

Graybar Inter-Phone Systems System No. 1

Selective Ringing—Selective Talking

For use in business organizations, industries, stores, institutions, etc., where frequently, more than one conversation will take place at the same time, and where instantaneous connections without loss of time are necessary.

By pressing a button each station can selectively ring and talk with any other station without disturbing the rest of the stations in the system and as many separate conversations can be carried on simultaneously as there are pairs of Inter-Phones. For example, in a system of six Inter-Phones, three conversations can be carried on at the same time.

For each station in the system, one push button key is required in each Inter-Phone.

Available in standard sizes of 6, 12, 16, 20, and 24 buttons; and in Nos. 1324 and 1355 Wall Type Inter-Phones, No. 6016 Desk Sets, and No. 6016HR Hand Sets.

Cable

For connections between the various stations, cable specially designed for Inter-Phones can be supplied. This cable includes the necessary number of wire conductors (two pairs for battery leads and one pair for each station in the system) and is furnished in three different types to suit various locations and conditions:

No. of Stations	6	12	16	20	24
No., Fireproof Braid	134B	141B	157B	158B	136B
No., Brown Cotton Braid	155B	156B			
No., Lead Covered	134B	141B	157B	158B	136B

These cables are listed in detail elsewhere.

Cable Terminals

A cable terminal should be used wherever a junction is to be made between cables. For example: Where an outside lead-covered cable is connected to an interior cable, or wherever a branch is taken off from the main cable. In cases where the cable can be run direct to the Inter-Phone, no cable terminal is necessary. The number of cable terminals required should be determined by the installer. For 6 and 12-button systems use the No. 19A cable terminals. For 16, 20 and 24-button systems use the No. 19B cable terminals.

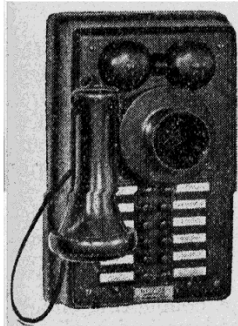
Batteries

Not more than 12 dry cells will be necessary for operating the system. (Five cells for the talking circuit; 4 to 7 cells for the ringing circuit, depending upon length of line.)

A Recti-Filter may be used for battery supply.

No. 1324 Type Wall Inter-Phones

Surface Mounting



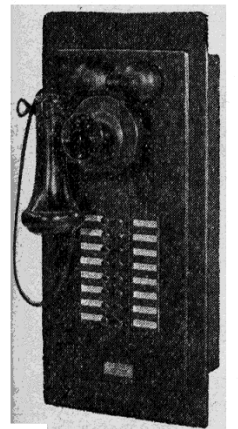
An all metal set having a hinged face plate, movable transmitter and hand receiver. The face being hinged, makes it possible to easily inspect all connections and apparatus without disturbing the installation.

Black with nickel trimmings.

Code No.	No. of Buttons	Height Inches	Width Inches	Depth Inches
1324C-6	6	10	6 ³ / ₈	3
1324C-12	12	10	6 ³ / ₈	3
1324C-16	16	14 ⁵ / ₁₆	7 ¹ / ₈	3
1324C-20	20	14 ⁵ / ₁₆	7 ¹ / ₈	3
1324C-24	24	14 ⁵ / ₁₆	7 ¹ / ₈	3

No. 1355 Type Wall Inter-Phones

Flush Mounting



A flush mounting set having a steel face plate on which is mounted all of the talking and signalling apparatus and a sheet steel outlet box arranged for 3/4-inch conduit. The outlet box can be separated from the set and built into the wall during the construction of the building.

The face plate is hinged at the bottom, making all terminals easily accessible for installation or inspection.

Dull black with nickel trimmings.

Code No.	No. of Buttons	Height Inches	Width Inches	Depth Inches
1355C-16	16	14 ¹ / ₂	6 ⁷ / ₈	3 ³ / ₈
1355C-20	20	14 ¹ / ₂	6 ⁷ / ₈	3 ³ / ₈
1355C-24	24	14 ¹ / ₂	6 ⁷ / ₈	3 ³ / ₈

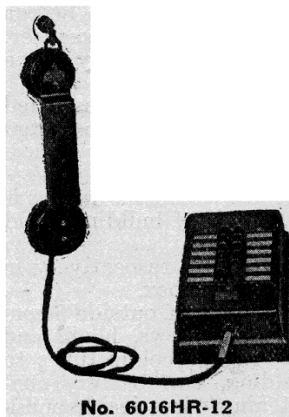
Graybar Inter-Phones For System No. 1

No. 6016 Type Desk Set

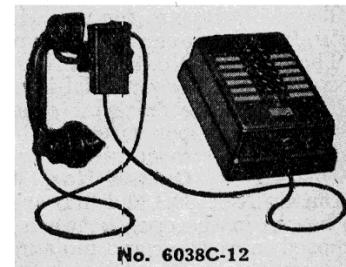
Code No.	No. of Buttons	Desk Stand	Cord Feet
6016D-6	6	1140BE	5 ¹ / ₂
6016D-12	12	1140BE	5 ¹ / ₂
6016D-16	16	1140BE	5 ¹ / ₂
6016D-20	20	1140BE	5 ¹ / ₂
6016D-24	24	1140BE	5 ¹ / ₂



Hand Sets



No. 6016HR-12



No. 6038C-12

The hand set is made of black molded Bakelite.

The switch-hook box can be installed on the side of the desk, on the wall, or any vertical surface.

No. 6016HR TYPE Hand Set			No. 6038C TYPE Hand Set & Switch-Hook Box		
Code No.	Hand Set	Hook	Code No.	Box	No. of Buttons
6016HR-6	1003R	141A	6038C-6	1038C	6
6016HR-12	1003R	141A	6038C-12	1038C	12
6016HR-16	1003R	141A	6038C-16	1038C	16
6016HR-20	1003R	141A	6038C-20	1038C	20
6016HR-24	1003R	141A	6038C-24	1038C	24

No. 6016CH Cradle Type Hand Sets



The cradle or mounting for supporting this hand set consists of a metal base finished in black.

Code No.	No. of Buttons	Hand Set and Cradle	Cord Feet
6016CH-6	6	1016CH	6
6016CH-12	12	1016CH	6
6016CH-16	16	1016CH	6
6016CH-20	20	1016CH	6
6016CH-24	24	1016CH	6

Key Box

The key box for these Inter-Phones is finished in dull black. Cable entrances are provided at bottom and ends of the box.

No.	328C-6	328C-12	328C-16	328C-20	328C-24
Width	5	5	5 ³ / ₄	5 ³ / ₄	5 ³ / ₄
Length	7 ¹ / ₂	7 ¹ / ₂	10 ³ / ₄	10 ³ / ₄	10 ³ / ₄
Depth	2 ⁵ / ₈	2 ⁵ / ₈	2 ⁵ / ₈	2 ⁵ / ₈	2 ⁵ / ₈
Button Cap.	6	12	16	20	24

Stranded Flexible Cables

Usually connected between key box and cable terminal. Furnished with silk-covered, mercerized-covered, and common cotton braid. If key box is mounted in stationary position, standard lead or braided Inter-Phone cable should be used.

Cord Code No.	416	428	436	444	452
No. Single Conductors	16	28	36	44	52
Used with Button Capacity	6	12	16	20	24

Graybar Inter-Phone Outfits

Outfit No. 17

This outfit consists of two No. 1003 type hand sets with all material required to install a simple intercommunicating system between two points not over 80 feet apart, and where the wire will be wholly indoors and not exposed to weather conditions or moisture. The material, in addition to the hand sets, consists of two connecting blocks with mounting screws, 80 feet of insulated twisted pair copper wire, 60 insulated nails for fastening wire, two hooks for holding hand sets, two bells, two battery connectors and illustrated installing instructions.

Outfits Nos. 30 and 31

Outfit No. 30 includes two surface wall No. 2527C-1 Inter-Phones and one No. 51H retardation coil in one box, but no installing or wiring material.

Outfit No. 31 includes two hand set Type No. 6043P Inter-Phones and No. 51H retardation coil in one box, but no installing or wiring material.

Outfits Nos. 30A and 31A

These outfits are for use where the wiring is to be run entirely under cover and not exposed to moisture or weather.

They include No. 30 and No. 31 Outfit respectively in one box and installing material in another box.

The installing material consists of 75 feet of insulated 3-conductor copper wire, two battery connectors, insulated nails, and illustrated installing instructions.

Outfits Nos. 30B and 31B

Outfits Nos. 30B and 31B are for use where the wiring is to be run in the open between or outside of buildings, and exposed to weather and moisture.

They include No. 30 and No. 31 Outfits respectively in one box, and installing material in another box.

The wiring material consists of 150 feet of outside 3-conductor copper wire, two brackets with screws, hooks and knobs to attach wires to building, two porcelain tubes to insulate wires when entering building, two battery connectors, 25 insulated nails for fastening wires inside building, and illustrated installing instructions.

Graybar Inter-Phone Systems

System No. 11

Selective Ringing—Common Talking

For use where conversations can be limited to one at a time. Each Inter-Phone is equipped with a number of push buttons for calling each other station in the system.

The wall type Inter-Phones can be furnished in capacities of 2, 3, 4, 6 and 8 buttons, accommodating 3, 4, 5, 7 and 9 stations respectively in a system. The desk and hand set Inter-Phones are furnished in capacities of 4 and 8 buttons, accommodating 5 and 9 stations respectively in a system.

No. of Buttons	WALL TYPE		Cradle Set	Hand Set
	Surface	Flush		
2	2527C-2	2539C-2	.....	.....
3	2527C-3	2539C-3	.....	.....
4	2527C-4	2539C-4	6044C-4	6034AZ or BG
6	2527C-6	2539C-6	.....	.....
8	2527C-8	2539C-8	6044C-8	6034BB or BH

NOTE.—Sets described in detail on other pages.

Retardation Coil

A No. 51H retardation coil must be ordered separately for installation near the battery of each system.

Cables

Cable especially designed for connection between the various stations can be furnished. This cable includes three common wires and one individual wire for each station.

No. of Stations.....	3 & 4	6 & 8
Code No., with Fireproof Braid.....	161B	162B
Code No., with Brown Cotton Braid.....	142B	.....
Code No., with Lead Covering.....	161B	162B

Connecting Blocks

Where a junction is to be made between cables, or wherever a branch is taken off the main cable, a connecting block should be used. In cases where the cable can be run direct to the Inter-Phone, the connecting block is not required.

Batteries

Five dry cells are required for the operation of this system, when the distance between the two stations farthest apart is 750 feet or less, and Inter-Phone cable, listed above, is used. On lines of greater length it is recommended that instead of increasing the number of battery cells to more than 5, larger wire be used. A Recti-Filter can be furnished for the battery supply in place of dry cells.

Graybar Inter-Phone Systems

System No. 12

Master Station—Common Talking

Consists of one centrally located "Master Station" Inter-Phone to which are connected other "Outlying Station" Inter-Phones.

The Master Station Inter-Phone is equipped with a number of push buttons; one for each outlying station in the system.

Outlying stations are equipped with one button for ringing the master station.

Only one conversation can be carried on at a time.

Capacity, one Master Station and from 2 to 8 outlying stations.

Master Station

No. of Buttons	Metal Wall Surface	Type Inter-Phones Flush	Cradle Set Inter-Phones	Hand Set Inter-Phones
2	2527C-2	2539C-2	.....	.....
3	2527C-3	2539C-3	.....	.....
4	2527C-4	2539C-4	6044C-4	6034AZ or BG
6	2527C-6	2539C-6	.....	.....
8	2527C-8	2539C-8	6044C-8	6034BB or BH

Outlying Stations

1	2527C-1	2539C-1	6044C-1	6042K
.	.....	.....	.....	*6042E
.	.....	.....	.....	6043E

*No. 6042E is same as No. 6242K, but without face plate and wall box. For details see listing elsewhere.

Accessories

Retardation Coil

A No. 51H retardation coil must be ordered separately with each master station Inter-Phone and installed near the battery of the system.

Wiring

For connections between the outlying stations and the master station either cable or insulated wires can be used, depending largely upon the layout of the system. Three common wires are required throughout the system, and in addition, one individual wire from the master to each outlying station. Where there is a long run of a large number of wires, it will be found economical to use cable, and at all distributing and junction points, to install connecting blocks. From these connecting blocks separate wires can be run to the Inter-Phones.

The sizes of cable and the number of connecting blocks required should be determined in accordance with the installation instructions.

Cables and connecting blocks are described elsewhere.

Batteries

Five dry cells are required for the operation of this system when the distance between the master station and most distant outlying station is 750 feet or less and No. 22 A.W.G. wire (as in the case of Graybar cable) is used.

On lines of greater length it is recommended that instead of increasing the number of battery cells to more than five, larger wire be used. This should be determined in accordance with the installation instructions.

A Recti-Filter may be used in place of batteries.

NOTE.—Detailed information covering wiring diagrams, connection of wires and cables, connecting blocks, etc., can be found in our booklet, "Installing and Maintaining Inter-Phones," which will be furnished upon request.

Especially adapted for schools where the principal may call the teachers individually and the teachers can call the principal. Similar to the No. 12 system except that the master station includes an annunciator for identifying the calls from the outlying stations.

Only one conversation can be carried on at a time.

Capacity, one master station and 3 up to 20 or more outlying stations.

System No. 12A

The master station Inter-Phone includes a push button block having as many buttons as there are outlying stations, also one extra button for electrically resetting the annunciator drops.

Each outlying station Inter-Phone is equipped with a push button which signals the master station. This call will also be registered at the master station by the operation of the annunciator drop.

No. of Class-room Stations	Group Code No.	Master Station GROUP CODE NO. CONSISTS OF				
		*Push Button Block No.	Cradle Set No.	Cable Terminal No.	ANNUNCIATOR †Surface	CODE No. †Flush
8	8A	9030C	6044C-0	19A	403-8	409-8
10	10A	9032C	6044C-0	19A	403-10	409-10
12	12A	9034C	6044C-0	19A	403-12	409-12
14	14A	9036C	6044C-0	19A	403-14	409-14
16	16A	9038C	6044C-0	19A	403-16	409-16
18	18A	9040C	6044C-0	19A	403-18	409-18

No. of Buttons	METAL WALL TYPE		HAND SET TYPE		
	Surface	Flush	Cradle	Surface	Flush
1	2527C-1	2539C-1	6044C-1	6043E	6042K ‡6042E

System No. 12AC

System No. 12AC differs from System No. 12A in that a ring-all button is furnished in the push button block at the principal's station. This button will ring all stations simultaneously for school period purposes and for fire drills.

No. of Class-room Stations	Group Code No.	Master Station GROUP CODE NO. CONSISTS OF				
		*Push Button Block No.	Cradle Set No.	Cable Terminal No.	ANNUNCIATOR †Surface	CODE No. †Flush
10	10AC	9072C	6044C-0	19A	403C-10	409C-10
12	12AC	9074C	6044C-0	19A	403C-12	409C-12
14	14AC	9076C	6044C-0	19B	403C-14	409C-14
16	16AC	9078C	6044C-0	19B	403C-16	409C-16
20	20AC	9082C	6044C-0	19B	403C-20	409C-20
24	24AC	9086C	6044C-0	19B	403C-24	409C-24
26	26AC	9090C	6044C-0	2-19A	403C-26	409C-26
30	30AC	9094C	6044C-0	1-19A, 1-19B	403C-30	409C-30

No. of Buttons	METAL WALL TYPE		HAND SETS	
	Surface	Flush	Surface	Flush
1	2527C-1	2539C-1	6044B-1	6043P 6042AE *6042AF

Wall type sets only, equipped with 24-volt ringers.
 *The push-button block includes a 6-foot connecting cord.
 †No. 403 Type furnished unless otherwise specified.
 ‡No. 6042E is same as No. 6042K, but without face plate and wall box.

Accessories

Retardation Coil

A No. 51H retardation coil must be ordered separately for installation near the battery of each system.

Wiring and Battery Requirements

Two wires common to all stations in the system and two individual wires for each outlying station.

System No. 12A requires a battery of five dry cells, connected in series, to furnish current for ringing and talking.

System No. 12AC requires a battery of dry cells or storage batteries to total 24 volts may be used for the ringing and talking battery supply.

Provides for communication between a master station annunciator and a number of outlying stations.

The master annunciator is equipped with a hand set Inter-Phone, and can be obtained with or without push buttons.

System No. 12B—1-Way Ringing

The annunciator is without push buttons, enabling the outlying stations to ring the master station but the master station cannot ring the outlying stations.

System No. 12C—2-Way Ringing

The annunciator is equipped with push buttons, one for each outlying station, enabling the outlying stations to ring the master station and the master station to ring the outlying stations individually.

Master Station Annunciators

CODE Nos.		No. of Drops	CODE Nos.		No. of Drops
For No. 12B	For No. 12C		For No. 12B	For No. 12C	
1204B	1204C	4	1216B	1216C	16
1206B	1206C	6	1220B	1220C	20
1208B	1208C	8	1224B	1224C	24
1210B	1210C	10	1230B	1230C	30
1212B	1212C	12	.....	.....	..

A No. 1003D Hand Set must be ordered separately with each annunciator. This set is equipped with a 3-foot cord, and can be hung on the hook on the side of the annunciator.

Accessories

Wiring

For System No. 12B one wire, common to all stations in the system, and in addition, one individual wire from the master station to each outlying station.

For System No. 12C one wire, common to all stations in the systems, also two individual wires from the master station to each outlying station.

Batteries

Only one battery is required for the operation of the system. This should consist of three or four dry cells, where the distance between the master station and the farthest outlying station is 250 feet or less, and No. 22 A.W.G. copper wire is used. On lines of greater length it is recommended that instead of increasing the number of dry cells to more than four, larger wires be used.

A Recti-Filter may be used in place of batteries.

System No. 14

2-Station Private Line

For use where only two stations are required and where the sets are distantly located from each other.

Either station can ring the other.

No. of Buttons	METAL WALL TYPE		Desk Sets	HAND SETS	
	Surface	Flush		Surface	Flush
1	2527C-1	2539C-1	6044B-1	6043P 6042AE *6042AF	

*No. 6042AF is same as No. 6042AE but without face plate and wall box.

Wiring and Battery Requirements

Only two wires are used for connecting the Inter-Phones.

A battery of three dry cells is required at each station to furnish current for talking and ringing if the length of line is less than 750 feet. If the length of the line is increased, additional dry cells are required at each station to insure satisfactory ringing. The following list indicates the additional dry cells required at each station:

Length of Line Between Stations	ADDITIONAL NUMBER OF CELLS FOR EACH STATION A.W.G. COPPER WIRE			
	No. 12	No. 14	No. 16	No. 18
750 to 1000 ft.	1	1	1	2
1000 to 1500 ft.	1	1	1	3
1500 to 2000 ft.	1	2	3	..
3000 to 4000 ft.	2	3	..	..
4000 to 5000 ft.	2	..	..	..
5000 to 6000 ft.	3	..	..	..

Graybar Inter-Phone Systems

System No. 15

Code Ringing—Common Talking

A simple and inexpensive system for small residences, warehouses, or stores where only a few stations are required. Only one conversation can be carried on at a time.

Each station is equipped with one push button which rings the bells at all the other stations.

The various stations are called by signalling each one with a different code ring; for instance, two rings for Station No. 2, three rings for Station No. 3, etc. If more than 6 stations are in service, signalling code mistakes are likely to occur. System No. 11 is recommended where the initial installation comprises more than 4 or 6 stations.

No. of Buttons	METAL WALL TYPE		Desk Sets	HAND SETS	
	Surface	Flush		Surface	Flush
1	2527C-1	2539C-1	6044D-1	6043CD	6042CD

Accessories

A No. 51H retardation coil must be ordered separately and installed near the battery of the system.

Four wires are required for connecting the Inter-Phones.

Five dry cells are required for the operation when the length of the line is 750 feet or less, and not more than four stations are to be used, connected by Nos. 20 or 22 A.W.G. copper wire. If more than four Inter-Phones are required or if the line is longer than 750 feet, larger wires should be used in accordance with installation instructions.

Master Annunciator System No. 18C

Non-Interfering

Provides for communication between a central or master station and a larger number of outlying stations, as follows:

The master station can selectively ring and talk with any of the outlying stations and the outlying stations can call the master station annunciator.

Communication can be arranged between any two outlying stations through the medium of one or two connecting cords at the master station.

No connection can be made between this system and a public telephone system.

An annunciator supervisory feature is provided to indicate the termination of a conversation between the outlying stations. Where a large number of connections are required between outlying stations, the lamp signal, Private Exchange Switchboard for surface or flush mounting, is recommended.

Master Station Annunciators

Annunciators regularly equipped with answering cord only. If inter-communication between outlying stations is desired, one or two pairs of connecting cords may be ordered.

A No. 1003K Hand Set must be ordered separately with each annunciator.

Code No.	Drops	Ht.	Wdth.	Dpth.	Code No.	Drops	Ht.	Wdth.	Dpth.
No. & Jacks	In.	In.	In.	In.	No. & Jacks	In.	In.	In.	In.
1810-C	10	15 ¹ / ₈	11 ¹ / ₄	5 ¹ / ₄	1849-C	49	23 ³ / ₄	23 ¹ / ₄	5 ¹ / ₄
1814-C	14	15 ¹ / ₈	14 ¹ / ₄	5 ¹ / ₄	1856-C	56	23 ³ / ₄	24 ³ / ₄	5 ¹ / ₄
1816-C	16	15 ¹ / ₈	17 ¹ / ₄	5 ¹ / ₄	1864-C	64	28 ¹ / ₈	23 ¹ / ₄	5 ¹ / ₄
1820-C	20	15 ¹ / ₈	18 ³ / ₄	5 ¹ / ₄	1872-C	72	28 ¹ / ₈	26 ¹ / ₄	5 ¹ / ₄
1825-C	25	19 ³ / ₈	17 ¹ / ₄	5 ¹ / ₄	1881-C	81	32 ³ / ₈	24 ³ / ₄	5 ¹ / ₄
1830-C	30	19 ³ / ₈	18 ³ / ₄	5 ¹ / ₄	1890-C	90	32 ³ / ₈	26 ¹ / ₄	5 ¹ / ₄
1836-C	36	19 ³ / ₈	21 ³ / ₄	5 ¹ / ₄	1900-C	100	32 ³ / ₈	29 ¹ / ₄	5 ¹ / ₄
1842-C	42	23 ³ / ₄	20 ¹ / ₄	5 ¹ / ₄					

Outlying Stations

No. of Buttons	METAL WALL TYPE		HAND SETS	
	Surface	Flush	Surface	Flush
1	2527C-1	2539C-1	6043D	6042D
				*6042M

*Same as No. 6042D, but with face plate and wall box.

Accessories

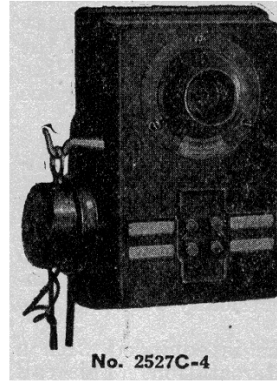
One wire, common to all stations in the system is required, and, in addition, two individual wires between the master and each outlying station. Where there is a long run of a large number of wires, it will be found economical to use cable and install cable terminals or connecting blocks at all distributing and junction points. From there, the installation can be continued by means of separate wires to the various outlying stations.

Five or more dry cells are required for operating the system. A Recti-Filter may be used in place of batteries.

Graybar Inter-Phones

Description of Metal Wall Type

No. 2527C, Surface Mounting



No. 2527C-4

The No. 2527C Type Inter-Phone has a surface mounting metal housing which contains all of the talking and signalling apparatus, also a metal backboard, which is furnished for mounting the set to the wall.

The housing of the set is of rugged construction, being formed of sheet steel and is equipped with hinge hooks which match up with slots in the base of the metal backboard. This arrangement permits fastening the backboard in place on the wall and then mounting the housing unit to it.

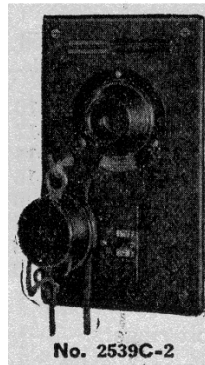
The hinge arrangement of this set enables the installer to swing down the housing unit from the backboard for making connections to the terminals; also to permit interior inspection of the set at any time after its installation.

The metal backboard is designed to permit the entrance of wires or cabling from either the top, bottom or center of the set; also, a metal guide ring is located near the cable entrance at the base of the backboard so that the connecting wires may be looped through this ring to hold them in place and provide a proper bending point when the housing is swung forward.

Durable dull black enamel finish with nickel trimmings.

Code No.	No. of Buttons	For Systems	DIMEN. HOUSING, INCHES		
			Height	Width	Depth
2527C-0	0	20 and 21	7 ¹ / ₂	5	2 ⁵ / ₈
2527C-1	1	{ 12, 14, 15, 18, 20 and 21 }	7 ¹ / ₂	5	2 ⁵ / ₈
2527C-2	2	20 and 21	7 ¹ / ₂	5	2 ⁵ / ₈
2527C-3	3	11, 12, 20 and 21	7 ¹ / ₂	5	2 ⁵ / ₈
2527C-4	4	11, 12, 20 and 21	7 ¹ / ₂	5	2 ⁵ / ₈
2527C-6	6	11, 12, 20 and 21	7 ¹ / ₂	5	2 ⁵ / ₈
2527C-8	8	11, 12, 20 and 21	7 ¹ / ₂	5	2 ⁵ / ₈

No. 2539C, Flush Mounting



No. 2539C-2

The No. 2539C Type Inter-Phone has a flush steel face plate on which is mounted all of the talking and signalling apparatus, also a metal outlet box which is furnished for mounting the set in the wall.

The outlet box is of unique design in that metal aligning strips are fastened at the top and bottom front of the box so as to properly align the set after the face plate unit is fastened to the outlet box (in case the outlet box is installed out of plumb). It is equipped with adjustable ears for mounting it in the wall, the same as are furnished on standard sectional outlet boxes. Knockouts are provided

at both the top and bottom for the entrance of 1/2-inch conduit or connecting wires.

The face plate support for installer is an added feature of this set, consisting of a wire hook mounted on a small card with printed instructions for its use. This hook is for temporarily supporting the Inter-Phone face plate, of flush type sets, during installation, so that the wires may be readily connected to the terminals by the installer.

Durable dull black enamel finish with nickel trimmings.

Code No.	No. of Buttons	For Systems	DIMENSIONS, INCHES					
			FACE PLATE		OUTLET BOX			
			Height	Width	Height	Width	Depth	
2539C-0	0	20	9	5 ⁵ / ₁₆	7 ¹ / ₂	4	2 ⁵ / ₁₆	
2539C-1	1	{ 12, 14, 15, 18 and 20 }	9	5 ⁵ / ₁₆	7 ¹ / ₂	4	2 ⁵ / ₁₆	
2539C-2	2	20	9	5 ⁵ / ₁₆	7 ¹ / ₂	4	2 ⁵ / ₁₆	
2539C-3	3	11, 12, and 20	9	5 ⁵ / ₁₆	7 ¹ / ₂	4	2 ⁵ / ₁₆	
2539C-4	4	11 and 12	9	5 ⁵ / ₁₆	7 ¹ / ₂	4	2 ⁵ / ₁₆	
2539C-6	6	11 and 12	9	5 ⁵ / ₁₆	7 ¹ / ₂	4	2 ⁵ / ₁₆	
2539C-8	8	11 and 12	9	5 ⁵ / ₁₆	7 ¹ / ₂	4	2 ⁵ / ₁₆	

Graybar Inter-Phones

Description of Hand Sets

Selective Ringing—Common Talking

No. 6038 Type



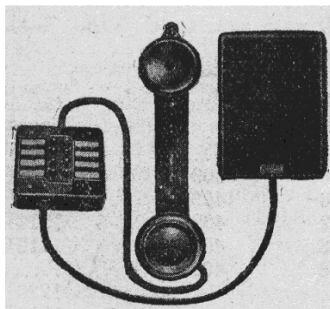
This hand set unit was designed for installation at the side of a desk, on the wall, or any vertical surface. The set may be installed at one end, side or in the alcove of the desk; also recommended for residential purposes for mounting at the bedside, either on the bed or on the wall within reach of the bed.

Made of Bakelite, reinforced.

The switch-hook box contains a switch-hook unit for holding the hand set in place. This hook operates on the same principle as the standard telephone hook. A 4-foot cord connects the hand set to the switch-hook box.

Code No.	No. of Buttons	COMPOSED OF				For Use In System
		Hand Set & Switch Box	Connecting Block	Push Button Block	Apparatus Box	
6038A	0	1038A	2 No. 11A	.....	.....	1801P.B.X.
6038B-1	1	1038B-1	12E	.....	.....	14 and 15C
6038C-1	1	1038C-1	2 No. 11A	.....	.....	12
6038C-4	4	1038CB	.....	104AC	35B	11 and 12
6038C-8	8	1038CB	.....	108AC	35B	11 and 12

No. 6034 Type



Code No.	No. of Buttons	COMPOSED OF				Bell No.	For Use In System
		HAND SET Code No.	Cord Ft.	Push Button Block	Apparatus Box		
6034BG	4	1003AD	6	104AC	35B	.....	11 & 12
6034AZ	4	1003AD	6	104AC	.....	8G 11B	11 & 12
6034BH	8	1003AD	6	108AC	35B	.....	11 & 12
6034RR	8	1003AD	6	108AC	.....	8H 11R	11 & 12

Graybar Inter-Phones

Description of Hand Sets

Selective Ringing—Common Talking

The Inter-Phone transmitter and receiver are a part of the hand set. A bar marked Press to Talk mounted in the hand set handle is held down by the natural position of the hand while talking. When not in use, the hand set can be hung on a hook or laid down in any position.

Finished in dull black.

No. 6043, Surface Mounting



Surface Mounting Apparatus Units (No. 383 Type) are equipped with an insulated base, black finished round metal cover and nickel hook.

Approximate size, 3¹¹/₁₆ inches in diameter by 1⁵/₁₆ inches deep.

Code No.	No. of Buttons	HAND SET Code No.	Cord Feet	Apparatus Box	For Use in System
6043E	1	1003J	3	383J	12 & 12A
6043D	1	1003E	3	383J	12B & 18C
6043P	1	1003AB	3	383J	14 & 15C
6043R	0	1003AC	3	383H	*1801P.B.X.

*For use in systems A and B only of 1801 P.B.X.

No. 6042, Flush Mounting



Flush Mounting Apparatus Boxes (No. 382 Type) are intended to be set in the wall and are equipped with a brush brass finished face plate. These boxes consist of three parts—a Gem A Union sectional switchbox, an apparatus unit, and a face plate. The face plate is 4¹/₂x2³/₄ inches; the wall box, 2x3x3 inches deep.

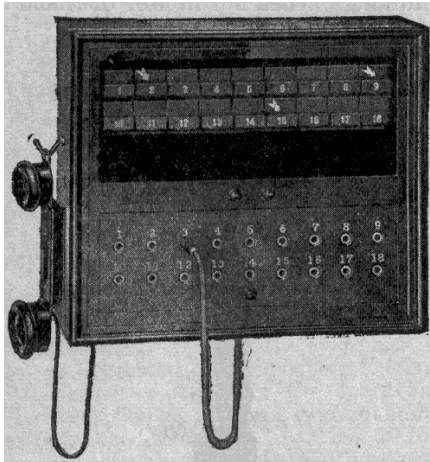
An important point to be observed is that wall box and face plate are the same as those used in electric light wiring for push button switches. Sets furnished either complete, including wall box and face plate, or minus these parts.

Code No.	No. of Buttons	HAND SET		APPARATUS (FLUSH TYPE)			For Systems
		Code No.	Cord Ft.	Code No.	Switchbox	Face Plate No.	
6042E	1	*1003G	3	382E	.....	.....	12 & 12A
6042K	1	*1003G	3	382EB	Gem A	12007	12 & 12A
6042D	1	1003K	3	382J	.....	.....	12B & 18C
6042M	1	1003K	3	382JB	Gem A	12007	12B & 18C
6042AE	1	1003AA	3	382JB	.....	.....	14 & 15C
6042AF	1	1003AA	3	382J	Gem A	12007	14 & 15C

Graybar Inter-Phones

Description of Annunciators

For Systems 18C, 20J, and 21J



For System 18C

No. of Drops	System 18C List No.	Systems 20J & 21J List No.	No. of Drops	System 18C List No.	Systems 20J & 21J List No.
10	1810C	2010	49	1849C	2049
14	1814C	....	56	1856C	2056
16	1816C	2016	64	1864C	2064
20	1820C	2020	72	1872C	2072
25	1825C	2025	81	1881C	2081
30	1830C	2030	90	1890C	2090
36	1836C	2036	100	1900C	2100
42	1842C	2042	....	....	....

Larger sizes furnished on order.

No. 18C system annunciators equipped with answering cord only. No connecting cords furnished unless ordered separately.

For Systems 22D and 22G

No. of Drops	System 22D List No.	System 22G List No.	For No. of Sections	*No. of Calling Buttons	No. Jack and Door Buttons
2	2202D	2202G	2	12	2
3	2203D	2203G	3	18	3
4	2204D	2204G	4	24	4
5	2205D	2205G	5	30	5
6	2206D	2206G	6	36	6

*For System 22G only.

Larger sizes furnished on order.

For System 22J

No. of Drops	List No.	For No. of Sections	No. of Calling Buttons	No. Jack and Door Buttons
12	2202J	2	12	2
18	2203J	3	18	3
24	2204J	4	24	4
30	2205J	5	30	5
36	2206J	6	36	6

Larger sizes furnished on order.

Hand Set Inter-Phones for Annunciators

Annunciators do not include the hand sets which must be ordered separately.

Order No. 1003K hand set for Systems 18C, 20J, and 21J, and for Systems 22D, G, and J.

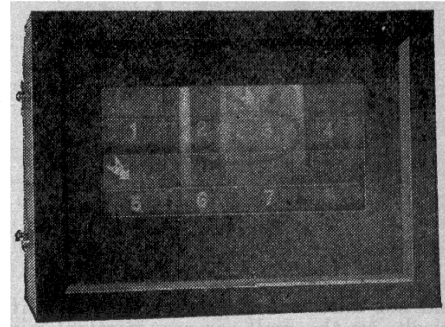
Graybar Inter-Phones

Description of Annunciators

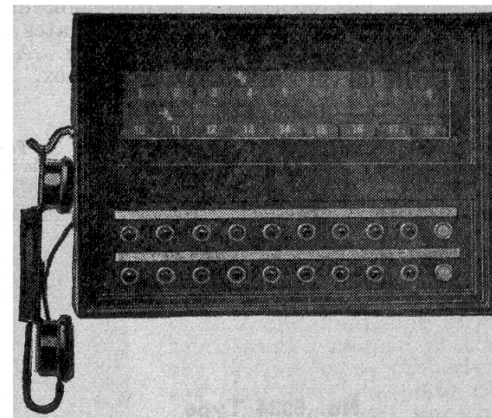
These annunciators are equipped with electric reset drops. The drop indication is a white arrow which points directly at the name card. When reset, the arrow drops out of view behind the name card.

The front of the annunciator protecting the drops is plain glass and as the arrow is between the glass and the dull black background, it can be easily seen from any angle.

For Systems Nos. 12A, 12B, and 12C



No. 403



No. 1204C to 1230C

No. of Drops	System 12A, Surface	List No. Flush	System 12B List No.	System 12C List No.
4	....	....	1204B	1204C
6	....	....	1206B	1206C
8	403- 8	409- 8	1208B	1208C
10	403-10	409-10	1210B	1210C
12	403-12	409-12	1212B	1212C
16	403-16	409-16	1216B	1216C
18	403-18	409-18	....	....
20	....	....	1220B	1220C
24	....	....	1224B	1224C
30	....	....	1230B	1230C

Larger sizes furnished on order.

Hand Set Inter-Phones for Annunciators

No. 1003D hand set must be ordered separately for Systems 12B and 12C annunciators.

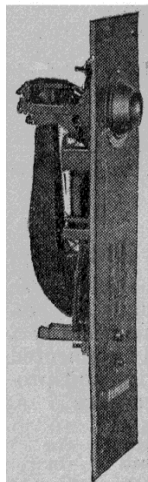
Graybar Apartment House Inter-Phones

System No. 21

Selective Ringing—Common Talking

No. 1524-E Loud Speaking Vestibule Set

Systems No. 21A, D, E, G, H, and J



No. 1524-E & F

Eliminates, as far as possible, all projecting and removable parts, such as the transmitter, receiver and switch-hook. Also safeguards theft of receiver and the cords.

The set consists of a flush mounting face plate. A push button is mounted at the bottom of the plate for talking and listening purposes.

Bronze brass finish.

Face plate, 5x16½ inches.

Equipped with a janitor call button.

To call one of the apartments from the vestibule, the push button (under the name of the party wanted) is pressed, which rings the bell of that apartment. The vestibule party next depresses the talking button at the bottom of the telephone set, and keeps it depressed while awaiting reply, and while conversing with the apartment party.

Only one conversation can be carried on at a time.

Battery Requirements

For the operation of each system three sets of dry batteries are required, each set to consist of three dry cells.

System No. 21A

Vestibule can call apartments; apartments can open door.

System No. 21D

Vestibule can call apartments and janitor; apartments can open door and call janitor.

System No. 21E

Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry.

System No. 21G

Vestibule can call apartments and janitor; apartments can open door and call janitor; and janitor can call apartments.

System No. 21H

Vestibule can call apartments and janitor; apartments can open door and call janitor and laundry; janitor and laundry can call apartments.

System No. 21J

Vestibule can call apartments and janitor; apartments can open door and call janitor; and janitor can call apartments.

No. 1524-F Loud Speaking Vestibule Set

Systems No. 21AR, DR, and GR

These systems operate as described for the No. 1524-E except a relay is furnished in the vestibule set for closing the talking circuit when a receiver is removed from the hook at a suite station. This replaces the talking button described for the No. 1524-E.

System No. 21AR

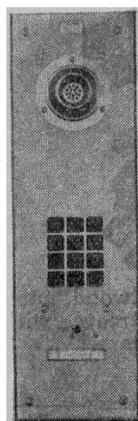
Vestibule can call apartments; apartments can open door.

System No. 21DR

Vestibule can call apartments and janitor; apartments can open door and call janitor.

System No. 21GR

Vestibule can call apartments and janitor; apartments can open door and call janitor; and janitor can call apartments.



No. 1524-F

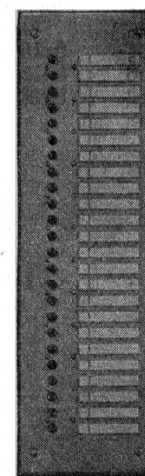
Graybar Apartment House Inter-Phones

System No. 20

Selective Ringing—Common Talking



No. 1520-R



No. 424-A
Push Button Plate

The No. 20 Inter-Phone Systems are designed to provide an inexpensive and reliable means of communication between vestibule, apartments, janitor's quarters, laundry, and tradesmen's entrance.

There are six combinations of the No. 20 System, differing from each other in the number of locations in the apartments which are to be connected for inter-communicating service.

Only one conversation can be carried on at a time.

No. 1520-R Vestibule Inter-Phones

With Armored Receiver Cord

The No. 1520-R Inter-Phone consists of a flush mounting brush brass finish face plate with a push-button for signalling the janitor.

Battery Requirements

For the operation of each system a battery of not more than five dry cells is required. These can be placed in the basement or any other accessible place.

System No. 20A

Vestibule can call apartments; apartments can open the door.

System No. 20D

Vestibule can call apartments and janitor; apartments can open the door and call the janitor.

System No. 20E

Vestibule can call apartments and janitor; apartments can open the door and call janitor and laundry.

System No. 20G

Vestibule can call apartments and janitor; apartments can open the door and call janitor; and janitor can call apartments.

System No. 20H

Vestibule can call apartments and janitor; apartments can open the door and call janitor and laundry; and janitor and laundry can call apartments.

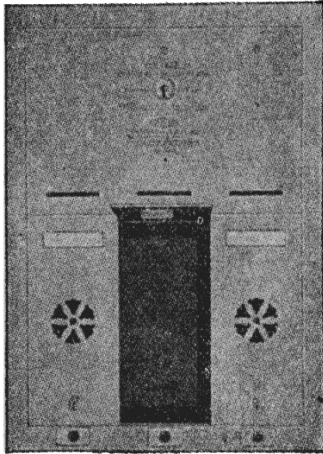
System No. 20J

Vestibule can call apartments and janitor; apartments can open the door and call janitor; and janitor can call apartments.

Graybar Vestibule Push-Button Plates

Designed to mount on either side of the vestibule Inter-Phone. A card holder is provided opposite each button. Push button plates can be obtained in two different sizes.

Code No.	No. of Buttons	Face Plate Inches	Code No.	No. of Buttons	Face Plate Inches
400A	..	5x16½	416A	16	5x16½
406A	6	5x16½	420A	20	5x16½
412A	12	5x16½	424A	24	5x16½



Graybar Vestibule Mail Boxes

Mail boxes may be obtained in groups of 3 to 8, being assembled complete in units and master-locked for mounting in single or double rows.

Finished in bronze, other finishes being considered special.

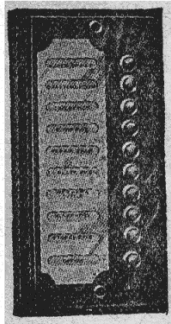
The overall dimensions of the individual letter boxes are 5 inches in width and 16½ inches in height.

Code, No., Double and Single Row	3003	3004	3005	3006	3007	3008
No. of Boxes, Single Row	3	4	5	6	7	8

Graybar Inter-Phone Accessories
For Use with Inter-Phone Systems Nos. 12A, 20G and 20H, Private Installations and Call Bell Service

Wood Push Button Blocks

These are regular desk type push button blocks in various button capacities for general signalling purposes such as call bell service and for use in connection with desk type Inter-Phones.



Regular Wood Base Without Cord Eyelet

Code No. Without Cord	Code Nos. With Cord	No. of Buttons	Code No. Without Cord	Code Nos. With Cord	No. of Buttons
9004	9004C	4	9012	9012C	12
9006	9006C	6	9016	9016C	16
9008	9008C	8	9020	9020C	20

Weighted Base With 1 Cord Eyelet

Code No. Without Cord	Code Nos. With Cord	No. of Buttons	Code No. Without Cord	Code Nos. With Cord	No. of Buttons
9024	9024C	4	9032	9032C	12
9026	9026C	6	9036	9036C	16
9028	9028C	8	9040	9040C	20

Metal Push Button Blocks

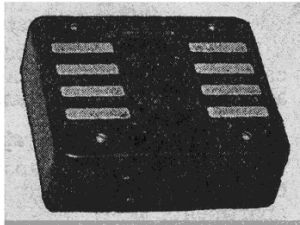
A black finished metal box, bushed for entrance of connecting cord or wires. Base plate has 2 punched holes for mounting if desired. Felt pads are attached to bottom of plate. Size of box, 3¾x4¼x1¾ in.

Without Cords

Code No.	No. of Buttons	Code No.	No. of Buttons
101A	1	104A	4
102A	2	106A	6
103A	3	108A	8

With 6-Foot Length Cords

104AC	4	108AC	8
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Graybar Inter-Phone Accessories
For Use with Inter-Phone Systems Nos. 12A, 20G and 20H, Private Installations and Call Bell Service

Continued

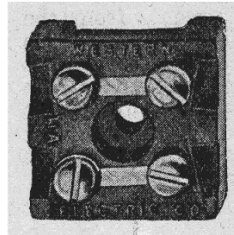
No. 8 Type Connecting Blocks



Consists of bridge type connectors, mounted on a black finished maple base, equipped with a screw eye for fastening stay cord.

Code No.	No. of Terminals	DIMENSIONS, INCHES		
		Length	Width	Depth
8G	8	5⅝	1⅜	5⅞
8H	12	8⅞	1⅜	5⅞

Nos. 11 and 12 Type Connecting Blocks



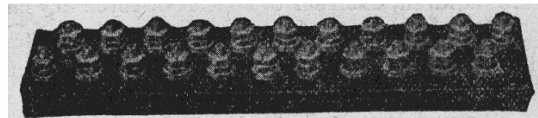
No. 11A

These consist of a composition base in which the screw terminals are embedded. Each terminal consists of 2 screw bushings electrically connected by means of a metal strip, and provided with screws and washers.

Code No.	No. of Terminals	Size In.	Code No.	No. of Terminals	Size In.
11A	2	1⅛x1⅝	12E	3	1⅛x1⅝
*11B	2	1⅛x1⅝	*12F	3	1⅛x1⅝

*Equipped with a cover.

No. 30 Type Connecting Blocks



These consist of brass studs embedded in a hard composition base. Studs fitted with 2 nuts (one a split check nut) and 2 washers.

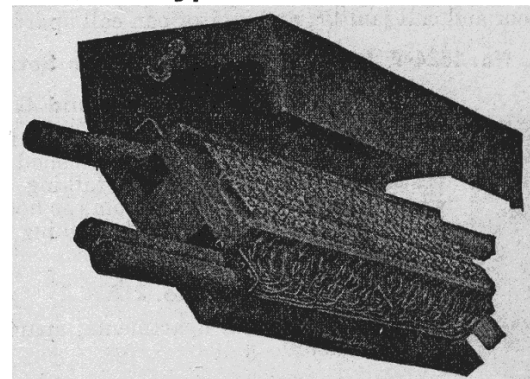
Code No.	Capacity in Pairs	DIMENSIONS, INCHES		
		Length	Height	Width
30A	6	4 ⅜	1⅜	1½
30B	11	7 ⅝	1⅜	1½
30C	16	10 ⅞	1⅜	1½
30D	26	16 ⅞	1⅜	1½

No. 141A Hand Set Hooks

A hook to be screwed into wall for holding No. 1003 type hand set.



No. 19 Type Cable Terminals

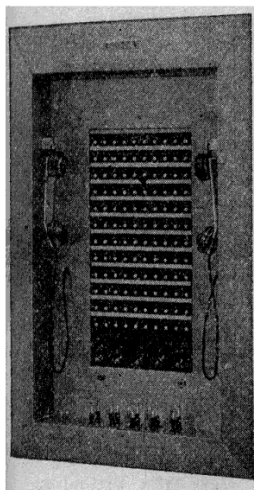


For interior distributing work. Made of hardwood, numbered and shellacked; with sheet steel cover, treated with Parker Rust-Proof Process, finished in black enamel.

Illustration shows 4 cables attached.

Code No.	Capacity in Pairs	DIMENSIONS, INCHES		
		Length	Width	Depth
19A	14	8	5⅞	2½
19B	26	14	5⅞	2½

Graybar Inter-Phone Switchboards Nos. 108 and 109 Flush Wall Type



Construction

The cabinet consists of birch woodwork fitted with either a wood or metal mat framing. The finish of the wood to be oak, mahogany, or walnut; the metal, bronze finished to match sample submitted.

The lamp and jack strips are mounted in face of the switchboard on a panel which is hinged, to give complete access to interior of the switchboard.

The recessed portion, including the front panel door and the plug shelf, is covered with black formica.

Cord Circuit Equipment

The cross-connecting cords are supervised through a single lamp circuit. These lamps are located over the key position. The single

cam type ringing and listening key for each cord position is located on the face of the board.

Lamp and Jack Equipment

The line lamp and jack equipment is mounted 10 per strip with associated designation strips.

Night Alarm

All calls at the switchboard may be received through a buzzer signal by the operation of a push button key.

Battery Switch

A push button control is provided for disconnecting the battery from the switchboard when required.

Operator's Telephone Set

An all metal hand set which hangs at the left-hand side of the board and is suspended by means of a hook support, and connected with a suitable cord length.

Cable Termination

Cable termination at the back of the switchboard will be at the selection of the customer. It is recommended that suitable cable lengths (up to 15 feet) be provided instead of a cable terminal which is usually fastened at the back of the board. These cable lengths consist of 20 pair size lead covered cables, one end terminating to the switchboard line lamp and jack connections and the other end tagged to enable the installer to make proper terminal connections to the cable terminal box. This method eliminates duplicate cable terminating points by omitting the terminal block at the switchboard.

The proper length of cable must be specified. If it is not possible to locate the cable terminal box within suitable distance of the switchboard, terminal strips will be furnished at back of board for terminating the lines.

Extension Telephone

An extension telephone consisting of an all metal hand set will be furnished when specified. This permits visitors or employees to communicate directly with an apartment without interfering with the regular operator's service. For this purpose a jack is provided at the right hand side of the board near the hand set which is supported on a hook, in the same manner as the operator's telephone.

Grilled Doors

The switchboard may be fully concealed from view by means of a fancy grilled door, made of bronze and finished to match the metal trim of any interior.

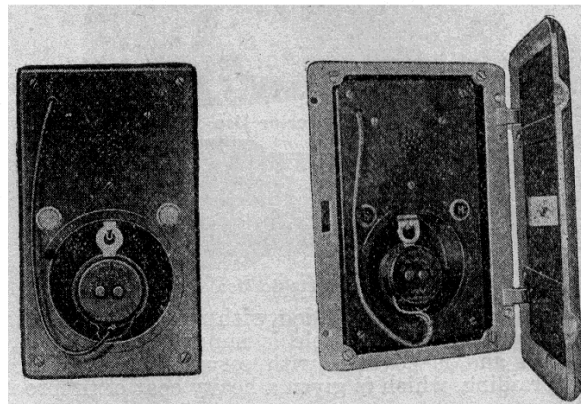
Lighting Fixtures

Lighting fixtures are not ordinarily provided for illuminating the face of the switchboard, however special fixtures mounted separately from the switchboard can be provided when the board is mounted in a dark location.

Further Information

Detailed information, covering types of switchboards, dimensions, wiring diagrams, accessories, etc., can be found in our Booklet GBT-86 which will be furnished upon request.

Graybar Inter-Phones Elevator Inter-Phone Service



No. D-1640

An elevator Inter-Phone system provides for communication between the elevator starter and each elevator cab, also between the elevator starter, the engineer, the superintendent, the machine room, etc., depending upon the total number of master and outlying stations to be installed.

The elevator cab Inter-Phone D-1640 is designed to mount in back of the Underwriters' building certificate frame, which in a number of cases is required by law. This frame is hinged to a metal outlet box so that the cab operator has access to the Inter-Phone through this door. The set is compact, is concealed, has no projecting parts, and the exterior frame may be designed to match the trim of the cab in which it is installed.

The D-1640 Inter-Phone Set does not include the outlet box and mounting frame as shown in the illustrations. The elevator company usually provides a suitable type of frame and outlet box in which to mount the Inter-Phone Set. In some cases the elevator companies may wish to install a standard surface wall or hand type of instrument, depending upon the local requirements.

The starter's station Inter-Phone is usually installed in the control panel with the other operator's signalling equipment. This Inter-Phone may consist of a wall or hand type, depending upon the space available for mounting the instrument. The regular cab call button on the starter's panel will also be used for signalling the cab Inter-Phone by means of a code ring. Extra buttons will be provided for signalling the other stations in the system.

Assembly drawings of Inter-Phones and wiring diagrams will be furnished upon request.

Elevator Cable

For Inter-Phone and Signalling Systems Control Cable with Steel Support

Size 16 A. W. G.

No. of Cond.	Wt., Lbs. per M	O.D. In.	No. of Cond.	Wt., Lbs. per M	O.D. In.	No. of Cond.	Wt., Lbs. per M	O.D. In.
2	94	.585	8	213	.683	20	449	1.000
3	108	.585	10	267	.795	22	484	1.018
4	125	.585	12	325	.896	24	537	1.067
5	138	.585	14	360	1.003	26	580	1.111
6	160	.588	16	448	1.102	28	630	1.193
7	187	.588	18	482	1.202	30	680	1.212

Annunciator Cable without Steel Support

Size 18 A. W. G.

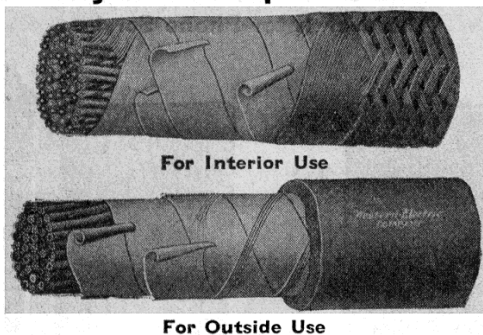
No. of Cond.	Wt., Lbs. per M	O.D. In.	No. of Cond.	Wt., Lbs. per M	O.D. In.	No. of Cond.	Wt., Lbs. per M	O.D. In.
2	25	.254	8	70	.386	20	151	.525
3	32	.260	10	87	.452	22	166	.550
4	39	.288	12	106	.452	24	181	.575
5	46	.324	14	109	.452	26	200	.616
6	52	.336	16	121	.475	28	208	.616
7	61	.336	18	134	.500	30	214	.616

Lighting Cable (Size 14 A.W.G.)

No. of Cond.	WITH STEEL SUPPORT		WITHOUT STEEL SUPPORT	
	Wt., Lbs. per M	O.D. In.	Wt., Lbs. per M	O.D. In.
2	127	.677	107	.528
3	155	.677	135	.560
4	183	.677	163	.614

Further data on elevator cable furnished upon request.

Graybar Inter-phone Cable



The conductors are provided with single silk and single cotton insulation. The cable is impregnated with a wax compound and is covered with servings of paper and a heavy braiding, which is given a heavy coat of fireproofing paint.

- Three general types of cable are provided.
1. Interior Cable with outside braiding treated with gray fireproofing paint. Use only in dry places.
 2. Interior cable with brown glazed cotton outside braiding. Use only in dry places where exposed to view.
 3. Outside cable, lead covered. Always use this cable outside, and inside where there is apt to be moisture even in a small degree. In conduit installations lead covered cable should be used.

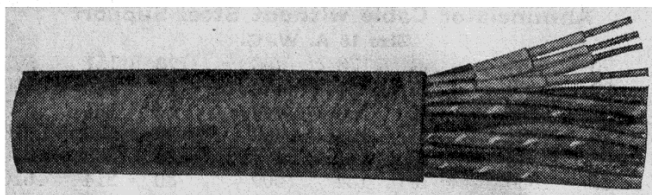
Lead-covered cables are not listed with separate Code Nos. Any fireproofed type of cable may be ordered with a lead sheath.

All cables are provided with a standard color scheme, so that each pair can be distinguished from any other. The pairs are properly twisted to prevent inductive disturbances.

Code No.	CONDUCTORS, A.W.G.		Covering	Approx. O.D. In.
	No. 22	No. 18		
185B	4 singles	....	Fireproofed braid	1/4
161B	8 singles	....	Fireproofed braid	5/16
161B (Lead)	8 singles	....	Lead sheath	3/16
142B	8 singles	....	Brown cotton braid	5/16
162B	12 singles	....	Fireproofed braid	11/32
162B (Lead)	12 singles	....	Lead sheath	3/8
*164B	6 singles	2 pr.	Fireproofed braid	13/32
*134B	6 pr.	2 pr.	Fireproofed braid	13/32
*134B (Lead)	6 pr.	2 pr.	Lead sheath	7/16
*155B	6 pr.	2 pr.	Brown cotton braid	13/32
*141B	12 pr.	2 pr.	Fireproofed braid	7/16
*141B (Lead)	12 pr.	2 pr.	Lead sheath	1/2
*156B	12 pr.	2 pr.	Brown cotton braid	7/16
*157B	16 pr.	2 pr.	Fireproofed braid	17/32
*157B (Lead)	16 pr.	2 pr.	Lead sheath	9/16
*158B	20 pr.	2 pr.	Fireproofed braid	9/16
*158B (Lead)	20 pr.	2 pr.	Lead sheath	19/32
*136B	24 pr.	2 pr.	Fireproofed braid	19/32
*136B (Lead)	24 pr.	2 pr.	Lead sheath	5/8
*140B	31 pr.	2 pr.	Fireproofed braid	5/8
*140B (Lead)	31 pr.	2 pr.	Lead sheath	11/16

*These cables also include two spare No. 22 B. & S. gauge conductors.

Whitney Blake Flexible Stranded Cable for Interphones and Signaling Systems



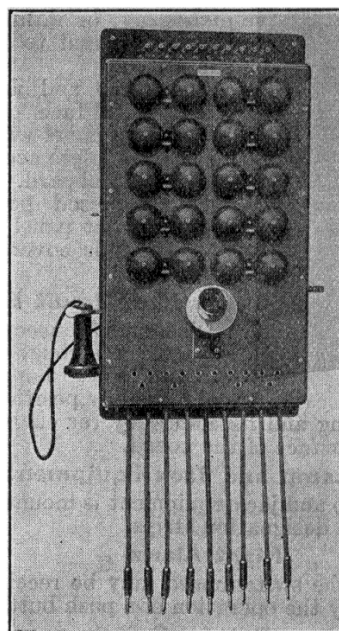
Finished in mercerized brown braid.

Color code of conductors is in accordance with standard telephone practice.

Code No.....	416WB	428WB	436WB	444WB	452WB
No. of Conductors..	16	28	36	44	52

No. 1012 Western Electric Magneto Wall Switchboards

Ringer Type



This switchboard is intended for use in exchanges having 10 lines or less, and where the number of calls does not warrant having a regular telephone operator in attendance.

It has been installed by numerous rural companies who desire a switching station established in the country in which case it is installed in a farmer's home and the calls are answered by members of the family.

Being equipped with ringers, constant attendance at the switchboard is not necessary as the bells can be heard at some distance from the board.

In addition to this ringer, indicators are supplied with each ringer which give a visible signal showing which bell has been ringing.

The cabinet is well constructed of thoroughly seasoned, quarter sawed oak, which is given a durable light finish. The front is hinged and the apparatus and wiring is within easy reach for inspection or maintenance.

Equipment

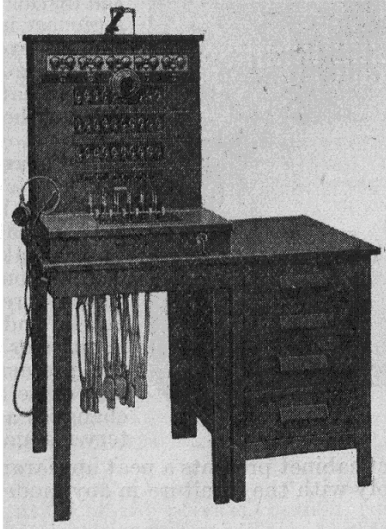
Each line is provided with a jack and a 1000 ohm ringer, although 1600 or 2500 ohm ringers can be furnished if required. Four-cord circuits, with a listening-in jack bridged across the tip and ring, and a listening cord are provided for handling the calls, no supervisory or ring off signals being provided. A powerful five-bar hand generator is furnished for ringing purposes. The operator's telephone set consists of the regular long distance transmitter and receiver.

Operation

Subscribers are called by ringing with the hand generator over the listening cord with which the operator answers calls and listens in for supervisory purposes. Connections are made with the other cords, without the use of keys.

Western Electric Magneto Non-Multiple Switchboards

No. 1800 Sectional Unit Type



Method of Assembling No. 1800 Switchboard to 35 Line Capacity

The unit or sectional type construction for the small switchboard was introduced by the Western Electric Company a number of years ago, and since that time has been supplying the demand of discriminating buyers for a small switchboard that would meet their traffic requirements and eliminate the necessity of buying an "oversize switchboard."

The capacity of the No. 1800 Unit Type Switchboard is from 10 to 50 lines. While 50 lines has been set as an arbitrary maximum it is safe to assume that with a normally low calling rate as many as 70 or 80 lines can be handled conveniently. While the No. 1800 Unit Type Switchboard is small in size (floor space required only 2 feet x 2½ feet), this does not mean that this board receives less consideration or care in manufacture than a larger switchboard, for the same quality of material, skilled workmanship and rigid inspection are applied to all of the Western Electric products regardless of size. Red oak lumber, which has been kiln-dried, thoroughly seasoned and given a dark rubbed finish, is used in the construction of the units. The inside of the units have been specially treated to preserve wood and prevent warping or cracking.

To meet various requirements, there are different types of base or supporting units, cord units, line units and top units. To assemble a switchboard of 10 lines capacity for example it is only necessary to select units as follows:

1 Supporting Unit	1 Line Unit
1 Cord Unit	1 Top Unit

These units are easily assembled into a complete switchboard which presents a neat, compact and serviceable appearance and can be arranged to meet any service condition. Line units can be added at any time.

All of the apparatus and terminals associated with the operator's cord and telephone circuits are mounted in the cord unit.

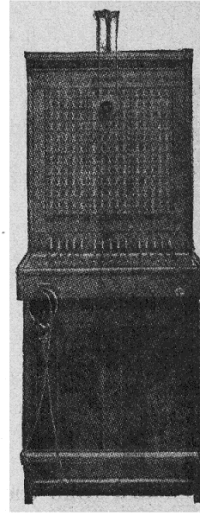
The circuits used are very simple. A diagram of each circuit is pasted to the inside of the rear doors for convenient reference. The back of each unit is hinged and, when open, all of the wiring and equipment are easily accessible.

This switchboard is specially recommended for small, rapidly growing telephone exchanges where the ultimate capacity cannot be definitely determined.

No. 1240-D Western Electric Magneto Switchboards

Non-multiple—Automatically Restored Line Signals

Capacity, 165 Lines 15 Cord Circuits



Front View

as to be within easy reach of the operator, reducing that work to a minimum.

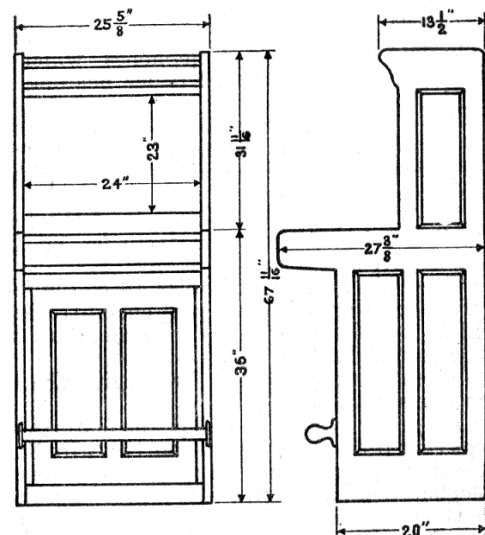
The lumber used in the construction of the cabinet is red oak, thoroughly seasoned and kiln dried to prevent warping or cracking.

The exterior of the cabinet is given a dull golden oak finish which is very serviceable. As an added precaution against warping, cracking or decay the interior surfaces are coated with shellac.

The steel framework which supports the face equipment is copper plated as a protection against corrosion or rust, also insuring a positive ground connection for the apparatus.

An apparatus and terminal board is mounted in the rear of the switchboard on which are mounted the repeating coils, night alarm bell, and large screw terminals where all power wiring such as power ringing, transmitter battery, night alarm battery, monitor taps, etc., are terminated.

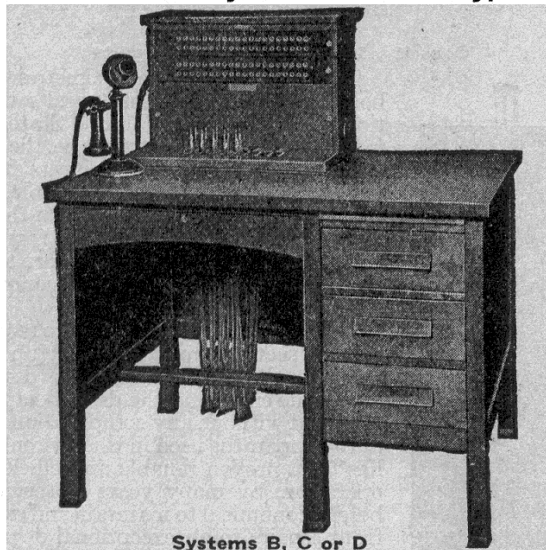
The No. 1240-D non-multiple magneto switchboard is furnished with either single or double supervision cord circuits. Single supervision boards may, if desired, be equipped with five cord circuits having toroidal repeating coils and switching keys. Double supervision boards may be equipped with either the condenser type non-hang-up cord circuits, or the condenser repeating coil type non-hang-up, non-ring-through cord circuits. The present switchboard, if arranged for single supervision, may be changed to a double supervision board simply by installing the necessary additional apparatus.



Dimensions

No. 1801 Western Electric Private Exchange Switchboards

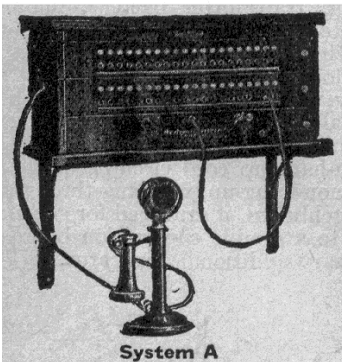
Central Battery—Sectional Unit Type



Systems B, C or D

The No. 1801 sectional unit type switchboard (like the No. 1800) was originated by the Western Electric Co., and introduced to the telephone trade to supply the demand for a small flexible and economical switchboard. Adaptable to many conditions, this switchboard has been installed by small telephone companies, as private branch exchanges, for hotels, factories, public schools and institutions or any place where telephone service was required and the ultimate capacity could not be definitely determined.

Being of the unit type, with construction somewhat similar to the sectional book case, and so arranged that additional units may be readily added when required, this switchboard is adaptable to many line and traffic conditions which are met on the small exchange. The rear of the units is permanently closed. The front panels of all units are held in place with thumb screw locks and are hinged to permit access to the wiring, terminals and apparatus. All connections are made under screw terminals.



System A

The No. 1801 has lamps for the line and supervisory signals. Birch lumber, with a mahogany finish, or quarter sawed red oak which has been kiln dried and thoroughly seasoned to prevent warping and cracking is used in the construction of the units.

Four systems—"A," "B," "C" and "D" have been devised to handle the various classes of service required in this type of switchboard. Telephones which can be

used with the systems are listed under heading: Central Battery Telephones.

SYSTEM A.—This system provides for communication between the switchboard and stations only. There are no facilities for inter-communication between stations or for connections to a central office.

SYSTEM B.—This system embodies all of the features of System "A" and in addition has facilities or intercommunication between stations.

SYSTEM C.—This system embodies all of the features of System "B" and in addition two plug ended trunks are provided which may be equipped for connections to either magneto or central battery central offices.

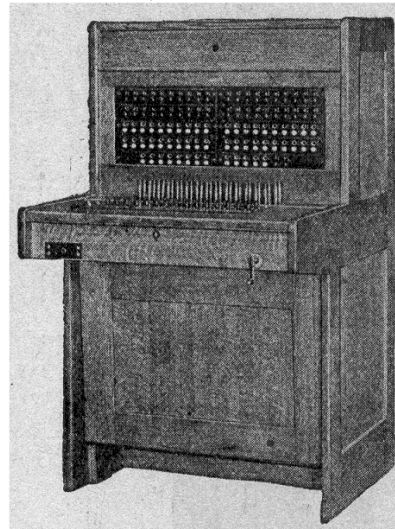
NOTE.—Direct current is used for ringing the telephone bells in Systems A, B and C.

SYSTEM D.—This system has all of the features of system "C" except that it employs the regular two wire line circuit, and alternating current is used for ringing purposes.

The telephone sets used with this system are the regular central battery sets used with central office systems.

Write our nearest house for particulars. State which system is best suited for your requirements.

No. 551 Type Western Electric Private Branch Exchange Switchboards



This switchboard has the distinction of being a pioneer in the private branch exchange field since the adoption of the modern flat type relays, it being the first private branch exchange switchboard in which the new relays were used. Either the No. 551A or 551B switchboard makes an ideal installation for department stores, factories, hotels, and apartments in cities or towns where the present main central office is a dial exchange or a central battery manual office.

The compact cabinet presents a neat appearance and compares favorably with the furniture in any modern office.

Types and Capacity

Type	551A (40)	551B (80)	551B (320)
Station Lines Total	40	80	320
*Station Lines Wired for			
Relays	10	20	20
Trunk Lines	10	15	15
Cord Circuits	10	15	15

*Certain lines are wired for relays to be used on lines where the telephone is located a considerable distance (800 feet) from the switchboard. Relays are not provided unless specified.

The No. 551D is a multiple P.B.X. for use where the number of station line circuits does not exceed 360 lines. The capacity of the No. 551D multiple P.B.X., based upon a minimum of three 2-panel sections, is as follows:

Station Line Circuit	3-panel basis	360
Trunk Circuit	3-panel basis	30
Cord Circuit	per section	15

Red oak lumber with a dark finish or birch with a mahogany finish is used for all exposed woodwork parts. The lumber is kiln dried and thoroughly seasoned to prevent warping and cracking. Iron reinforcing brackets are placed on the inside of the cabinet at the corners giving added strength. The keyshelves and fronts of the 551-P.B.X.'s have been faced with phenol fibre rubbed a dull black which not only results in a pleasing rich appearance but provides a hard and durable surface.

The stile strips which hold the line jacks and lamp sockets in place as well as the key mounting strips in the keyshelf consist of cold drawn galvanized steel. This insures alignment of the face and keyboard equipment, also prevents damage from moisture.

All apparatus inside the section, except hand generator and ringing resistance lamp, is mounted upon a relay gate which makes equipment immediately available for adjustment while gate is closed and leaves wiring fully exposed when gate is open. Cord-weight protection panel is mounted on the relay gate rather than being fixed in the section so that when gate is open and work is being done on cords or hand generator the gate wiring is still protected from damage.

Gate is equipped with mounting clips and screws. The mounting clips hold the relay mounting plates on the relay gate and permit the use of the one-piece relay gate.

The cabinet is compact and all parts are easily accessible. Switchboards in the 80-line capacity are equipped with removable end panels. This permits lining up of 2 boards and makes an ideal installation where several positions are required.

The line circuits are simple and terminate on terminal strips which are easily accessible.

No. 551 Type *Western Electric* Private Branch Exchange Switchboards

Continued

Certain lines are arranged for use with relays and intended to be used for the stations located considerable distance (800 feet) from the switchboard. The latest standard flat type relays are used throughout which permits placing the maximum amount of equipment in a small place.

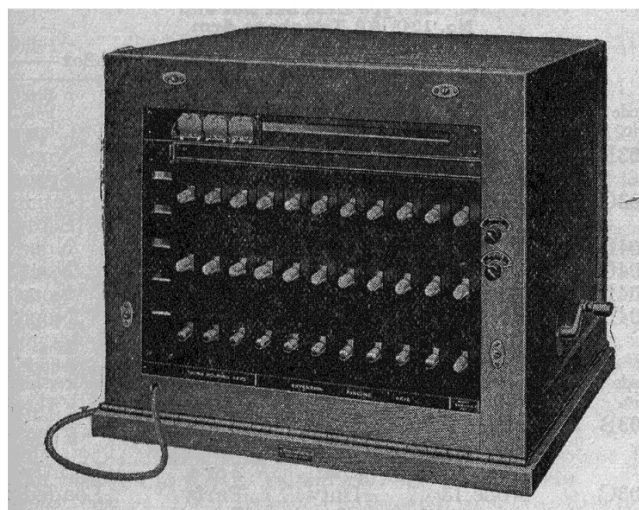
Strip line jacks and associated lamp sockets are used in all boards on the line-circuits. The number of jacks and lamps required are equipped and the remaining jack and lamp positions plugged with apparatus blanks. The blanks can be removed and jacks and lamps installed at any time. The panels upon which the individual jack and lamp sockets are mounted consist of one piece of dull finished black faced fibre which does not reflect the light. A designation strip is provided above each row of jacks for convenience in numbering. The black faced fibre panel presents a neat appearance and insures perfect alignment of the face equipment.

Jack ended trunks are used on all No. 551 type boards. The jacks and lamp sockets are individually mounted.

The cord circuits embody all of the features required for the successful operation of the private branch exchange. Connections between stations and from stations to trunks are easily established. Each cord circuit is arranged for dialing by the operator from the board and through dialing from any station on the private branch exchange to the machine switching exchange. This through dialing is accomplished by the operator throwing the night key and through dialing key in the proper position after putting up the night connections. The function of the night key is to cut out all the equipment from the circuit which is not required for night service.

The dial may or may not be used as desired it being easily installed when needed. It is connected to the local cable by means of a flexible cord and the dial itself held in place by a spring clip which is screwed to the keyboard. When the dial is not equipped the hole for the cord is suitably covered with an apparatus blank.

No. 506 *Western Electric* Central Battery Cordless Type P.B.X. Switchboards



Ideal as a dependable private branch exchange. Switchboard is of the single-operator position, cordless type, with all connections established by the operation of keys.

The entire equipment is enclosed in a cabinet of light oak, or of mahogany with a rich mahogany-walnut finish.

This board is a compact and effective switching unit, and harmonizes with other office furnishings.

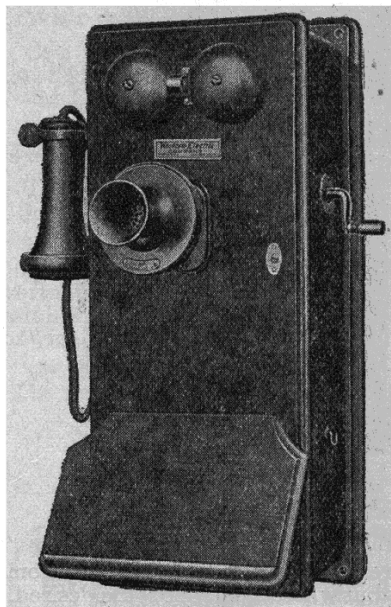
The cabinet and steel framework are designed to permit the utmost accessibility of the apparatus.

The circuits are arranged for local manual service and for operation into either central battery manual offices or into panel or step-by-step automatic offices.

Western Electric Magneto Telephones

No. 1317 Type

General Description



2-Cell, Closed View

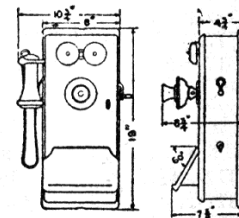
The No. 1317 type telephone represents the highest development attained in magneto telephone design and construction. It has been standard with the Western Electric Company for more than a decade, and its high efficiency, reliability and long life has been thoroughly proven by the hundreds of thousands in service.

2 and 3-Cell Types

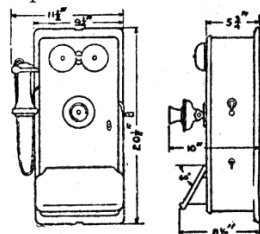
No. 1317 telephones are made in two styles, namely, the "2-cell" and the "3-cell." The talking circuits of these two types are identical, i.e., they employ the same transmitters, receivers and induction coils. The battery compartment of the "3-cell" type is suf-

ficiently large to take three standard dry cells, whereas only two dry cells can be placed in the "2-cell" type. The larger cabinet of the "3-cell" type also permits the mounting of the No. 48 type (5-bar) generator, while the "2-cell" type employs the No. 50 type (large 3-bar) generator.

The 3-cell set is the more powerful and the better set from a transmission standpoint but where a smaller set is desired the 2-cell sets can be used. The 50 type generator is exceptionally powerful for a 3-bar generator. This generator will ring thirty 2500 ohms ringers connected to a No. 12BB iron metallic telephone line 15 miles in length (provided, of course, that the line is properly installed and in good condition). It will operate more telephones on a line than many 4 or 5-bar generators.



2-Cell Dimensions



3-Cell Dimensions

WOODWORK AND FINISH.—The cabinet is made of quarter sawed oak and given three coats of high-grade varnish rubbed down by hand. Unexposed surfaces of the telephone are also given a protective finish so as to prevent warping.

WIRING.—All terminals including those for the transmitter, receiver, cord, line wires, etc., are plainly marked so that

there can be no possible mistake when making connections. The various cords, such as those of the transmitter and receiver and the flexible leads running to the condenser are all furnished with cord tips.

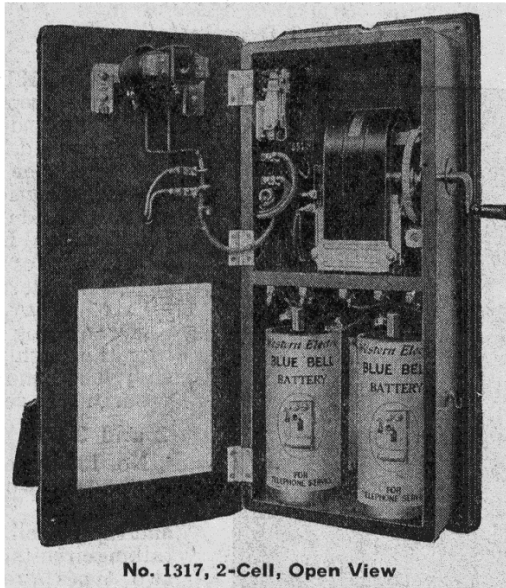
A complete and explanatory circuit label is pasted on the inside of the door of each telephone, in addition to which a booklet is furnished giving complete instructions for installation and maintenance.

METAL FINISH.—The transmitter bracket, gongs, switch hook, generator, crank and lock escutcheon are given an extremely durable and pleasing black finish.

ADJUSTMENT.—These telephones are carefully adjusted in the factory, and should, therefore, be satisfactory for service as received by the customer unless unusual service conditions should be encountered, in which case only the ringer will require readjustment. The adjustment of the ringer is a very simple matter and instructions furnished in the booklet are so clear that no difficulty will be encountered.

Western Electric Magneto Telephones

No. 1317 Type—Continued



No. 1317, 2-Cell, Open View

No. 1317 3-Cell Type

The 3-cell set is the more powerful and the better set from a transmission standpoint but where a smaller set is desired, the 2-cell sets can be used. The 50 type generator is exceptionally powerful for a 3 bar generator.

Code No.	RINGER		GENERATOR	
	Code No.	Res. (Ohms)	Code No.	Condenser
1317-AH	38-AG	1000	22-A	.....
1317-N	38-FG	1600	48-A	.....
1317-R	38-FG	1600	48-A	21-W
1317-P	38-BG	2500	48-A	.....
1317-S	38-BG	2500	48-A	21-W
1317-BA	38-FG	1600	48-A	.....

Code No.	CLASS OF SIGNAL SERVICE		Line Conditions as Regards Load
	Telephones to Cent. Office	Cent. Office to Telephones	
1317-AH	Code	Code	Light
1317-N	Code	Code	Medium
1317-R	Code	Code	Medium
1317-P	Code	Code	Heavy
1317-S	Code	Code	Heavy
1317-BA	*C. O.		
	Selective	Code	Medium

No. 1317C 2-Cell Type

Code No.	RINGER		GENERATOR	
	Code No.	Res. (Ohms)	Code No.	Condenser
1317-CH	53-AG	1000	22-BA	.....
1317-CN	53-FG	1600	50-F	.....
1317-CR	53-FG	1600	50-F	21-W
1317-CP	53-BG	2500	50-F	.....
1317-CS	53-BG	2500	50-F	21-W

Code No.	CLASS OF SIGNAL SERVICE		Line Conditions as Regards Load
	Telephones to Cent. Office	Cent. Office to Telephones	
1317-CH	Code	Code	Light
1317-CN	Code	Code	Medium
1317-CR	Code	Code	Medium
1317-CP	Code	Code	Heavy
1317-CS	Code	Code	Heavy

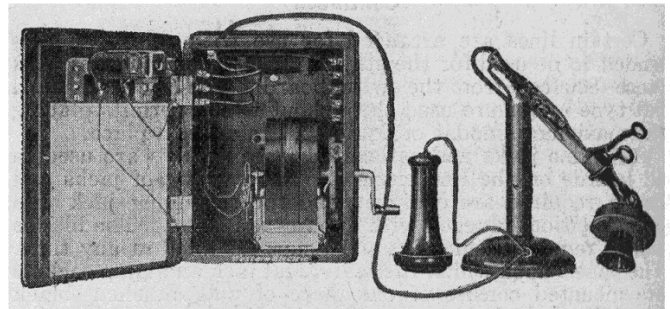
In addition to the above-mentioned apparatus all of these telephones are equipped with the following apparatus:

- No. 13 Induction Coil.
- No. 323 Transmitter.
- No. 8A Transmitter Bracket.
- No. 144 Receiver.
- No. 143Y Switchhook.

*Equipped with No. 1006A push button, Telephone user can signal central office secretly or not as desired and can signal other parties on same line by code ringing.

Western Electric Magneto Telephones

Nos. 6003 and 6004 Desk Types



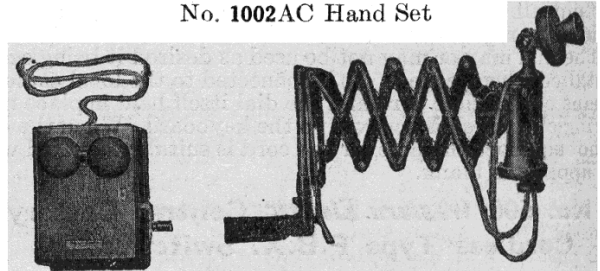
Interior View of No. 6004D

The Nos. 6003 and 6004 type desk telephones consist of a No. 1020 AL Desk Stand and a No. 300 or 315 type Desk Set Box. These telephones comprise the combinations of desk stands and desk set boxes that are most used, and therefore for convenience in ordering, are covered by a single code number.

Combinations of apparatus differing from those covered by these code numbers listed may be obtained by ordering the separate items that will make up the desk telephone desired. The following items of apparatus are the electrical equivalent of the No. 1020 AL Desk Stand and may therefore be used in connection with any of the desk set boxes listed below.

- No. 1048AA Telephone Arm
- No. 1048AC Telephone Arm
- No. 1048AB Telephone Arm
- No. 1001C and H Hand Sets

No. 1002AC Hand Set



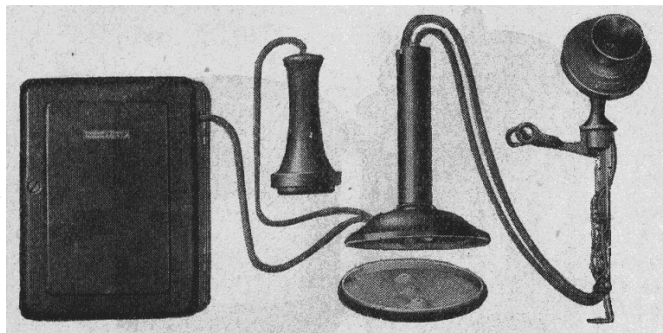
No. 300 Type Desk Set Box and No. 1048 AA Telephone Arm

Code No.	Desk Stand	Desk Set Box	CONTENTS OF DESK SET BOX			
			Generator	RINGER Code No.	Resistance (Ohms)	Bias Feature
6003B	1020AL	315H	22A	51AG	1020	None
6003C	1020AL	315J	22E	49BG	2500	Spring and Screws
6004B	1020AL	300K	48A	51BG	2500	None
6004C	1020AL	300L	48A	51FG	1620	None
6004D	1020AL	300AA	50A	51BG	2500	None
6004E	1020AL	300AB	50A	51FG	1620	None

Code No.	DESK SET BOX (CONTINUED) Con- Ind. denser Coil	CLASS OF SIGNAL SERVICE Telephones to Central Office	Central Office to Telephones	Line Condition as Regards Load
6003B	None 13	{ Code Ringing	Code Ringing	Lightly Loaded
6003C	None 13	{ Can Only Signal	Code Ringing 2 or 4 Party Selective	
6004B	None 13	{ Code Ringing	Code Ringing		Heavily Loaded
6004C	None 13	{ Code Ringing	Code Ringing	
6004D	None 13	{ Code Ringing	Code Ringing	Heavily Loaded
6004E	None 13	{ Code Ringing	Code Ringing	

NOTE.—In the case of the Nos. 300AA, 301AB, 315H, and 315J Desk Set Boxes provision is made for inserting a one microfarad condenser (see No. 21W condenser) in series with the receiver. However, condensers are not furnished unless so ordered.

Western Electric Central Battery Telephones Nos. 6054 and 6059 Desk Type



**No. 6054 Desk Telephone—No. 1020AL
Desk Stand Partially Dismantled**

The Nos. 6054 and 6059 desk type telephones consist of a No. 1020 type desk stand and a desk set box. These telephones comprise the combinations of desk stand and desk set boxes that are most used and, therefore, for convenience in ordering are covered by a single code number.

Combinations of apparatus differing from those covered by the No. 6054 or 6059 series of code numbers may be obtained by ordering a desk stand and a desk set box as separate items, also a telephone arm or a hand set may be used in place of the desk stand if desired.

For example, any of the desk set boxes that will function with the No. 1020AL desk stand will also function with the following:

- No. 1048AA Telephone Arm No. 1001C and H Hand Sets
- No. 1048AB Telephone Arm (See Hand Set Hangers)
- No. 1048AC Telephone Arm No. 1002AC Hand Set

Telephone Code No.	TELEPHONE CODE NO. COVERS		CONTENTS OF DESK SET		
	Desk Stand	Desk Set Box Code No.	Code No.	BOX RINGER Res. (Ohms)	Con- denser
6054E	1020AL	534E	41SG	....	21BW
6054F	1020AL	534F	33 1/3 Cycles 41TG	....	21BW
6054G	1020AL	534G	50 Cycles 41UG	....	21BW
6054H	1020AL	534H	66 2/3 Cycles 41RG	....	21BW
6054AR	1020AL	634AR	16 2/3 Cycles 72AG	1000, 3000	194B
*6059A	1020AL	584A-3	78AG	1500	149A
*6059B	1020AH	584K	78AG	1500	149A

Telephone Code No.	Relay	Induction Coil	Talking Circuit	Kind of Ringing	Ringing Current
6054E	46B	Std. C.B.	{ Harmonic 4-Party Selective or 8-Party Semi- Selective }	Harmonic
6054F	46B	Std. C.B.		Harmonic
6054G	46B	Std. C.B.		Harmonic
6054H	46B	Std. C.B.		Harmonic
6054AR	85N	146B	Std. C.B.	4-Party Selective	Pulsating Current
*6059A	46C	Std. C.B.	{ Single Party & 2- Party Selective }	A.C.
*6059B	Series	C.B.		A.C.

*The Nos. 6059A and 6059B Telephone Sets replace the Nos. 6054A and 6054K Telephone Sets, respectively.

See listings of No. 534 type desk set boxes, No. 1040 desk stands and protectors.

No. 202A-3 Hand Telephone Set with a No. 584A-3 Subscriber Set

Intended for general use at common battery manual stations on non-polarized ringing lines. The No. 78AG Ringer used is biased to prevent tapping.

Hand Telephone Set	Hand Set Mounting	Apparatus Blank No.	Cords	Hand Set
202A-3	D1-3	50J-3	*D4N-9	E1B-3

*Will be furnished with a D4S waterproof cord instead of the D4N-9, when specified in the order.

No. 584A-3 Subscriber Set

Code No.	Ringer No.	Condenser No.	Induction Coil
584A-3	78AG	149A	46C

Western Electric Central Battery Telephones

Nos. 1533, 6054, and 6059 Types

Ringer and gongs are enclosed within the case thereby preventing tampering, reducing maintenance and greatly improving the appearance.

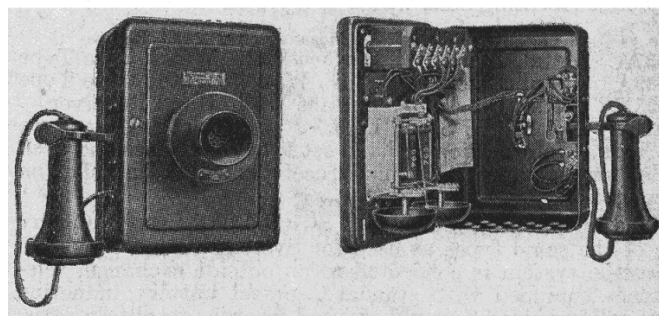
Case is made of heavy sheet steel, copper-plated, and finished with two coats of extremely durable black enamel (baked on) especially developed for this particular purpose.

The case is constructed so that every part of the interior is easily accessible when the cover is opened.

The base is flanged, thereby giving greater rigidity and preventing base from cutting into plastered surfaces.

Unit type of construction and universal terminal block employed. This permits of the telephone being readily converted from one class of service to another. This also permits of a desk set box being converted into a wall telephone or vice versa by a substitution of covers.

No. 1533 Type Telephones



No. 1533A

No. 1533A—Interior

Telephone Code No.	Trans- mitter	Receivers	RINGER		Con- denser
			Code No.	Res. (Ohms)	
1533A	323	144	68AG	1600	21BW
1533K	323	171	68AG	1500	149A
1533Y	323	144	8AG	*1400	149A
1533AR	323	144	72AG	1000, 3000	21AP
1533E	323	144	41SG	460	21BW
1533F	323	144	33 1/3 Cycles 41TG	285	21BW
1533G	323	144	50 Cycles 41UG	200	21BW
1533H	323	144	66 2/3 Cycles 41RG	1800	21BW
			16 2/3 Cycles		

Telephone Code No.	Induction Relay Coil	Talking Circuit	Kind of Ringing	Ringing Current
1533A	... 46B	Std.	{ 2-Party Selective or 4-Party Semi- Selective }
1533K	{ Series C. B. Central Bat. Signalling Local Bat. Talking }		{ Single Party 2-Party Selective 4-Party Semi- Selective }	A.C.
1533Y	... 13		{ 4-Party Selective }		{ Harmonic 4 and 8- Party Selective }	A.C.
1533AR	85J 46B	P.C.		
1533E	... 46B	Harmonic		
1533F	... 46B	Harmonic		
1533G	... 46B	Harmonic		
1533H	... 46B	Harmonic		

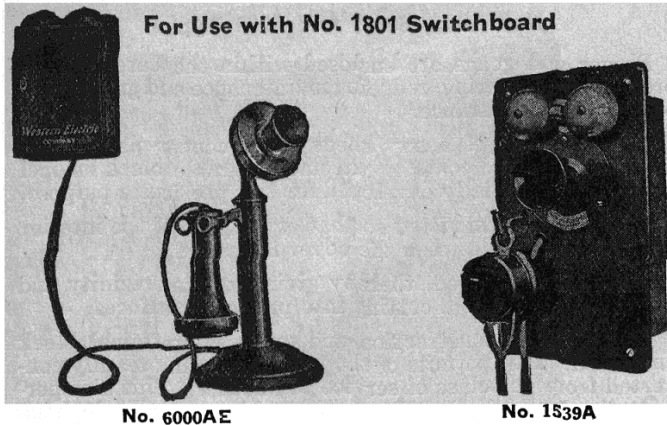
*The No. 8AG Ringers were formerly wound to 1000 ohms instead of 1400 ohms. The 1000 and 1400 ohm ringers have the same impedance and may be used interchangeably in service.

All of these telephones are equipped with the No. 7A Transmitter Bracket, two T1A 6-inch transmitter cords, and a 30-inch No. 521 Receiver Cord with the exception of the No. 1533K, which contains one No. 92 Cord (3 feet long) in place of the No. 521 Cord.

See separate listing for "Central Battery Telephones for use with No. 1801 Switchboards," and for protectors.

The No. 323 Transmitters have a black finish.

Western Electric Central Battery Telephones



No. 6000AE

No. 1539A

Systems A and B

The telephones for No. 1801 Switchboard Systems A and B are of the series talking circuit type and equipped with 140 ohm vibrating bells which operate on direct current.

Code No.	Case and Finish	Mounting	Receiver
2537A	Metal, Black	Surface Wall	Watch Case Type
2539A	Metal, Black	Flush Wall	Watch Case Type
1533N	Metal, Black	Surface Wall	Hand Receiver
6034AU	No. 1020BJ	Stand Desk	Watch Case Type

NOTE.—Information on hand set type telephones and desk telephones equipped with hand receivers will be furnished on application.

System C

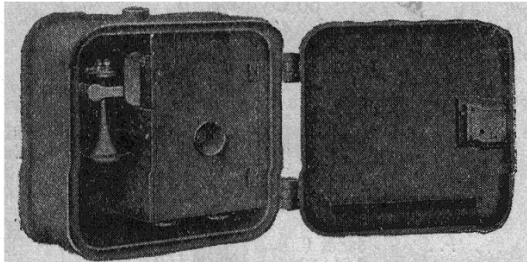
The telephones for No. 1801 Switchboard System C may be of the same types as used for Systems A and B, but in case the system is connected to an outside exchange, telephones equipped with standard central battery induction coil talking circuit should be used in order to obtain satisfactory transmission, as follows:

Code No.	Case and Finish	Mounting
1533M	Metal, Black	Surface Wall

System D

Any standard central battery telephone with ringers operated by alternating current either induction coil or series types can be used with System D. The No. 1533A wall type and No. 6059A desk type telephones may be selected for this system.

No. 1320 Type Telephones for Police Service



No. 1320A Outer Door Open

The No. 1320 type is a metal case weatherproof telephone for central battery service. It was designed primarily for the Police Patrol Service but will be found very satisfactory for general central battery service where a weatherproof telephone is required.

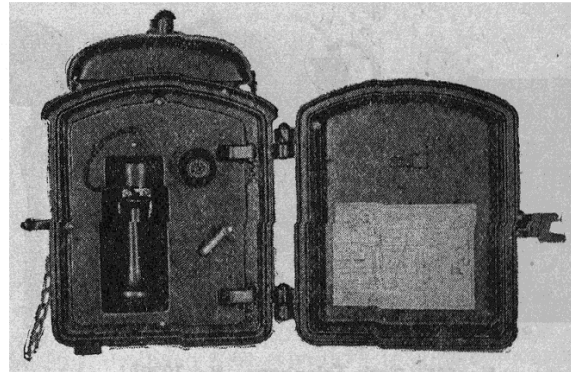
The apparatus is mounted on a metal frame which is removable as a unit from the case. An inner door protects the apparatus from the weather when the outer door is open. The overall dimensions are 6⁵/₁₆ inches deep by 13¹/₈ inches high by 12³/₄ inches wide.

A loud ringing extension bell may be connected in multiple with the ringer of this telephone thereby providing means of signaling a patrolman from a distance (see extension bells).

A tapped hole is provided in each end of the case for receiving conduit. Four holes are drilled in the back of the case for receiving mounting screws or mounting clamps. The lock on the outer door is designed so that the key cannot be removed until the door is closed.

Outer door is not marked. Standard finish, gray paint. Special No. 1320A telephones may be obtained with outer doors marked (raised characters cast on door) in accordance with customer's requirements; color of finish, as specified.

Western Electric Magneto Mine Telephones



No. 1336 with Outer Door Open

Code No.	Transmitter	Receiver	Receiver Cord	Condenser	Code No.	RINGER Resistance
1336A	312	144A	384	None	None	2500
1336E					45BG	
1336J					45BG (Spl.)	
1336K	312	558	R2AD	21W *21F	21W	2500
1536E					63BG	

Code No.	Ringer Operating On	GENERATOR Code No.	Current	Signalling Service	For Line Load
1336A	A.C.	48C	A.C.	Code Ringing	Heavily Loaded
1336E					
1336J					
1336K	A.C.	48C	A.C.	Code Ringing	Medium Loaded
1536E	A.C.	51A	A.C.	Code Ringing	Heavily Loaded

*Furnished only when specified in order.

A reliable telephone system in a mine permits instant communication throughout the plant. Routine business can be easily handled with such a system. In cases of power suspension, shut downs, or emergencies involving possible loss of life or of property the telephone is of inestimable value.

GENERAL—There are three classes of location must be considered for mine telephones. 1. Dry locations above ground or in protected parts of the workings such as the Superintendent's office and the engine room. In such locations the standard wall or desk magneto telephones are recommended. 2. Exposed locations above ground or in mines in which methane or other explosive gases or coal dust are not likely to be present in dangerous proportions. In such locations No. 1336 type telephones are recommended. 3. Mines or other locations in which methane or other explosive gases or coal dust are likely to be present in dangerous proportions. The No. 1536 type telephone is recommended for such locations.

No. 1336 Type Telephones

Briefly these are metal case magneto telephones in which the apparatus has been especially treated to provide resistance to moisture, acid fumes, and non-inflammable gas. All parts are enclosed in a cast iron case which provides protection against damage from water and falling objects. The top of the case is rounded so that water will readily drain off and any objects falling on the top will slide off to the ground. An outer door totally encloses all parts including the transmitter receiver and generator crank.

Western Electric Magneto Mine Telephones

Continued

No. 1336 Type Telephones

The sets are primarily designed for use on lines to which a large number of telephones are connected and where code ringing is used. Although intended chiefly for mine service they are also recommended for out-of-door use as in railway service, police alarm, etc.

Equipped with a No. 143J switchhook and a No. 31 induction coil.

Special No. 1336 type telephones equipped with a heavy brass padlock with 2 keys are obtainable. The padlock is attached to chain in place of latch pin. Orders for these telephones must state that padlocks are desired.

No. 1336A telephone is not equipped with a ringer. Intended for use where an extension bell is preferred to the regular telephone ringer, also for service where all the calls will be outgoing.

No. 1336E differs from the No. 1336A in that it is equipped with a ringer and an iron hood for protecting the gongs.

No. 1336J differs from the No. 1336E only in that a condenser is provided to permit the ringers of this telephone as well as others on the same line, being rung even though its receiver may have been left off the switchhook.

To add a condenser to a No. 1336 type telephone that was not originally so equipped the following apparatus and parts should be ordered: No. 21W condenser, one condenser strap P-43065, and two round head machine screws P-110187.

Dry Cells

Two standard size dry cells are required for each telephone to furnish current for talking. Western Electric Blue Bell Dry Cells are specially designed for telephone service and are recommended because they last longer and are more efficient for this class of service than other dry cells.

Two special Blue Bell Dry Cell cartons, impregnated with moisture-proofing compound, are furnished with each No. 1336 type telephone. These are to be substituted for the standard cartons furnished on the dry cells. These cartons resist the action of any moisture that may form on the inside of the case and prevent current leakage and rapid deterioration.

Case

The box, outer door, inner door and gong hood are of cast iron heavily coated with a rust-resisting finish. When the outer door is closed only the metal transmitter mouthpiece, receiver, receiver cord and the generator handle are exposed. When the outer door is closed these parts are protected from mechanical injury. When using this telephone it is, of course, evident that only the outer door need be opened.

Entrance for Line Wires

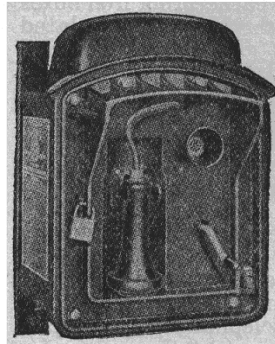
The line wires may be brought in either at the top or the bottom of the case. A short length of pipe is screwed into the top of the case and is covered with a pipe cap. This cap prevents water running into the set by following the line wires. In case the line wire is to be run to the telephone in pipe (conduit) no difficulty will be encountered in joining the conduit to the telephone as the wire entrance hole at bottom as well as the top of the case is tapped.

Mounting

Wrought iron mounting bars are secured to the back of the case. The upper end of these have pear shaped holes, and with this arrangement the telephone can be readily mounted by one man and without any danger of damaging it. This is accomplished by driving two lag screws into the mounting surface until their heads project about $\frac{1}{2}$ inch. The telephone may then be hung upon these mounting screws (the heads of the lag screws will pass through the large end of the pear shaped holes) after which the lower mounting screws may be driven into place through the holes in the lower end of the mounting bars. Wrought iron mounting bars are employed as they are less subject to breakage than if lugs were cast on the case.

Western Electric Magneto Mine Telephones

Continued

No. 1536 Type Telephones

Designed especially for use in mines and other locations subject to the hazard of explosive gases or coal dust and have been declared by the United States Bureau of Mines permissible for use in mines or other locations where methane or other explosive gases or coal dust are likely to be present in dangerous proportions.

No. 1536E telephone is the same as the 1336E except that protective features are incorporated in the electrical contacts of the switchhook, generator, ringer.

No. 1536E has a 149A switchhook, a 31 induction coil and is furnished without condenser unless the condenser is called for in the order. The outer door is omitted. Projecting hood over the door protects the transmitter, receiver and generator crank. Line wires are brought in either top or bottom, when from the top an angle fixture is provided so moisture cannot enter. Holes in the bottom of the set drain off any accumulation of moisture. Special cordage adapter is provided at the receiver connection of the cord. Unusually hard usage and hoisting will not fray the insulation. Internal mechanism, batteries, line connection, etc. in the housing are inaccessible without unlocking the door and removing the cap screws around the side of the door. Switch hook, generator and ringer are separately removable so they can be carried away for repairs.

Two Blue Bell dry cells with screw terminals are furnished as part of the set. Cartons P-201339 are furnished with sets, but new cells can be ordered without cartons as one carton has a longer life than the cell. Wrought iron bars are secured to the back of the set for mounting. Two lag screws are needed (but not furnished) to mount set. Set as furnished is permissible, any change automatically voids the approval of the Bureau of Mines.

Systems

For a system in which all the telephones are connected to a party line, the set should be of such a design that all the stations can be clearly signaled, for example: No. 1336J telephone set for service below ground or exposed locations above ground and the 1536E for gaseous locations. No. 1317S wall telephone set for service above ground in unexposed locations or No. 6004-B desk type telephone set.

It is preferable, in cases where the size of the system warrants, to use a number of lines connected to a switchboard rather than to depend on one party line. Any of the lines may be a party line but it is much better to have the important stations such as engine room and superintendent's office connected to the switchboard by individual lines. With a switchboard and individual lines the 1336E or the 1536E telephones should be used below ground and in exposed locations. For the lightly loaded lines above ground and not exposed the 1317AH wall telephone set or the 6003B desk telephone set can be used.

Ringers and Extension Bells

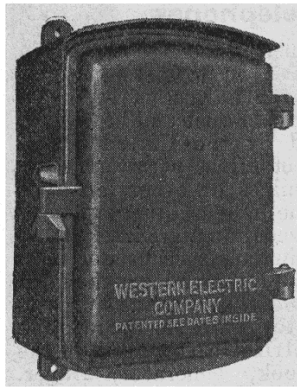
The ringers used in these telephones may be readily adjusted if necessary with a screwdriver. The gongs emit a loud distinct ring, which can be heard a long distance, particularly so underground. However it is often desired to provide loud ringing extension bells in connection with mine telephones and for this purpose the No. 392 and No. 342 type subscribers sets are recommended as they are designed to withstand the severe conditions encountered in mine service.

Protectors

The telephone installed above ground should be equipped with protectors consisting of open space cut outs (for example the No. 60AP protector) to prevent damage to the telephone by lightning. In case there is a chance of contact between the telephone line and a power circuit protectors consisting of open space cut outs and fuses (for example the No. 58AP protector) should be used.

Western Electric Street Railway Telephones

Magneto and Battery Types



No. 1278 type telephones employ weatherproof iron boxes and are provided with insulated circuits. They are intended principally for exterior use by street railway companies operating telephone lines on which there is a chance of crosses with low voltage power circuits. This type telephone is arranged so that its circuit is cut off from the line except when its door is opened. When the telephone is in use a repeating coil is interposed between the line and telephone circuit proper, so as to protect the user, as far

as possible, from the chance of injury should the line become crossed with a low voltage circuit. When the door is opened, a line switch is released which connects one winding of the repeating coil across the line and connects two fuses and two open space cut-outs into this circuit. The telephone circuit proper is connected to the second winding of the repeating coil and has no direct contact with the line circuit. The fact that a repeating coil is interposed between the line circuit and the telephone circuit reduces the efficiency of the telephone to some extent and, therefore, the use of these telephones is not recommended on heavily loaded lines, except where the protective feature is essential. See No. 1336 type telephones. In case a car is held up awaiting orders from the dispatcher the door of the telephone is left open so as to permit of the telephone being signalled. (It is impossible for the telephone to be signalled when its door is closed.) As the talking circuit is only closed when the push button in the hand set is depressed, the battery in the telephone is not wasted under the above condition. The apparatus of this telephone is mounted on an iron shelf, which may be removed as a unit from the telephone for inspection. The connection between the apparatus on the shelf and the line and ground terminals is made through the medium of clips which register with contacts mounted on a terminal block secured to the back of the case. The case and door are of cast iron and have a galvanized finish. Both the top and bottom ends of the case are tapped for receiving 1/2 inch conduit.

The F, G and J telephones are equipped with a lock which is arranged so that the key cannot be removed until the door of the telephone is closed. The No. 1278H is equipped with a hasp, staple and pin similar to that used on No. 1336 type telephones, but padlock is not included.

For Magneto Service

Code No.	Hand Set	RINGER Resistance Code No. (Ohms)	Generator	Ind. Coil	Repeating Coil	Lock	Class of Signal Service	For Line Load			
1278F	1001H	51AG 1000	†48C	13	25E	5B	†Code	Medium			
1278G									29	29	*None
1278H											

For Local Battery Talking and Central Battery Signalling

1278J	1001H	51AG 1000	None	13	25E	5B	†Code	Medium
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Designed for medium line load.

In addition to the apparatus listed above these telephones are each equipped with: A special door switch. A special protector.

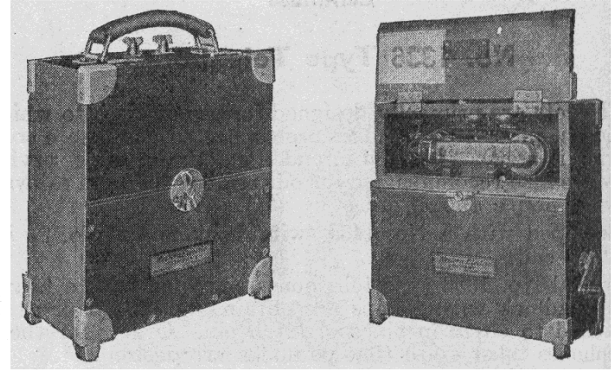
- 2 D. & W. No. 5001 Type C fuses—500 volt 1 ampere.
- 2 No. 2 protector blocks.
- 2 No. 1 protector blocks.
- 2 No. 3 protector blocks.

Dry cells must be ordered as a separate item.

*Equipped with hasp, staple and pin the same as No. 1336 type telephones. Ringer is disconnected from the line when door of telephone is closed.

†Generators have special mounting brackets.

Western Electric Portable Magneto Telephones



No. 1330E Closed

No. 1330E Open

Nos. 1330 and 1331 Types

These are complete magneto telephones mounted in substantial wooden cases. They are primarily for use in railway service and are designed to withstand the jarring and rough handling incident to train service. In addition to railway service these telephones are suitable for any service where a substantial type of portable telephone is required. While these telephones are not waterproof they are designed to withstand ordinary weather conditions.

The Nos. 1330F and 1331F telephones are equipped with a six-foot waterproof cord and No. 146 plug for connecting them to a telephone line through a No. 186 pole jack.

The Nos. 1330E and 1331E telephones are intended primarily for use where connection to the line will be made with a line pole.

No. 1375 Type

The No. 1375B is especially adapted for use in cases where the telephone user must carry the telephone considerable distances. While it is primarily intended for use on moderately loaded lines, the design of the generator is such that it may be satisfactorily operated on heavily loaded lines.

The generator, induction, coil buzzer and terminal block are mounted on an aluminum frame and secured in the case by means of machine screws.

The case is made of high grade leather and is designed to withstand considerable rough handling.

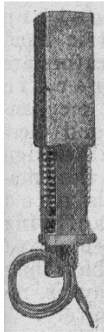
Code No.	Hand Set	Plug	Cord for Plug	RINGER OR BUZZER Code No.	Resistance (Ohms)
1330E	1001C	None	None	32B Ringer (A.C.)	2500
1330F		No. 146	No. 509 6-ft.		
1331E		None	None	3B Buzzer (A.C.)	2500
1331F		No. 146	No. 509 6-ft.		
1375B	1001H	.....	.....	D-21141 Buzzer (A.C.)	2150

Code No.	GENERATORS Code No.	Current	Ind. Coil	Condenser	Battery Used*	Approx. Wt.Lbs.
1330E	48A	A.C.	29	21F	2 Blue Bell Dry Cells*	28
1330F							(5 Bar)
1331E	22A	A.C.	29	21F	2 No. 790 Eveready batteries*	17
1331F							(3 Bar)
1375B	29E	A.C.	D-17624	None	One No. 703 Eveready Battery*	10 1/2

Code No.	Over All Dimensions In.	Line Conditions as Regards Load	Signalling
1330E	12 1/2 x 13 1/2 x 5 1/4	For heavily loaded lines	Telephone signals and is signalled by code ringing
1330F			
1331E			
1331F	11 1/2 x 10 1/2 x 4 3/4	For lightly loaded lines	Telephone signals and is signalled by code ringing
1375B	9 3/4 x 7 1/4 x 4 1/4	Medium and heavily loaded	

*Batteries are not included in the price of the telephone and are furnished only when specified in the order.

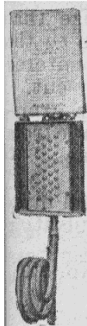
Western Electric Cable Terminals



Type C

A No. 22 A.W.G. cable stub $6\frac{1}{2}$ feet long will be furnished on Nos. C-10 and C-16 unless otherwise specified. A 7-foot, No. 22 A.W.G. cable stub will be furnished with No. C-26 unless otherwise specified.

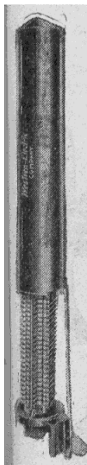
Code No.	No. of Pairs	Height Inches	Replaces
C-10	10	$12\frac{3}{4}$	8A
C-16	16	$14\frac{5}{8}$	8B & 8D
C-26	26	$17\frac{3}{4}$	8C & 8E



No. 14 Type Without Protectors

This is for open wire distribution from lead-covered aerial cable, and is intended to be mounted on poles or buildings. No arrangement is made for protective devices. A 6-foot No. 22 A.W.G. cable stub is standard.

Code No.	Capacity Pairs	Length Including Nipples Inches	Width of Cover Inches
14B	11	9	$7\frac{1}{16}$
14C	16	$11\frac{17}{32}$	$7\frac{1}{16}$
14D	26	$16\frac{3}{32}$	$7\frac{1}{16}$



No. 18 Type With Protectors

This is a protected terminal for open wire distribution from lead-covered aerial and underground cable. Inclosed in a black finished galvanized iron cover approximately $8\frac{5}{16}$ inches in diameter, provided with a safety chain fastened to the mounting base.

Arranged for mounting on poles. Equipped with: No. 7A Fuses (7 ampere unless otherwise specified). No. 1 Protector Blocks. No. 2 Protector Blocks. No. 3 Protector Micahs.

A 6-foot No. 22 A.W.G. cable stub is standard.

Code No.	Capacity Pairs	Length Inches	Code No.	Capacity Pairs	Length Inches
18A	10	$19\frac{3}{32}$	18D	30	$33\frac{1}{32}$
18B	15	$22\frac{1}{32}$	18E	50	$46\frac{25}{32}$
18C	25	$28\frac{25}{32}$	18F	60	$53\frac{21}{32}$

Western Electric Telephone Cords

There is a Western Electric cord to fit any telephone set or switchboard. If none of the cords described below meet your requirements, write us, sending if possible a sample cord or a sketch, paying particular attention to the kind of tip required.

Always specify length of cord when ordering.

Wall Telephone Receiver Cords

Code No.	Tinsel Cord	Brown Covering	No. Receiver End	CORD TRG Set End	Standard Length Feet
10	2-Conductor	Silk	29	62	$2\frac{1}{2}$ and 6
R2A	2-Conductor	Silk	103	103	$2\frac{1}{2}$
460	2-Conductor	Silk	29	29	$2\frac{1}{4}$

Used with receiver on wall set.

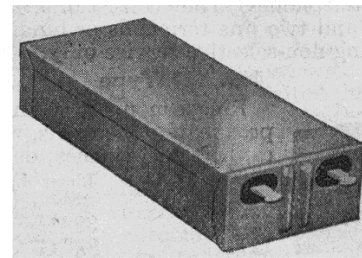
Desk Stand Cords

Code No.	Conductor	Covering	No. Receiver End	Set End	Standard Length Feet
549	2-Conductor	Silk	29	103	$2\frac{1}{2}$
T1A	1-Conductor	Cotton	98	103	1
550	3-Conductor	Silk	..	..	$5\frac{1}{2}$ or 8

No. 549 is used with receiver and No. T1A is used with transmitter on Nos. 1020 and 1040 Desk Stand. No. 550 is used with stand to connect with desk set box.

Western Electric Unmounted Condensers

No. 21 Type



No. 21

Code No.	Rated Capacity	Voltage Tested On, A.C.	Use
21H	0.1	1200	No. 85 Type Interrupter Railway Sets Telegraph
21AA	1.0	1000	
21AK	0.5	1000	

No. 142 Type

Code No.	CAPACITY			Voltage Tested On A.C.	Use
	Min.	Rated	Max.		
142B	.25	.25	.32	1000	Telegraph
142D	.05	.05	.06	1000	Railway Sets

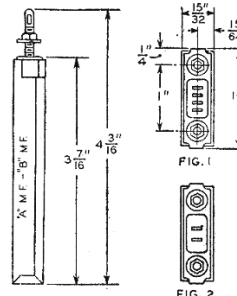
No. 142B Type replaces Nos 21Y and 21AL Condensers.

No. 142D Type replaces No. 21U Condenser.

The No. 142 Type Condensers require one No. 27A Bracket when mounted in place of the No. 21 or similar type condensers.

Arranged to mount on $\frac{1}{2}$ -inch horizontal and $1\frac{3}{4}$ -inch vertical centers. Furnished with two nuts and washers for mounting.

Safe continuously applied voltage, either d.c. or effective a.c. at 60 cycles or less and of an approximate sine wave, is 300 volts.



No. 142

Nos. 147 and 149 Types

The Nos. 147 and 149 Type Condensers are equipped with mounting tabs at lower edge of condenser and may be mounted by means of this tab and a mounting strap.

Safe continuously applied voltage, either d.c. or effective a.c. at 60 cycles or less and of an approximate sine wave, is 180 volts.

If No. 147 Type Condenser when substituted must fill space of No. 21 Type, order should specify P-409555 Adapter, and for the No. 149 Type Condenser, specify P-409556 Adapter.

Code No.	CAPACITY M.F. STAMPED AT			Voltage Tested On D.C.	Use	Replaces	
	Max.	A	Min.				
147A	2.50	...	2.0	2.0	500	General	Nos. 21D, E & L
147B	1.25	1.0	...	1.0	500	General	No. 21BG
*147C	1.25	...	1.0	1.0	500	Composite	No. 21AD
	1.25	1.0	...	1.0			
*147D	1.25	1.0	...	1.0	500	Coil Racks	No. 21N
	.62	...	.5	.5			

*Values stamped at "A" are measured between terminals 1 and 2, and values stamped at "B" are measured between terminals 1 and 3.

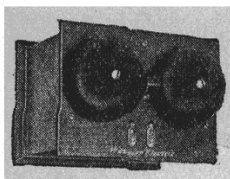
Code No.	CAPACITY M.F.			Voltage Tested On D.C.	Use	Replaces
	Max.	Rated	Min.			
149A	1.25	1.0	1.0	500	General	Nos. 21F, K, W & BW
149B	.62	.5	.5	500	General	Nos. 21AC & AS
149C	.13	.1	.1	500	General	No. 21R
149D	.80	.65	.65	500	General	No. 21BF

Western Electric A. C. Extension Bells

Intended for auxiliary use in connection with wall, desk or telephone arm telephones. They consist of a ringer on a suitable mounting and two line terminals or binding posts. For magneto bridging non-selective service only.

No. 127 Type

Ringer mounted in an oak box. Approximate dimensions, width 6½ inches; height 4¾ inches; depth 4¾ inches.



Code No.	Ringer No.	Resistance Ohms
127E	38AG	1020
127F	38BG	2500
127G	38FG	1620

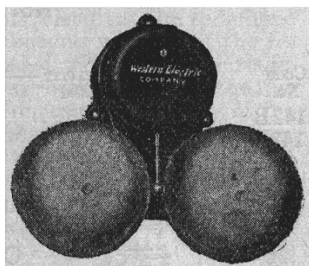
No. 392 Type

Moisture-proofed loud ringing bells having a black finish metal cover and base with galvanized finish gongs.

When the extension bell is to be used on a central battery line a 2 M.F. condenser must be connected in series with the ringer coils.

Base is arranged for mounting a No. 21D condenser. Condenser is not furnished, however, unless so ordered.

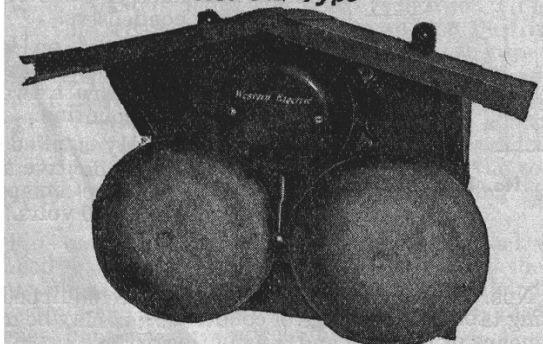
The connecting leads to the ringer coils are so arranged that the condenser can be easily connected in series with the ringer without disturbing the line wires when desired.



Code No.	Resistance Ohms	Diameter Gongs, In.
392A	1000	6
392B	2500	6
392E	1600	6
392G	1000	8
392H	2500	8

Biasing attachment for selective ringing can be added.

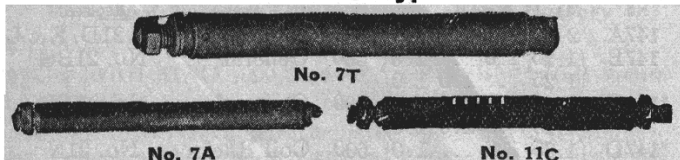
No. 342 Type



Loud ringing bells for use in mines and other places where a bell protected from weather is desired. Consists of a No. 392 type bell mounted on a No. 149A backboard having a sloping roof which protects the bell.

Code No.	Bell Used	Resistance Ohms	Diam. Gongs, In.	Code No.	Bell Used	Resistance Ohms	Diameter Gongs, In.
342G	392G	1000	8	342J	392A	1000	6
342H	392H	2500	8	342K	392B	2500	6

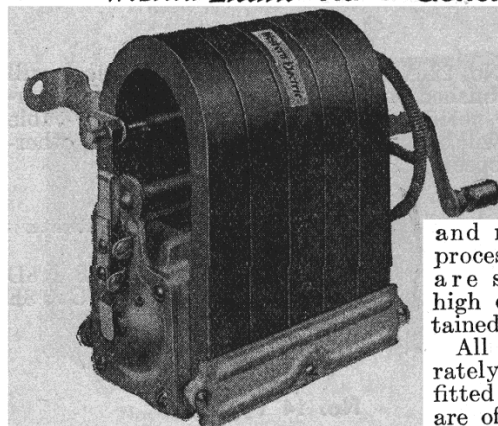
**Western Electric Tubular Fuses
Fiber Shell Type**



These fuses are carefully made from especially selected materials. The use of lead fuse wire prevents the possibility of overheating the shell. These fuses will carry their rated currents indefinitely without injury and will act reliably on one and one-half times their rated current values. Fuses of the same code number and rated capacity will give consistent performance as to rated and operating current values.

Code No.	Rated Capacity Amperes	Used with
7A	1 to 7 as Specified	Nos. 61, 77, 1074A and 1078 Protectors
7T	7	B Cable Terminals.
11C	7	Nos. 58AP and 1079AP Protectors

Western Electric Hand Generators



No. 48A

Western Electric hand generators are correct in both mechanical and electrical design and the materials used and manufacturing processes employed are such that their high efficiency is retained indefinitely.

All parts are accurately machined and fitted and the bearings are of such size that no trouble due to the armature scraping on the pole pieces will be encountered even after years of service. The gears are accurately cut.

All metal parts are given a protective finish and the armature winding is moistureproofed. The magnets are made from steel which was developed especially for this purpose.

No. 22 Type Generators

The No. 22 type generator is used on lightly loaded magneto lines and may be obtained for alternating or pulsating current.

These generators have three magnets except the No. 22E, which has only two.

No. 29 Type Generators

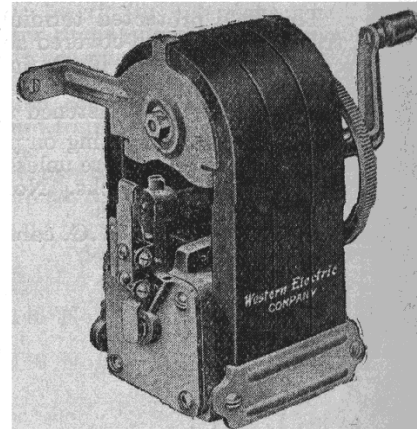
The No. 29 type generators are used where light weight is essential as in linemen's test sets, and portable telephones.

No. 48 Type Generators

The No. 48 is our most powerful hand generator and is used in telephone for heavily loaded line service.

No. 50 Type Generators

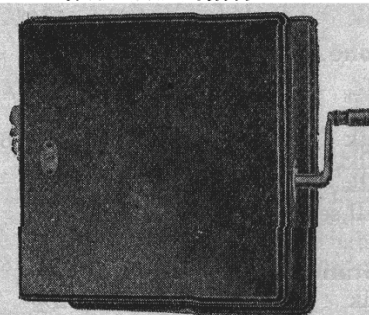
The No. 50 type generator was designed for use on moderately loaded lines and while it only has three magnets, it is considerably more powerful than a good many five-bar generators on the market, and will be found satisfactory for use on all but the very heaviest loaded lines. On a line of 12000 ohms, the No. 50 generator will operate six 2500 ohms Western Electric ringers and will operate thirty-five 2500 ohms Western Electric ringers on a line of about 1000 ohms.



No. 50A

The No. 50 generator is approximately 75% as powerful as the No. 48 type.

Western Electric Hand Generator Boxes

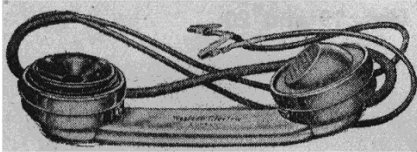


A hand generator box consists of a generator mounted in an oak cabinet having a hinged cover.

The leads from the generator are connected to terminals mounted close to the inside edge of the box.

Code No.	Generator	Current	DIMENSIONS OF BOX, INCHES		
			Width	Depth	Length
299F	48A	A. C.	8	6	9
299G	48B	A. C. and P. C.	8	6	9
303G	50A	A. C.	7 ²⁹ / ₃₂	4 ¹³ / ₃₂	8 ¹ / ₈

No. 1001 Type *Western Electric* Hand Sets



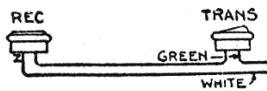
No. 1001A

The No. 1001 type hand sets have been manufactured for over fifteen years. They were originally intended for the use of linemen and are designed to withstand the rough handling, incidental to such service. This design proved to be so satisfactory that it is now used extensively for a number of different purposes, as described below. The handles are made of brass tubing with drawn brass end pieces and the transmitters and receivers are provided with drawn brass cases equipped with screw clamping rings, thereby making an instrument that is extremely rugged.

The No. 1001-C, and H hand sets are provided with a push button switch which is connected so that these hand sets function the same as the No. 1020-AL desk stand. In view of this, they may be used in connection with our regular magneto and central battery desk set boxes in place of a desk stand, in cases where the service conditions are such that a hand set is required. These hand sets have a nickel-plated finish.

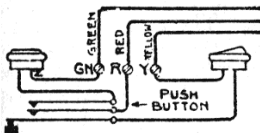
No. 1001A

Used by linemen as a test set on central battery lines. The cord is equipped with spring connection clips.



Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001A	244	131	243	8 in.	None
			574	2½ ft.	
			(Waterproof)		

Nos. 1001C and 1001H



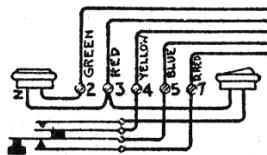
No. 1001C is used with Nos. 1330 and 1331 portable magneto telephones.

No. 1001H is used with No. 1375B portable magneto telephone.

Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001C	285	131	366	6 ft.	2 Make
			(Waterproof)		
1001H	244	131	422	5 ft. 2 in.	2 Make
			(Waterproof)		

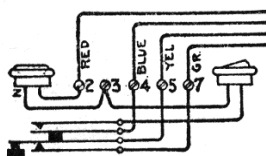
No. 1001E

Used with desk type Inter-phones where 5-conductor cord is required.



Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001E	244	131	398	6 ft.	1 Make and 1 Break

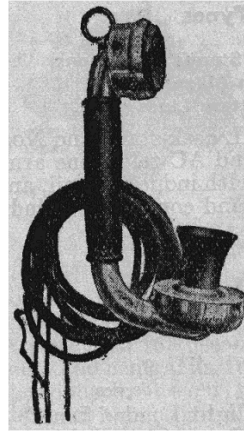
No. 1001J



No. 1001J is used with desk type Inter-phones.

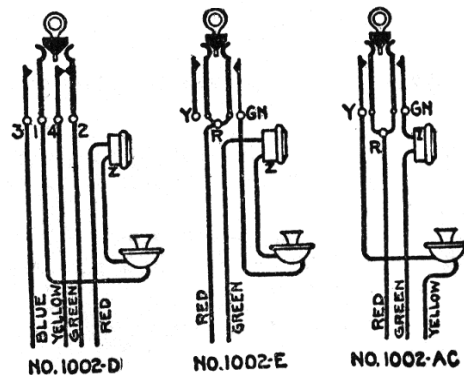
Code No.	Transmitter	Receiver	CORDS		Push Button Spring Combination
			Code No.	Length	
1001J	244	131	502	6 ft.	1 Make and 1 Break

No. 1002 Type *Western Electric* Hand Sets



No. 1002AC

The transmitter and receiver of the No. 1002 type hand sets are mounted on a nickel plated tubular brass frame, equipped with a hard rubber handle. A switch mounted within the frame is actuated by a plunger which terminates in a ring by which the hand set is suspended, when not in use. When the hand set is removed from the hook, the switch is automatically closed. These hand sets function the same as certain desk stands, and, therefore, may be used in place of desk stands, if required. A hook (No. 141A switch-hook) is furnished with each hand set.



No. 1002D

Used in place of desk stands and telephone arms in connection with Interphones. Also for general use.

Code No.	Transmitter	Receiver	CORDS		Switch Combination
			Code No.	Length	
1002D	267	141	336	14 ins.	1 make and 1 break (4 conductors)
			402	8½ ins.	
			429	4 ft. 6 ins.	

No. 1002E

Used in connection with a janitor's switchboard in apartment house equipment. Also for general use.

1002E	267	141	402	8½ ins.	2 make contact
			336	14 ins.	
			430	4 ft. 6 ins.	
			(2 conductors)		

No. 1002AC

Used in place of local battery bridging or central battery desk stands. Functions same as No. 1040AL desk stand. Also No. 1801 swbd.

1002AC	267	141	318	4½ ft.	2 make
			(3 conductors)		
			414	4¼ ins.	
			415	9½ ins.	

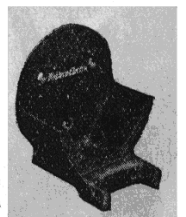
No. 1003 Type Hand Sets

NOTE.—The No. 1003 type hand sets are listed under Interphones.

Western Electric Hand Set Hangers

No. 1B mounts on a vertical surface for holding a No. 1001 type hand set when not in use. The hand set is suspended by its receiver, which fits into a recess in the hanger. Cast brass; black finish. Overall dimensions, 3¼ inches wide, 2½ inches deep and 3⅜ inches high.

No. 1C is the same as the No. 1B, except that it is equipped with rubber studs and a spring, so arranged as to prevent the hand set from swaying. Used principally on

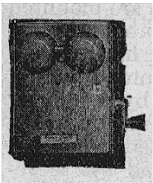


No. 1B

Western Electric Desk Set Boxes

Nos. 300 and 315 Types

For Use with Desk Stands, Telephone Arms, Etc., on Magneto or Central Battery Lines



Used with No. 1020AL desk stand and Nos. 1020CC, 1048AA, AB and AC telephone arm. Oak boxes equipped with induction coil, and with ringer, generator and condenser as indicated below.

Ringers Operated by A.C.

Code Ringing

Code No.	Ringer Resistance Ohms	Type Generator	Con-denser	Service
315H	1020	No. 22 (3 Bar A.C.)	.....	Light Loaded Lines
300K	2500	No. 48 (5 Bar A.C.)	.....	Heavy Loaded Lines
300N	2500	No. 48 (5 Bar A.C.)	1 Mf.	Heavy Loaded Lines
300L	1620	No. 48 (5 Bar A.C.)	.....	Medium Loaded Lines
300M	1620	No. 48 (5 Bar A.C.)	1 Mf.	Medium Loaded Lines

No. 1020AL Western Electric Desk Stands

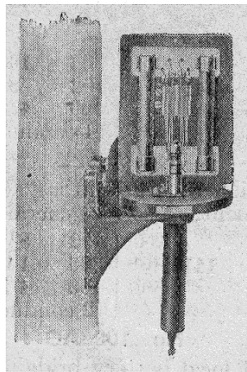


For regular bridging magneto or common battery service. Insulated transmitter.

Includes one No. 20AL Desk Stand, one No. 323 Transmitter, one No. 144 Receiver and cords.

Black Japan finish.

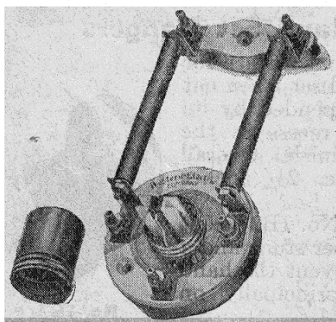
No. 186 Western Electric Weatherproof Telephone Jacks



Weatherproof jack designed for mounting poles; affords a means of connecting a portable telephone to the line. Contains protective apparatus.

Lock will be furnished if specified in order.

No. 58AP Western Electric Telephone Protectors

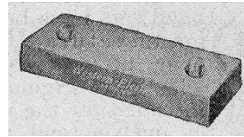


Designed for protection against lightning and crosses with electric circuits.

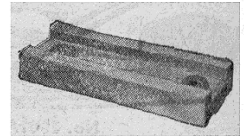
Consists of two No. 11C-7 Ampere Fuses, two each Nos. 26 and 27 Protectors and Nos. 16, 29 and 48 Mountings.

Western Electric Telephone Protector Blocks

Nos. 19 and 20



No. 19



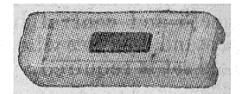
No. 20

Code No.	Description	USED WITH		
		Protector Blocks, No.	Protector Micas, No.	Protectors, Nos.
19	Plain Copper Block with Two Pins	20	10	58B, 60B
20				

Nos. 26 and 27



No. 26



No. 27

Provides better telephone service through fewer interruptions of operation. They are used together without a separator (protector mica) and form an open space cutout which will afford the highest grade of protection against high potentials due to lightning.

The No. 26 protector block is a solid piece of hard non-dusting carbon. The face of the block is especially ground to present a smooth surface. The No. 26 protector block is mounted on the ground side of the protector mounting.

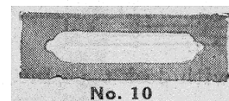
The No. 27 protector block consists of a porcelain frame with a countersunk hard carbon plug which is fastened in place with low temperature fusing cement. The surface of the frame which bears against the No. 26 block, when assembled in a mounting, is finished by grinding. The air gap between the carbon insert in the No. 27 block and the face of the No. 26 block is held to close limits by this grinding process and the consistent operation of the cutouts at the proper voltage is thereby insured.

Ordinary lightning discharges will cause an arc across the air gap between the carbon blocks but will not heat them sufficiently to melt the cement used for holding the carbon plug in place. A cross with an electric light or power line, however, will cause a discharge or repeated discharges, of such duration that the heating of the carbon insert of the No. 27 blocks will melt the cement holding it in place and allow the mounting spring to push it into direct contact with the No. 26 block, thus permanently grounding the line.

Code No.	Description	Used with Protectors, Nos.
26	Carbon Block	12AP, 58AP, 60AP, 76AP, 1268A and 1269A
27	Porcelain Frame with Carbon Insert	

The new blocks are interchangeable with the old combinations of No. 1 protector block, No. 2 protector blocks and No. 3 protector mica in all subscribers' set protector mountings and are therefore available for improving protective equipment already in service, during the normal replacements. All orders for replacements of Nos. 1 and 2 blocks and No. 3 micas in subscribers' telephone station protectors should specify the Nos. 26 and 27 protector blocks; no separator (protector mica) is needed with the new design of block.

Protector Micas

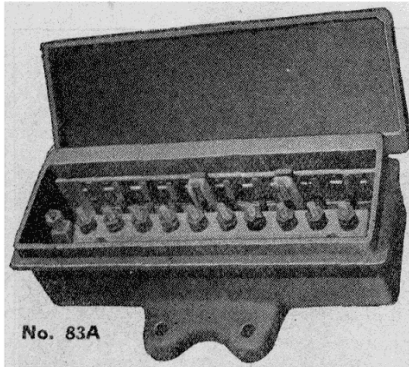


No. 10

Code No.	Protector Blocks, Nos.	USED WITH	
		Protectors, Nos.	Protectors, Nos.
10	19, 20 and 21	58B, 60B and 80A	178
11				19 and 20

No. 11 mica is twice as thick as the No. 10.

Western Electric Telephone Protector Mountings

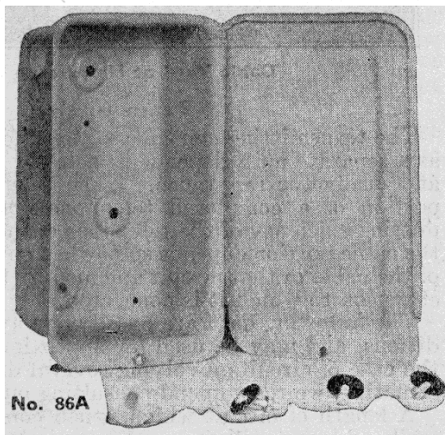


No. 83A

No. 83A is designed to protect drop wires between the overhead lines and the subscribers telephone set from lightning. This protector mounting consists of an iron box approximately $8\frac{1}{4} \times 5 \times 2\frac{3}{4}$ inches deep with a cover and having a No. 84A protector mounted within it. Arranged to mount 10 pairs of No. 26 and 30 protector blocks. This

protector mounting provides for the protection of 5 pairs of wires. The box mounts directly underneath the crossarms on the poles. Two mounting lugs are provided for this purpose.

No. 86A is for housing the 58 type protector where outside installation is desired. Consists of a galvanized iron metal box having a sliding cover with locking screws. Three screws are furnished for mounting the protector in the box. Size, 10 inches long, $5\frac{31}{32}$ inches wide, $3\frac{1}{4}$ inches deep.



No. 86A

Western Electric Hand Receivers



No. 144

With hard rubber case.

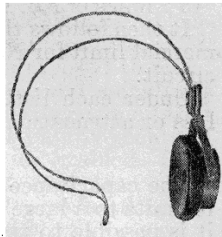
Cord not included; order separately.

Western Electric Head Receivers

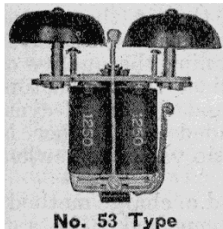
No. 528

Standard bipolar head receiver, brass case with improved wire type headband.

Used with operator's telephone set and all switchboards.



Western Electric Ringers



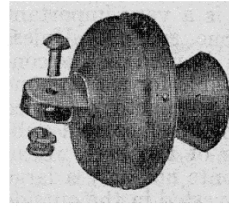
No. 53 Type

Have gong posts suitable for $\frac{5}{8}$ -inch woodwork; spacers can be furnished to adapt the No. 53 type to $\frac{3}{8}$ -inch woodwork and the No. 38 to either $\frac{3}{8}$ or $\frac{1}{2}$ -inch woodwork. Black finish gongs are furnished as standard, but nickel finish gongs can be supplied.

Used with central battery (magneto) telephones.

Code No.	Approx. Resistance Ohms	GONGS		Mounts in Woodwork Inches
		Code No.	Diam. Inches	
38AG	1020	26A	3	$\frac{5}{8}$
38BG	2500	26A	3	$\frac{5}{8}$
38FG	1620	26A	3	$\frac{5}{8}$
53AG	1000	29A	$2\frac{1}{2}$	$\frac{5}{8}$
53BG	2500	29A	$2\frac{1}{2}$	$\frac{5}{8}$
53FG	1600	29A	$2\frac{1}{2}$	$\frac{5}{8}$

Western Electric Transmitters



No. 323

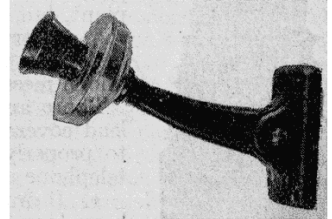
High resistance, insulated transmitter. Provided with mounting lug and clamping bolt. Black finish.

Designed for use on magneto and central battery desk stands and telephone arms

No. 353

High resistance, insulated, bracket type transmitter. Black finished all over.

Designed for use on magneto and central battery wall telephones, requiring a bracket type transmitter.



Western Electric Testing Sets

Type 90500



No. 90530

Each set consists of a hand generator and a ringer, wired in series, and included in a wooden case.

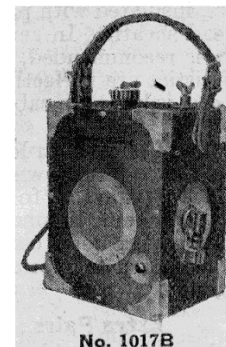
Code No.	Will Ring Through Ohms	Consists of
90530	10000	1 No. 22K Generator 1 No. 19B Ringer
90510	35000	1 No. 22K Generator 1 Special No. 19 Ringer
90511	50000	1 No. 22N Generator 1 No. 19A Ringer
90512	100000	1 No. 22N Generator 1 No. 19B Ringer

Size of case is $5\frac{3}{4} \times 6\frac{3}{8} \times 5\frac{1}{4}$ inches.

It is finished in birch.

No. 1017 Type Western Electric Test Sets

No. 1017 Type



No. 1017B

A wooden box telephone test set equipped with a regular local battery talking circuit consisting of a No. 266 transmitter, No. 13 induction coil, No. 189 receiver and a special three-cell dry battery unit.

NOTE.—The No. 1017C test set differs from the No. 1017B only in that it is equipped with a specially designed high efficiency generator. The No. 1017B will, under ordinary conditions, be found entirely satisfactory, but in case a more powerful set is required to meet unusual conditions, the No. 1017C set has been developed.

No. 1017B. For lightly loaded lines—it will ring 15, 2500 ohm bells over a 15 mile No. 12BB iron metallic line.

Code No.	Weight Including Battery Pounds	Size of Case Inches	Finish
1017B	8	$42\frac{7}{32} \times 6\frac{3}{32} \times 7\frac{27}{32}$	{ Birch Mahogany
1017C	8	$42\frac{7}{32} \times 6\frac{3}{32} \times 7\frac{27}{32}$	{ Birch Mahogany

No. 1017C. For moderately loaded lines—it will ring 33 2500 ohm bells over a 15 mile No. 12BB, iron metallic line.