

PRIVATE LINE TELEPHONE SERVICE
600/1500-CYCLE SELECTIVE SIGNALING SYSTEM
TYPICAL EQUIPMENT LAYOUTS
RIGHT-OF-WAY (ROW) COMPANIES

1.00 GENERAL

1.01 This section contains general information on equipment requirements at locations where 600/1500-cycle selective signaling is used for the dial selection of stations on 4-wire private lines terminating in station sets. Where these lines multiple to PBX on the same premises, equipment requirements covering these terminations are included. The information covered herein applies principally to those installations involving ROW companies.

1.02 The station relay equipment associated with the 600/1500-cycle selective signaling is arranged on a feature basis, ie, each installation, instead of being coded as a complete plan, consists of different combinations of features, selected as required and connected together at the time of installation. Various equipment layouts, representative of the features requested by ROW companies, have been included in this section. It is felt that the typical layouts covered herein should be helpful in the planning of other installations where the layouts may differ slightly due to varying feature requirements.

1.03 Information on the selection of battery supply arrangements, apparatus cabinets, and relay racks is included in this section.

1.04 Conduit and power wiring between the commercial power supply distribution box and the power supply receptacles in apparatus cabinets or on relay racks should be arranged for by the customer.

1.05 Reference information listing other sections and drawings that contain material helpful to the installer has been included in Part 5.

1.06 Polarized electrolytic capacitors are severely damaged by reversed polarity dc voltage. Therefore, fuses are to be added and loop length and wire size limited. Should the dc voltage from the reserve battery be connected to the 101G power plant with reversed polarity, the 24C 2-amp fuses will operate, preventing any damage to the polarized electrolytic capacitors within the 101G power plant.

2.00 LOCATING

General

2.01 Apparatus located at the telephone set location should include only that necessary for its operation, ie, the telephone set, audible and visual signals, keys, etc.

2.02 The relay equipment should be located in one apparatus cabinet of adequate size or on a relay rack. If the latter is provided, it should be located in a telephone equipment room if available. If space limitations exist which necessitate locating the relay rack where the equipment or wiring is exposed to accidental damage by the personnel, a railing or other protective arrangements should be provided by the customer to minimize this possibility.

2.03 If a power plant for dc battery supply is provided, it should be floor- or wall-mounted, depending on the type, in close proximity to the relay equipment. A typical wall-mounted arrangement of the 101G power plant and emergency dry cell reserve is shown in Fig. 1.

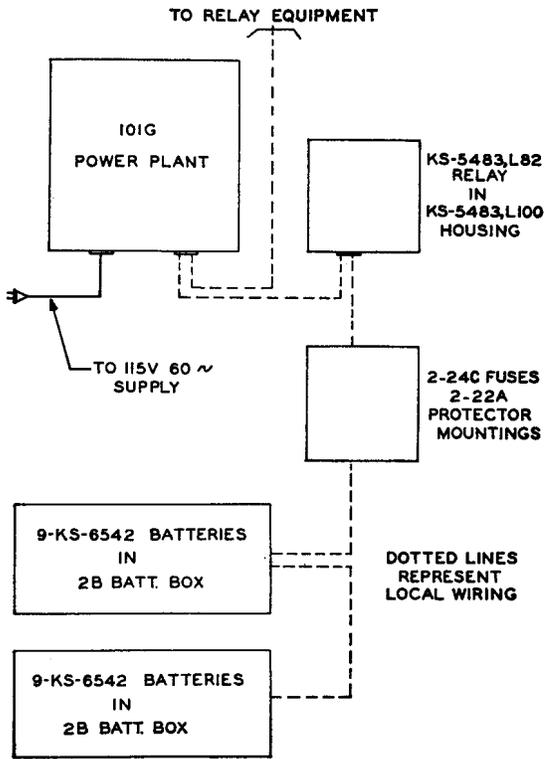


Fig. 1 - Typical Wall-mounted Arrangement of the 101G Power Supply and Fused Emergency Dry Cell Battery Reserve

3.00 SELECTION

Apparatus Cabinet and Relay Racks

3.01 Every effort should be made to determine the customer's future anticipated growth before selecting the type of mounting arrangement. In general, when one cabinet such as the 45-plate capacity type is not adequate, the use of relay racks is recommended. In some cases, however, where a separate equipment room is not provided and the two-tone equipment must be mounted in the operating room, the provision of two apparatus cabinets may be desirable from an appearance standpoint.

3.02 To aid in the proper selection of an apparatus cabinet or relay rack, typical equipment layouts specifying the mounting plate space requirements are shown in Fig. 3 to 7.

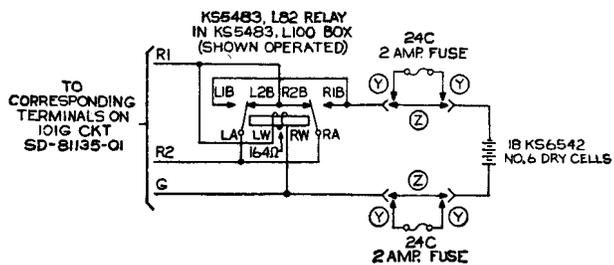
3.03 Information on the types of apparatus cabinets recommended, relay rack, and adapter details for mounting 19-inch mounting plates on framework designed for 23-inch mounting plates is listed in Part 5 in this section.

Power Supply Arrangements

3.04 The use of dry cell batteries as a regular source of talking or signaling battery is not recommended.

3.05 Where existing PBX supply, building battery, or cable feeders are available, this source of supply should be used.

3.06 Where no existing supply is available, the use of the 101G power plant is recommended. To protect against commercial power failure, an emergency dry cell battery reserve with automatic transfer (or customer emergency power supply, if available) should be provided in accordance with Fig. 2, and 24C 2-amp fuses or equivalent should be used. One 22A protector mounting is required for each 24C fuse. Restrict the wire to 16-gauge minimum and loop length to 50-foot maximum. This change should be made at all existing installations. The dry cells will only supply a dc reserve to the equipment receiving its dc battery from the 101G power plant. They do not provide complete service during a commercial power failure.



Note 1: Use No. 16 minimum lead size with 50-foot maximum loop length.

Note 2: "Z" option is superseded by "Y" option.

Fig. 2 - Transfer Circuit with Fused Dry Battery Reserve for Use with 101G Power Plant

Automatic Time-out of Signals

3.07 At locations not attended on a 24-hour basis, an automatic time-out circuit per Fig. 66 of SD-69167-01 should be provided. This will eliminate, in the case of an unanswered call during the unattended hours, the continuous operation of the buzzer.

4.00 TYPICAL EQUIPMENT LAYOUTS

4.01 Typical equipment layouts are shown in Fig. 3 to 7. In accordance with the recommendations set forth in 3.01, relay rack mounting arrangements are specified where one apparatus cabinet would not be adequate. Where the mounting space requirements are less, either relay rack or apparatus cabinet may be selected.

4.02 Fig. A to L cover various features that may be requested. Unless otherwise specified, this equipment consists of angle bracket assembled equipment or key telephone units which are mounted on mounting assemblies per ED-69143-01, G1 for bars 19 inches long or ED-69143-01, G2 for bars 23 inches long. The connections between the units are made in accordance with SD-69167-01.

4.03 The notations and abbreviations in Fig. A to L are interpreted as follows:

- 29 (G) — Equipment Unit ED-91929-01 (Group)
- 38 (G) — Equipment Unit ED-91938-01 (Group)

KTU — Key Telephone Unit

Letter in parentheses } Corresponds to circuit designations and figures on SD-69167-01.
 Figure number }

Front and Rear — Refers to equipment mounted on the front or rear of the mounting assemblies per ED-69143-01, G1 or G2.

4.04 Where two Fig. A to H are provided, only one time-out circuit per Fig. 66 of SD-69167-01 is required.

4.05 Tie trunk, auxiliary trunk, and signaling connector units associated with the multiple- or dial-type PBXs such as the 552A, 552D, 605A, 700C, or 701A are not covered in this section,

as it is assumed that these units will be located in all cases with their associated PBX equipment either on relay rack or in the rear of the switchboard section.

4.06 Tie trunk, auxiliary trunk, and signaling connector units associated with the non-multiple PBXs such as the 551A, 551B, 551D, etc, are covered herein and should be mounted in the rear of the PBX section if space is available and fused locally from the PBX battery supply; otherwise they should be mounted as shown in Fig. 3, 4, 5, or 7 and fused from the fuse panel provided on associated framework.

4.07 The space of two 1-3/4 inch mounting plates above the 600/1500-cycle receiving unit should be unequipped to provide clearance for maintaining the 60-type selectors.

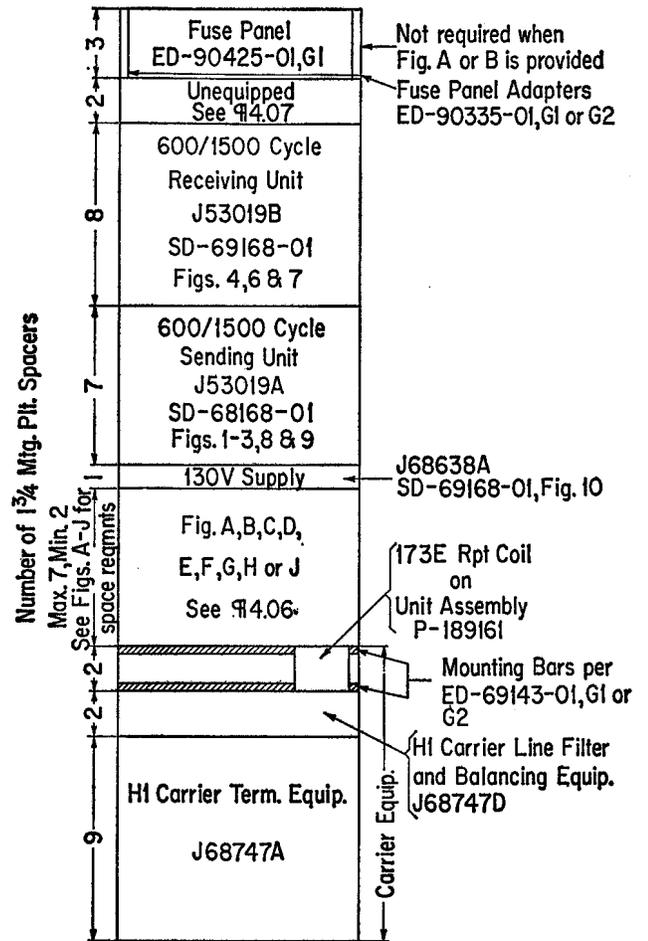


Fig. 3 — One 4-wire Private Line with or without HI Carrier Equipment for Various Terminations as Covered in Fig. A to J

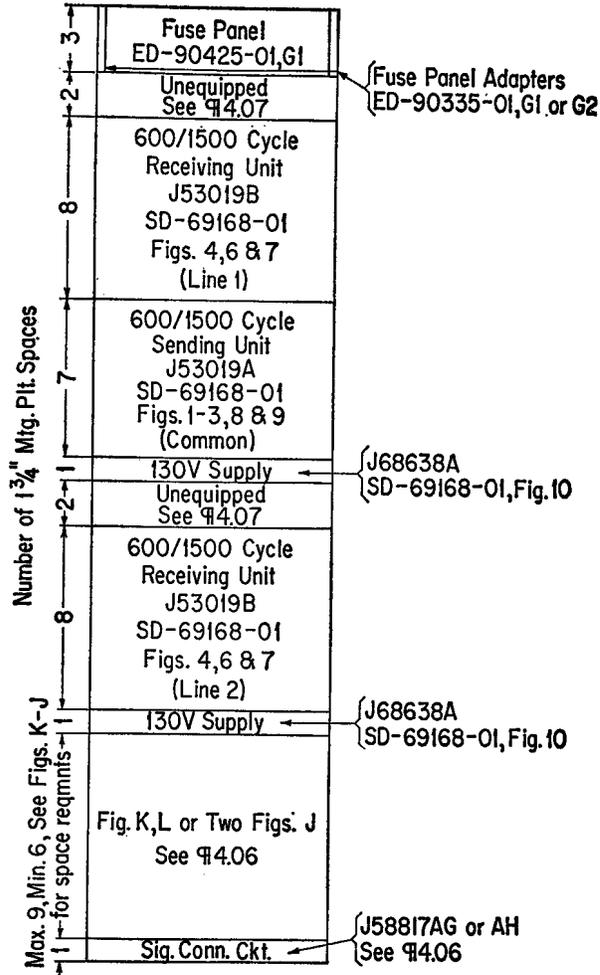


Fig. 4 - Two 4-wire Private Lines with Common Sending Unit for Terminations as Covered in Fig. J, K, and L

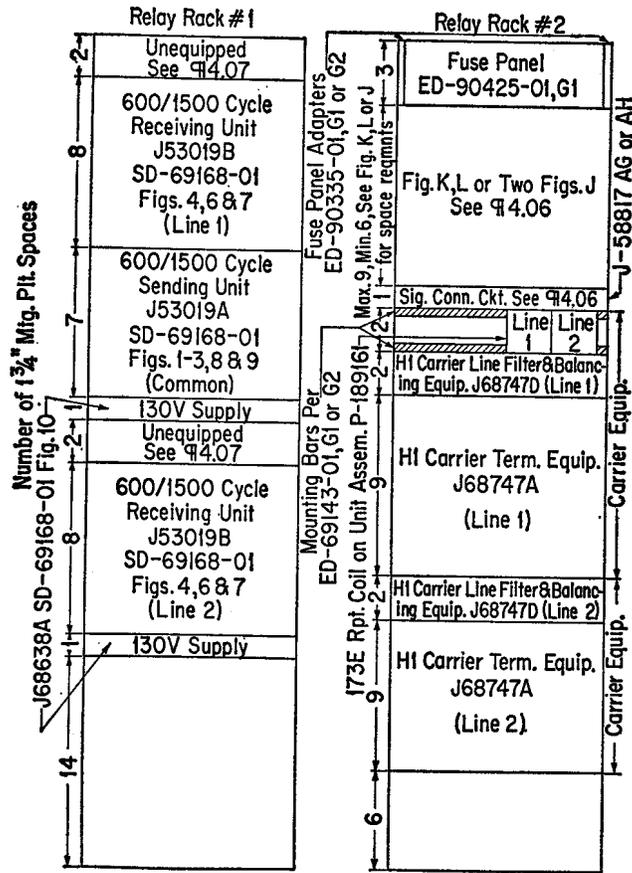


Fig. 5 - Two 4-wire Private Lines with Common Sending Unit and H1 Carrier Equipment for Terminations as Covered in Fig. J, K, and L

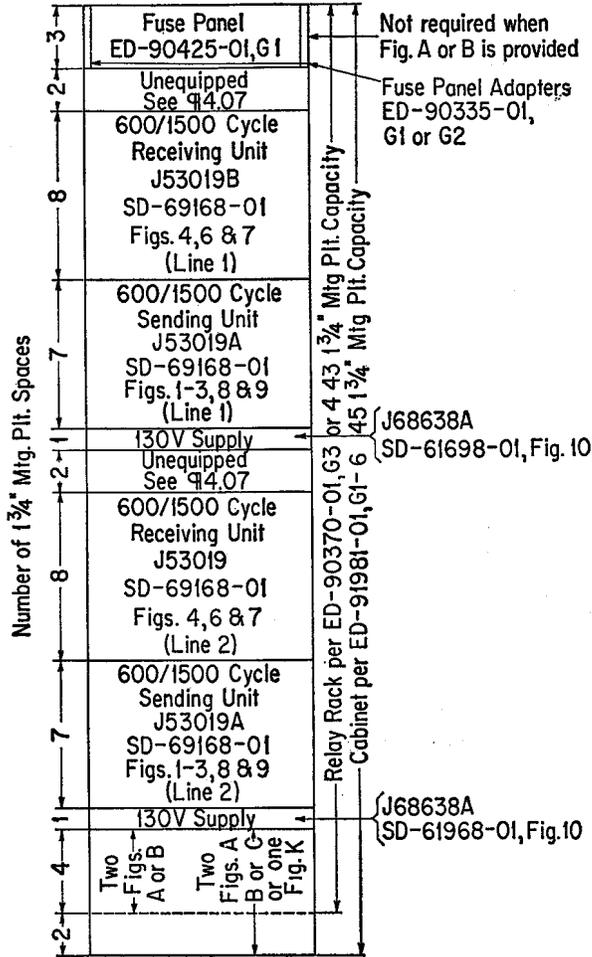


Fig. 6 – Two 4-wire Private Lines, Each with Separate Sending Units for Terminations as Covered in Fig. A, B, C, and K (See Fig. 7 for another typical arrangement employing same terminations.)

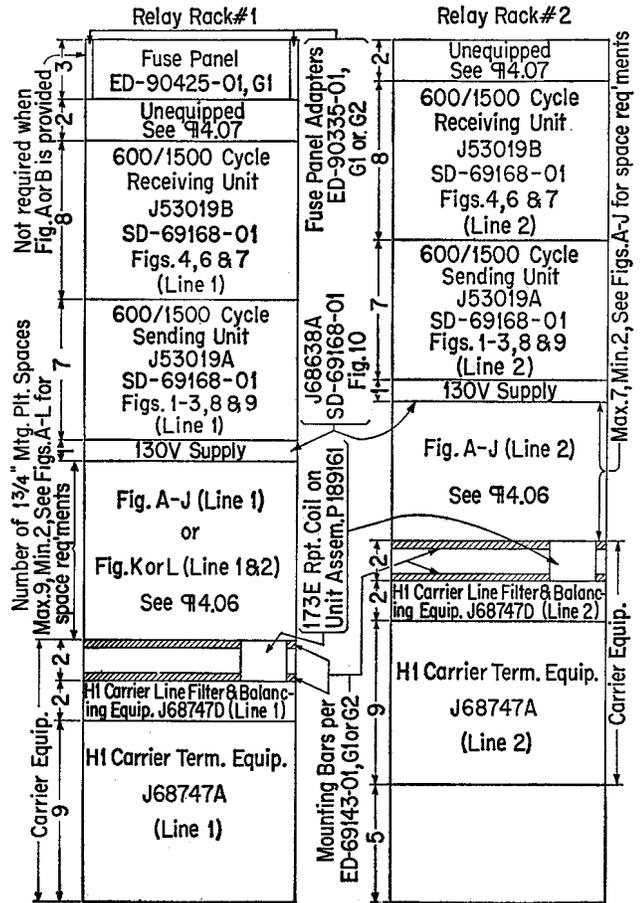


Fig. 7 – Two 4-wire Private Lines, Each with Separate Sending Units, with or without H1 Carrier Equipment for Terminations as Covered in Fig. A to L

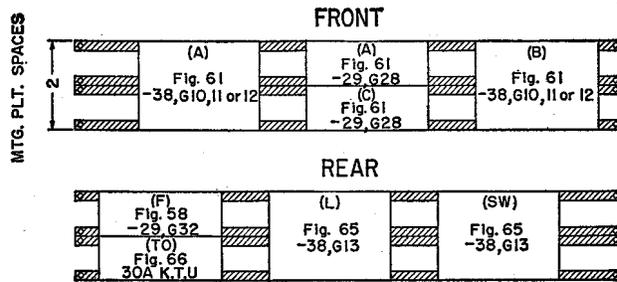


Fig. A – One Line, One Station with Dry Cell Battery Talking Supply

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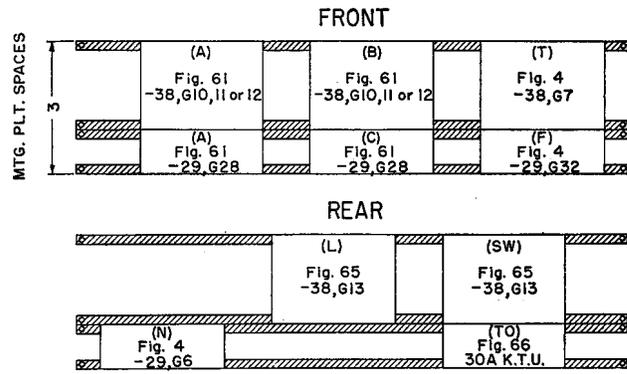


Fig. B - One Line, One Station with Following Features:

1. Dry Cell Battery Talking Supply
2. Push-to-talk Operation

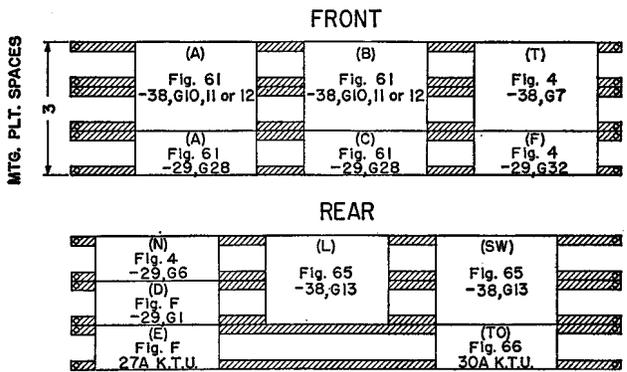


Fig. C - One Line, One Station with Following Features:

1. Common Battery Talking and Signaling Supply
2. Push-to-talk Operation

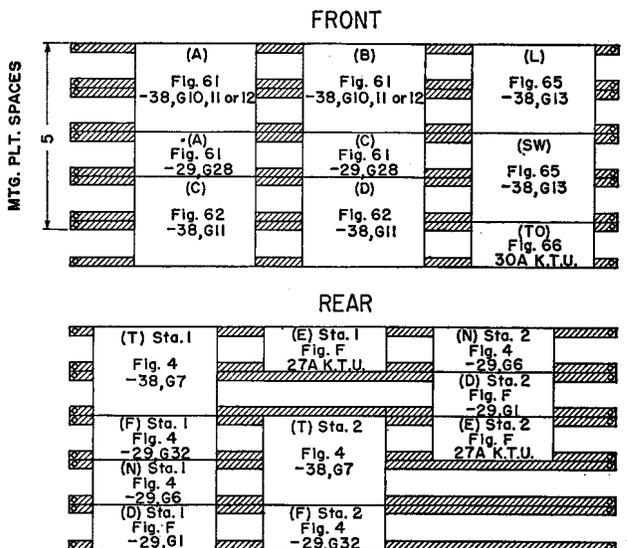


Fig. D - One Line, Two Stations with Following Features:

1. Common Battery Talking and Signaling Supply
2. Push-to-talk Operation
3. One Incoming Code Common to Both Stations

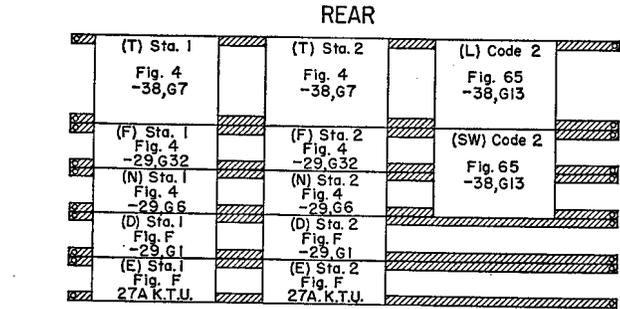
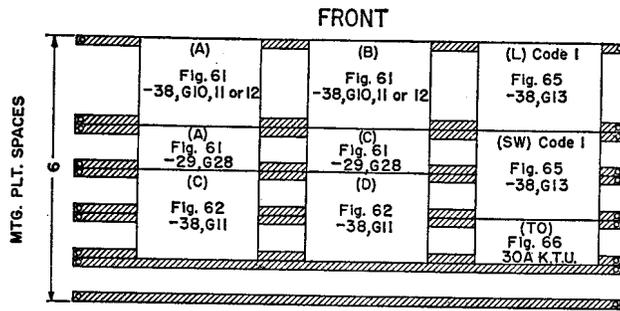


Fig. E - One Line, Two Stations with Following Features:

1. Common Battery Talking and Signaling Supply
2. Push-to-talk Operation
3. Separate Incoming Codes for Each Station

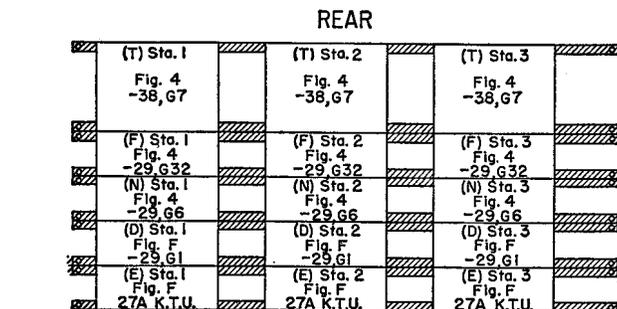
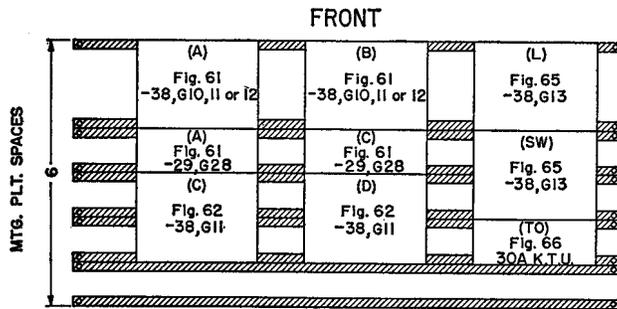


Fig. F - One Line, Three Stations with Following Features:

1. Common Battery Talking and Signaling Supply
2. Push-to-talk Operation
3. One Incoming Code Common to Three Stations

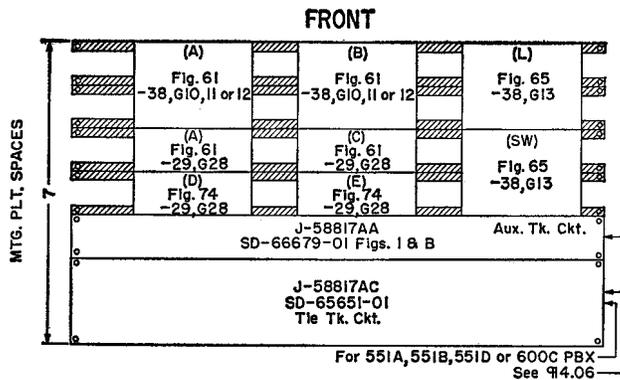


Fig. G – One Line, PBX, and One Station Termination with Following Features:

1. Common Battery Talking and Signaling Supply
2. Push-to-talk Operation at Station
3. Station Cutoff Circuit
4. One Incoming Code Common to PBX and Station

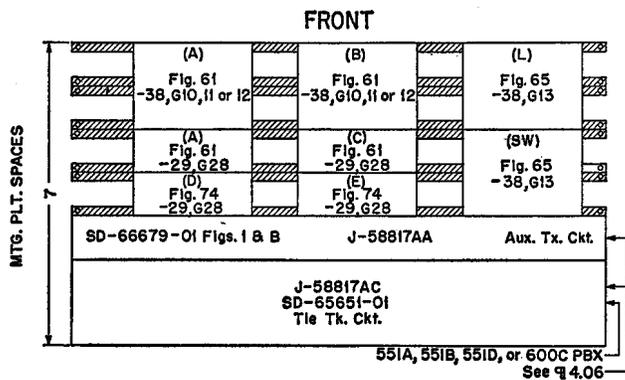


Fig. H – One Line, PBX, and One Station Termination with Following Features:

1. Common Battery Talking and Signaling Supply
2. Push-to-talk Operation at Station
3. Separate Incoming Codes for PBX and Station

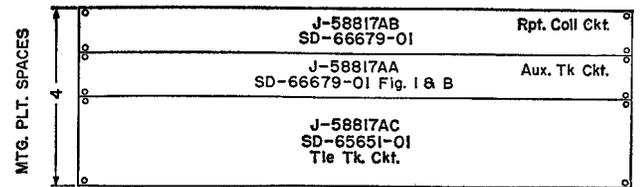


Fig. J – One Line Terminating at 551A, 551B, 551D, or 600C PBX (See 4.06.)

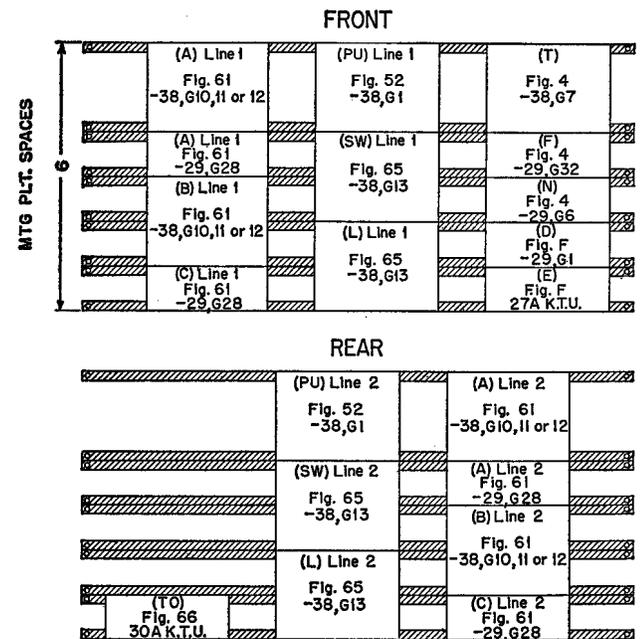
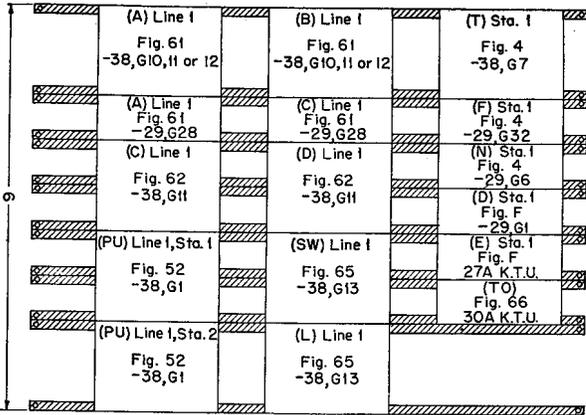


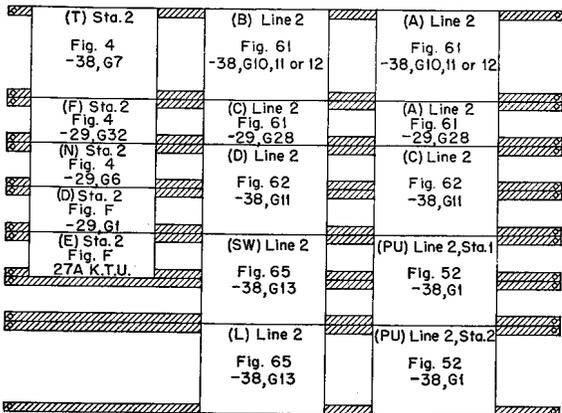
Fig. K – Two Lines, One Station Termination with Following Features:

1. Key to Pick up Both Lines
2. Common Battery Talking and Signaling Supply
3. Push-to-talk Operation

FRONT



REAR



5.00 REFERENCES

Section or Drawing Number	Item
310-430-200	Installation — 600/1500-cycle Selective Signaling Equipment
ED-69143-01	Mounting Bar Assemblies for mounting equipment and key telephone units on 19- and 23-inch framework
ED-90273-01	Adapter Details for mounting 19-inch mounting plates on 21-5/8 inch or 23-inch framework
ED-91180-01	18-plate Apparatus Cabinet
ED-92185-01	26-plate Apparatus Cabinet
ED-91981-01	45-plate Apparatus Cabinet
ED-90370-01	19- or 23-inch Relay Rack 7 Feet High
ED-90425-01	Fuse Panel
ED-90335-01	Fuse Panel Adapters for mounting ED-90425-01 fuse panel on 19- or 23-inch framework
SD-69167-01	4-wire Private Line Circuit Arranged for Receiving and Transmitting 600/1500-cycle Selective Signals
SD-69168-01	600/1500-cycle Selective Signaling Circuit
SD-64691-01	600/1500-cycle Oscillator Circuit
SD-65655-01	Signaling Connector Circuit
SD-65651-01	Tie Trunk Circuit
SD-66679-01	Auxiliary Trunk Circuit
SD-81135-01	101G Power Plant

Fig. 1 — Two Lines, Two Stations with Following Features:

1. Key to Pick up Both Lines
2. Common Battery Talking and Signaling Supply
3. Push-to-talk Operation
4. One Incoming Code per Line Common to Both Stations