

**555 PBX SWITCHBOARD
EQUIPMENT DESIGN REQUIREMENTS
PBX SYSTEMS**

1. GENERAL

Scope

1.01 This specification, together with the supplementary information listed herein, covers the design requirements for the framework, equipment, and circuits to be used in the manufacture and installation of the No. 555 PBX switchboard.

1.02 This specification is reissued to incorporate previous appendix changes.

1.03 The capacity of the No. 555 PBX is as follows:

Station lines	
20 per strip	120
10 per strip	60
Central office and tie trunks	14*
Cords	15

* Limited to 13 when hand generator is equipped.

Operating Ranges

1.04 *The trunk, plus the subscriber loop, plus 35 ohms for the supervisory relay, shall not exceed the maximum permissible subscriber loop range of the office to which the PBX is connected. The maximum PBX extension range varies with the minimum PBX voltage.*

Description

1.05 *The No. 555 PBX is a small manual single-position nonmultiple switchboard.*

It is used to establish manual connections between local stations, or from these stations to a manual or dial central office or another PBX. All station lines and trunks have jack and lamp appearances in the face of the switchboard. The

attendant establishes a connection by inserting the plugs of a cord circuit in the jacks of two station lines or in the jacks of a line and trunk between which the connection is to be made. Supervisory lamps are associated with each cord circuit, providing supervision on all calls. A dial is provided for completing calls to a dial central office or a dial PBX.

1.06 For field modification of existing switchboards to TOUCH-TONE calling see J58850.

1.07 *The PBX is constructed with a steel inner framework on which the equipment is carried.* Easily removable wooden casing panels are provided in different finishes to enclose this framework, thus facilitating repairs and changes in the field. Unfinished birch panels are available, to permit the exterior surfaces of the board to be finished locally by the decalcomania method or with various lacquers to conform with the customer's premises. Wooden parts, upon which apparatus is mounted and which are more subject to wear, such as the front panel and writing shelf, are phenol fiber faced. The size of the PBX is 2 feet 5-3/8 inches wide, 3 feet 10-1/16 inches high, and 2 feet 5-7/16 inches deep. The top of the writing shelf is 30 inches above the floor.

1.08 *Single-circuit equipment units are used in this PBX.* The equipments for the cord, trunk, and telephone circuits are on single, self-contained units which are assembled and wired in the shop. A suitable number of these units are placed in the basic switchboard unit by the shop, sufficient for light traffic conditions. Additional units are placed in the framework only as required, and unequipped spaces are provided with blanks to maintain an appearance uniform with the equipped units. All connections between the cord and telephone units are made by means of plugs which make

contact with a common bus bar type of connector at the rear of the board. The trunk units occupy the space just above the piling rail and are connected to the outgoing terminal strip through a plug mounted on the unit and a socket connected to the position local cable. By these means, a PBX may be equipped in any combination, as required, to meet a particular traffic condition within the limits of its ca-

capacity, without providing any excess equipment. Furthermore, repairs and adjustments can conveniently be made to these units. If the repair is of the nature of a relay adjustment, it can be made at the rear of the board without removing the unit. If wiring is involved, the units can readily be removed and repaired at the bench or at a central repair point. In the meantime, another unit can be inserted to maintain equiva-

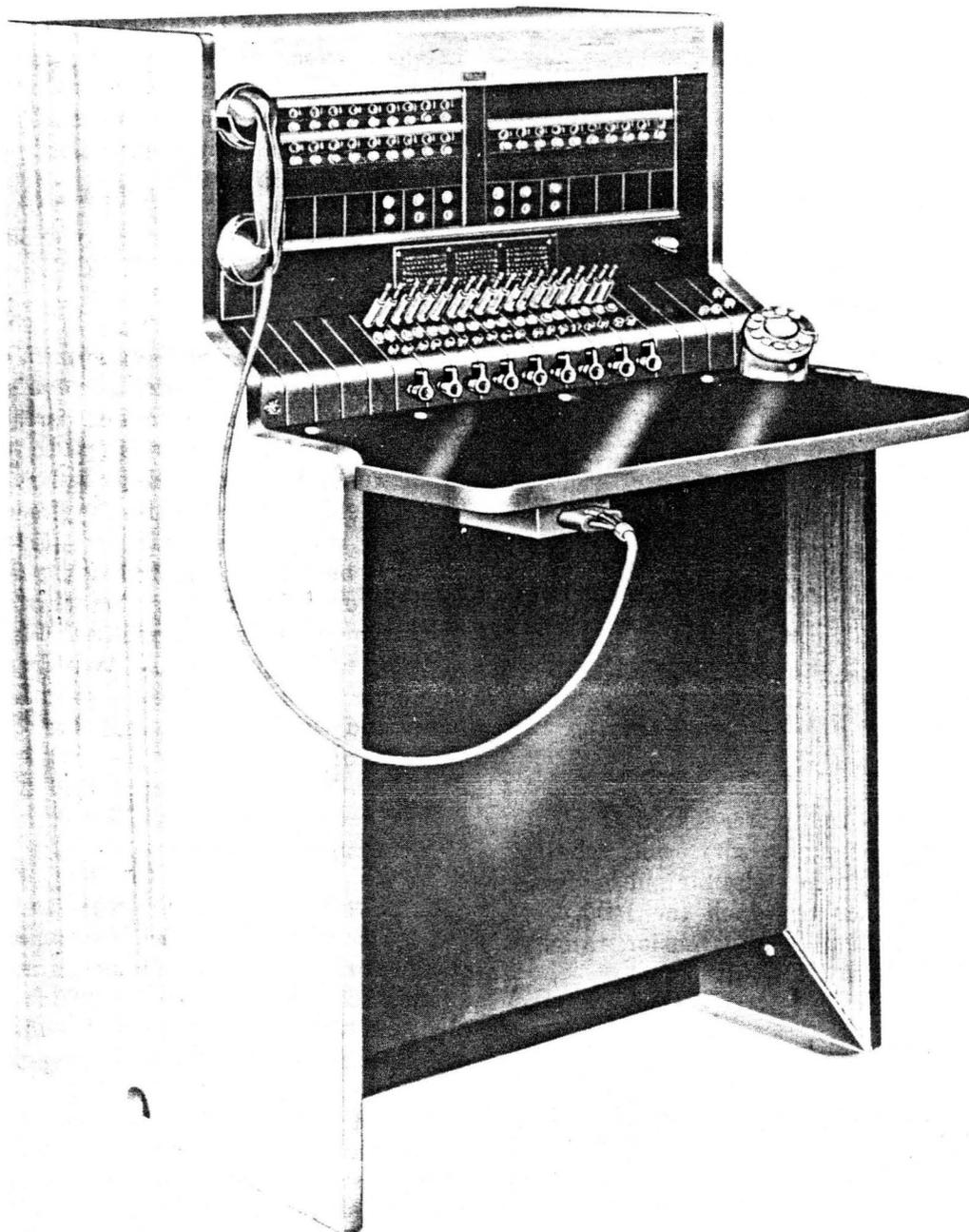


Fig. 1 - J59013A No. 555 PBX Switchboard—With Wooden Casing—Front View

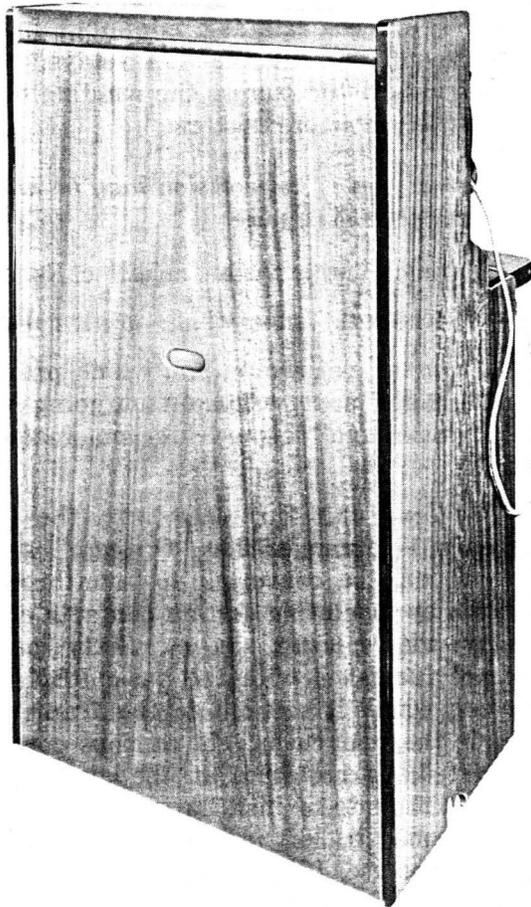


Fig. 2 - J59013A No. 555 PBX Switchboard —
With Wooden Casing — Rear View

lent service with practically no interruption. Cords are replaceable from the front of the board without removing the cord unit proper.

1.09 *A convenient writing shelf* is used instead of the conventional hinged keyshelf. All keys, plugs, and lamps have been located in a sloping panel in the face of the board at convenient height, thus leaving a large, unobstructed writing surface for clerical purposes. The elimination of the keys in the horizontal surface also permits a more comfortable knee well space for the operator than does the usual keyshelf. The writing shelf is so constructed that it may be removed from the framework proper and shipped separately to cut down the shipping space required and to permit moving the section through narrower than normal doorways.

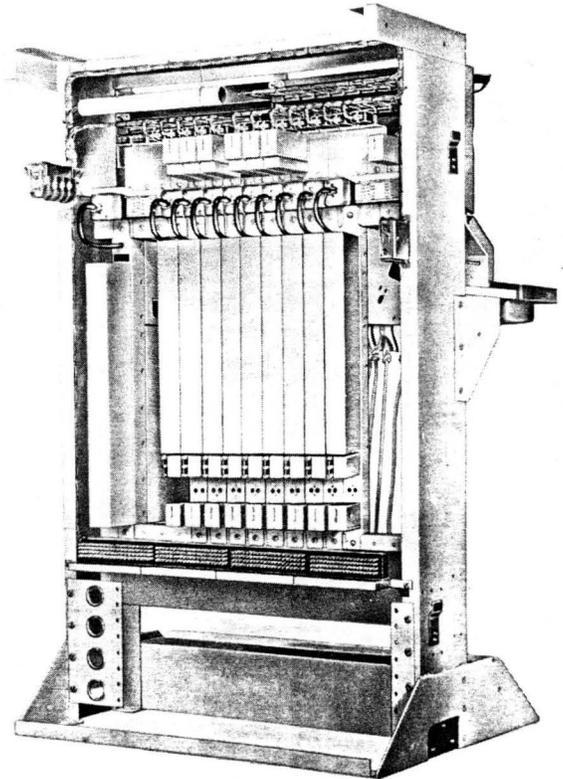


Fig. 3 - J59013A No. 555 PBX Switchboard —
Rear View

1.10 *The station line jacks* may be spaced on either 1/2- or 1-inch centers. The station line capacity is 120 lines on a 1/2-inch center (20 per strip) basis, or 60 lines on a 1-inch center (ten per strip) basis. Wiring is not provided in the unit for the top strips of jacks on the 120-line capacity board, making the basic capacity of the local cable 80 lines. If more than 80 station lines are required, however, the necessary jack and lamp strips, terminal strip, and connecting local cable may be obtained as a separate list. The supplementary cable is so designed that the terminal strip and jack and lamp strips may be connected by the shop and shipped as a unit. Thus, installation in the field becomes simply a matter of fastening the cable to the framework and connecting battery and ground leads.

1.11 *The circuits for the No. 555 PBX have been designed to operate over the extremely wide voltage range* of from 16 to 50 volts. With this range, the majority of nonmultiple installations will require only one or two

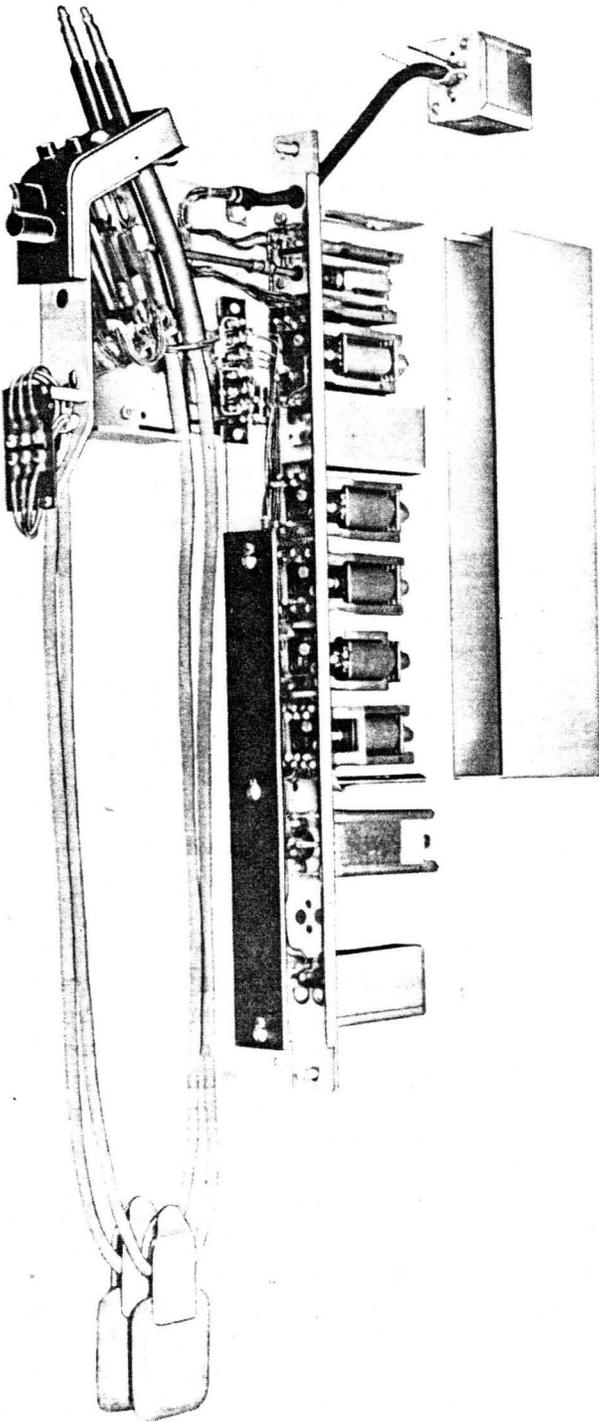


Fig. 4 - J59013E Cord Unit

pairs of battery feeders from the central office. The long range of the circuit loops will practically eliminate the need for long line equipment. The rering feature has been made a function of the trunk circuit where, by means of thermistors, the ring-up relay is made to do

double duty. Various means have been employed to keep the current drain at a minimum, including the use of high-resistance UA relays, where possible, and varistors across the winding of the sleeve relays instead of resistors.

1.12 Three types of supervision may be had on trunk calls. They are:

- (a) "Through" supervision on all calls.
- (b) "Nonthrough" supervision on all calls.
- (c) Automatic discrimination, which provides "through" supervision on outgoing calls and "nonthrough" supervision on incoming calls.

The cord unit furnished with the basic switchboard is arranged for "through" supervision, but may be converted to "nonthrough" supervision by insulating certain contacts of the RB relay with plastic sleeves. Sixty plastic sleeves are furnished with the basic PBX in a plastic bag which is secured to the framework just inside the rear cover. The various contacts are insulated, as required, at the distributing house or at the site of installation, and the excess sleeves may be left in the switchboard for possible future use. If *automatic discrimination* is desired, the apparatus (one relay per cord unit) required for this change may be ordered under a separate list and installed locally.

1.13 The "talk and dial" and "night and thru dial" keys of the cord circuit are combined on one operating mechanism. The key handle is turned and locked to the "talk and dial" position, and the same handle is pushed and locked to the "night and thru dial" position. Each operation is guarded against the other by suitable interlocking mechanisms, thus allowing any cord to be set up for "through" night calls without the likelihood of being accidentally restored.

1.14 As an optional feature, a monitoring key may be associated with the telephone unit to allow the attendant to monitor on any busy line.

1.15 A splitting key, provided with the telephone unit, is furnished to enable the attendant to split off and hold an incoming trunk call while privately consulting with the called subscriber.

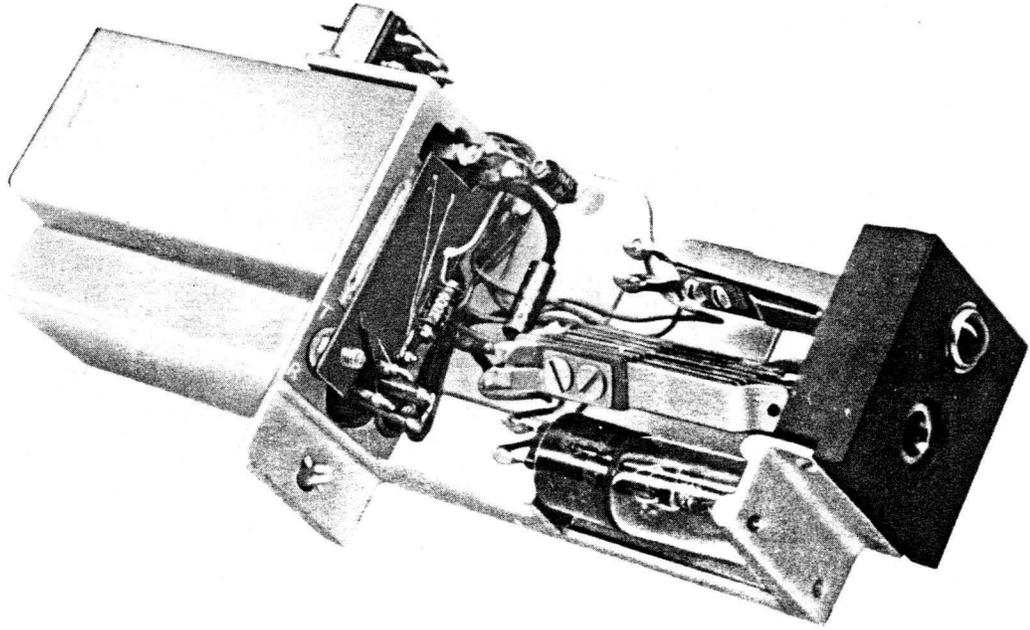


Fig. 5 – J59013F Central Office Trunk Unit

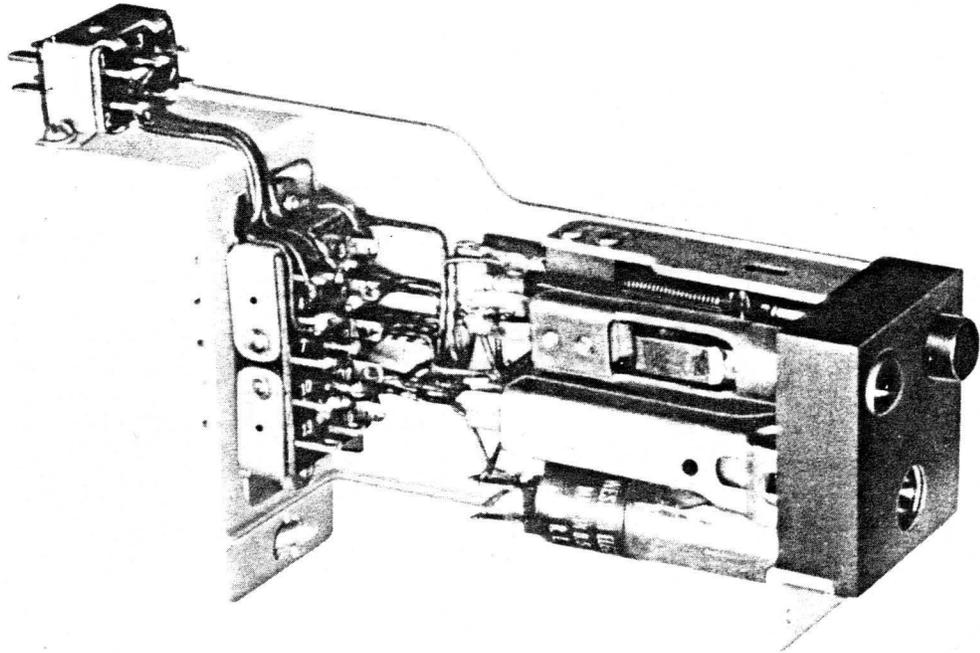


Fig. 6 – J59013G Ringdown Tie Trunk Jack Unit

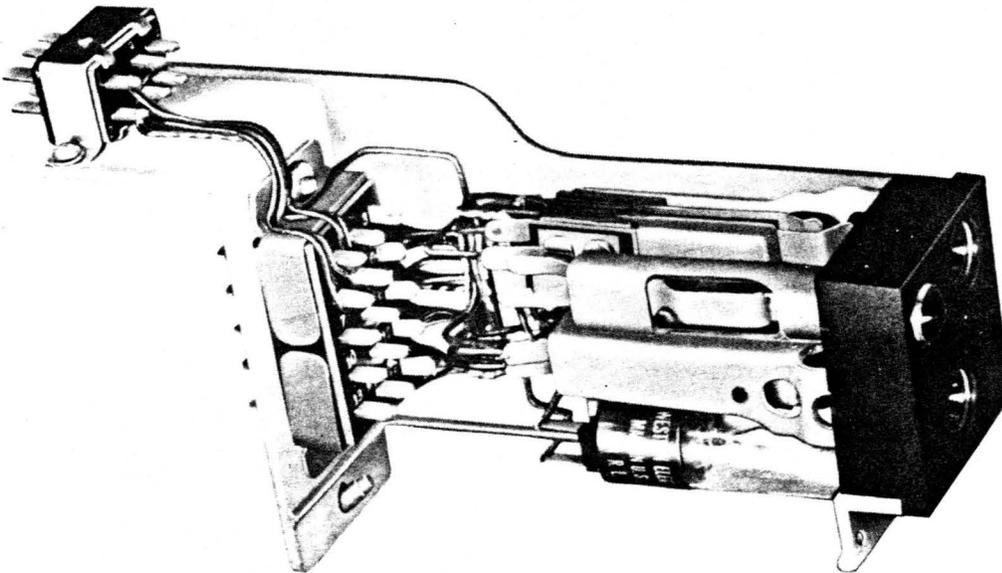


Fig. 7 - J59013H Tie Trunk to Dial PBX Jack Unit

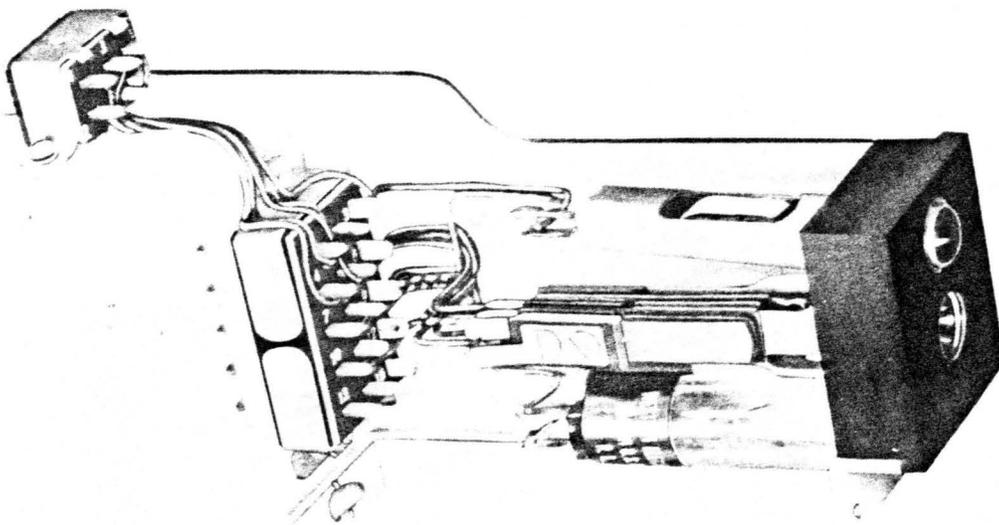


Fig. 8 - J59013J Automatic Tie Trunk Jack Unit

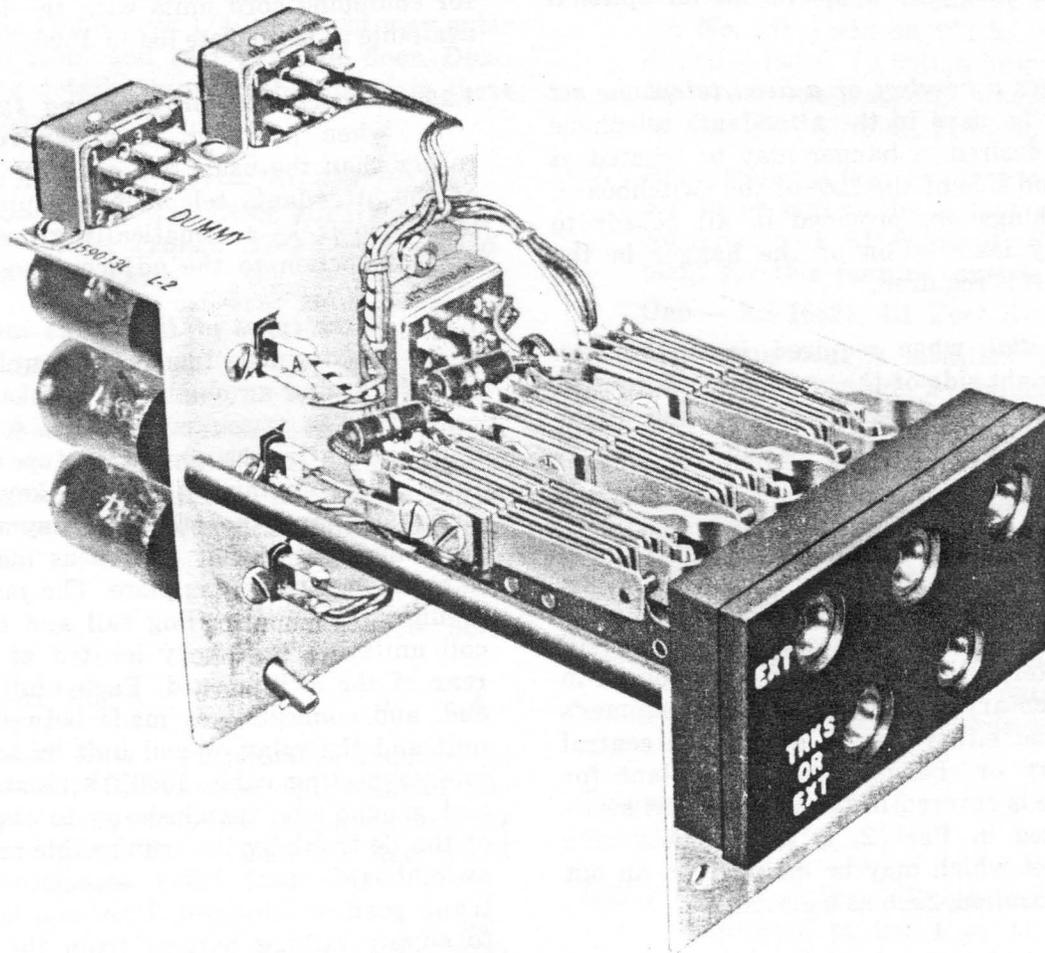


Fig. 9 – J59013L Jack Unit for Manual Conference Circuit

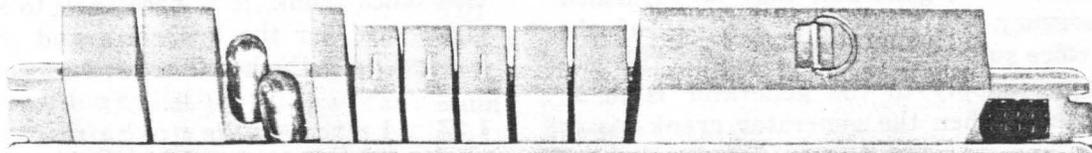


Fig. 10 – J59013H Tie Trunk Relay Unit (Other Relay Units are Similar)

1.16 Because of the increased loop capabilities of the circuits, no *line relays* are furnished. If line relays should be required, however, the mounting plate spaces at the bottom rear of the switchboard may be used for this purpose with the necessary wiring provided locally. Typical equipment arrangements are shown on ED-65818-01.

1.17 *Where the cable pair to any one station exceeds 1000 feet*, including bridged taps, a large capacity capacitor shunting the winding

of each cord supervisory relay is required to reduce the noise resulting from inductive interference. The capacitor is optional and is installed locally when required.

1.18 Various central office trunk loop conditions are compensated for in a manner similar to that described in 1.12.

1.19 *The auxiliary signal buzzer* is adjustable from the front of the switchboard so that the attendant may vary the loudness of the

signal to suit her specific needs. A foot switch to cut off the buzzer is available on an optional basis.

1.20 *Either a handset or a head telephone set* may be used in the attendants telephone circuit. If desired, a hanger may be located at the left-hand side of the face of the switchboard. Screw bushings are provided in all boards to permit easy installation of the hanger in the field, when it is required.

1.21 *The dial*, when required, is mounted on the right side of the writing shelf, toward the rear and at a convenient operating angle. Either a 10- or 20-pulse-per-second dial may be used.

1.22 *Battery power* is usually supplied direct from the central office over cable pairs. Where the distance from the central office is so great as to make this uneconomical, a small storage battery may be provided, and housed in a supplementary cabinet on the customer's premises, and either floated across the central office battery or charged locally. A plant for this purpose is covered in the power plant specification listed in Part 2. It is available in a metal cabinet which may be mounted in an out of the way location, such as a closet.

1.23 *Ringling current* is normally furnished over cable pairs from the central office. However, for an installation in a critical location, a small hand generator may be furnished for emergency use in case of failure of the central office supply. The transfer from the central ringing supply to the generator is made automatically when the generator crank starts to turn.

1.24 *Where a 2-section switchboard installation* is required, one end panel of one section is removed and the two sections are bolted together. If hand generators are provided, the generator handle in the left position is replaced with a folding handle to reduce interference with the cords. The cord units should be equipped with long cords to reach jacks in the adjacent position. The cord units have been so designed that long cords may be installed without the use of a platform to elevate the section from the floor. This is accomplished by the use of triple-pulley cord weights in place of the

standard single-pulley cord weights. Apparatus for equipping cord units with the long cords is available as a separate list in J59013E.

1.25 *The circuit for grouping two positions*, when provided, is under relay control rather than the usual key control. The removal of the attendants telephone set plug from the telephone jacks automatically groups the cords of that section to the adjacent position.

1.26 *Three types of tie trunks are available:* ringdown tie trunks, tie trunks to a dial-type PBX, and automatic tie trunks. Unlike the central office trunk which is a self-contained unit, the tie trunks consist of two units, one a jack unit containing the jack, key, and lamp equipment, and the other a relay or coil unit containing the circuit apparatus mounted on a 2- by 23-inch mounting plate. The jack units are mounted above the piling rail and the relay or coil units are ordinarily located at the bottom rear of the switchboard. Each unit has a plug end, and connection is made between the jack unit and the relay or coil unit by means of an interconnecting cable J59013K, List 1. Battery and ground are "patched in" to the jack unit of the tie trunk by the trunk cable socket of the switchboard local cable associated with the trunk position equipped. Provision is also made to supply talking battery from the tie trunks when the left cord of a pair is connected to the tie trunk. If the left cord is used to answer an incoming call which is to be connected to a central office trunk, it is necessary to substitute a right cord for the left cord, and complete the connection with the other cord of the same pair.

1.27 *A ringdown tie trunk circuit* may be used to terminate any type of ringdown tie trunk in the No. 555 PBX. They may also be used for terminating toll lines equipped with standard 20-cycle composite ringers, toll lines arranged for full-period talking service, code-ringing manual party lines, or trunks to magneto central offices. J59013G covers the units for ringdown tie trunks.

1.28 *The circuit for a tie trunk to dial PBX* connects the No. 555 PBX to any dial-type PBX, and enables the attendant to remotely control the switches of the distant dial PBX by means of a dial at the No. 555 PBX position, using an idle cord circuit as a dial

cord. The tie trunk circuit is arranged for automatic line lamp signaling, line lamp supervision, incoming reverse battery signaling and supervision, outgoing high-low signaling and supervision, dial-jack dialing, and prevention of false line lamp after disconnection. J59013H covers the units for tie trunks to the dial PBX.

1.29 *The automatic tie trunk* connects the No. 555 PBX to a manual PBX or to the attendant switchboard of a dial PBX. It may also be arranged to be selected by dialing at the distant PBX. With this trunk unit, the line relay of the distant PBX is automatically operated when the attendant inserts the left cord of a cord unit into the trunk jack. Circuit functions include automatic line lamp signaling, line lamp supervision, outgoing signaling battery toward the distant PBX, incoming high-low supervision, and provides a talking path between the two PBXs. J59013J covers the relay unit and the jack unit for one automatic tie trunk.

1.30 *A manual conference unit* permits a No. 555 PBX attendant to set up conference connections between a maximum of five extension stations, four stations and one central office trunk or tie trunk, or three stations and two central office or tie trunks. Five conference jacks are furnished in two rows in a single unit in the face of the PBX. The upper row contains three jacks for station connections, while the lower row contains two jacks for trunk or station connections. A separate cord circuit is used for each station or trunk connected for conference. J59013L covers the coil unit and the jack unit for one manual conference circuit.

1.31 *A maximum of four 2- by 23-inch mounting plates* may be installed in the rear bottom of the section.

1.32 *Standard equipment arrangements are not provided for the miscellaneous circuits* shown on SD-66537-01. Where these circuits are used, equipment should be arranged on a job basis. Typical arrangements are shown on ED-65818-01.

1.33 *Key Equipments:* The 1B, 6C, and 18C key telephone units should be used in place of the 1A, 6B, and 18B key telephone units

when the 1A key telephone system is used in connection with a No. 555 PBX, and the voltage at the PBX is less than 34 volts.

Subdivisions of Equipment

- ED-65722-70 — Framework Insulating and Dust Sealing Details
- J59013A (AT&TCo Std) — No. 555 PBX Switchboard — Basic Unit Equipped With Six Trunks, Nine Cords, and 30 Station Lines
- J59013B (AT&TCo Std) — No. 555 PBX Switchboard — Basic Unit Equipped With Eight Trunks, 11 Cords, and 40 Station Lines
- J59013D (AT&TCo Std) — No. 555 or 557A PBX Telephone Unit
- J59013E (AT&TCo Std) — No. 555 or 557A PBX Cord Unit
- J59013F (AT&TCo Std) — No. 555 or 556A PBX Central Office Trunk Unit
- J59013G (AT&TCo Std) — No. 555 or 557A PBX Ringdown Tie Trunk
- J59013H (AT&TCo Std) — No. 555 or 557A PBX Tie Trunk to Dial-type PBX
- J59013J (AT&TCo Std) — No. 555 or 557A PBX Automatic Tie Trunk
- J59013K (AT&TCo Std) — Universal Interconnecting Cable for Patching No. 555 PBX Jack Units to Associated Relay or Coil Units
- J59013L (AT&TCo Std) — No. 555 or 557A PBX Manual Conference Circuit Equipment
- J59013C — Reserved

2. SUPPLEMENTARY INFORMATION

- 809-000-000 — PBX Systems Index
- AA128.006 — List of General Equipment Requirements Sections
- 536-550-110 — General Description of No. 555 PBX
- J53007 (AA321.007) — Key Telephone System No. 1A
- J53122 (809-106-150) — Manual Conference Equipment With Voice Repeater
- J58834 (809-108-151) — Message Waiting Service Equipment
- J58850 (809-140-151) — TOUCH-TONE Dial and Dial Auxiliary Unit for Attendant Switchboards
- J59018 (809-719-150) — 556A PBX

J59023 (809-720-150) — 557A PBX Switchboard
 J99219 (AA381.315) — Steel Apparatus Cabinet
 KS-15668 — Rectifier
 KS-15918, L1 Power Plant

3. DRAWINGS

Circuits

SD-65665-01 — Central Office Trunk Circuit —
 556A PBX
 SD-65714-01 — 557A PBX — Cord, Telephone,
 Dial, Auxiliary Signal, Station
 Line, Position Grouping, Ringing,
 and Battery Circuits
 SD-65715-01 — Central Office Trunk Circuit —
 555 PBX
 SD-66520-01 — 555 PBX — Cord, Telephone,
 Dial, Central Office Trunk, Sta-
 tion Line, Buzzer, Ringing, and
 Battery Circuit
 SD-66521-01 — 2-position Grouping Circuit
 SD-66522-01 — Ringdown Tie Trunk
 SD-66523-01 — Tie Trunk to Dial-type PBX
 SD-66524-01 — Automatic Tie Trunk
 SD-66525-01 — Key Sheet
 SD-66531-01 — Manual Conference Circuit
 SD-66537-01 — Miscellaneous Circuits

Framework, Equipment, and Cabling

ED-65660-01 — Section Assembly
 ED-65661-01 — Steel Frame Assembly
 ED-65670-01 — Instruction Card
 ED-65722-70 — Framework Insulating and Dust
 Sealing Details
 ED-65818-01 — Station Line and Trunk Circuit
 Equipment Units
 J59013A-() — No. 555 PBX Switchboard —
 Basic Unit Equipped With Six
 Trunks, Nine Cords, and 30 Sta-
 tion Lines
 J59013B-() — No. 555 PBX Switchboard —
 Basic Unit Equipped With
 Eight Trunks, 11 Cords, and
 40 Station Lines
 J59013D-() — No. 555 or 557A PBX Telephone
 Unit
 J59013E-() — No. 555 or 557A PBX Cord Unit
 J59013F-() — No. 555 or 556A PBX Central
 Office Trunk Unit
 J59013G-() — No. 555 or 557A PBX Ringdown
 Tie Trunk

J59013H-() — No. 555 or 557A PBX Tie Trunk
 to Dial-type PBX
 J59013J-() — No. 555 or 557A PBX Automatic
 Tie Trunk
 J59013K-() — Universal Interconnecting Cable
 for Patching No. 555 PBX Jack
 Units to Associated Relay or
 Coil Units
 J59013L-() — No. 555 or 557A PBX Manual
 Conference Circuit Equipment

4. EQUIPMENT

ED-65660-01 — Section Assembly — Casing Details

Group 6 — One set of mahogany parts with wal-
 nut finish for No. 555 PBX or 556A
 PBX.

Group 7 — One set of oak-finished parts for No.
 555 PBX or 556A PBX.

Group 8 — One set of unfinished birch parts for
 No. 555 or 556A PBX. (See note A.)

Group 9 — One set of unfinished mahogany
 parts for No. 555 or 556A PBX. (See
 note A.)

Group 10 — One set of unfinished oak parts for
 No. 555 PBX or 556A PBX. (See
 note A.)

Note

A. The parts furnished in group 8, 9, or 10 are
 to be finished locally, as required.

ED-65722-70 — Framework Insulating and Dust Sealing Details

Group 1 — One set of insulating and dust seal-
 ing details for a No. 555 PBX. (See
 note A.)

Note

A. When this switchboard is located on a con-
 ducting surface such as the metal inserts
 used for terraza flooring and the switch-
 board is supplied with central office battery,
 the framework should be mounted on in-
 sulating details. These details are not
 required for insulating the switchboard
 from metal work concealed under the sur-
 face of the flooring because the insulation
 bushing provided with the PBX performs

this function. Since the insulating details lift the framework 1/4 inch, dust may enter at the front and rear near the floor. Dust-sealing details are furnished to close these openings.

J59013A (AT&TCo Std) — No. 555 PBX Switchboard — Basic Unit Equipped With Six Trunks, Nine Cords, and 30 Station Lines

Equipment — J59013A-()

Cabling — J59013K-()

List 4 (A&M Only) — Equipment, less jacks, required in addition to list 1 or 12 to equip ten station line jacks, jacks mounted on 1-inch centers. (See note C.)

	EQUIP	SEE NOTES
Sta Line Ckt, SD-66520-01, Fig. 5	10	A

List 9 (A&M Only) — Equipment required to modify the common equipment of two positions, except the telephone unit, for grouping. To be installed and wired locally.

	EQUIP	SEE NOTES
2-position Grouping, Buzzer, Ringing, and Bat. Supply Ckt, SD-66521-01, Fig. 1, 2, 3, & 4 Shipped Loose	1	5.01

List 11 — Equipment and mounting required in addition to list 10, 12, or 13 for a hand generator per SD-66520-01, Fig. 1, "ZK" option only, shipped loose. (See note E.)

Notes

- A. Basic switchboard, list 12 may be equipped with additional station line jacks per J59013A, List 4 up to the capacity of the board.
- B. When a hand generator is furnished, the cable socket for trunk position No. 14 may be used for tie trunk or conference circuit jack units only. Interference with the hand generator prevents use of position No. 14 for central office trunk units.

C. One No. 136 jack mounting equipped with ten No. 275 jacks should be ordered in addition to list 4. To obtain proper numbering, the order must specify whether the jacks are for lines 31 to 40, 41 to 50, or 51 to 60.

D. Arrangements may be provided for the buzzer to be cut off by a foot switch, in accordance with SD-66520-01, Fig. E. Equipment for this feature consists of:

One — KS-16821, L1 Foot Switch

This equipment is installed and wired locally with 18-gauge, 2-conductor, type SJO rubber-covered cord.

E. Wiring only for "ZK" option (hand generator) is provided in the local cable, but is not connected. When a hand generator is required, list 11 shall be ordered and mounted locally.

J59013B (AT&TCo Std) — No. 555 Switchboard — Basic Unit Equipped With Eight Trunks, 11 Cords, and 80 Station Lines

Equipment — J59013B-()

Cabling — J59013K-()

List 7 (A&M Only) — Equipment required in addition to list 1 or 11 to wire and equip 40 station line jacks (lines 81 to 120). Includes jack and lamp strips, terminal strip, and local cable, shop connected.

	WIRE	EQUIP
Station Line Ckt, SD-66520-01, Fig. 5	40	40

Notes

A. When a hand generator is furnished, the cable socket for trunk position No. 14 may be used for tie trunk or conference circuit jack units only. Interference with the hand generator prevents use of position No. 14 for central office trunk units.

B. Arrangements may be provided for the buzzer to be cut off by a foot switch in accordance with SD-66520-01, Fig. E. Equipment for this feature consists of:

One — KS-16821, L1 Foot Switch

This equipment is installed and wired locally with 18-gauge, 2-conductor, type SJO rubber-covered cord.

- C. The PBX is arranged so that two positions may be grouped. J59013A, List 9 covers the common equipment for this arrangement in accordance with SD-66521-01, Fig. 1, 2, 3, and 4. This equipment is installed and wired locally.
- D. Wiring only for "ZK" option (hand generator) is provided in the local cable, but is not connected. When a hand generator is required, one J59013A, List 11 should be installed locally.

J59013C — Reserved

**J59013D (AT&TCo Std) — No. 555 or 557A
PBX Telephone Unit**

Equipment and Framework — J59013D-()

List 1 — Assembly, equipment, and wiring for one No. 555 or 557A PBX telephone unit not equipped for grouping, monitoring, or the "busy test on idle cords" feature.

	WIRE	EQUIP	SEE NOTES
Attendants Tel Ckt, SD-66520-01, Fig. 2 & F, or SD-65714-01, Fig. 2 & F	1	1	D,E 5.02
Mon Key Ckt, SD-66520-01, Fig. G or SD-65714-01, Fig. G	1	0	B
Busy Test on Idle Cords Ckt, SD-66520-01, Fig. M, or SD-65714-01, Fig. M	1	0	C
Pos Grp Ckt, SD-66521-01, Fig. 5, or SD-65714-01, Fig. 18	1	0	A

List 2 — Additional equipment required to arrange telephone unit per list 1 for grouping.

	EQUIP	SEE NOTES
Pos Grp Ckt, SD-66521-01, Fig. 5, or SD-65714-01, Fig. 18	1	E, 5.01

List 4 — Additional equipment required to equip telephone unit per list 1 for the "busy test on idle cords" feature.

	EQUIP	SEE NOTES
Busy Test on Idle Cords Ckt, SD-66520-01, Fig. M, or SD-65714-01, Fig. M, Shipped Loose	1	C,E

Notes

- A. Grouping leads are looped at position of unequipped grouping relays.
- B. Monitoring leads are looped at position of unequipped monitoring key.
- C. Busy test "BT" lead to position of relay only is provided with list 1. Additional wiring as required is added locally.
- D. Facilities may be provided to monitor on any busy line in accordance with SD-66520-01, Fig. G or SD-65714-01, Fig. G. Equipment for this feature consists of:

One — 498F Key, 7/8-inch shelf

Two — 6 by 1/2 RHST Screw
Type F-Z Parker-Kalon
Cadmium Plate Finish

This equipment is installed and wired locally.

- E. When list 2 is specified for use in the 557A PBX, a lead from No. 2 punching of the telephone circuit plug to the G2 relay must be added to the telephone unit local cable.

**J59013E (AT&TCo Std) — No. 555 or 557A
PBX Cord Unit**

Equipment and Framework — J59013E-()

List 4 — Cord weights, cord pulleys, and hardware required to permit installation of 8-foot 0-inch cords in cord units per list 1, shipped loose. (See note D and 5.01.)

List 5 — Apparatus per SD-66520-01 or SD-65714-01, Fig. H required in addition to list 6 to provide automatic discrimination on trunk calls ("through" supervision on outgoing calls and "nonthrough" supervision on incoming) (shipped loose).

List 6 — Assembly, equipment, and wiring for one No. 555 or 557A PBX cord unit arranged for "through" supervision on all calls and for conversion to "non-through" supervision, less cords, lamp caps, and cord weights.

	WIRE	EQUIP	SEE NOTES
Cord Ckt, SD-66520-01, or SD-65714-01, Fig. 1 with "ZX", "ZY", and "ZZ" Options	1	1	A,B,C,D, E,5.02, 5.05, 5.08

Notes

- A. If "nonthrough" supervision is desired, provide option "ZW" in accordance with SD-65520-01, notes 102 and 108.
- B. Various central office trunk loop conditions are compensated for by insulating certain contacts of the RB relay with plastic sleeves in accordance with SD-65520-01, notes 102 and 108.
- C. When the cord unit is installed, it will be necessary to add two cords with plugs and cushions, two cord weights, and two lamp caps which are not supplied as a part of list 1. The color of the cords shall be red or slate with red or gray plug shells, respectively, depending on its position in the board. The lamp caps shall be red or white to match the cords.
- D. The 8-foot 0-inch cords are not supplied in list 4. Red or slate cords with plug and cushion shall be supplied locally.
- E. Where the cable pair to any one station exceeds 1000 feet, including bridged taps, the following equipment is required in accordance with SD-66520-01, Fig. L or SD-65714-01, Fig. L:
One — KS-13486 Capacitor
Two — .138-32 by 1/4 BHM Screws
This equipment is installed and wired locally.

**J59013F (AT&TCo Std) — No. 555 or 556A
PBX Central Office Trunk Unit**

Equipment and Framework — J59013F-()

List 4 — Assembly, equipment, and wiring for one central office trunk unit.

	WIRE	EQUIP	SEE NOTES
Central Office Trk Ckt, SD-66520-01, Fig. 9 or SD-65665-01, Fig. 5, "S" Option	1	1	A,B, 5.05

Notes

- A. The sockets, per SD-66520-01, Fig. 4 or SD-65665-01, Fig. 4, associated with the trunk circuit plugs are provided with and connected to the switchboard local cable.
- B. When this trunk is associated with the answering jack in a 556A switchboard used with the 756A PBX, remove "S" option locally and provide "T" option.

**J59013G (AT&TCo Std) — No. 555 or 557A
PBX Ringdown Tie Trunk**

Equipment and Framework — J59013G-()

List 2 — Assembly, equipment, and wiring for one No. 555 PBX ringdown tie trunk jack unit.

	WIRE	EQUIP	SEE NOTES
Ringdown Tie Trk Ckt, SD-66522-01, Fig. 2	1	1	A

List 3 — Assembly, wiring, and equipment for one ringdown tie trunk relay unit per SD-66522-01, Fig. 6 with "X" and "B" wiring. (See notes A, B, C, D, E, and F and 5.04, 5.05, 5.07, and 5.08.)

Notes

- A. When this unit is used in a No. 555 PBX, one interconnecting cable per J59013K is required in addition to lists 1 or 3 and 2, to provide complete equipment for one tie trunk. The standard arrangement requires that the jack units be mounted in trunk positions 10, 11, 12, 13, and 14. If it is necessary to mount the jack unit in other trunk positions, an interconnecting cable shall be made locally as required.
- B. When, in accordance with circuit requirements shown in the schematic drawing, "G" or "H" wiring is required, it is provided locally by strapping the appropriate terminals on the resistance mounting assembly.
- C. "X" wiring provides a "locked-in" line lamp. Where "X" wiring is not required, it is disconnected locally.

D. When a transmission pad per SD-66522-01, Fig. 6, "A" option is required on connections to a PBX station, the following equipment should be ordered separately and installed locally in drillings provided on the mounting plate:

- One — 441B Capacitor
- One — 1C Pad
- One — 89-type Resistance, as required

E. Where connection to train dispatching equipment is required, wiring per SD-66522-01, "E" option shall be provided locally.

F. When the jack circuit is to be strip mounted, equipment per SD-66522-01, Fig. 4 and 5 shall be ordered separately and installed locally.

**J59013H (AT&TCo Std) — No. 555 or 557A
PBX Tie Trunk to Dial-type PBX**

Equipment and Framework — J59013H-()

List 1 — Assembly, equipment, and wiring for one No. 555 or 557A PBX tie trunk to dial PBX, relay unit.

	WIRE	EQUIP	SEE NOTES
Tie Trk Ckt, SD-66523-01, Fig. 1 with "Z" Wiring	1	1	A,B,C, 5.04,5.05, 5.07,5.08

List 2 — Assembly, equipment, and wiring for one No. 555 PBX tie trunk to dial-type PBX, jack unit.

	WIRE	EQUIP	SEE NOTES
Tie Trk Ckt, SD-66523-01, Fig. 2	1	1	A

Notes

A. When these units are used in a No. 555 PBX, one interconnecting cable per J59013K is required, in addition to lists 1 and 2, to provide complete equipment for one tie trunk. The standard arrangement requires that the jack unit be mounted in trunk positions 10, 11, 12, 13, and 14. If it is necessary to mount the jack unit in other trunk positions, an interconnecting cable shall be made locally as required.

B. This unit is provided with "Z" wiring. When, in accordance with circuit requirements shown on the schematic drawing, "Z" wir-

ing is not required, it should be disconnected by the installer.

C. When the jack circuit is to be strip mounted, equipment per SD-66523-01, Fig. 4 and 5 shall be ordered separately and installed locally.

**J59013J (AT&TCo Std) — No. 555 or 557A
PBX Automatic Tie Trunk**

Equipment and Framework — J59013J-()

List 2 — Assembly, equipment, and wiring for one No. 555 PBX automatic tie trunk jack unit.

	WIRE	EQUIP	SEE NOTES
Auto. Tie Trk Jk Ckt, SD-66524-01, Fig. 2	1	1	A

List 3 — Assembly, wiring, and equipment for one automatic tie trunk relay unit per SD-66524-01, Fig. 6 with "X," "Y," and "Z" wiring. (See notes A, B and C and 5.04, 5.05, 5.07, and 5.08.)

Notes

A. When this unit is used in the No. 555 PBX, one interconnecting cable per J59013K is required in addition to lists 1 or 3 and 2 to provide complete equipment for one tie trunk. The standard arrangement requires that the jack unit be mounted in trunk positions 10, 11, 12, 13, and 14. If it is necessary to mount the jack unit in other trunk positions, an interconnecting cable shall be made locally as required.

B. When, in accordance with circuit requirements shown on the schematic drawing, either "Y" or "Z" wiring is not required, it shall be removed locally by cutting the appropriate straps at the A, B, and C resistances.

C. When the jack circuit is to be strip mounted, equipment per SD-66524-01, Fig. 4 and 5 shall be ordered separately and installed locally.

**J59013K (AT&TCo Std) — Universal Interconnecting Cable for Patching No. 555
PBX Jack Units to Associated Relay
or Coil Units**

Cabling — J59013K-()

List 1 (A&M Only) — Assembly, equipment, and wiring for one interconnecting cable for patching No. 555 PBX jack units mounted in trunk positions 10, 11, 12, 13, and 14 to associated relay or coil units mounted in bottom rear of switchboard section.

	WIRE	EQUIP	SEE NOTES
Cable Wired Universally for Fig. 3 of SD-66522-01, SD-66523-01, SD-66524-01, and SD-66531-01	1	1	A

Note

A. The interconnecting cable is designed to permit mounting jack units in trunk positions 10, 11, 12, 13, and 14. When other than these positions must be used, an interconnecting cable shall be made up locally to suit job conditions.

J59013L (AT&TCo Std) — No. 555 or 557A PBX Manual Conference Circuit Equipment

Equipment and Framework — J59013L-()

List 1 — Assembly, equipment, and wiring for one coil unit for No. 555 or 557A PBX manual conference circuit.

	WIRE	EQUIP	SEE NOTES
Man. Conf Ckt, SD-66531-01, Fig. 1	1	1	A,B, 5.04,5.05, 5.07,5.08

List 2 — Assembly, equipment, and wiring for one jack unit for use with list 1, for No. 555 PBX manual conference circuit.

	WIRE	EQUIP	SEE NOTES
Man. Conf Ckt, SD-66531-01, Fig. 2	1	1	A

List 3 — Assembly, wiring, and equipment for one jack unit per SD-65719-01, Fig. 12 required for use when a conference unit per J53122A is provided for the No. 555 or 557A PBX. (See note C.)

Notes

A. When lists 1 and 2 units are used in the No. 555 PBX, one interconnecting cable per J59013K is required to provide complete

equipment for one conference circuit. The standard arrangement requires that the jack unit, which occupies two trunk spaces, be mounted in two of trunk positions 10, 11, 12, 13, and 14. If it is necessary to mount the jack unit in other trunk positions, a longer interconnecting cable shall be made up locally as required.

B. When the jack circuit is to be strip mounted, equipment per SD-66531-01, Fig. 4 and 5 shall be ordered separately and installed locally.

C. As an alternate method, these jacks may be strip mounted. See SD-65719-01, Fig. 8, 9, and 10 for apparatus required.

Miscellaneous Equipment

4.01 The J59023E manual central office trunk unit provides five nonmultiple CO trunk circuits per SD-65715-01 on a 2- by 23-inch mounting plate. This unit may be used in place of units per J59013F, where strip-mounted lamps and individually mounted trunk jacks are desired. The lamps, jacks, mountings, and associated wiring are provided locally. (See 5.04.)

5. GENERAL NOTES

5.01 Modifications for grouping one section to another are made locally, in accordance with SD-66521-01, Fig. 1, 2, 3, 4, 5, 8, and 9. The apparatus required to modify the telephone unit is furnished in accordance with J59013D, List 2. J59013A, List 9 covers the common equipment for grouping the two sections. Apparatus for equipping cord units with long cords is furnished in J59013E, List 4.

5.02 The J59013D, List 1 telephone unit and J59013E, List 1 cord units are furnished with the basic sections. Where other lists are desired, these units are replaced at the distributing house as required.

5.03 Provided that it is not expected that tie trunks or conference units are to be installed, the space in the rear bottom of the switchboard may be used for cross-connecting between the house cable and the incoming terminal strip. This is accomplished by installing additional terminal strips below the existing terminal strips.

5.04 One adapter plate per P-267850 is required for each switchboard in which relay units are to be mounted in the rear bottom section of the switchboard. This adapter will accommodate four 2- by 23-inch mounting plates. When CO trunks per J59023E are used in the No. 555 PBX, one P-34A424 adapter, which accommodates four plates, is required instead of P-267850. One KS-14555, List 1 connector is also required for each J59023E unit.

Trunk units J59023E, associated jack mountings, lamp socket mountings, and designation strips shall be ordered separately as required. When more than ten nonmultiple central office trunk circuits are required, the wiring and connectors for trunks 11 through 15 shall be added locally.

5.05 One loose circuit label shall accompany each cord unit, telephone unit, central office trunk unit, the trunk relay unit, and conference circuit coil unit which is shipped separate from the basic switchboard. The label may be folded twice for convenience in packing. This label will be affixed to the rear door when the unit is installed in the switchboard provided one bearing the same piece-part number has not previously been installed. (See ED-65659-01.)

5.06 Circuit labels shall be made in conformance with the following requirements:

- (a) The label shall be printed on 8-1/2- by 13-inch white paper.
- (b) The piece-part number of the circuit label shall be printed in the upper left-hand corner in bold characters with the associated "SD- -01" circuit drawing numbers printed directly below.
- (c) A cross reference to the corresponding wiring diagram drawing shall be maintained on the circuit label. Associated connecting drawings shall not be listed.
- (d) The diagram shall be of the "airline" type.
- (e) Notes shall be brief and kept to a minimum. Definitions of standard conventions, etc, shall not be contained in notes on the piece part proper.
- (f) If changes in the wiring or apparatus of a unit are authorized, a new circuit label with a new piece-part number shall be issued,

except when the change is minor and a complete record of the superseded apparatus and wiring be maintained on the label itself. Superseded circuit labels shall not be rated "Mfr Disc." since they are required for replacement purposes.

(g) Circuit labels for the trunk units and conference circuit units shall show the wiring of the jack units as well as the associated relay or coil unit.

5.07 Four P-148634, .216-24 by 1/4 RHM screws shall be supplied and packed with each J59013G, List 1 or 3, J59013H, List 1, and J59013J, List 1 or 3, tie trunk relay unit and with each J59013L, List 1 conference circuit coil unit.

5.08 Unequipped cord and trunk unit spaces are not equipped with blanks by the factory. When required, the branch house or telephone company shall order one P-185038 trunk unit blank assembly and one P-185039 cord unit blank assembly for each trunk and for each cord unit space not being equipped with trunk or cord units. The P-185038 blank provides means for holding the trunk cable sockets associated with unequipped positions.

5.09 One set of P-41F676 mounting brackets and associated mounting screws shall be shipped loose with each switchboard. These brackets, once mounted, can be easily changed from an idle (vertical) position to a working (horizontal) position. In their working position, these brackets permit mounting a cord unit or a telephone and dial unit for servicing and trouble clearing while keeping it connected to the switchboard circuits. (See ED-65659-01, Fig. U.) When the brackets are in working position, the mounting screws shall be set up tight. Loosening them a few turns will suffice to permit the brackets to be rotated to their idle positions.

List of "A&M Only" and "Mfr Disc." Equipment

The following equipment has been replaced as indicated. Where "A&M Only" items appear, the issue numbers shown are those of the issue in which the rating was first applied.

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT	EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
J59013A,L1	Mfr Disc.	3	J59013A,L10	L5	Mfr Disc.	2	See J59013B, Note C
L2	Mfr Disc.	2	ED-65660-01, G6	L6	Mfr Disc.	2	See J59013B, Note D
L3	Mfr Disc.	2	G7	L7	A&M Only	4	—
L4	A&M Only	4	—	L8	Mfr Disc.	2	See 5.04
L5	Mfr Disc.	2	See J59013A, Note D	L9	Mfr Disc.	4	—
L6	Mfr Disc.	2	J50913A,L9	L10	Mfr Disc.	3	J59013B,L11
L7	Mfr Disc.	2	See 5.04	L11	Mfr Disc.	4	—
L8	Mfr Disc.	4	—	J59013D,L3	Mfr Disc.	2	See J59013D, Note D
L9	A&M Only	4	—	J59013E,L1	Mfr Disc.	4	J59013E,L6
L10	Mfr Disc.	3	J59013A,L12 & L13	L2	Mfr Disc.	2	—
L12	Mfr Disc.	4	—	L3	Mfr Disc.	2	See J59013E, Note E
L13	Mfr Disc.	4	—	J59013F,L1	Mfr Disc.	2	J59013F,L2
J59013B,L1	Mfr Disc.	3	J59013B,L10	L2	Mfr Disc.	3	L3
L2	Mfr Disc.	2	ED-65660-01, G6	L3	Mfr Disc.	3	L4
L3	Mfr Disc.	2	G7	J59013G,L1	Mfr Disc.	3	J59013G,L3
L4	Mfr Disc.	3	—	J59013J,L1	Mfr Disc.	3	J59013J,L3
				J59013K,L1	A&M Only	4	—

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