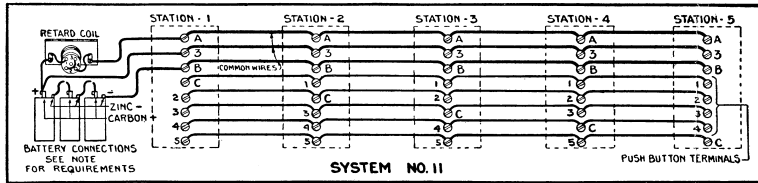
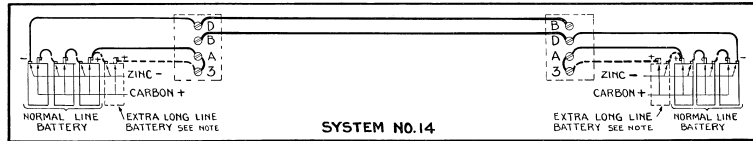


# Graybar Electric

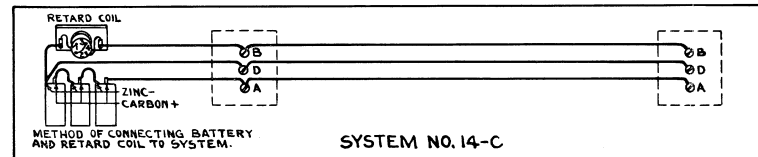
**Diagrams of Connections for Common Talking Inter-Phones Systems No's 11, 12, 12-A, 12-B, 12-C, & 12-AC, 12-SS, 14, 14-C, 15 and 18-C Using Wall, Desk or Hand Set Type Inter-Phones**



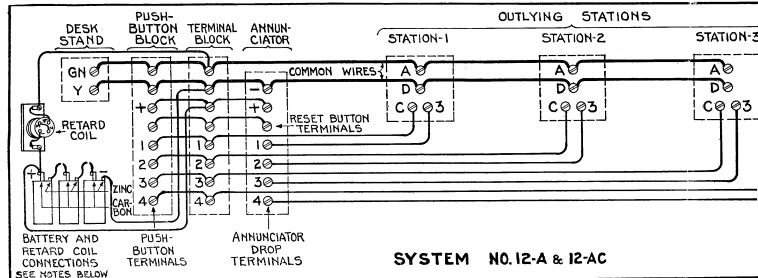
SELECTIVE RINGING—COMMON TALKING



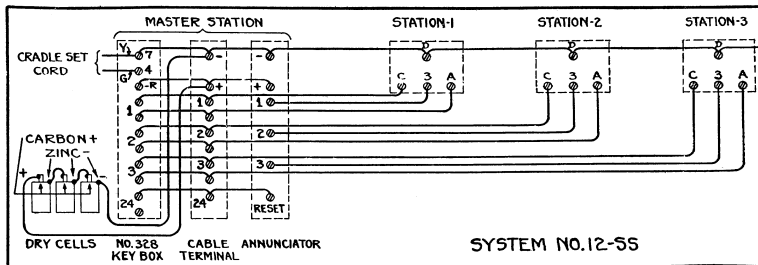
TWO STATION—PRIVATE LINE—TWO WIRES



TWO STATIONS—PRIVATE LINE—THREE WIRES



MASTER PUSH-BUTTON BLOCK AND ANNUNCIATOR—TWO-WAY SERVICE



MASTER KEY BOX AND ANNUNCIATOR—SECRET SERVICE

## Battery Requirements of Systems No's 11, 12, 12-A, 12-SS & 18-C

Only one battery is required to furnish current for talking and ringing. Do not use more than five Blue Bell dry cells connected in series. When using wires of No. 22 B. & S. gauge (as contained in the standard Inter-Phone cables recommended for this system) the wire distance between the master and the farthest outlying station should not exceed 750 feet. On lines of greater length larger wire should be used as follows:

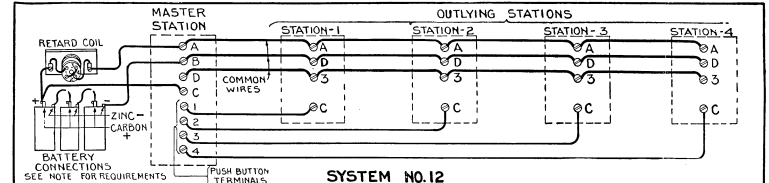
	750-1000 ft.	1000-1500 ft.	1500-2500 ft.
No. 20 B. & S. gauge			
No. 18 B. & S. gauge			
No. 16 B. & S. gauge			

## Battery Requirements of System No. 14

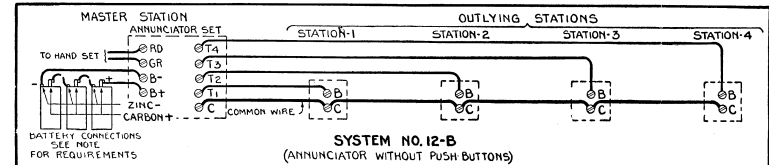
A battery of three Blue Bell dry cells is required at each station to furnish current for talking and ringing if the length of line is 750 feet or less. If the length of the line is increased, additional dry cells are required at each station to insure satisfactory ringing as follows:

Distance Between Stations up to	750 Ft.	1000 Ft.	1500 Ft.	2000 Ft.	2500 Ft.	3000 Ft.	4000 Ft.	5000 Ft.	6000 Ft.
No. B. & S. Gauge	18	18	18	16	16	14	14	12	12
Copper Wire									
No. of Dry Cells for Each Station	3	4	5	4	5	4	5	4	5

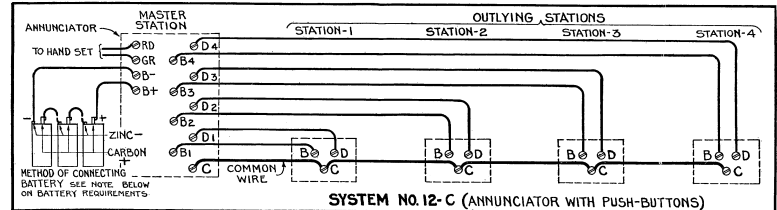
When additional cells are required, they must be connected in series with the original cells and the zinc or negative pole must be connected to terminal "3." When so arranged, the wire between "A" and "3" in each station must be cut. This applies to No. 1527-C-1 and No. 1539-C-1 wall Inter-Phones only.



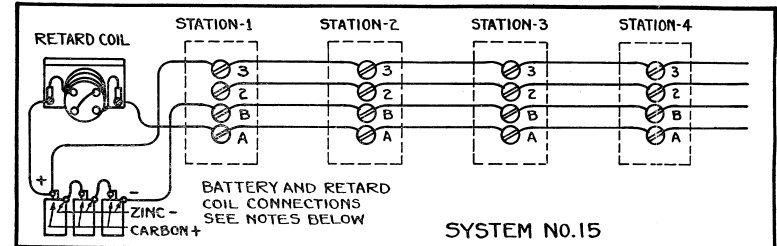
MASTER STATION—COMMON TALKING



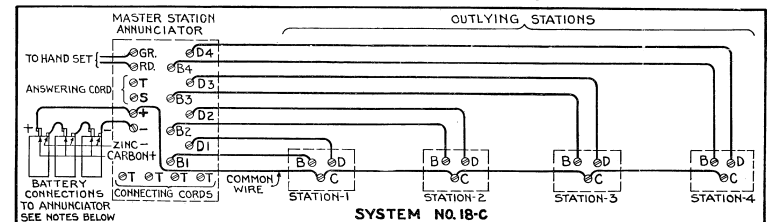
MASTER ANNUNCIATOR—ONE-WAY RINGING—COMMON TALKING



MASTER ANNUNCIATOR—TWO-WAY RINGING—COMMON TALKING



CODE RINGING—COMMON TALKING



MASTER ANNUNCIATOR—NON-INTERFERING

## Battery Requirements of System No. 12-B & C

Only one battery is required to furnish the current for talking and ringing. Do not use more than four Blue Bell dry cells connected in series.

When using wires of No. 22 B. & S. gauge size (as contained in the standard Inter-Phone cables recommended for this system) the wire distance between the master and the farthest outlying station should not exceed 250 feet, as this is the longest distance over which satisfactory ringing can be secured. On the longer lines, larger wire should be used as follows:

	250-400 ft.	400-600 ft.	600-1000 ft.
No. 20 B. & S. gauge			
No. 18 B. & S. gauge			
No. 16 B. & S. gauge			

## Battery Requirements of System No. 12-AC

A 24 volt battery is required for this system. This may consist of Blue Bell dry cells or storage batteries, depending upon the installation requirements.

## Battery Requirements of System No. 14-C & 15

Only one battery is required to furnish current for talking and ringing. Do not use more than five Blue Bell dry cells connected in series. The battery requirements of this system are listed below and are determined by the number of Inter-phones to be connected, the length of line and the size of wire to be used.

The battery may be connected at any station in the system.

Number of Stations	2	3	4	5	6	7	8
Copper Wire—							
B. & S. Gauge No.	16 18 20 22	16 18 20 22	16 18 20 22	16 18 20 22	16 18 20 22	16 18 20 22	16 18 20 22
Length of Line—							
250 Ft.	4 4 4 4	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5
500 "	4 4 4 4	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5
750 "	4 4 4 4	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5
1000 "	4 4 4 4	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5
1250 "	4 4 4 4	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5
1500 "	4 4 4 4	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5	4 4 4 5