SELECTION OF WIRE AND CABLE

1. GENERAL

1.01 This section covers the selection of the wire or cable which is used between telephone set and:

(a) Station Protector.
(b) Connecting Block.
(c) Inside Cross-Connecting Box or Cable Terminal.
(d) Extension Telephone or Extension Ringer.

1.02 Consider the selection of either wire or cable, and determine the proper type of wire or cable and the number of conductors to use after deciding upon the location of telephone set and entrance and, where required, connecting block, protector and ground connection.

1.03 Privately owned wire or cable systems should not be used without first obtaining authority through your supervisor.

2. SELECTION OF WIRE AND CABLE

Wire

2.01 The selection of wire for interior wiring should be considered where the number of pairs or triples to be run at the same time is four or less.

Cable

2.02 The selection of cable should be considered where five or more pairs or triples have to be run at the same time, or:

(a) Appearance will not permit the use of several taped or untaped wires.
(b) The run if made with wires would require taping for a large part of the distance.
(c) Conduit system is available, but is too small for the required number of wires.
(d) Expensive or difficult fishing in wall or partition is otherwise required.
(e) Wire run passes locations subject to the action of steam, or walls and ceilings that are always damp.
(f) Where additional growth is expected.

2.03 Before ordering cable, however, obtain the approval of your supervisor if:

(a) The number of pairs in cable required is more than eleven pairs, regardless of the length.

(b) The length of cable required is more than one hundred feet, regardless of the number of pairs.

3. SELECTION OF TYPES OF WIRE

General

3.01 If, after the terms of paragraphs 2.01 and 2.02 have been considered, wire appears to be best suited for the particular run, determine the type of wire to use as hereinafter outlined.

Interior Wiring

3.02 **Inside Wire:** Select inside wire for use where:

(a) Wire is not exposed to dampness.

(b) Appearance is important.

3.03 Use brown inside wire for runs on dark surfaces.

3.04 Use ivory inside wire for runs on white, cream or ivory walls and other surfaces which are not so dark as to show the light colored wire in marked contrast.

3.05 **Duct Wire:** Select duct wire for use where:

(a) Wire is exposed to dampness.

(b) Appearance is not important.

(c) Wire is run in conduit or underfloor duct systems, etc.

3.06 **Bridle or Drop Wire:** Where no protector is required and appearance is not important, bridle or drop wire may be run directly to subscriber set if set is located near point of entrance.

Interior Wiring Extended Outside of Building

3.07 **Duct Wire:** Select duct wire for use where part of the interior wiring is extended outside of building, such as for an extension station or extension ringer, etc., in the same building.

Cross-Connections

3.08 **Inside or Distributing Frame Wire:** Select brown inside wire or distributing frame wire for use in inside cross-connecting boxes or frames at dry locations.

3.09 **Duct Wire:** Select duct wire for use in inside cross-connecting boxes or frames at damp locations and at all terminals equipped with sealed chambers

4. SELECTION OF TYPES OF CABLE

General

4.01 If, after the terms of paragraphs 2.01 and 2.02 have been considered, cable appears to be best suited for the particular run, determine the type of cable to use as hereinafter outlined.

Inside Wiring Cable

4.02 Select inside wiring cable for use where:

(a) Cable does not pass locations subject to the action of steam, or walls and ceilings that are always damp.

(b) Appearance may or may not be important.

Note: Inside wiring cable costs less per foot than U type cable.

4.03 The color considerations outlined in paragraphs 3.03 and 3.04 for inside wire also apply to inside wiring cable, and therefore should be used accordingly.

UA and AUA Cable

4.04 Select UA or AUA cable for use where terminals are at dry locations and:

(a) Cable passes locations subject to the action of steam, or walls and ceilings that are always damp.

(b) Cable is run through underfloor duct systems, conduits, etc.

MUA and NUA Cable

4.05 Select MUA or NUA cable for use where terminals are at damp locations and the conditions of (a) and (b) of paragraph 4.04 obtain.

5. SELECTION OF SINGLE, PAIR OR TRIPLE WIRE

Individual and Non-Selective Party Line Stations

5.01 Use pair wire for wiring from protector, connecting block or terminal box as shown in Fig. 1.

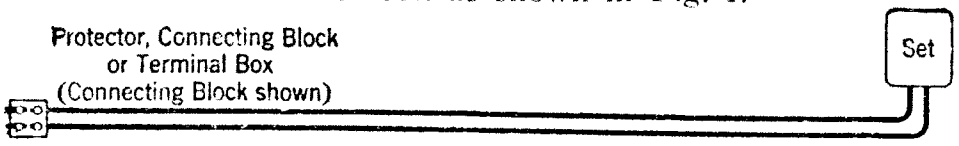

Fig. 1.

5.02 In districts where selective ringing is used and party line stations are frequently installed, it may be desirable to install triple wire for individual line stations, particularly in rented houses and in apartment houses not having house cables in order to reduce the expense of installing a party line station later should this be required. In this connection follow local instructions.

5.03 If triple wire is installed as above at an individual line station having a protector, do not connect the yellow tracer to the ground terminal of set and protector, but coil up enough slack to reach ground terminal when required. At stations without protectors, run the triple wire to and terminate it at the connecting block. Place signaling ground wire from connecting block to ground connection at time individual line station is changed to party line station.

Converting Individual to Selective Party Line Stations

5.04 If in converting these stations the existing wire is in good condition and is either pair bridle or pair olive inside wire, add a single brown inside wire for ground connection unless appearance requires the replacement of the entire wire run. If existing wire is pair white inside wire, add a single ivory inside wire for ground connection as shown in Fig. 2.

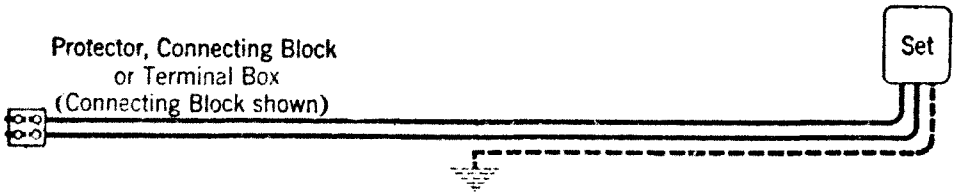

Fig. 2.

Selective and Semi-Selective Party Line Stations

5.05 **General:** At these stations a signaling ground wire is required.

5.06 **Wiring to Protector or Terminal Box with Ground Connection:** Use triple wire as shown in Fig. 3.

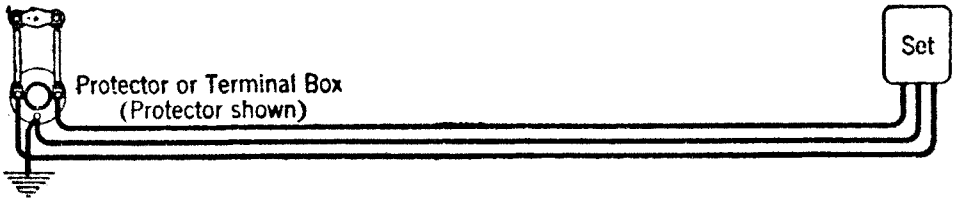

Fig. 3.

5.07 **Wiring to Connecting Block or Terminal Box without Ground Connection When Station and Ground Wires Are Run in Same Direction:** (In Figs. 4 to 6 consider terminal box as a connecting block.) If ground is beyond the block, use a three-post connecting block. Use triple wire from set to block and single wire from block to ground connection as shown in Fig. 4.

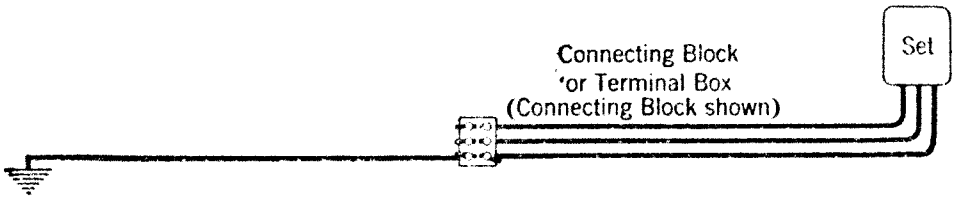

Fig. 4.

5.08 If ground is nearer connecting block than set but between the block and set, use a two-post connecting block. Use triple wire from set to block. Untwist yellow or double tracer conductor and run to ground connection as shown in Fig. 5.

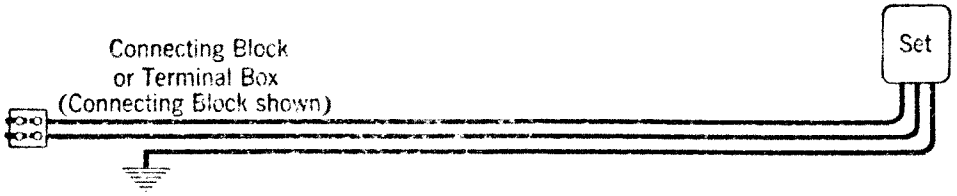

Fig. 5.

5.09 If ground is nearer set than connecting block, use a two-post connecting block. Use pair wire from set to block and single wire from set to ground connection as shown in Fig. 6.

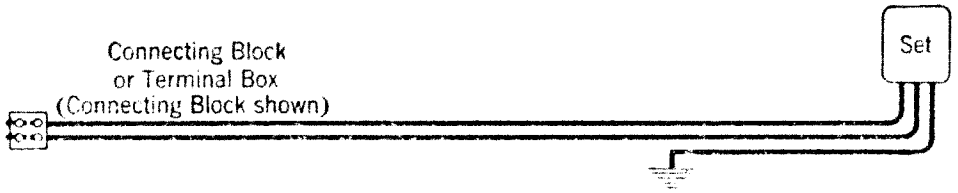

Fig. 6.

5.10 **Wiring to Connecting Block or Terminal Box without Ground Connection When Station and Ground Wire Are Not Run in Same Direction:** Use a two-post connecting block. Run pair wire from set to block and single wire from set to ground connection as shown in Fig. 7.

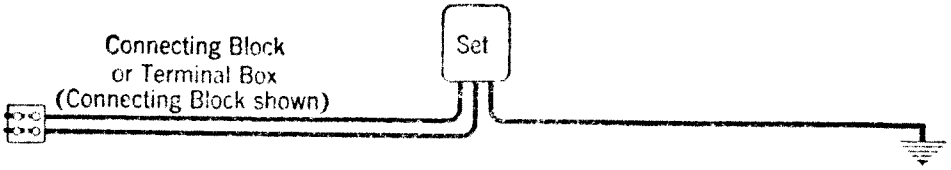

Fig. 7.

5.11 **Drop or Block Wire Run Direct to Set:** If the drop or block wire is run directly to set, use single wire from set to ground connection.