | 827.8025    |
| DSP PAL Chip — for an OPC with four DSPs installed . . . . .                                                                        | 827.1020    |
| Keyset OHVA Module . . . . .                                                                                                        | 550.3114    |
| Keyset PC Data Port Module (PCDPM) — includes AC transformer & PCDPM-To-RS232C cable . . . . .                                      | 550.3014    |
| Keyset Modem Data Port Module (MDPM) — includes PCDPM-To-MDPM cable . . . . .                                                       | 550.3015    |
| PCDPM-To-Keyset Interface Cable . . . . .                                                                                           | 813.1567    |
| PCDPM-To-MDPM Interface Cable . . . . .                                                                                             | 813.1566    |
| PCDPM-To-RS232C Interface Cable . . . . .                                                                                           | 813.1565    |
| PCDPM-To-DSS Interface Cable . . . . .                                                                                              | 813.1595    |
| DSS-To-DSS Interface Cable . . . . .                                                                                                | 813.1519    |
| Keyset LCD Kit (for non-display Standard Keysets) . . . . .                                                                         | 828.1211    |

FIGURE 8-1. REPLACEMENT PARTS (CONT'D)

| <u>DESCRIPTION</u>                                                         | <u>PART NUMBER</u> |
|----------------------------------------------------------------------------|--------------------|
| <b>Miscellaneous Equipment (continued)</b>                                 |                    |
| AC Transformer — 24VAC, 450mA (for PCDPMs, MDPMs, and DSS/BLF Units) ..... | 806.1045           |
| AC Transformer — 24VAC, 1.25A (for SLAs) .....                             | 806.1046           |
| Modem Kit (includes modem and custom cable) .....                          | 550.3026           |
| Digital Attendant Playback Device .....                                    | 828.1315           |
| Database Back-Up Battery (3.6V, 1/2AA lithium) .....                       | 815.1011           |
| <b>Manuals</b>                                                             |                    |
| Installation & Field Maintenance Manual .....                              | 550.8000           |
| Owner's Guide .....                                                        | 550.8001           |
| Basic & Standard Keypad User Guide .....                                   | 550.8002           |
| Executive Keypad User Guide .....                                          | 550.8008           |
| Single-Line Set User Guide .....                                           | 550.8003           |
| Keypad Quick Reference Guide .....                                         | 550.8004           |
| System Administrator Quick Reference Guide .....                           | 550.8006           |
| AXXESSORY Talk Voice Mail User Guide .....                                 | 550.8101           |
| AXXESSORY Talk Voice Mail Subscriber Quick Ref. Guide ....                 | 550.8102           |
| AXXESSORY Talk Voice Mail System Admin. Q.R. Guide ....                    | 550.8104           |
| AXXESSORY Talk Voice Mail Documentation Package .....                      | 550.9001           |

FIGURE 8-2. RECOMMENDED SPARE PARTS

| <u>DESCRIPTION</u>                                      | <u>QUANTITY</u> | <u>PART NO.</u> |
|---------------------------------------------------------|-----------------|-----------------|
| CPU Card .....                                          | 2               | 550.2000        |
| MEM Card .....                                          | 2               | 550.2100        |
| CPU020/PCM-D Card .....                                 | 2               | 550.9003        |
| Options Card .....                                      | 2               | 550.2600        |
| Digital Keypad Card — 8-Port .....                      | 2               | 550.2200        |
| Digital Keypad Card — 16-Port .....                     | 2               | 550.2250        |
| Single-Line Adapter .....                               | 1               | 550.2500        |
| Single-Line Card .....                                  | 2               | 550.2101        |
| Lamp Option Card .....                                  | 1               | 550.2102        |
| Loop Start Card .....                                   | 1-2             | 550.2300        |
| LSC Daughter Card .....                                 | 1-2             | 550.2301        |
| T1 Card .....                                           | 2               | 550.2730        |
| Network Clock Card .....                                | 1               | 550.2732        |
| Digital Signal Processor (DSP) Chip .....               | 5               | 834.2328        |
| Original Power Supply Unit .....                        | 1               | 550.0102        |
| New-Style Power Supply Unit — 6 Amp .....               | 1               | 550.0104        |
| New-Style Power Supply Unit — 9 Amp .....               | 1               | 550.0110        |
| Basic Digital Keypad (or Terminal) .....                | 5-10            | 520.4000        |
| Standard Digital Keypad (or Terminal) .....             | 5-10            | 550.4300        |
| Executive Digital Keypad (or Terminal) .....            | 5-10            | 550.4100        |
| Digital DSS/BLF Unit .....                              | 2               | 550.4200        |
| Keypad PC Data Port Module .....                        | 2               | 550.3014        |
| Keypad Modem Data Port Module .....                     | 2               | 550.3015        |
| Keypad LCD Kit (for non-display Standard Keypads) ..... | 5               | 828.1211        |
| AC Transformer (for PCDPMs, MDPMs, & DSS/BLF Units) ... | 3               | 806.1045        |
| AC Transformer (for SLAs) .....                         | 3               | 806.1046        |

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## DEFAULT FEATURE CODES

### Outside Trunk Access Codes:

|                                                   |      |
|---------------------------------------------------|------|
| Select Trunk Group 1-103 . 9201-9299, 93000-93003 |      |
| Automatic Route Selection (ARS) . . . . .         | 9200 |
| Emergency Call . . . . .                          | 911  |
| Outgoing Call . . . . .                           | 8    |

### Extension Numbers:

|                              |           |
|------------------------------|-----------|
| Stations . . . . .           | 1000-1255 |
| Hunt Groups . . . . .        | 2000-2074 |
| Attendant . . . . .          | 0         |
| External Page Port . . . . . | 91000     |

### Administrator Feature Codes:

|                                     |      |
|-------------------------------------|------|
| Clear System Alarm . . . . .        | 9850 |
| Diagnostics Mode . . . . .          | 9900 |
| Freeze System History* . . . . .    | 9993 |
| Unfreeze System History* . . . . .  | 9998 |
| Night Ring On/Off . . . . .         | 9860 |
| Print Message Log* . . . . .        | 9975 |
| Print Reset Log* . . . . .          | 9972 |
| Program Station Data . . . . .      | 9802 |
| Program System Speed Dial . . . . . | 9801 |
| Seize Device . . . . .              | 9973 |
| Set Time/Date . . . . .             | 9800 |

\* The Diagnostics Mode feature code (9900) must be entered at the administrator's station to enable system diagnostic mode before these feature codes can be used.

### Station Feature Codes:

|                                               |     |
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| ACD Agent Login . . . . .                     | 326 |
| ACD Agent Logout . . . . .                    | 327 |
| ACD Agent Login/Logout Toggle . . . . .       | 328 |
| ACD Agent Wrap-Up Terminate . . . . .         | 329 |
| Account Code — All Following Calls . . . . .  | 391 |
| Account Code — Optional . . . . .             | 390 |
| Answer (Ringing Call) . . . . .               | 351 |
| Automatic CO Access On/Off . . . . .          | 360 |
| Automatic Intercom Access On/Off . . . . .    | 361 |
| Automatic Trunk Answer . . . . .              | 350 |
| Background Music On/Off . . . . .             | 313 |
| Call Forward — All Calls . . . . .            | 355 |
| Call Forward — If Busy . . . . .              | 357 |
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