

701B AND 711B PBXs
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. 701B and 711B PBX systems.

1.02 The No. 701B and 711B PBX systems replace the No. 701A and 711A PBX systems covered by J58801, except for the switching equipment required to fill out existing partially equipped frames or shelves. The line finder, selectors, connectors, and selector-connectors of the No. 701B system may be used on the corresponding types of No. 701A shelves. When additional switch frames and dial station lines are required beyond the capacities of the existing frames of the No. 701A and 711A PBXs, the No. 701B and 711B equipment shall be specified.

1.03 This specification is reissued:

- (a) To correct 1.20 and 1.23.
- (b) To revise Subdivisions of Equipment and Detailed Index.
- (c) To revise 3. Drawings.
- (d) To revise J58831A, J58831S, J58831T, and J58831U.
- (e) To add J58831W, J58831Y, J58831AA, J58831AB, J58831AC, J58831AD, and J58831AE.
- (f) To rate J58831K Mfr Disc.
- (g) To add Mfr Disc. drawing to Part 5.
- (h) To provide the equipment design requirements to arrange the PBX for batteryless operation.

(i) To provide new J58831AE Miscellaneous Alarm Unit.

1.04 Issue 5 of this specification did not have general distribution.

CAPACITY

1.05 The capacities of the No. 701B and 711B PBXs are:

TYPE OF OPERATION	NO. 701B*		NO. 711B
	TYPE OF SWITCHBOARD	STATION LINES†	STATION LINES†
2-Digit	552A Nonmultiple	90	100
2-Digit	608A Nonmultiple	100	
3-Digit	552A Nonmultiple	300	999
3-Digit	552D Multiple	600	
3-Digit	608A Nonmultiple	160	
3-Digit	608A Multiple	400	

* The capacities are based on the use of one selector level for attendant trunks to the switchboard.

† When selector levels are used for central office trunks or for trunks to another PBX, the capacity of the 2-digit PBX will be reduced by ten and the 3-digit PBX by 100 per level used.

Operating Ranges

1.06 The operating ranges of the No. 701B and 711B PBXs are:

Station conductor loop 885 ohms
(Station-to-station calls)

Trunk conductor loop ‡

‡ The loop resistance of the trunk and/or the station depends on the type of attendant PBX switchboard and the type of connecting central office. The ranges for these types of combinations of equipment are covered in the drawings listed in 3. of this specification.

DESCRIPTION

General

1.07 The No. 701B and 711B PBXs are step-by-step dial switching systems that have been developed to replace the 701A and 711A PBXs. In general, the circuits for the new systems are essentially the same as those for the old systems with the exception of EA-type instead of R-type relays in the line circuits, a new line finder circuit, and a new miscellaneous alarm circuit. In addition, the switching equipment arrangements include:

- (a) Mounting the line relays on the line finder unit, so as to avoid the separate line relay bay and associated cabling with its installing difficulties.
- (b) Improved switch frame structure.
- (c) New distributing frames.
- (d) Relay rack switch shelf units for heavy traffic groups.
- (e) Improved alarm arrangement.
- (f) Improved restriction and diversion of selector levels.

No major changes have been made in either the circuit or equipment associated with the manually operated attendant-type switchboards connected to the No. 701A and 701B PBX systems. Each unit of equipment associated with the No. 701B and 711B PBXs will be shipped complete with all the necessary hardware to meet installation needs in the field.

1.08 A relay-rack-type switch frame, wired and equipped with 60, 80, or 100 dial station line circuits and arranged for eight line finder switches and eight selector-connector switches, is available for use in the 701B and 711B PBX systems when 1- or 2-digit dialing is required. Two of these switch frames can be utilized to provide 200 dial station lines by the addition of a 4- or 8-switch connector shelf unit for each 100-line group and cabling the units to meet local traffic conditions.

1.09 Provision has been made for transferring an incoming dialed call to the PBX attendant. Each incoming trunk for inward dialing

requires a jack and lamp appearance at the attendant switchboard to permit a called PBX extension station to transfer an incoming call to an attendant. When a large number of incoming trunks is provided, a trunk finder circuit is available to minimize the number of jack and lamp appearances at the switchboard. Up to 198 incoming trunks may be connected to the trunk finder bank multiple and each trunk finder switch is connected to an attendant trunk with a jack and lamp appearance at the switchboard. The amount of transferred traffic determines the number of switches to be provided.

1.10 For small dial PBXs (under 200 lines or so, depending on traffic considerations), a key telephone set, a 5A or 6A telephone console, or key equipment may be used for the attendant position rather than a cord switchboard. In this case, an *auxiliary trunk for use with telephone consoles* must be provided (see J58824). This attendant position equipment is used with PBX central office trunks as a regular position or may be used for night or auxiliary services when a cordboard is provided.

Frame Arrangements

1.11 *The switch frame* is a double-sided, universal-type, floor-supported frame, 6 feet 0-9/16 inch long, 7 feet 3-7/8 inches high (including cable rack), and 1 foot 9-1/2 inches wide, arranged to be shipped as a knocked-down unit. The base of this switch frame is of sheet-metal construction completely enclosed, with provision for a duplex ac power outlet on the front and one on the rear. Power wiring is accomplished via rigid conduit run between frames on the outside of the base assemblies or via a metal duct extending throughout the length of the frame with holes provided in each end panel to permit extending the power wiring between frames. The two uprights are of the channel type, drilled and tapped for 3/8-inch cap screws on 2-1/2 inch centers, with a bracket plate at the top of each channel, and spacers for fastening a 12-inch cable rack to the uprights by means of J bolts. End-guard assemblies are also available for the ends of each line-up. They must be ordered separately as required. When assembled on the job this frame will mount, on its front, an initial line finder unit including 200 station line circuits, a connector shelf for the first hundreds group, and a supplementary line finder

shelf. On the rear, it mounts an initial first-selector unit, a connector shelf for the second hundreds group, and a supplementary first-selector shelf (see Fig. 1, 2, 3, and ED-66579-01). This frame will also mount, on the front or the rear as required, selector shelves to accommodate second selectors for 4-digit operation or incoming selectors associated with tie trunks (see Fig. 4). Another double-sided switch frame, 2 feet 0-11/16 inch long, 7 feet 3-7/8 inches high (including cable rack), and 1 foot 9-1/2 inches wide, is available to mount relay-rack-type switch shelves used to build out the universal switch frame groups, if required, for heavy traffic conditions (see Fig. 5). Relay rack frames 2 feet 0-11/16 inch long, 7 feet 3-7/8 inches high (including cable rack) are available with two types of bases, one 1 foot 9-1/2 inch wide base is for use when the rack is in line with switch frames and the other 1 foot 0 inch wide base is for use when the relay racks are in a separate line-up.

Equipment Arrangements

1.12 *One initial line finder unit* is required for each group of 200 lines or a portion thereof. This unit which includes 20 line finder banks (1 to 20) is arranged to accommodate 20 line finder switches and 200 dial station line circuits. The line equipment is located to the right of the line finder banks. The necessary fuses, alarm features, and common control relays are provided on the lower portion of this unit. The terminal strips for connecting the associated switching circuits are located at the top of this unit and immediately above the line finders. Terminal strips are provided immediately above the station line relays for connecting the station line conductors external to the unit.

1.13 One initial relay-rack switch frame is equipped with 100 dial station lines mounted on the front and at the top. Immediately below is mounted a group and subgroup unit with the associated fuses, and at the lower portion of this frame is a standard 8-switch line finder unit. Immediately to the rear of this unit, a standard 8-switch selector-connector unit is mounted. A supplementary relay-rack switch frame, with the same type of equipment as the initial relay-rack switch frame excluding

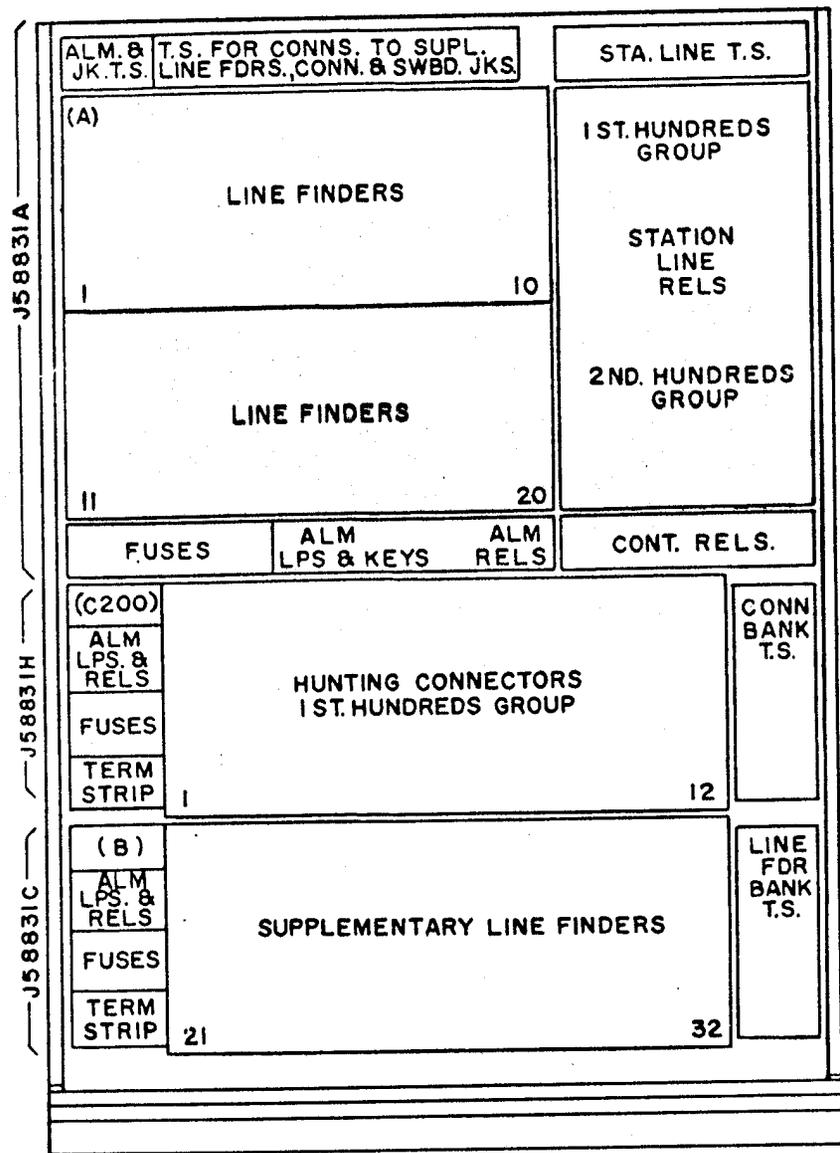
the group and control unit with associated fuses, is used to fill out the additional 100 dial station lines required for a 200-line group. This arrangement, supplemented with relay-rack-type connector shelves, will provide a maximum of 16 line finder switches and 16 selector switches for 3-digit operation.

1.14 *One initial first selector unit* is required for use with each initial line finder unit. This unit consists of two shelves of ten first-selector switch banks each, one designated shelf A, switches 1 to 10, and the other shelf B, switches 1 to 10, to accommodate first-selector switches. Fuses, alarm lamps, and alarm relays are located on the lower portion of this unit. Terminal strips are provided at the top for installer connections. At the left end of this unit, space has been provided to enable access to the dial station line relay wiring on the initial line finder unit.

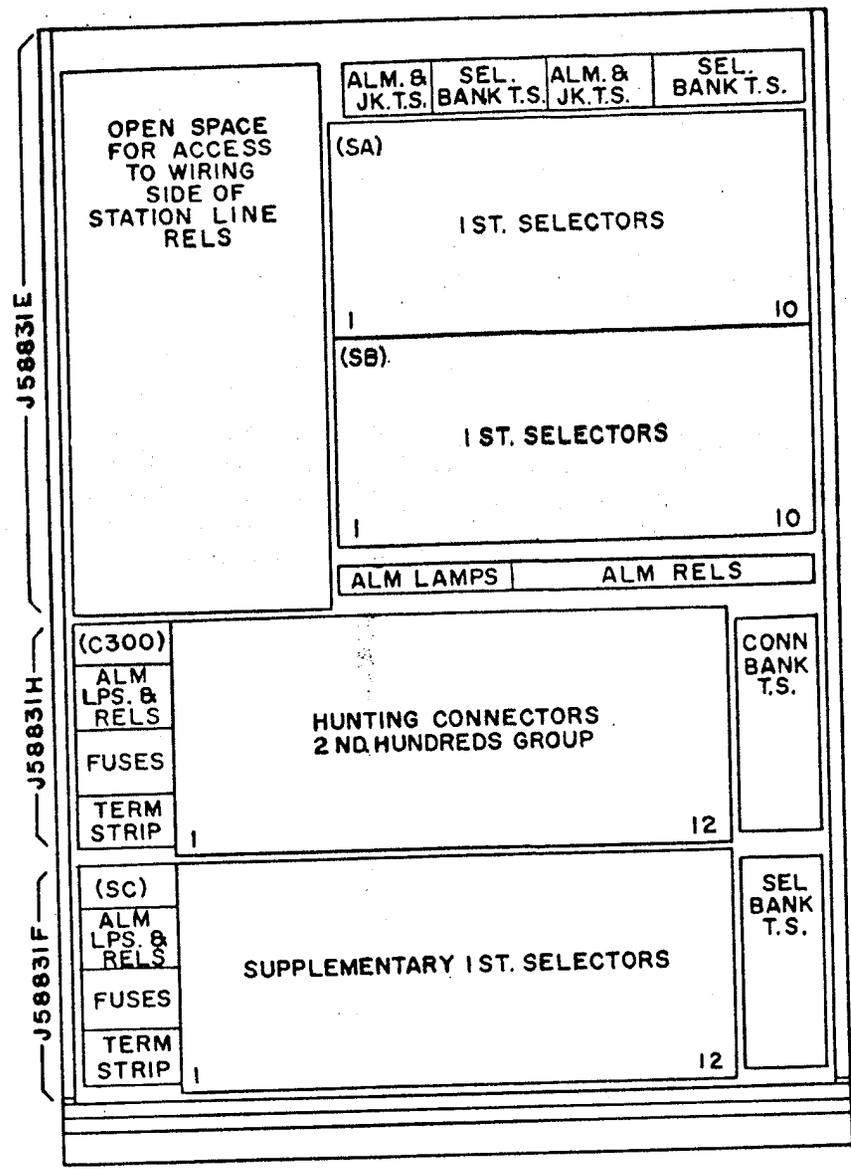
1.15 *Supplementary line finder, trunk finder, supplementary first selector, connector, and selector shelves:*

(a) Two types of shelves are available, one type for the universal switch frame, 6 feet 0-9/16 inch long, and the other for the relay-rack-type switch frame, 2 feet 0-11/16 inch long. Each shelf is furnished with fuses, alarm features, loose hardware, and cable terminating facilities as required. The capacity of the shelves is as follows.

UNIVERSAL SWITCH FRAME 6 FEET 0-9/16 INCH	RR SWITCH FRAME 2 FEET 0-11/16 INCH
12 Supplementary Line Finder Switches	4 or 8 Supplementary Line Finder Switches
12 Supplementary First Selector Switches	4 or 8 Supplementary First Selector Switches
12-Second Selector Switches	4- or 8-Second Selector Switches
12 Incoming Selector Switches	4 or 8 Incoming Selector Switches
12 Selector-Connector Switches	
12 Hunting Connector Switches	4 or 8 Selector-Connector or Hunting Connector Switches
12 Incoming Hunting Connector Switches	4 or 8 Incoming Hunting Connector Switches



FRONT VIEW



REAR VIEW

Fig. 1 - 701B and 711B PBXs - Typical Equipment Arrangement for 200 Dial Station Lines, Line Finders, First Selectors, and Connectors

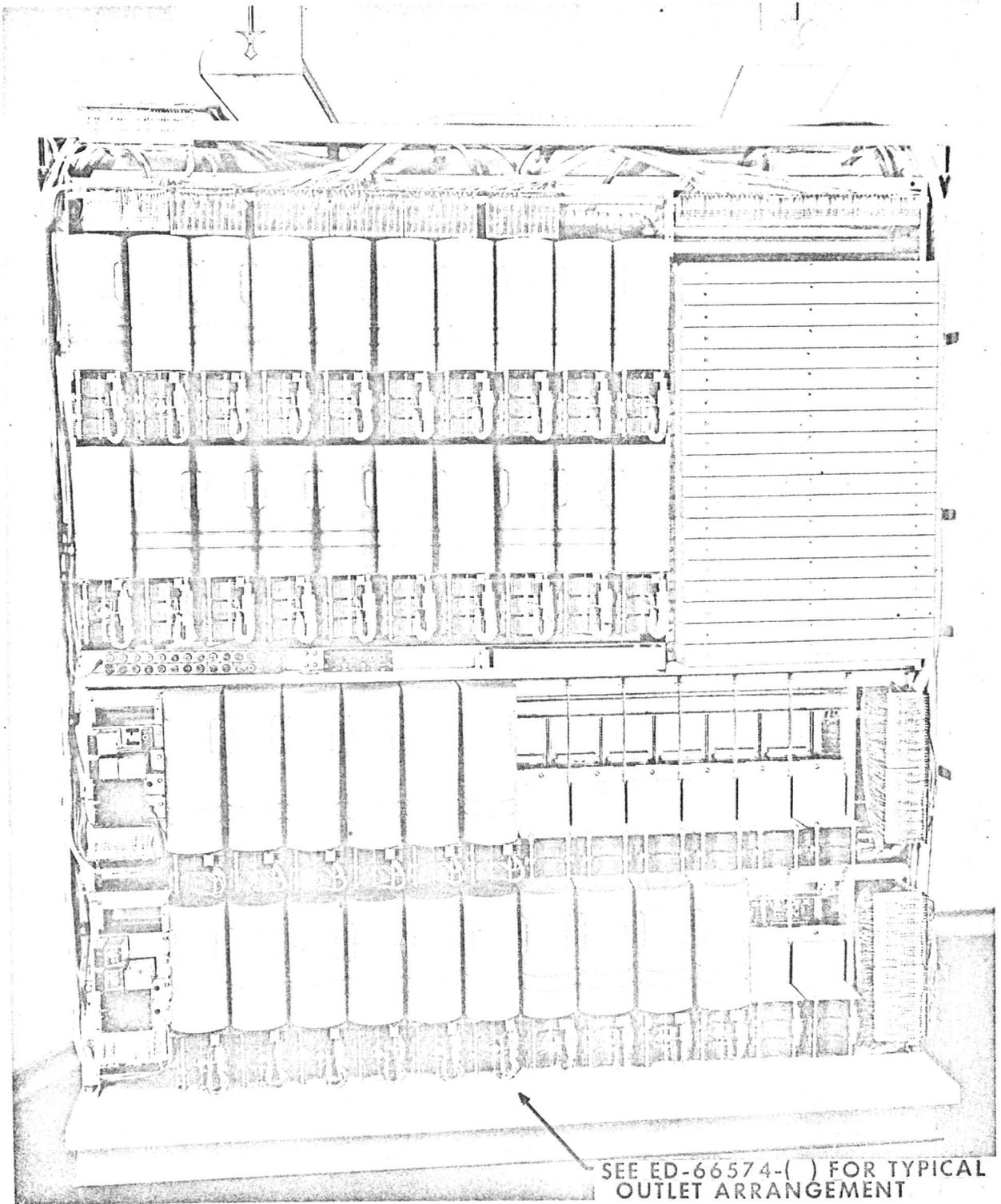


Fig. 2 — Typical Switch Frame Equipment — Front View — Showing Initial Line Finder Shelf, Connector Shelf (Lower Hundreds Group), and Supplementary Line Finder Shelf

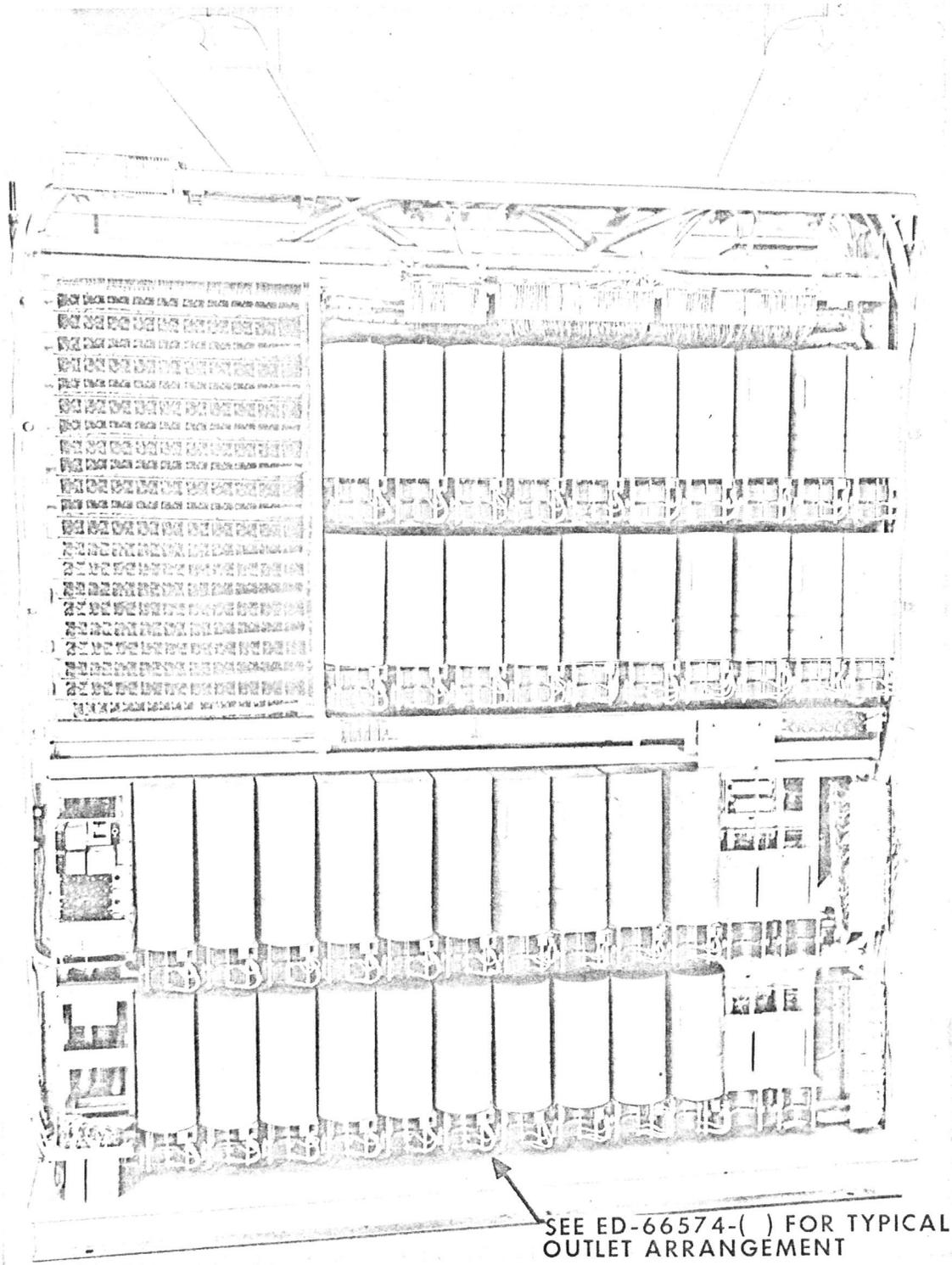
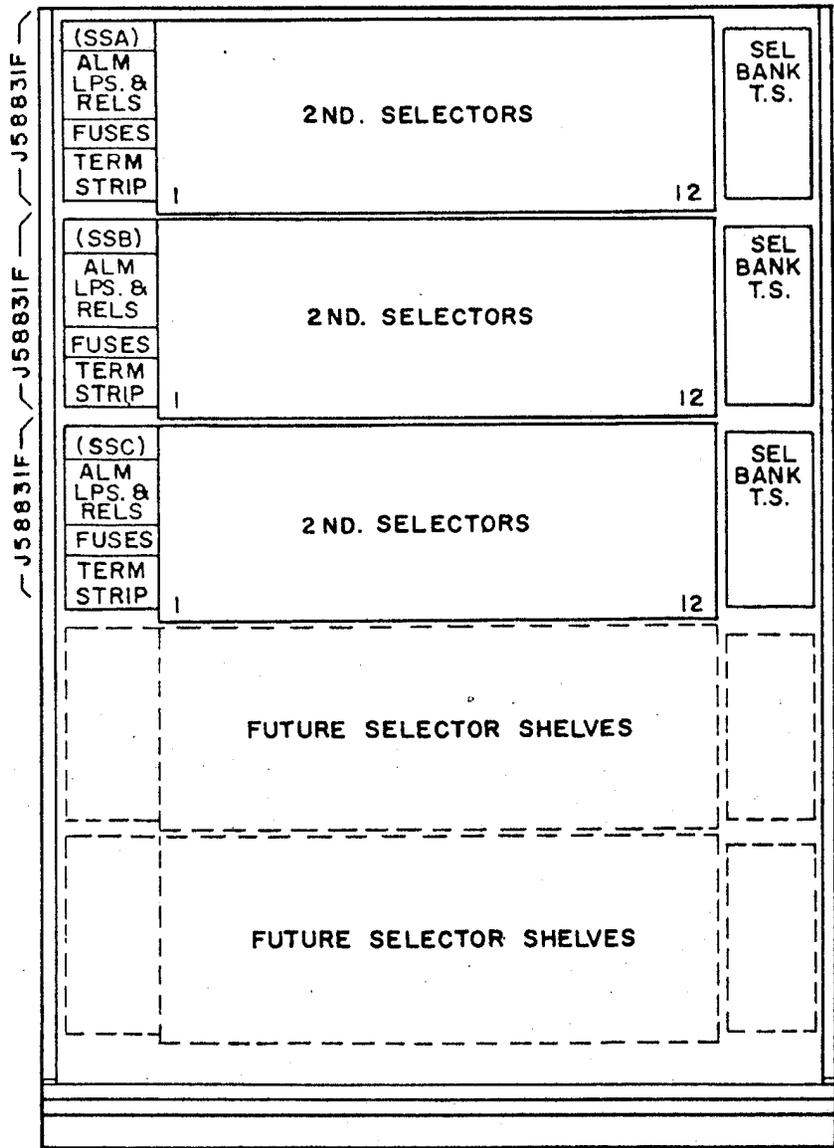
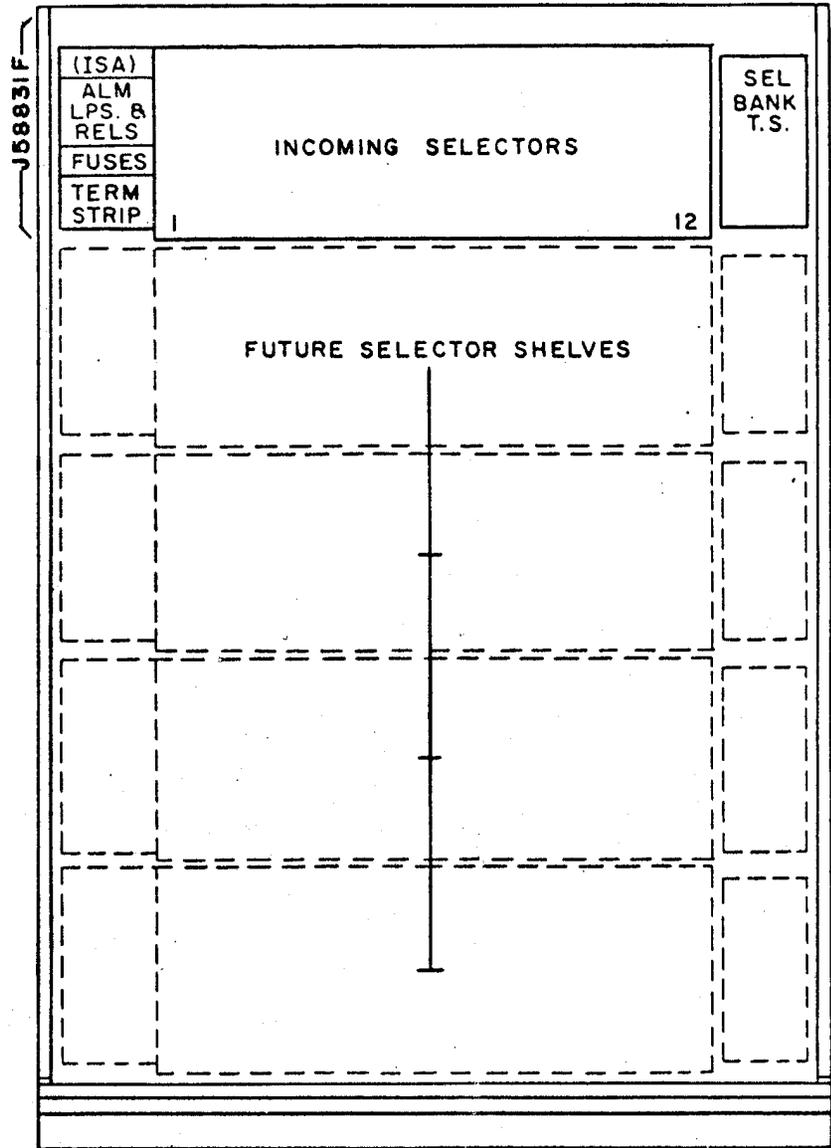


Fig. 3 - Typical Switch Frame Equipment - Rear View - Showing Initial Shelf Unit for First Selectors, Connector Shelf (Higher Hundreds Group), and Supplementary Shelf for First Selectors



FRONT VIEW



REAR VIEW

Fig. 4 - 701B and 711B PBXs - Typical Equipment Arrangement -
Second Selectors and Incoming Selectors

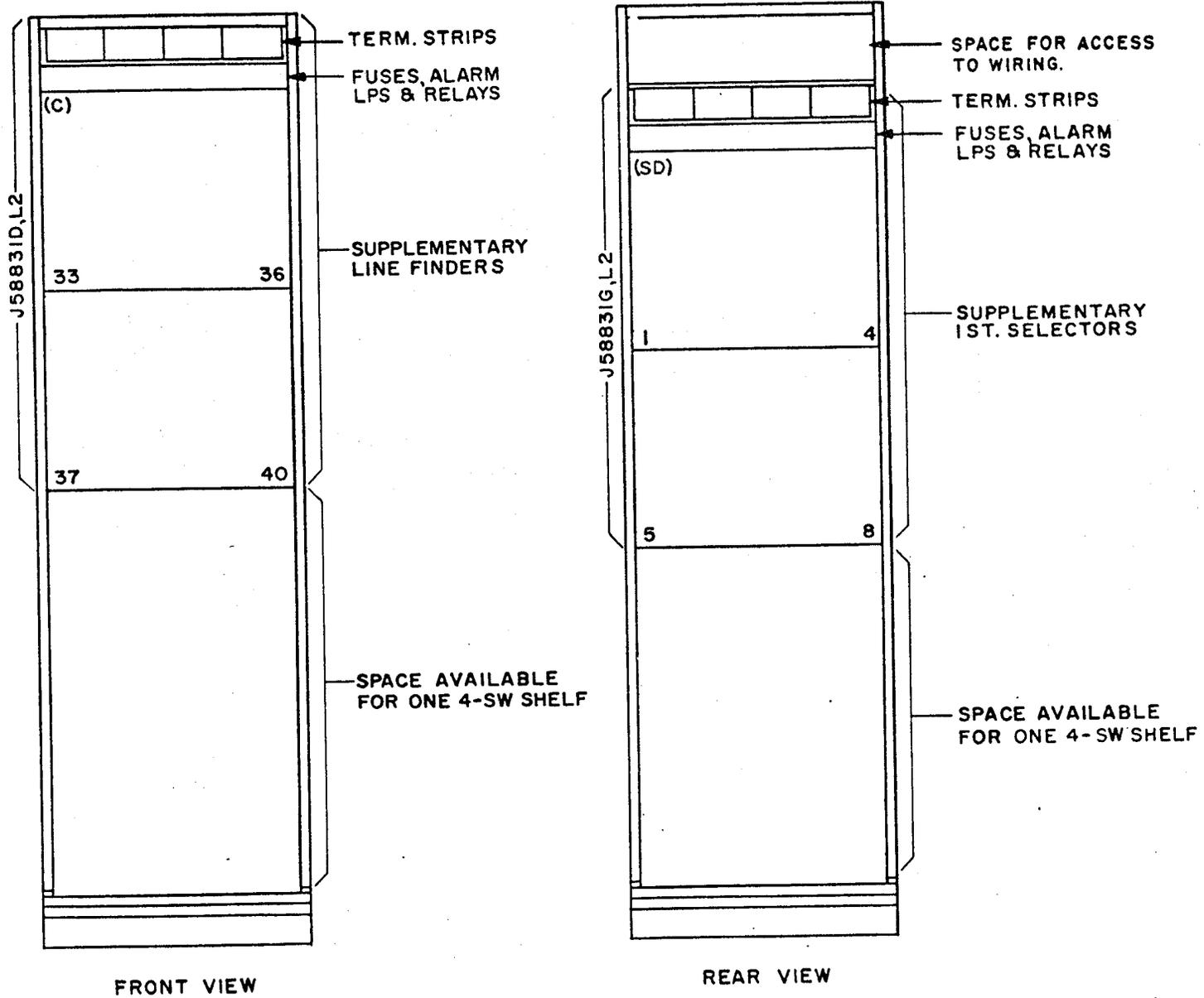


Fig. 5 - 701B and 711B PBXs — Typical Equipment Arrangement — Supplementary Line Finder and Selector Units Mounted on Double-Sided Relay-Rack-Type Switch Frame

1.16 Switches:

(a) *The line finder switch unit* for the No. 701B and 711B systems has circuit features similar to the unit used with the No. 701A system. The equipment arrangements are different, however, as a make-busy key and a test jack have been incorporated on each switch unit in place of the ones provided on the shelf panel in the No. 701A and 711A systems. This switch unit can be used without modification on No. 701A and 711A shelves, but the switch presently used with the No. 701A and 711A systems cannot be used on the No. 701B and 711B shelves.

(b) *Selectors:* The first, second, and incoming selectors are the same for the No. 701A, 711A, 701B, and 711B systems.

(c) *Digit-Absorbing Selectors:* A digit-absorbing selector is available that can be arranged to absorb one or more digits as required.

(d) *Connectors:* The hunting connector and incoming hunting connector can be used interchangeably in the No. 701A, 711A, 701B, or 711B system. The regular nonhunting connectors have been rated A&M Only for use in the No. 701A or 711A system.

(e) *Selector-connector:* The hunting selector-connector for the No. 701B and 711B PBXs is the switch which has formerly been specified for the No. 740E PBX. This circuit has been arranged so that it replaces the regular nonhunting, as well as the hunting, selector-connector formerly specified for the No. 701A and 711A PBXs. For 2-digit operation, typical selector-connector level assignments are as follows:

- Level 0 — Trunks to PBX Attendant
 - Level 9 — Trunks to Central Office
 - Level 8
 - Level 7
 - Level 6
 - Level 5
 - Level 4
 - Level 3
 - Level 2
 - Level 1
- } Tie Trunks to an Associated PBX and Station Lines

All trunks must be assigned to levels above the highest level to which station lines are assigned.

(f) *Trunk Finder:* The trunk finder switch for the 701A, 711A, 711B, or 740E PBX is used with one-way incoming central office trunks arranged for dial transfer. The function of the trunk finder switch is to connect its associated selector to the one-way incoming trunk arranged for dial transfer under control of the called station.

1.17 Miscellaneous Alarm Unit: The miscellaneous alarm unit for the 701B PBX mounts on a 23-inch relay rack bay and consists of timing alarm relays, alarm lamps, keys, and cable connecting facilities. These circuits may be extended to a central office or test bureau for maintenance purposes, if required. The J58831AE, list 1, alarm unit is arranged for console operation. List 2 provides for a maximum load of 30 amperes and list 3 provides for a maximum load of 60 amperes when specifying switchboard operation. The unit can also be arranged for operation with 5- or 6-type consoles.

1.18 Aisle Pilots and Alarms: When desired, a set of alarm pilot lamps per frame line-up may be furnished to direct a maintenance man to the line-up in which a trouble condition has occurred. The aisle pilots are located on a bracket on the frame upright at the end of the aisle, and connected to the nearest distributing power terminal strip located on the cable rack. The circuit is so arranged that no additional equipment is required in the alarm unit to furnish these features. Audible and visual alarms are provided on the miscellaneous alarm unit and they are extended to the attendant PBX switchboard in the No. 701B PBX system.

1.19 Distributing Power Terminal Strip: Provision has been made for a distributing power terminal strip arrangement using a terminal strip consisting of U-shaped terminals embedded in the base of the terminal strip material and equipped with two fanning strips to permit multiplying of conductors as required. These terminal strips will be mounted on the side rail of the cable rack, one above the front and the other above the rear of each switch frame, also above the rear of each relay rack. The necessary power, ringing leads, alarm leads, etc, are thus extended to each frame or aisle as required.

1.20 Additions to No. 701A and 711A PBX

Systems: Equipment will be available to fill out existing No. 701A or 711A PBX installations where required. When additional station lines or switching equipment is required beyond the capacities of the existing No. 701A or 711A switch frames and relay racks, the No. 701B and 711B PBX equipment shall be used. Provision has been made in the alarm circuit to extend the shelf alarms of the No. 701B or 711B PBX systems to the presently installed alarms associated with the No. 701A or 711A PBX systems. There may be some cases, however, where it would be more economical to utilize the basic alarm system of the No. 701B or 711B system in place of adding to the No. 701A or 711A alarm unit. No provision has been made to extend the No. 701A and 711A PBX alarms to the No. 701B and 711B PBX miscellaneous alarm unit.

1.21 Four distributing frames are available for use as follows:

(a) For very small installations, where little growth is expected, a single-sided distributing frame may be used. This frame consists of single verticals 6 feet 10-1/2 inches high, floor-supported, with spacers to support a 12-inch cable rack at a height of 7 feet 3-7/8 inches. Verticals for protectors or for terminal strips are available to be spaced on 6-inch centers.

(b) A narrow-type combined distributing frame is available, which is floor-supported using a sheet-metal base, and is suitable for alignment with double-sided switch frames. This frame has 7-foot 0-inch high verticals on 8-inch centers with spacers to support a 12-inch cable rack at a height of 7 feet 3-7/8 inches. The frame equipment is confined to 1 foot 9-1/2 inches, front to rear, to conform to aisle space requirements of the switch frames and it is, therefore, limited in cable and jumper capacity to PBXs up to about 1000 station lines. The frame does not provide for cable entering the vertical side from below. The verticals are arranged to mount C50-type protector mountings, 300-type connectors, 444-type jacks, 8-inch terminal strips, or 16-inch terminal strips.

(c) A central-office-type distributing frame having 2-foot 9-1/2 inch guardrails is available for large PBX installations, and also

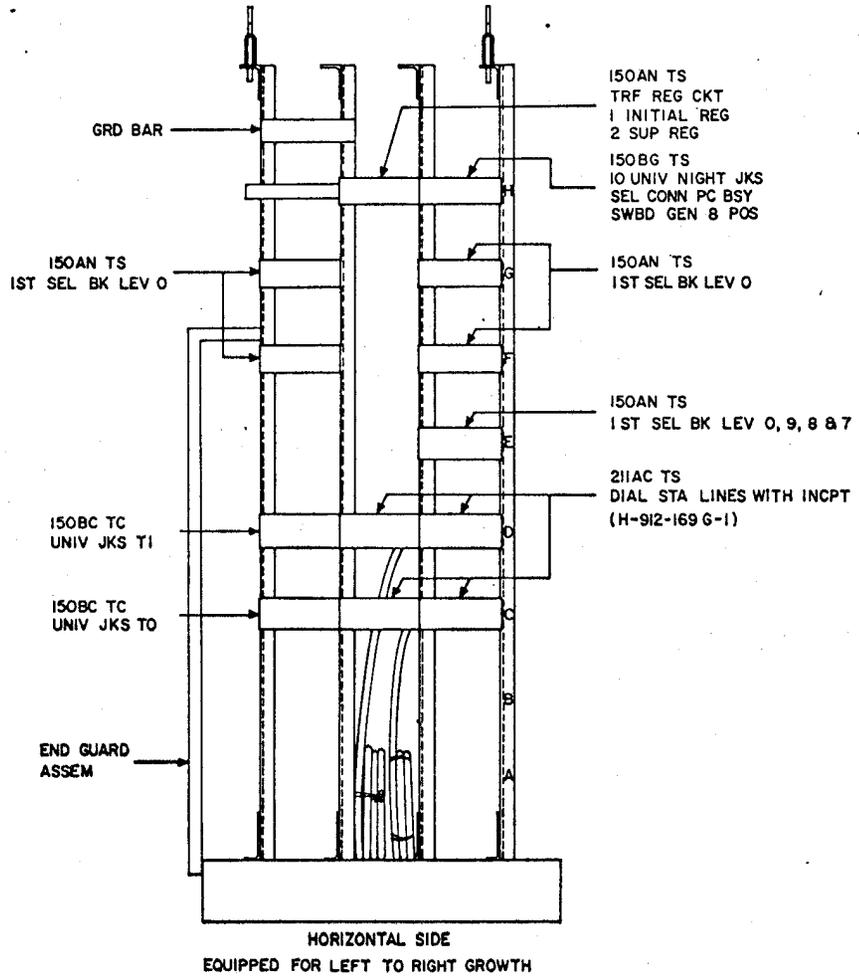
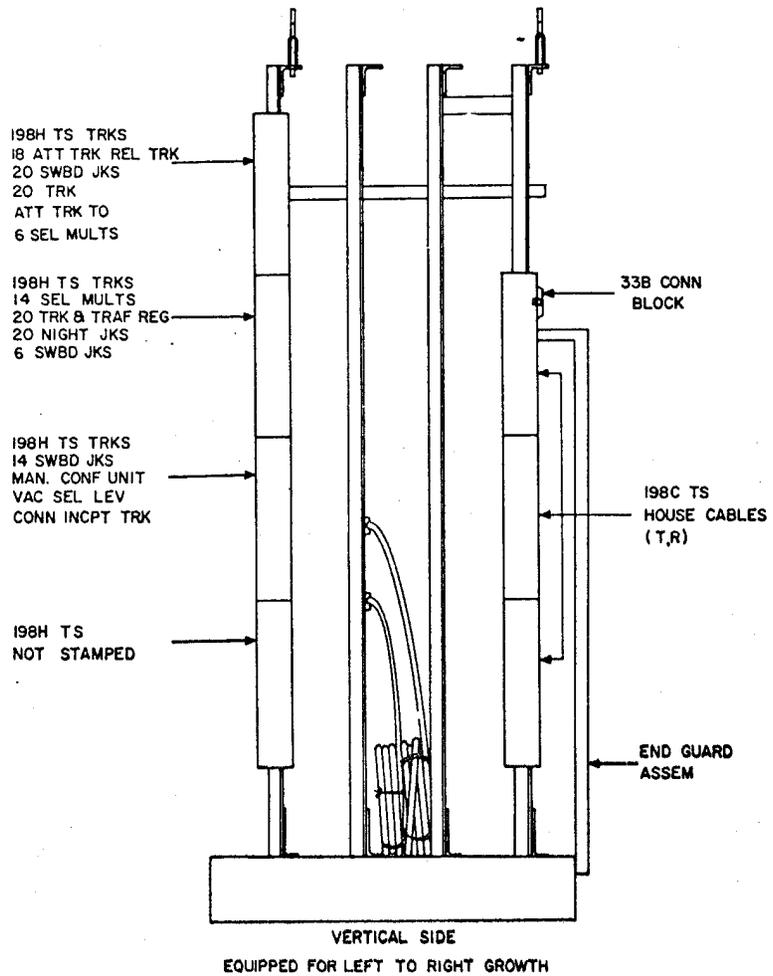
for small installations where the house and feeder cables enter from below. This frame has 7-foot 0-inch high verticals on 8-inch centers and it requires auxiliary framing to support it at the top. The overhead cable rack is supported on the auxiliary framing at a height of 7 feet 3-7/8 inches. Verticals are available for C50- or C52-type protectors, 444-type jacks, or for terminal strips, on the vertical side, and 8-inch terminal strips on the horizontal side.

(d) A narrow-type combined distributing frame, factory assembled and equipped with switchboard cable (H912-169G1) for the station line finders prewired at the terminal strip end, is available (Fig. 6). It is floor supported using a single sheet-metal base and is suitable for alignment with double-sided switch frames. This frame is arranged for right-to-left or left-to-right growth and has four 7-foot 0-inch high verticals on 8-inch centers with spacers to support a 12-inch cable rack at a height of 7-feet 3-7/8 inches. The frame equipment is confined to 1 foot 9-1/2 inches, front to rear to conform to aisle space requirements of the switch frames and it is therefore limited in cable and jumper capacity to PBXs up to approximately 1000 station lines. The verticals are arranged to mount C50-type protector mountings, 300-type connectors, 444-type jacks, and 8- or 16-inch terminal strips.

1.22 Traffic register equipment units are of a universal design, suitable for mounting the registers in any of the following places.

- (a) In the face of a 552A, 552D, or 608A PBX switchboard in space not required for jack equipment.
- (b) On a backboard in the room with the attendant switchboard.
- (c) On mounting plates on the alarm bay or other relay rack in the switchroom.

The initial unit provides the battery key for the peg count registers and provides five busy registers for trunk groups. A supplementary unit arranged for six registers is suitable for use with each 200-station lines, providing registers for all finders busy, peg count for the first selector group and the two connector groups, and for all connectors busy for each of the two connector groups. Another supplementary unit provides



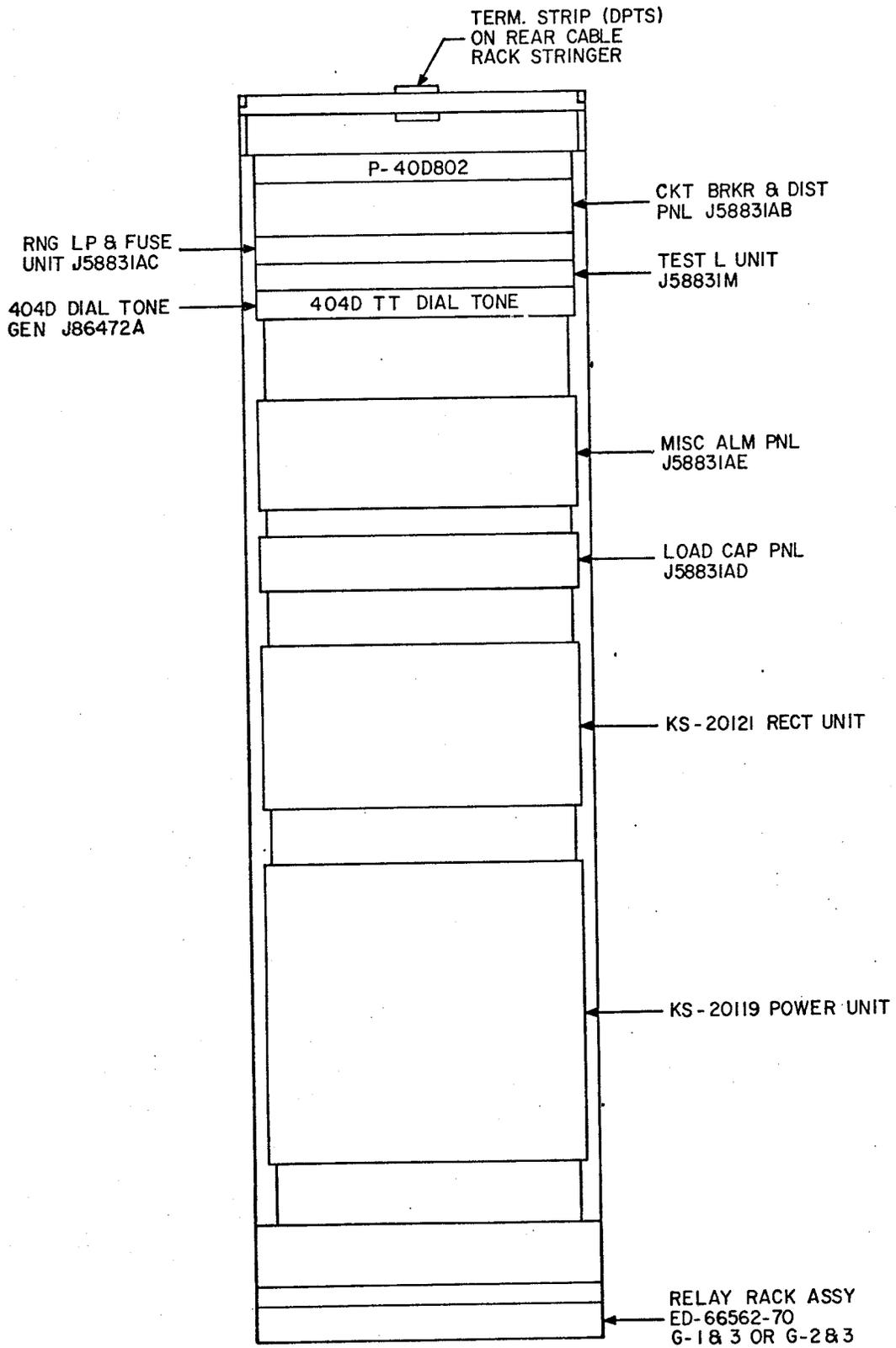


Fig. 7 - Batteryless Power Bay - Shop Assembled

six additional busy registers for trunk groups of large PBXs. A supplementary unit is available for peg count registers for incoming selectors and/or second selectors, when desired. When relay rack mounting is desired, the required number of mounting plates should be ordered, one plate for two register units. Where wall mounting is required, the backboard should be ordered locally. All registers are cabled to the distributing frame for cross connection to the switching circuits.

1.23 Power Plants: Both battery reserve and batteryless operation is available for use in the 701B and 711B PBX. The batteryless power bay is a preassembled and wired unit (see Fig. 7) arranged to provide power distribution, tones, ringing, interrupt signals, miscellaneous alarms, test line, load capacitors, precision dial tones, and space to mount the KS- power unit and KS- rectifier. A second rectifier and a power failure transfer unit are mounted on the miscellaneous relay rack. Maximum batteryless operation is limited to 50 amperes, with a 10-amp and 30-amp arrangement also available. For battery operation, the 111A power plant is available in capacities up to three rectifiers of 30 amps per rectifier. It is enclosed in a cabinet assembly 2 feet 4 inches long, 7 feet 0 inch high, and 1 foot 9 inches wide. To handle the battery load at the PBX, provision has been made for one, two, or three rectifiers. They have high, light load efficiency and are permanently connected to the batteries. The rectifiers are individually voltage regulated. A 105E power plant is also available and may be used where the battery load permits. Other power plants may be required for large installations.

1.24 Ringing Power Plant: A new ringing power plant coded 806G is available for use in the 701B and 711B PBX systems. This ringing power plant consists of two KS-15804, 1/4-amp ringing machines with automatic transfer from regular to spare machine in case of a ringing circuit failure. Either machine is operated from the 48-volt battery and furnishes 20-cycle ringing supply through interrupters (which are operated by nylon cams), and tone is supplied from a tone alternator. This unit occupies a space of eleven 2-inch mounting plates on the standard 2-foot 9-11/16 inch relay rack.

1.25 A ringing and alarm bay equipment unit is available to form the nucleus of a 701B or 711B system. This unit is shop assembled and wired as a complete basic unit suitable for all but the largest PBXs. It provides ringing resistance lamps for a maximum of 1200 dial extension lines or any increments thereof (see Fig. 8). When more than 1200 lines are required, and spare ringing lamps that were reserved for other purposes are available on the initial ringing leads unit, they may be reassigned and used. However, a supplementary ringing leads unit may be installed on this bay (by the installer) which will increase its capacity to 2800 dial lines, provided all of the lamps on this supplementary unit are used for furnishing ringing to connector shelves only and the busy-hour ringing load does not exceed the capacity of the ringing machine. When busy-hour ringing load approaches or equals the capacity of the 806G ringing power plant furnished with this bay, larger ringing power plant is recommended and shall be engineered locally to meet job requirements.

1.26 Another arrangement of the ringing and alarm bay is available that has all the features outlined in 1.25 (see Fig. 9). In addition, this bay comes equipped with the more commonly used trunk units and is supplied with a shop connected cable to the units for field connection to the combined distributing frame. This bay comes equipped with ringing resistance lamps for a maximum of 600 dial extension lines or any increments thereof. When more than 600 lines are required, space is available for ordering six additional resistance lamps. A supplementary unit is available which will increase capacity to 2800 dial lines, installer mounted and wired.

1.27 Service Features:

(a) **Restricted Service:** These PBXs are arranged so that dial lines are restricted from obtaining a connection to a central office. Unrestricted service can be obtained by adding a red plastic sleeve on a contact of the line relay of the associated line circuit.

(b) **Toll Diverting:** When these PBXs are connected to a panel, step-by-step, or crossbar dial central office, the trunks may be arranged so that either all, or none, of the dial extension lines may be diverted to the

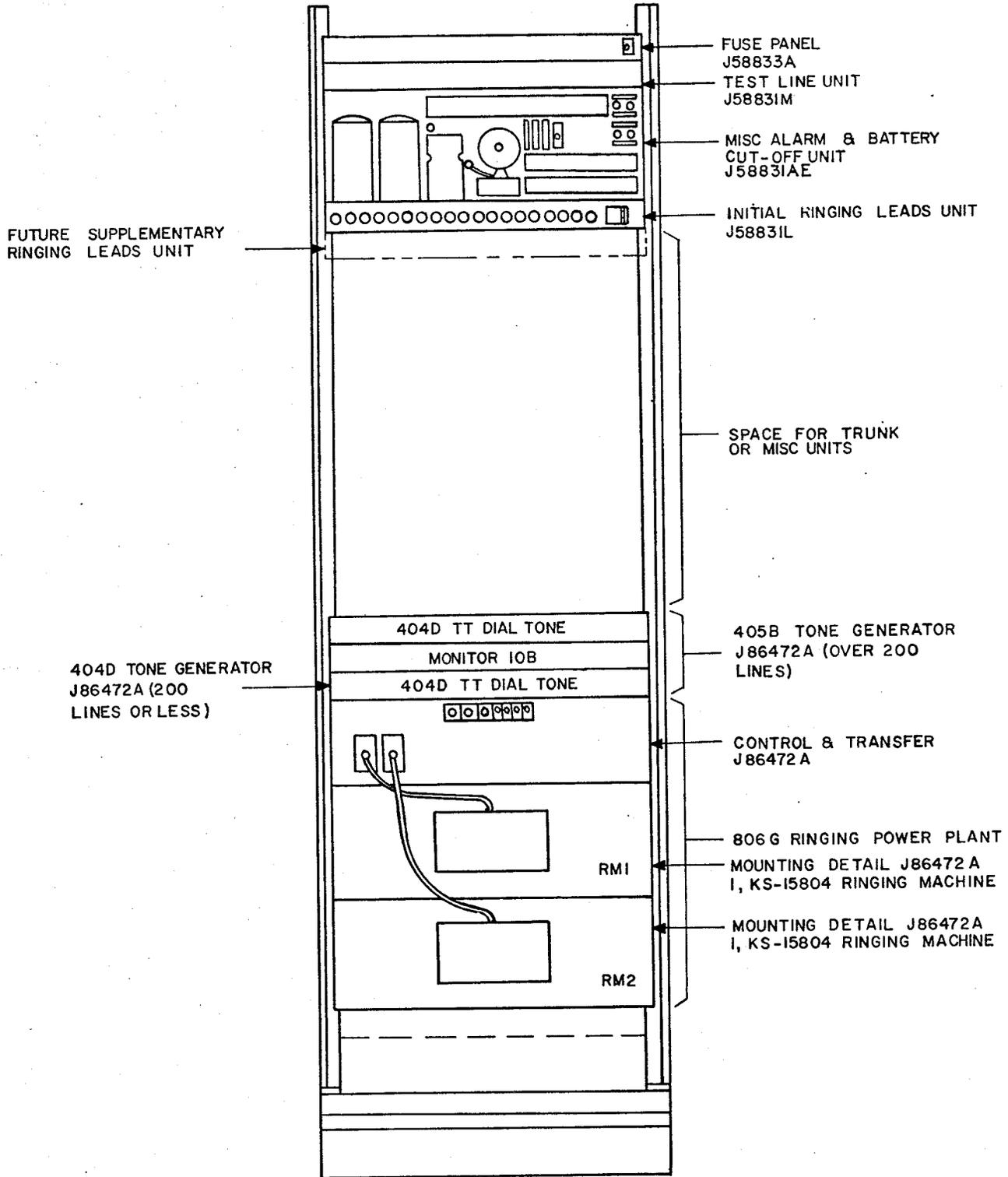


Fig. 8 - Alarm Bay Equipment Including Ringing Power Plant and Traffic Registers

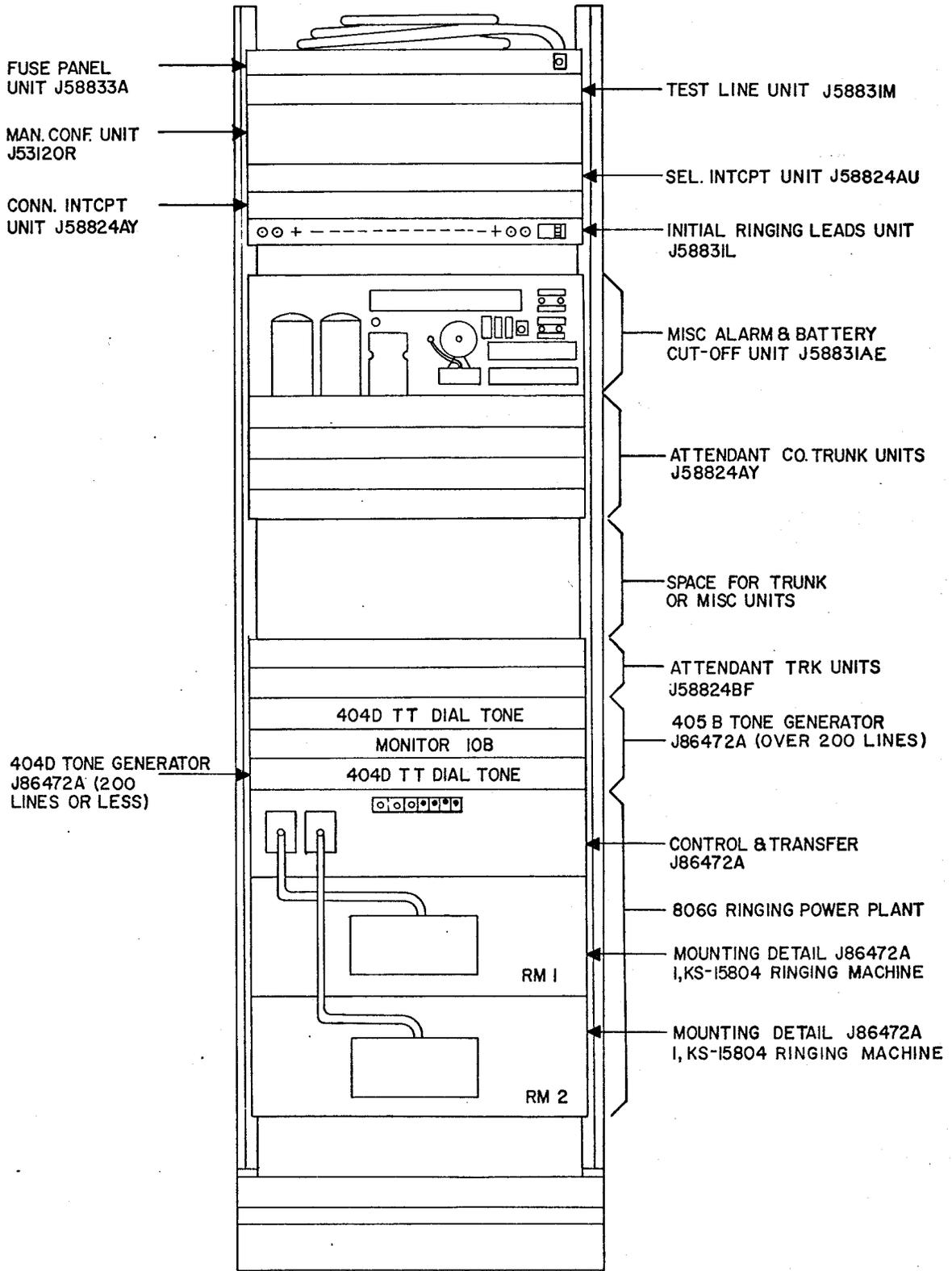


Fig. 9 - Alarm Bay Equipment Including Ringing Power Plant and With a Shop Connected Cable

PBX attendant or to busy tone, if a toll call is dialed. The associated central office must be arranged to divert, the trunks must be arranged for toll diverting, and an operator toll diverting trunk or a toll diverting tone circuit must be provided at the PBX.

(c) *Individual or Party-Line Service:* Either individual or 2-party service may be obtained in the No. 701B or 711B PBX systems. Facilities for 4-party service that were available for the No. 701A and 711A systems have been rated Mfr Disc. because of practically no demand.

(d) *Intercept Service*

(1) *Vacant Selector Level Intercept:* A selector level intercept trunk circuit has been made available which will function with the customary attendant switchboard.

(2) *Vacant Connector Intercept:* A connector intercept circuit has been made available to facilitate the intercepting of nonworking extension lines. Dial extension lines not equipped with line and cutoff relays are made busy and arranged for rotary

hunting, except the last line of each connector level which is connected to the intercept trunk.

Ceiling Heights

1.28 The height of the frames for these PBXs is 7 feet 0 inch. The overall height of these frames including cable rack is 7 feet 3-7/8 inches. The ceiling height under the lowest ceiling obstruction should be sufficient to allow for placing, on the cable rack, the maximum amount of cable that will be required for the ultimate equipment. Including working space over the cable rack, a minimum of 8 feet 0 inch clearance is desirable.

Floor Weights

1.29 Floor plan data sheets indicate the maximum weight on each frame. Where the weight of the equipment exceeds the allowable floor load, it will be necessary to reinforce the floor or relocate the frames to be over floor girders, as required. In the case of battery racks with their high load density, it is recommended that they be installed over main girders or adjacent to walls located over main girders.

SUBDIVISIONS OF EQUIPMENT AND DETAILED INDEX

WECO J drawings should be ordered by referring to the prefix and base number and requesting the current dash (—) number.

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
ED-65721-01		Hunting Selector-Connector	ED-65721-01	
ED-65900-01		Digit Absorbing Selector	ED-65900-01	
ED-65901-01		Line Finder	ED-65901-01	
ED-66010-03		Second Selector	ED-66010-03	
ED-66144-03		Hunting Connector	ED-66144-03	
ED-66302-02		2-Digit Rotary Hunting Selector	ED-66302-02	
ED-66359-03		First Selector	ED-66359-03	
ED-66360-03		Incoming First Selector	ED-66360-03	
ED-66556-70		Universal Switch Frame, 6 Feet 0-9/16 Inch Long	ED-66556-70	

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
ED-66560-70		Switch Frame 2 Feet 0-11/16 Inch Long, Double Sided	ED-66560-70	
ED-66562-70		Relay Rack, Angle Type, 7 Feet 0 Inches for 2- by 23-Inch Mounting Plates	ED-66562-70	
ED-66564-70		End-Guard Assemblies	ED-66564-70	
ED-66570-70		Combined Distributing Frame — Floor Supported — Protectors or Terminal Strips on Vertical Side — 7 Feet 0 Inch High — 1 Foot 9-1/2 Inch Guardrail Width	ED-66570-70	
ED-66570-71		Combined Distributing Frame Assembly — Floor Supported Type — 7 Feet 0 Inch High, Eight Shelves — 1 Foot 9-1/2 Inch Guardrail Width	ED-66570-71	
ED-66576-70		Combined Distributing Frame — Shop Assembled Units — Protectors or Terminal Strips on Vertical Side — 7 Feet 0 Inch High — 1 Foot 10 Inches Wide — Eight Shelves — 2 Feet 9-1/2 Inch Guardrail Width	ED-66576-70	
ED-66577-70		Mounting of Battery and Ground Connecting Blocks on Frames	ED-66577-70	
ED-66594-02		Incoming First Selector for Operation With Repeating Tie Trunk — Supplies Dial Tone	ED-66594-02	
ED-66596-02		Incoming Hunting Connector	ED-66596-02	
ED-92473-01		Single-Sided Distributing Frame — Floor Supported — Individual Verticals — Arranged for Protectors or Terminal Strips	ED-92473-01	
J58831A	AT&TCo Std	Initial Line Finder Shelf Unit, Arranged for Twenty 200-Point, 3-Wire Line Finders and 200 Station Lines	J58831A-()	SD-65761-01 SD-65901-01 SD-66715-01
J58831B	AT&TCo Std	Station Line Relay Unit — For Use With Line Finder Unit J58831A — Lines Arranged for Restricted Service	J58831B-()	SD-66715-01
J58831C	AT&TCo Std	Supplementary Line Finder Shelf Unit — For 200-Point, 3-Wire Line Finders — 12 Capacity — Arranged to Mount on Universal Switch Frame	J58831C-()	SD-65761-01 SD-65901-01

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J58831D	AT&TCo Std	Supplementary Line Finder or Trunk Finder Shelf Unit — For 200-Point, 3-Wire Line Finders or 100-Point, 6-Wire Trunk Finders — 4 or 8 Capacity — Arranged to Mount on Relay-Rack-Type Frame	J58831D-()	SD-65761-01 SD-65794-01 SD-65901-01 SD-65906-01
J58831E	AT&TCo Std	Initial Selector Shelf Unit — Arranged for Twenty 3-Wire First Selectors — Two Divisions	J58831E-()	SD-65761-01 SD-65900-01 SD-66359-01 SD-66360-01 SD-66594-01
J58831F	AT&TCo Std	Supplementary Selector Shelf Unit — For First, Second, or Incoming 3-Wire Selectors — 12 Capacity — Arranged to Mount on Universal Switch Frame	J58831F-()	SD-65761-01 SD-65900-01 SD-66010-01 SD-66359-01 SD-66360-01 SD-66594-01
J58831G	AT&TCo Std	Supplementary Selector Shelf Unit — For First, Second, or Incoming 3-Wire Selectors — 4 or 8 Capacity — Arranged to Mount on Relay-Rack-Type Switch Frame	J58831G-()	SD-65761-01 SD-65900-01 SD-66010-01 SD-66359-01 SD-66360-01 SD-66594-01
J58831H	AT&TCo Std	Connector Shelf Unit — Capacity 12 Hunting Connectors, Selector-Connectors or Incoming Connectors; or 2-Digit Rotary Hunting Selectors	J58831H-()	SD-65721-01 SD-65761-01 SD-66037-01 SD-66144-01 SD-66302-01 SD-66596-01
J58831J	AT&TCo Std	Supplementary Connector Shelf Unit — Capacity Four or Eight Hunting Connectors, Selector-Connectors, Incoming Connectors, or 2-Digit Rotary Hunting Selectors — Arranged to Mount on Relay-Rack-Type Switch Frame	J58831J-()	SD-65721-01 SD-65761-01 SD-66037-01 SD-66144-01 SD-66302-01 SD-66596-01
J58831L	AT&TCo Std	Ringling Leads Unit — Relay Rack Mounted — For No. 701B and 711B PBXs	J58831L-()	SD-65771-01
J58831M	AT&TCo Std	Test Line Unit — For Testing Connector or Selector-Connector Circuits	J58831M-()	SD-66037-01

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J58831N	AT&TCo Std	Aisle Pilot Lamp Assembly — For Indicating an Alarm Condition Originating in the Equipment in a Line-Up of Switch Frames or Relay Racks — For No. 701B and 711B PBXs and No. 3A Automatic Call Distributing System	J58831N-()	SD-65761-01 SD-65973-01
J58831P	AT&TCo Std	Traffic Register Unit	J58831P-()	SD-65774-01
J58831S	AT&TCo Std	Ringing and Alarm Bay Equipment Unit	J58831S-()	SD-65761-02 SD-65771-01 SD-65773-01 SD-65779-01 SD-65781-01 SD-66037-01 SD-66462-01 SD-66716-01 SD-66717-01 SD-81337-01 SD-81719-01
J58831T	AT&TCo Std	Common Group and Subgroup Unit for Line or Trunk Finders	J58831T-()	SD-65871-01
J58831U	AT&TCo Std	Relay Rack Station Line Switch Frame — Arranged for 100 Dial Station Lines, Eight Line Finder Switches, and Eight Selector-Connector Switches for 1- or 2-Digit Dialing	J58831U-()	SD-66715-01
J58831W	AT&TCo Std	Batteryless Power Bay	J58831W-()	SD-5E031-01 SD-5E040-01 SD-65761-02 SD-65771-01 SD-65773-01 SD-66037-01 SD-81337-01 SD-81954-01 SD-81956-01
J58831Y	AT&TCo Std	Station Restriction Unit — Arranged for Key Selected Outgoing and/or Incoming Station Restriction	J58831Y-()	SD-5E012-01
J58831AA	AT&TCo Std	Power Failure Transfer Unit — Relay Rack Mounted — For Use With Batteryless Power Bay — No. 701B or 711B PBX	J58831AA-()	SD-5E040-01
J58831AB	AT&TCo Std	Power Distribution Panel — Relay Rack Mounted — For Use With Batteryless Power Bay — No. 701B or 711B PBX	J58831AB-()	SD-5E031-01

EQUIPMENT CODE	RATING OF UNIT	TITLE	EQUIPMENT DRAWING	CIRCUIT DRAWING
J58831AC	AT&TCo Std	Ringling Lamp and Fuse Unit — Relay Rack Mounted — For Use With Batteryless Power Bay — No. 701B or 711B PBX	J58831AC-()	SD-5E031-01 SD-65779-01
J58831AD	AT&TCo Std	Load Capacitor Panel — Relay Rack Mounted — For Use With Batteryless Power Bay — No. 701B or 711B PBX	J58831AD-()	SD-5E031-01
J58831AE	AT&TCo Std	Miscellaneous Alarm Unit — With Battery Cutoff Relay — Relay Rack Mounted — for No. 701B or 711B PBX	J58831AE-()	SD-65761-02 SD-65773-01
J58831R	—	Reserved		

Circuit Schematic Index

CIRCUIT DRAWING	J58831 EQUIP. CODE
SD-5E012-01	Y
SD-5E031-01	W,AB,AC,AD
SD-5E040-01	AA
SD-65721-01	H,J
SD-65761-01	A,C,D,E,F,G,H,J,N,
SD-65761-02	S,W,AE
SD-65771-01	L,S
SD-65773-01	S,W,AE
SD-65774-01	P
SD-65779-01	S,AC
SD-65781-01	S
SD-65794-01	D
SD-65871-01	T
SD-65900-01	E,F,G
SD-65901-01	A,C,D
SD-65906-01	D
SD-65973-01	N
SD-66010-01	F,G
SD-66037-01	H,J,M,S,W
SD-66144-01	H,J
SD-66302-01	H,J
SD-66359-01	E,F,G
SD-66360-01	E,F,G
SD-66594-01	E,F,G
SD-66596-01	H,J
SD-66715-01	A,B,U
SD-66716-01	S
SD-66717-01	S
SD-81337-01	S
SD-81719-01	S
SD-81954-01	W
SD-81956-01	W

2. SUPPLEMENTARY INFORMATION

069-020-801 — Apparatus — Method of Blocking and Insulating Contacts
 809-000-000 — PBX Systems Index
 AA128.006 — List of General Equipment Requirements
 AA614.007 — Cable Rack — Installing
 AA618.001 — Protective Grounding
 J32313 (814-400-150) — Multiplying of Trunks From Selector Levels
 J34728 (809-259-150) — Automatic Call Through Test Set — Step-By-Step System
 J53112 (809-716-154) — (A&M Only) No. 552D PBX Switchboard
 J53120 (809-201-151) — Trunk and Miscellaneous Units — Manual PBXs
 J53123 (809-716-155) — (A&M Only) No. 552D PBX Switchboard
 J53125 (809-755-150) — No. 608A PBX Switchboard
 J53131 (809-135-152) — No. 3A Automatic Call Distributing System
 J54701 (809-258-150) — Test Set for Switches
 J58801 (809-803-150) — (A&M Only) No. 701A and 711A PBXs
 J58815 (809-201-152) — (A&M Only) Trunk and Miscellaneous Relay Units for No. 606A, 606B, and 702A PBXs
 J58817 (809-201-150) — Relay Units
 J58822 (809-115-150) — 3A Code Call Equipment
 J58823 (809-815-151) — No. 740E PBX
 J58824 (809-201-153) — Trunk and Miscellaneous Relay Units — Dial PBXs

- J58827 (809-203-150) — Selector Level Announcement Trunk
- J58832 (809-803-152) — No. 701B and 711B PBXs Pre-engineered and Packaged Equipment
- J58833 (809-120-150) — Miscellaneous Equipment Units Common to Various PBXs
- J58834 (809-108-151) — Message Waiting Service
- J58837 (809-803-153) — Individual or Multi-customer System — Arranged for Switched-Loop or Key-Terminated Operation — To Telephone Consoles or Cord Switchboards — With or Without Direct Inward Dialing Associated With 701B PBX
- J58847 (809-140-150) — No. 701A, 701B, 711A, 711B, and 740E TOUCH-TONE® Calling Equipment
- J59004 (809-716-150) — (A&M Only) No. 552A PBX Switchboard
- J59025 (809-716-151) — (A&M Only) No. 552A PBX Switchboard
- J86212 (AA367.010) — (A&M Only) Small Ringing Equipment
- J86470 (AA367.120) — 111A Power Plant — 10 to 120-Ampere Capacity — 44 to 50 or 44 to 52 Volts — Enclosed Power Board
- J86472 (AA367.818) — 806G Plant AC-DC Machine Ringing Equipment — 0.25 Ampere
- J86572 (AA367.113) — (A&M Only) 110A Power Plant — 10 to 240 Amperes, 48 Volts, AC Service
- J86596 (AA367.812) — 806D Power Plant — 0.50-Ampere
- J86814 (AA367.125) — No. 105E Power Plant
- J87118 (AA361.016) — Battery Equipments
- J87211 (AA362.082) — Rectifier Unit — Semiconductor Type — Automatic Regulation
- J90603 (AA381.307) — Cable Racks
- J90801 (AA381.801) — Cable Hole Sheathing
- J94704 (809-258-151) — Line Finder, Selector, Connector, Selector-Connector Test Set
- J99201 (AA388.016) — Long Line, Long Trunk, or Long Station Line Units
- J99204 (AA381.313) — Central Office PBX Alarm Cabinet
- J99205 (809-204-151) — Long Line and Long Trunk Units
- J99208 (AA381.314) — Lamp Signal Cabinets
- J99234 (AA388.077) — Long Line and Long Trunk Equipment
- J99236 (AA388.083) — Relay Rack Mounted Equipment — Located at a Central Office or in a PBX, or in Either a PBX or Central Office Associated With the PBX
- X-67142 — Manufacturing Testing Requirements for Step-by-Step Selectors and Connectors
- Floor Plan Data
- Section 6.2,
- Sheet 28
- Sheet 29
- Sheet 30
- Sheet 31
- Sheet 33
- Sheet 34
- Sheet 35
- Section 6.9,
- Sheet 10
- Sheet 11
- Sheet 12
- Sheet 13
- Current Drain Data — None available.
- 3. DRAWINGS**
- For additional drawings forming a part of this specification, see listing under Subdivisions of Equipment and Detailed Index.
- Keysheets**
- SD-65775-01 — No. 701B PBX
- SD-65780-01 — No. 711B PBX
- SD-66457-01 — No. 701A PBX
- SD-66458-01 — No. 711A PBX
- SD-66591-01 — No. 552A and 552D PBX
- SD-66729-01 — 608A PBX Switchboard
- SD-80700-01 — Power Systems
- Range Charts**
- ES-536316 — PBXs Connected to Panel Central Offices
- ES-536317 — PBXs Connected to Manual Central Offices
- ES-536318 — PBXs Connected to Crossbar Central Offices
- ES-536319 — PBXs Connected to Step-by-Step Central Offices
- SD-65763-01 — PBXs Connected to No. 5 Crossbar Central Offices Having 1350-Ohm Subscriber Conductor Loop

- SD-65764-01 — PBXs Connected to Panel Central Offices Having 1300-Ohm Subscriber Conductor Loop
- SD-65765-01 — PBXs Connected to Step-by-Step Central Offices Having 1300-Ohm Subscriber Conductor Loop

Framework

- ED-66540-70 — Initial Line Finder Unit — Universal Switch Frame
- ED-66542-70 — Supplementary Line Finder Shelf — Universal Switch Frame
- ED-66544-70 — Supplementary Line Finder Shelf — Relay Rack Switch Frame
- ED-66546-70 — Initial Selector Unit — Universal Switch Frame
- ED-66548-70 — Supplementary Selector Shelf — Universal Switch Frame
- ED-66550-70 — Supplementary Selector Shelf — Relay Rack Switch Frame
- ED-66552-70 — Connector Shelf — Universal Switch Frame
- ED-66554-70 — Connector Shelf — Relay Rack Switch Frame
- ED-66565-70 — Traffic Register Unit
- ED-66570-71 — Combined Distributing Frame Assembly — Floor Supported Type — 7 Feet 0 Inch High Eight Shelves — 1 Foot 9-1/2 Inch Guardrail Width
- ED-66571-70 — Combined Distributing Frame — End Guards — Frame 7 Feet 0 Inch High with 33-1/2 Inch Guardrails
- H253-005 — Location of Cable Racks at Power Boards
- H253-130 — Cable Racks — Fabrication and Supports at Power Boards
- H253-146 — Cable Racks — Fabrication and Supports at Power Boards
- H253-503 — Stock List of Material for Miscellaneous Cable Rack Fabrications
- H253-504 — Stock List of Material for Miscellaneous Cable Rack Fabrications
- H253-505 — Stock List of Material for Cable Rack, Multiple Fans, and Cable Runs
- H253-506 — Stock List of Material for Spiral Runs
- H253-509 — Stock List of Material for Cable Rack Supports

- H253-510 — Stock List of Material for Cable Rack Supports per AA614.007
- H253-511 — Stock List of Material for Cable Rack Fabrication per AA614.007
- H253-512 — Stock List of Material for Cable Rack Fabrication — Bar Type

Equipment

- ED-30159-01 — Designation Card Holder — For Selector Shelves
- ED-66359-03 — First Selector
- ED-66566-10 — Fuse Units — For Supplementary Line Finders, Selector, and Connector Units
- ED-66572-10 — Distributing Frame — Typical Equipment
- ED-66579-01 — Switch Frame Equipment — Typical
- ED-92958-01 — Ringer Bracket Unit

Wiring and Cabling

- ED-5E010-01 — Method of Cabling for Pre-assembled Ringing and Alarm Bay
- ED-66541-10 — Initial Line Finder Unit — Local Cable Plan
- ED-66543-10 — Supplementary Line Finder Shelf — Universal Switch Frame — Local Cable Plan
- ED-66545-10 — Supplementary Line Finder Shelf — Relay Rack Type — Local Cable Plan
- ED-66547-10 — Initial Selector Unit — Local Cable Plan
- ED-66549-10 — Supplementary Selector Shelf — Universal Switch Frame — Local Cable Plan
- ED-66551-10 — Supplementary Selector Shelf — Relay Rack Type — Local Cable Plan
- ED-66553-10 — Connector Shelf — Universal Switch Frame — Local Cable Plan
- ED-66555-10 — Connector Shelf — Relay Rack Type — Local Cable Plan
- ED-66557-10 — Universal Switch Frame 6 Feet 0-9/16 Inch Long — Double-sided — Switchboard Cable Plan
- ED-66561-10 — Relay Rack Type Switch Frame — 2 Feet 0-11/16 Inch Long — Double-sided, Switchboard Cable Plan

- ED-66563-10 — Bank Multiple Wiring — Line Finders, Selectors, and Connectors
- ED-66566-10 — Fuse Units — For Supplementary Line Finders, Selector, and Connector Units
- ED-66568-10 — Method of Wiring Station Line Relays
- ED-66573-10 — Distributing Frame — Switchboard Cabling
- ED-66574-10 — Method of Running Power Feeders and Appliance Outlet Wiring
- ED-66575-10 — Distributing Power Terminal Strip Cabling
- ED-66580-10 — Relay Rack Station Line Switch Frame Unit — Initial and Supplemental — Local Cable Plan
- ED-92224-01 — Relay Rack Units, Cabling Plan

4. EQUIPMENT

Switch Units

- ED-65721-01 — Hunting Selector-Connector*
- ED-65900-01 — Digit Absorbing Selector*
- ED-65901-01 — Line Finder*
- ED-66010-03 — Second Selector*
- ED-66144-03 — Hunting Connector*
- ED-66302-02 — 2-Digit Rotary Hunting Selector*
- ED-66359-03 — First Selector*
- ED-66360-03 — Incoming First Selector*
- ED-66594-02 — Incoming First Selector for Operation With Repeating Tie Trunk — Supplies Dial Tone*
- ED-66596-02 — Incoming Hunting Connector*

Frames and Racks

- ED-66556-70 — Universal Switch Frame, 6 Feet 0-9/16 Inch Long*

- Group 1** — One double-sided, universal switch frame, 6 feet 0-9/16 inch long, complete with 12-inch cable rack and fastening details. (See Notes B, C, and D.)
- Group 2** — One 12-inch cable rack, 6 feet 0-9/16 inch long, complete with cable rack supports and fastening details for spanning one vacant switch frame space when switch frames are in same lineup.

- Group 3** — One 12-inch cable rack, 6 feet 0-9/16 inch long, complete with cable rack support and fastening details for spanning aisle space between the end of a frame lineup and a wall.

- Group 4 (A&M Only)** — One duplex power outlet assembly. (See Note B.)

- Group 5** — One 12-inch cable rack, 3 feet 2-3/4 inches long, complete with fastening details for spanning aisle space between adjacent rows of double-sided frames when aisle space between guardrails does not exceed 2 feet 5-1/2 inches.

- Group 6** — One 12-inch cable rack, 3 feet 2-3/4 inches long, complete with fastening details for spanning aisle space between a double-sided frame and wall when the aisle space does not exceed 3 feet 5-1/2 inches between guardrail and wall.

- Group 7** — One set of 12 cable brackets for supporting cable at ends of first and last switch frames in lineup.

- Group 8** — One switch frame, 5 feet 3-1/16 inches wide, including 12-inch cable rack and supporting materials. (See Note B.)

- Group 9** — One pipe stand assembly support of cable rack in 7-foot 0-inch frame lineups.

- ED-66560-70 — Switch Frame 2 Feet 0-11/16 Inch Long, Double Sided*

- Group 1** — One double-sided relay-rack-type switch frame, 2 feet 0-11/16 inch long, complete with 12-inch cable rack and fastening details. (See Notes B and C.)

- Group 2** — One 12-inch cable rack, 2 feet 0-11/16 inch long, complete with cable rack supports and fastening details for spanning one vacant relay rack space when in the same lineup with equipped frames.

- Group 3** — One set of adapter bars for mounting five 2-inch mounting plates.

- Group 4** — One station line relay mounting for 100 dial station lines.

Notes

- A. The switch frames shall be designated SWF and shall show the letters F and R to indicate the front and rear of the frame. They shall be numbered consecutively from one up.
- B. The base of the universal switch frame will accommodate one or two power outlets as required and the base of the relay-rack-type switch frame will accommodate one outlet. The duplex outlet assemblies, as required, shall be ordered per ED-66574-(). The power cable shall be ordered locally to meet local requirements. Application of these outlets is covered on frame assembly drawings.
- C. Each switch frame is furnished with two distributing power terminal strips (266A) to permit multiplying the necessary power, ringing, and alarm leads.
- D. To assist the installer in locating equipment on switch frames, the mounting bolt locations are indicated on ED-66579-01 which shows typical switch frame equipment for the front and rear of the frame. The bolt locations are identified by counting downward from the top of the upright. Proper placement of the shelf units on the frame will facilitate maintenance access.

***ED-66562-70 — Relay Rack, Angle Type, 7 Feet
0 Inch for 2-by 23-Inch Mounting Plates***

- Group 1*** — One single-sided relay rack 2 feet 0-11/16 inch long with 1-foot 0-inch base (front to rear) complete with 12-inch cable rack and fastening details. (See Note B.)
- Group 2*** — One single-sided relay rack 2-feet 0-11/16 inch long, with 1-foot 9-1/2 inch base (front to rear) for use in line-up with switch frames, complete with 12-inch cable rack and fastening details. (See Note B.)
- Group 3*** — One frame brace for shop-wired relay rack.

Notes

- A. The relay racks shall be designed MRR and numbered consecutively from one up. When the ringing and alarm bay equipment unit is installed, it shall be designated MRR1.
- B. Each relay rack will accommodate one power outlet. The duplex outlet assembly shall be ordered per ED-66574-(). The power cable shall be ordered locally.
- C. A distributing power terminal strip (266A) is furnished with the ringing and alarm bay equipment unit, a distributing power terminal strip (266A) shall be ordered separately, as required, when additional miscellaneous relay racks are required.
- D. The mounting plate locations on each MRR are numbered from the top downward, and shall be numbered consecutively from one up for each relay rack.
- E. A fuse panel is required for each MRR to be mounted at the top of the bay. The fuse or fuses serving an equipment unit on the bay shall be stenciled with the corresponding individual or top-mounting-plate designation of the unit.

ED-66564-70 — End-Guard Assemblies

- Group 1*** — One end-guard assembly for double-sided switch frames or relay rack with 1-foot 9-1/2 inch base.
- Group 2*** — One end-guard assembly for combined distributing frame (right end).
- Group 3*** — One end-guard assembly for combined distributing frame (left end).
- Group 4*** — One end-guard assembly for relay rack with 1-foot 0-inch base.
- Group 5*** — One end-guard assembly for battery stand.
- Group 6*** — One base guard only for double-sided switch frames or relay rack with 1 foot 9-1/2 inch base.
- Group 7*** — One base guard only for relay rack with 1-foot 0-inch base.
- Group 8*** — One base guard only for battery stand.

Group 9 — One base guard only for combined distributing frame.

ED-66570-70 — *Combined Distributing Frame — Floor Supported — Protectors or Terminal Strips on Vertical Side — 7 Feet 0 Inch High — 1-Foot 9-1/2 Inch Guardrail Width*

Group 3 — One frame ground bar with terminal lugs, including ground lead and ground clamps.

Group 4 — One 12-inch cable rack 9 feet 8-1/2 inches long, for switchboard cable for an initial 4-vertical unit, ultimate 10 verticals, and spanning 3-foot 0-inch aisle to wall, includes supporting material.

Group 6 — One vertical 12-inch cable rack 9 feet 8-1/2 inches long, for house and feeder cables for an initial 4-vertical ultimate 10-vertical frame, spanning 3-foot 0-inch aisle to wall; includes supporting material.

Group 7 — One horizontal 12-inch cable rack, 9 feet 8-1/2 inches long, for house and feeder cables for an initial 4-vertical ultimate 10-vertical frame, spanning 3-foot 0-inch aisle to wall; includes supporting material.

Group 8 — One designation board and supports for two verticals.

Group 9 — One 2-vertical frame unit arranged for mounting up to four 50-pair or two 100-pair 300-type connectors, one C52 and three C50-type protectors, one 444B- and three 444C-type jacks, or eight 8-inch or four 16-inch terminal strips per vertical, including junction details and tie bars. (See Note A.)

Group 10 — One protector mounting bar complete with fanning strips for a C52 protector mounting or a 444B jack to be located at the first position from the top.

Group 11 — One protector mounting bar complete with fanning strips for a C50 protector mounting or a 444C jack to be located at the first, second, third, or fourth positions from the top.

Group 12 — One set of terminal lugs for mounting one 8-inch or one 16-inch terminal strip on the vertical side.

Group 13 (A&M Only) — One 2-vertical frame unit arranged for mounting 202 protectors, 404 jacks, or eight 8-inch or four 16-inch terminal strips including junction details, ground bar and tie bar.

Groups 14 and 15 — See ED-66570-71.

Group 16 — One connector mounting bar for each 50 pairs of a 300-type connector to be located at the first, second, third, or fourth position from the top.

Group 17 — C-type protector grounding material for one vertical, including ground bar connector, ground lead, and terminal lugs.

Group 18 — 300-type connector grounding material for one vertical, including ground bar connector, ground lead, and terminal lugs.

Note

A. The frame will accommodate one power outlet. The duplex outlet assembly shall be ordered per ED-66574-(). The power cable shall be ordered locally.

ED-66570-71 — *Combined Distributing Frame Assembly — Floor Supported Type — 7 Feet 0 Inch High, Eight Shelves — 1-Foot 9-1/2 Inch Guardrail Width*

Groups 1 through 13 — See ED-66570-70

Group 14 — One vertical preassembled frame for right to left growth.

Group 15 — One vertical preassembled frame for left to right growth.

ED-66576-70 — *Combined Distributing Frame — Shop Assembled Units — Protectors or Terminal Strips on Vertical Side — 7 Feet 0 Inch High — 1 Foot 10 Inches Wide — Eight Shelves — 2 Foot 9-1/2 Inch Guardrail With*

Group 1 — One 3-vertical frame unit arranged for 202 protectors per vertical; includes unit junction details.

Group 2 — One 3-vertical frame unit arranged for eight 8-inch or four 16-inch terminal strips per vertical; includes unit junction details.

Group 3 — One frame ground bar with terminal lugs; includes ground lead and ground clamp.

Group 4 — One set of details for supporting frame from wall using auxiliary framing bars includes clamps for regular and house and feeder cable racks, framing bars not included.

ED-92473-01 — *Single-Sided Distributing Frame — Floor Supported — Individual Verticals — Arranged for Protectors or Terminal Strips*

Group 1 — One terminal strip vertical.

Group 2 — One protector vertical.

Groups 3, 4, 6, 7, 9, and 10 — Not applicable with this equipment.

Group 5 — One ground lead assembly.

Group 8 — One set of cable rack support material for 12-inch cable rack for 701B PBX.

Miscellaneous

ED-66577-70 — *Mounting of Battery and Ground Connecting Blocks on Frames*

Group 1 — Battery and ground connecting block assembly for combined distributing frames.

Group 2 — Battery and ground connecting block assembly for relay rack.

Group 3 — Battery and ground connecting block assembly for universal switch frames or relay-rack-type switch frames.

J58833A — *Fuse Panel Unit With Alarm — Relay Rack Mounted*

Switch Shelf Units, Ringing and Alarm Equipment

J58831A (AT&T Co Std) — *Initial Line Finder Shelf Unit, Arranged for Twenty 200-Point, 3-Wire Line Finders and 200 Station Lines*

Equipment — J58831A-()

Local Cable — ED-66541-10

Bank Multiple Wiring — ED-66563-10

List 1 — Framework, assembly, wiring, and common equipment for one unit for twenty 200-point, 3-wire line finders, including 20 sets of 3-wire multiple banks and 9B commutators, but not including station line relays or line finder switches.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66540-70, G1		1	A,C,D,E
Bk Mult Assembly, 20 Sets of Bks and Commutators per J58831A-(), Showing Numbering of Bank Terminals, and SD-65901-01, Fig. 6	1	1	B,H,I,J,K,R
Line Fdr Ckt, SD-65901-01: Jack Wiring Only, Fig. 1	20	20	
Start Ckts, Fig. 2	10	10	G
Group Ckt, Fig. 3	1	1	
Group Test Lamp Ckt, Fig. 11	1	1	P
Test Line Jack Ckt, Fig. 4	1	1	
Alarm Ckt, SD-65761-01: Release Mag Alm Ckt, Fig. 2	1	1	
Fuse Alm Ckt, Fig. 6	1	1	
Station Line Ckt, SD-66715-01, Fig. 1, With N and T Wiring	200	0	F,L,M,R

Lists 2 through 9 — Consist of one shelf per list 1 equipped with station line relays, per J58831B, by the shop, as outlined below and arranged for restricted service.

J58831A, LIST NO.	STATION LINES EQUIPPED	EQUIP STATION LINES	HUNDREDS GROUP	STATION LINE RELAY UNITS REQUIRED PER J58831B		
				LIST 1	LIST 2	NOTE
2	60	20-79	1st	6		*
3	80	10-89	1st	8		†
4	100	00-99	1st	9	1	‡
5	120	00-99	1st	9	1	‡
		00-19	2nd	2		‡
6	140	00-99	1st	9	1	‡
		00-39	2nd	4		‡
7	160	00-99	1st	9	1	‡
		00-59	2nd	6		‡
8	180	00-99	1st	9	1	‡
		00-79	2nd	8		‡
9	200	00-99	1st	9	1	‡
		00-99	2nd	9	1	‡

* See Note F.

† Line and cutoff relays shall be disconnected by the installer and left in place for lines 19 and 10 for test lines, on two digits only.

‡ Line and cutoff relays are omitted from lines 99 and 90 of each hundred group for test lines, on three and four digits only.

Notes

A. This initial line finder shelf unit is required for each 200 dial station lines comprising a line finder group, as it provides the mounting space for the associated station line circuits and includes the group circuit and start relays. The line finder group may be enlarged from the initial 20 to 32 line finders by using supplementary line finder shelf unit J58831C. A further enlargement may be made by adding a relay-rack mounted line finder unit per J58831D, to 36 or 40 finders total, or by adding a second supplementary line finder unit J58831C to 44 line finders total.

B. The bank and commutator multiple slip, by levels (provided to reduce the average hunting time) shall be complete for each ten con-

secutively numbered banks and commutators, repeating for each succeeding ten switches of the line finder group regardless of the fact that the supplementary shelf units have 4, 8, or 12 banks each instead of multiples of ten. Thus, in cabling between supplementary shelves to extend the bank and commutator multiple, the slip must be continued between banks 32 and 33 located on different shelf units.

C. A line finder group consists of all line finders, connected to find the lines mounted on the initial shelf unit of the group. All line finders of a group are numbered consecutively from one up, beginning with those of the initial unit. These switches are divided into ten subgroups, each subgroup consisting of the switches having the same last digit in

their number; for example, the first subgroup consists of switches 1, 11, and 21, the second subgroup 2, 12, and 22, etc.

- D. The line finder shelf units shall be designated with the line hundreds group numbers with which the line finder banks are associated, in accordance with job information. They shall also be designated A, B, C, etc, in each line finder group, if more than one shelf unit is provided.
- E. The initial line finder unit serves 200 station line circuits which are mounted on the same unit and directly connected to the line finder bank multiple. These 200 lines are referred to as a line group. A subgroup of lines comprises the 20 lines served by the same group relay. The first subgroup of lines appears on the first level of line finders 1, 11, 21, etc, or line finder subgroup number one. The second subgroup of lines appears on the first level of line finders 2, 12, 22, etc, or line finder subgroup number two, etc.
- F. The station line circuits are provided as specified, in sets of ten circuits, except for the following. For partially equipped line groups of 3- or 4-digit PBXs, the lines should be equipped from top downward in multiples of 20 lines, on the initial line finder unit. This results in the lower numbered lines being equipped first, which facilitates cabling the associated switchboard jacks. Relays for station lines 99 and 90 of each hundred group are omitted because the corresponding bank terminals of associated connectors are assigned to a connector test line. [For 2-digit installations, lines 19 and 10 are omitted (or disconnected) instead of 99 and 90, because level nine is required for central office trunks.]
- G. One start lead is provided for each line subgroup to start a line finder in the line finder subgroup. When a call originates on a line of the subgroup, the first-choice line finder is made to find this line (assuming this line finder is not already busy). The assignment of the start leads to particular line finders (to make them first choice in the subgroup) is covered by SD-65901-01, Fig. 101 through 106. In general, for subgroups consisting of two, three, or four line finders, the start lead is assigned to the lowest numbered switch of even numbered subgroups and to the highest numbered switch of odd numbered subgroups. All switches of a line finder group are connected in a chain circuit, and, if the first choice switch is busy, the choice progresses through the switches of a subgroup to the first idle switch; if all switches of the subgroup are busy, the choice progresses to an idle switch in the next lower numbered subgroup having an idle switch. With this arrangement, during light loads, almost all calls are handled by switches having the line appearance on the first level; and during heavy loads, the distribution of traffic over all the switches of the line finder group is spread almost evenly. In case some first choice switch positions of a line finder group are not equipped, the chain circuit is closed through the unused switch jacks to extend the start lead to the next equipped switch of the chain, making it a first choice. The pattern for connecting start leads remains the same whether the line finder group is fully equipped or not.
- H. The order of equipping line finders for a group is covered on SD-65901-01.
- I. Provision is made for restricted service on specific station lines, as covered on SD-66715-01.
- J. Direct switchboard cabling from each line finder switch to each corresponding first selector switch is recommended. However, provision is made for optional cabling of these leads by way of the distributing frame when local conditions warrant. If direct cabling is used and some line finders are not equipped, the associated first selectors or selector-connectors shall be unequipped, whereas with cross-connections at the distributing frame the selector shelves can be filled, thus possibly saving a selector shelf. Offsetting this saving, are the added cabling and distributing frame costs together with added engineering and maintenance records of the cross-connections.
- K. The initial line finder shelf unit is equipped by the shop with station line relay units per J58831B, as specified in the order. The unit is shipped without the switches in order to reduce its weight and facilitate handling it at the subscriber's premises. Bank supports

are provided for all banks. These are removed by the installer at the time the switches are mounted on the shelf unit.

- L. When message waiting service is specified, SD-66715-01, V option shall be applied locally as covered on ED-66557-10.
- M. A package of 200 red plastic sleeves per P-32B126 is furnished with this shelf unit for use in insulating contacts of L and CO relays when it is desired that this method be employed to obtain unrestricted service or night service. Unused sleeves may be retained in the same package container for future use, and stored as directed by the telephone company.
- N. The method of blocking open the contacts of the CO relay on each line circuit prior to cutover is covered by Section 069-020-801.
- P. Group test lamp (LGT) need not be connected in offices with five or less line finder groups.
- R. To provide terminations for outgoing restriction, terminal strips have been provided by means of two lettered lists, one for up to and including 100 station lines and a second for over 100 and up to a maximum of 200 station lines.

J58831B (AT&TCo Std) — Station Line Relay Unit — For Use With Line Finder Unit J58831A — Lines Arranged for Restricted Service

Equipment — J58831B-()

List 1 — Assembly, wiring, and equipment for one station line relay unit arranged for restricted service and equipped with L and CO relays for ten station line circuits per SD-66715-01, Fig. 1, with J, K, T, X, Y, and Z wiring, and wired per ED-66568-10. (See Notes B, C, and D.)

List 2 — Assembly, wiring, and equipment for one station line relay unit arranged for restricted service and equipped with L and CO relays for eight station line circuits (lines 99 and 90 omitted). (See Notes A, B, and C.)

Notes

- A. One unit per list 2 is required for each hundreds group of station lines. (See Note F under J58831A.)
- B. When message waiting service is required, see Note L under J58831A.
- C. This unit is surface wired.
- D. When associated with direct station selection circuit, remove K strap and provide J wiring and apparatus.

J58831C (AT&TCo Std) — Supplementary Line Finder Shelf Unit — For 200-Point, 3-Wire Line Finders — 12 Capacity — Arranged to Mount on Universal Switch Frame

Equipment — J58831C-()
 Local Cable — ED-66543-10
 Bank Multiple Wiring — ED-66563-10

List 1 — Framework, assembly, wiring, and equipment for one unit for twelve 200-point, 3-wire line finders, including 12 sets of 3-wire multiple banks and 9B commutators, shelf fuse equipment, and shelf alarm equipment, but not including the line finder switches.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66542-70, G1		7	A,C,F
Bk Mult Assembly, 12 Sets of Bks and Commutators per J58831C-() Showing Numbering of Bk Terminals, and SD-65901-01, Fig. 6	1	1	
Line Fdr Ckt, SD-65901-01, Jk Wiring Only (Including Start Leads), Fig. 1	12	12	B,D,E
Alm Ckt, SD-65761-01:			
Release Mag Alm Ckt, Fig. 2	1	1	
Fuse Alm Ckt, Fig. 6	1	1	

List 2 — Shelf unit per list 1 equipped with switchboard cables connected to the jack and bank multiple terminal strips for use when this shelf is mounted on the same frame as the initial line finder unit, and associated connector shelf unit.

Notes

- A. This supplementary line finder shelf unit is intended for building out line finder groups which require more than 20 line finders, extending the group to 32 or 44.
- B. The bank and commutator multiple have a slip by levels, the slip being complete for the first ten banks and commutators and partially repeated for the eleventh and twelfth banks. (See Note B or J58831A.)
- C. The line finder unit shall be designated per Note D of J58831A.
- D. The start and commutator leads shall be connected as described in Note G of J58831A.
- E. Cabling from line finder units to first selector units is covered by Note J of J58831A.
- F. This unit is shipped equipped with the switches in positions as specified. Bank multiple supports are provided for unequipped switch positions.

J58831D (AT&TCo Std) — Supplementary Line Finder or Trunk Finder Shelf Unit — For 200-Point, 3-Wire Line Finders or 100-Point, 6-Wire Trunk Finders — 4 or 8 Capacity — Arranged to Mount on Relay-Rack-Type Frame

Equipment — J58831D-()
 Local Cable — ED-66554-10
 Bank Multiple Wiring — ED-66563-10

- List 1** — Framework, assembly, wiring, and equipment for one unit for four 200-point, 3-wire line finders or four 100-point, 6-wire trunk finders including four sets of multiple banks and 9B commutators, but not including switches.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66544-01, Group 1	1	1	A,C,F
Bank Multiple Assembly, Four Sets of Banks and Commutators per J58831D Showing Numbering of Bank Terminals and SD-65794-01, Fig. 1, SD-65901-01, Fig. 6, or SD-65906-01, Fig. 2	1	1	B,G,H

WIRE	EQUIP	SEE NOTES
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Finder Ckt, Jack Wiring Only, Wired Universally for SD-65794-01, Fig. 1, SD-65901-01, Fig. 1, SD-65906-01, Fig. 1	4	4	E,G,H
Alarm Ckt, SD-65761-01: Release Mag Alm Ckt, Fig. 2 & B	1	1	
Fuse Alm Ckt, Fig. 6	1	1	

- List 2** — Framework, assembly, wiring, and equipment for one unit for eight 200-point, 3-wire line finders or eight 6-wire trunk finders including eight sets of multiple banks and 9B commutators but not including switches.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66544-01, Group 1		1	A,C,F
Bank Multiple Assembly, Eight Sets of Banks and Commutators per J58831D Showing Numbering of Bank Terminals and SD-65901-01, Fig. 6 or SD-65906-01, Fig. 2	1	1	B,G,H
Finder Ckt, Jack Wiring Only, Wired Universally for SD-65794-01, Fig. 1, SD-65901-01, Fig. 1, SD-65906-01, Fig. 1	8	8	E,G,H
Alarm Ckt, SD-65761-01: Release Mag Alm Ckt, Fig. 2 & B	1	1	
Fuse Alm Ckt, Fig. 6	1	1	

Notes

- A. These supplementary line finder shelf units are intended for building out line finder groups which require more than 32 line finders.
- B. The bank and commutator multiple has a slip by levels, suitable to extend the slip of the preceding shelf units of the line finder group.
- C. The line finder unit shall be designated per Note D of J58831A.
- D. The start leads shall be connected as described in Note G of J58831A.

- E. Cabling from line finder units to first selector units is covered by Note J of J58831A.
- F. This unit is shipped equipped with switches in positions as specified. Bank multiple supports are provided for unequipped switch positions, if any.
- G. Lettered lists are available for the services required. One lettered list, which provides a supplementary line finder shelf, has the terminations for the commutator and bank multiple as the thirty-third line finder appearing on the first level of the thirty-third switch position; the other lettered list, which provides for an initial line finder switch or a trunk finder shelf, has the terminations for the commutator and bank multiple as the first trunk finder appearing on the first level of the first switch position.
- H. When these shelves are used as separate trunk finder shelves, they shall be designated TF1, TF2, etc. When a supplementary trunk finder shelf is provided, the shelves shall be designated TF1A, TF1B, etc.

J58831E (AT&T Co Std)—Initial Selector Shelf Unit — Arranged for Twenty 3-Wire First Selectors — Two Divisions

Equipment — J58831E-()
 Local Cable — ED-66547-10
 Bank Multiple Wiring — ED-66563-10

List 1 — Framework, assembly, wiring, and equipment for one unit for twenty 3-wire selectors in two divisions of ten each, not including the selector switches.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66546-70, G1		1	A,B,C, E,F,G, J,L
Bk Mult Assemblies, Ten Sets of Bk per J58831E-(), Showing Numbering of Bank Terminals	2	2	D,H,I
Sel Ckt, Jk Wiring Only, Wired Universally for: SD-65900-01, Fig. 1, SD-66359-01, Fig. 1, SD-66360-01, Fig. 1, SD-66594-01, Fig. 1	20	20	K

Alm Ckt, SD-65761-01:

	WIRE	EQUIP	SEE NOTES
Shelf PS Alm Ckt, Fig. 1	2	2	
Release Mag Alm Ckt Fig. 2	2	2	
Fuse Alm Ckt, Fig. 6	1	1	

Notes

- A. An initial selector unit is required for the first 20 first selectors associated with each line finder group. This shelf unit was designed to mount on a double-sided switch frame, opposite the initial line finder shelf with provision for access to the wiring side of the station line relays. The selectors for a line finder group may be increased from 20 to 32 selectors by using supplementary selector unit J58831F. A further enlargement may be made by adding relay-rack-mounted selector shelf units per J58831G, to 36 or 40 selectors total, or J58831F for 44 selectors total.
- B. Selector shelf units shall be designated S and shall be lettered consecutively from A up, for each division of first selectors. Thus, for the first shelf unit, the upper bank assemblies are designated SA and the lower one's SB, stamped on the unit framework. The selectors of each division (having its own bank multiple terminal strips) shall be numbered from one up.
- C. The first selectors are connected to associated line finders by switchboard cables between the shelf unit jack terminal strips. Provision is made for optionally cabling these leads by way of the distributing frame to provide cross-connections. (See J58831A, Note J.)
- D. The banks are assembled in multiples of ten sets and wired out to separate sets of bank multiple terminal strips. These selector divisions are multiplied together at the distributing frame where the circuits are cross-connected to jacks of succeeding switches in the train, or to trunk circuits. As an alternate method, some or all terminals of all levels of the selector divisions may be cabled from the bank terminal strips to the distributing frame so that the multiplying of divisions to form selector subgroups can be

- done by jumpers and strapping on distributing frame terminal strips. The selectors of one or more divisions which are given access to the same subgroup of trunks on a particular level comprise a subgroup of selectors.
- E. When ten or less selectors in a subgroup are given access to ten or less trunks on a particular level, no multiplying between selector divisions is required. Larger selector subgroups are obtained by multiplying the required number of selector divisions together for a particular level. The number of trunks forming a subgroup is determined by the traffic to be carried.
- F. Subgroups of ten or less trunks are known as straight multiple subgroups because each trunk is common to all divisions or units in the subgroup of selectors. In order that all of the selectors of a straight multiple subgroup having access to ten trunks shall not be required to hunt over the trunks in the same order, the number of units in the subgroup is divided into two parts and a complete reversal introduced between each part for trunks 1 to 9. The tenth trunk is not reversed with the others, but is carried through straight so that last trunk busy register circuits may be used when required. Where a subgroup of selectors will furnish a load for less than ten trunks, the working terminals shall be multiplied in the same manner as for a full group with the last working terminal multiplied through straight and the remaining working terminals multiplied with a reversal in the middle of the subgroup, except that where there are four or less trunks, no reversal shall be made.
- G. Subgroups of selectors having access to more than ten trunks are known as graded multiple subgroups. With this arrangement, some of the trunks are multiplied through all divisions of the subgroup, while the remaining ones are multiplied to only a portion of the divisions in the subgroup. To facilitate establishing graded multiple subgroups, and revising them later due to changed traffic conditions or PBX growth, an optional bus strapping arrangement at the distributing frame for the bank multiple trunks is shown on the drawings.
- H. *Unused terminals* on a selector level of a selector shall be made busy by strapping the S terminals at the bank terminal strips and running a No. 22 gauge, BH-type lead from one of the terminals to a ground punching on the miscellaneous terminal strip.
- I. *Vacant levels* of selectors shall be disposed of as follows:
1. *For the No. 701B PBX*, the vacant selector levels shall be wired and connected to vacant level intercepting trunk equipment, as required. One trunk will usually be sufficient for any PBX. The multiplying of the intercepting trunk or trunks between vacant levels may be done on the bank terminal strips of the selector unit, or where the leads from the selector bank multiple are run to the distributing frame. Intercepting trunks shall not be multiplied between terminals of the same level, but shall be connected only to the first terminal. All terminals on a level not connected to intercepting trunks shall be made busy in the same manner as unused selector terminals. (See Note H.)
 2. *For the No. 711B PBX*, all terminals of vacant selector levels shall be made busy in the same manner as for unused selector terminals. (See Note H.)
- J. The unit is shipped without the switches in order to reduce its weight and facilitate handling it at the subscriber's premises. Bank supports are provided for all banks. These shall be removed by the installer at the time the switches are mounted on the shelf unit.
- K. Provision is made for mounting incoming selectors in spare first selector switch positions on the initial selector shelf to avoid the installation of an additional shelf, where traffic conditions warrant.
- L. Provision is made to furnish cables connected to the shelf terminal strips for installations of from 200 to 400 lines.

J58831F (AT&T Co Std) — Supplementary Selector Shelf Unit — For First, Second, or Incoming 3-Wire Selectors — 12 Capacity — Arranged to Mount on Universal Switch Frame

Equipment — J58831F-()

Local Cable — ED-66549-10

Bank Multiple Wiring — ED-66563-10

List 1 — Framework, assembly, wiring, and equipment for one unit for twelve 3-wire selectors, not including the selector switches.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66548-70,G1		1	A,B,E,F
Bk Mult Assembly, 12 Sets of Bk per J58831F-(), Showing Number of Bank Terminals	1	1	D
Sel Ckt, Jk Wiring Only, Wired Universally for: SD-65900-01, Fig. 1, SD-66010-01, Fig. 1, SD-66359-01, Fig. 1, SD-66360-01, Fig. 1, SD-66594-01, Fig. 1	12	12	C
Alm Ckt, SD-65761-01: Shelf PS Alm Ckt, Fig. 1	1	1	
Release Mag Alm Ckt, Fig. 2	1	1	
Fuse Alm Ckt, Fig. 6	1	1	

Notes

- A. This selector shelf unit is used for building out the first selectors associated with a line finder group which requires more than 20 first selectors, extending the group to 32 or 44. It can also be used for incoming selectors or second selectors, supplemented when desired by shelf units per J58831G.
- B. The shelf shall be designated S and shall be lettered consecutively from C up for the shelf units of first selectors. The shelves for second selectors shall be designated SS with letters A, B, etc. Shelves for incoming first selectors shall be designated IS with letters A, B, etc.
- C. Cabling of first selectors or selector-connectors to line finders is covered by Note J of J58831A. Cabling of second selectors or incoming selectors to the distributing frame is covered on the selector circuits.
- D. The banks are assembled in a set of 12, wired out to bank multiple terminal strips on the shelf unit to form a selector division. The methods of cabling the bank multiple to other associated selector shelf units are covered by Note D of J58831E.

E. This shelf unit is shipped with switches in positions as specified. Bank multiple supports are provided for unequipped switch positions, if any.

F. Provision is made to furnish cables connected to the shelf terminal strips for installations of from 200 to 400 lines.

J58831G (AT&TCo Std) — Supplementary Selector Shelf Unit — For First, Second, or Incoming 3-Wire Selectors — 4 or 8 Capacity — Arranged to Mount on Relay-Rack-Type Switch Frame

Equipment — J58831G-()
Local Cable — ED-66551-10
Bank Multiple Wiring — ED-66563-10

List 1 — Framework, assembly, wiring, and equipment for one unit for four 3-wire selectors, not including the selector switches.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66550-70, G1		1	A,B,E
Bk Mult Assembly, 4 Sets of Bks per J58831G-() Showing Numbering of Bank Terminals	1	1	D
Sel Ckt, Jk Wiring Only, Wired Universally for: SD-65900-01, Fig. 1, SD-66010-01, Fig. 1, SD-66359-01, Fig. 1, SD-66360-01, Fig. 1, SD-66594-01, Fig. 1	4	4	C
Alm Ckt, SD-65761-01: Shelf PS Alm Ckt, Fig. 1	1	1	
Release Mag Alm Ckt, Fig. 2	1	1	
Fuse Alm Ckt, Fig. 6	1	1	

List 2 — Framework, assembly, wiring, and equipment for one unit for eight 3-wire selectors, not including the selectors.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66550-70, G2		1	A,B,E
Bk Mult Assembly, 8 Sets of Bks per J58831G-() Showing Numbering of Bank Terminals	1	1	D

	WIRE	EQUIP	SEE NOTES
Sel Ckt, Jk Wiring Only, Wired Universally for: SD-65900-01, Fig. 1, SD-66010-01, Fig. 1, SD-66359-01, Fig. 1, SD-66360-01, Fig. 1, SD-66594-01, Fig. 1	8	8	C
Alm Ckt, SD-65761-01: Shelf PS Alm Ckt, Fig. 1	1	1	
Release-Mag Alm Ckt, Fig. 2	1	1	
Fuse Alm Ckt, Fig. 6	1	1	

Notes

- A. The selector shelf units are intended for building out the first selectors associated with a line finder group which requires more than 32 switches. These shelves may also be used for incoming selectors or second selectors, exclusively, or as supplementary to J58831F shelf units.
- B. The shelf shall be designated S and shall be lettered consecutively from C up for the shelf units of first selectors. The shelves for second selectors shall be designated SS with letters A, B, etc. Shelves for incoming first selectors shall be designated IS with letters A, B, etc, and for incoming second selectors, ISS, with letters A, B, etc.
- C. Cabling of first selectors or selector-connectors to line finders is covered by Note J of J58831A. Cabling of second selectors or incoming selectors to the distributing frame is covered on the selector circuits.
- D. The banks are assembled in sets of four or eight, wired out to bank multiple terminal strips on the shelf unit to form partial selector divisions. The methods of cabling the bank multiple to other associated selector shelf units are covered by Note D of J58831E.
- E. This shelf unit is shipped equipped with switches in positions as specified, bank multiple supports are provided for unequipped switch positions, if any.

J58831H (AT&TCo Std) — Connector Shelf Unit — Capacity 12 Hunting Connectors, Selector-Connectors, or Incoming Connectors, or 2-Digit Rotary Hunting Selectors

Equipment — J58831H-()
Local Cable — ED-66553-10
Bank Multiple Wiring — ED-66563-10

List 1 — Framework, assembly, wiring, and equipment for one unit for 12 hunting connectors, or incoming connectors, or 2-digit rotary hunting selectors.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66552-70, G2		1	A
Bk Mult Assembly, 12 Sets of Bks per J58831H-() Showing Numbering of Bank Terminals	1	1	B,D, E,F, G
Conn Ckt, Jk Wiring Only Wired Universally for: SD-65721-01, Fig. 1, SD-66144-01, Fig. 1, SD-66302-01, Fig. 1, SD-66596-01, Fig. 1	12	12	B,C
Alm Ckt, SD-65761-01: Release Mag Alm Ckt, Fig. 2	1	1	
Fuse Alm Ckt, Fig. 6	1	1	
Test Line Ckt, SD-66037-01, Fig. 2 and Leads to Bank Mult TS	1	1	D

List 2 — Shelf unit per list 1 equipped with switchboard cables connected to the jack and bank multiple terminal strips, suitable for use when this shelf is mounted on the same frame as the associated line finders and first selectors and direct cabling is desired (3-digit operation). (See Note H.)

List 3 — Same as list 1 except that it is arranged for 12 selector-connectors as follows.

	WIRE	EQUIP
Alm Ckt, SD-65761-01: Shelf PS Alm Ckt, Fig. 1	1	1
Release Mag Alm Ckt, Fig. 2	1	1
Fuse Alm Ckt, Fig. 6	1	1

Notes

- A. This unit will be shipped with switches as specified and bank multiple supports are provided for unequipped switch position, if any.
- B. Connector units shall be designated C together with the hundreds group number of the lines with which the banks are associated. If two units are provided for a group of 100 lines, they shall be designated A and B. The connectors within a group shall be numbered consecutively from one up, starting with unit A and continuing through unit B. Where the unit is used for mounting 2-digit rotary hunting selectors, it shall be designated SS, followed by a letter the same as if it were a regular second selector shelf. Also, the designation CONN on the jack terminal strip shall be changed to 2D SEL, SUBS LINES on the bank terminal strip shall be changed to TRKS, and the designation on the fuses shall be changed to 2D SEL.
- C. The ringing supply for the connectors and selector-connectors is provided through ringing resistance lamps, mounted on the ringing and alarm bay, one lamp being provided for each shelf of switches, as covered on the ringing leads circuit SD-65771-01.
- D. The connector bank terminals for lines 90 and 99 in each hundreds group are reserved for testing purposes. The H and S terminals of line 99 shall be strapped together and connected to ground so that the connectors will hunt to terminal 90 when 99 is dialed. This ground shall be obtained by running a No. 22 gauge, BH-type lead from the S terminal on the bank terminal strip to the ground punching on the miscellaneous terminal strip designated GRD. For selector-connectors, the bank terminals for lines 19 and 10 are to be used in place of 99 and 90.
- E. The bank strapping, shown on the hunting connector and hunting selector-connector circuit drawings between the H and S bank terminals of each line, except the last line in a group, shall be done at the bank terminal strip of the first shelf unit serving the group only. This strapping shall be located on the switchboard cable side of the bank terminal strip and shall be done by the installer as directed by the telephone company.
- F. The vacant terminals of connectors shall be disposed of as follows:
1. To intercept vacant station lines equipped with line and cutoff relays, the tip and ring conductors which normally connect to the station are connected instead to the 2-wire intercept trunk. This trunk is connected to two rows of terminals lengthwise of the station line terminal strips on the horizontal combined distributing frame. The lines to be intercepted are connected along the cross rows of terminals to the trunk buses, using piece-part straps.
 2. To intercept vacant station lines not equipped with line and cutoff relays, connections to the intercept circuit are made at the connector bank terminal strip when the bank multiple is connected directly to the line finder unit or at the distributing frame, when the connector bank multiple is cabled there. The S terminals 1 through 9 for each vacant level shall be connected to ground to make them busy using one lead per connector shelf run to a terminal designated GRD. The corresponding H terminals shall be connected for hunting. The T, R, and S terminals for the tenth step of each vacant level shall be connected to the 2-wire intercept trunk, using one set of leads per switch frame run to the combined distributing frame. At the combined distributing frame, the leads are multiplied and assigned to the intercept trunk (or trunks) provided; the sleeves are connected to the battery through a 1200-ohm resistor on the intercept trunk unit.
 3. When intercept service is not desired, the vacant bank terminals of the connectors shall be made busy by connecting the S terminals to ground. The strapping shall be done at the connector bank multiple terminal strip and a 22BH lead run from one S terminal to a terminal designated GRD on the connector shelf terminal strip. Any of these vacant circuits which have the line relays equipped shall have the S lead to the station line relay equipment disconnected at the connector bank

terminal strip to prevent operation of the associated CO relay.

- G. Where the connector bank and switchboard jack multiples are cabled to the distributing frame, the necessary cross-connections for 2-party lines can be made at the distributing frame and the connector terminals of any line may be used for the second party of a party line.
- H. The switchboard cables furnished with the shelf per list 2 are long enough to reach the associated line finder terminal strips without regard to which side of the switch frame the connector shelf is installed on. The installer shall cut the cables to their proper lengths at the time of installation.

J58831J (AT&T Co Std) — Supplementary Connector Shelf Unit — Capacity Four or Eight Hunting Connectors, Selector-Connectors, Incoming Connectors, or 2-Digit Rotary Hunting Selectors — Arranged to Mount on Relay-Rack-Type Switch Frame

Equipment — J58831J-()
Local Cable — ED-66555-10

- List 1** — Framework, assembly, wiring, and equipment for one unit for four hunting connectors, hunting incoming connectors, or 2-digit rotary selectors.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66554-70, G1		1	A
Bk Mult Assembly, 4 Sets of Bks per J58831J-(), Showing Numbering of Bank Terminals	1	1	
Connector Ckt, Jack Wiring Only, Wired Universally for: SD-65721-01, Fig. 1, SD-66144-01, Fig. 1, SD-66302-01, Fig. 1, SD-66596-01, Fig. 1	4	4	
Alm Ckt, SD-65761-01: Release Mag Alm Ckt, Fig. 2	1	1	
Fuse Alm Ckt, Fig. 6	1	1	
Test Line Ckt, SD-66037-01, Fig. 2 and Leads to Bank Mult TS	1	1	

- List 2** — Framework, assembly, wiring, and equipment for one unit for eight hunting connectors, hunting incoming connectors, or 2-digit rotary hunting selectors.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66554-70, G2		1	A
Bk Mult Assembly, Sets of Bks per J58831J-() Showing Numbering of Bank Terminals	1	1	
Connector Ckt, Jack Wiring Only, Wired Universally for: SD-65721-01, Fig. 1, SD-66144-01, Fig. 1, SD-66302-01, Fig. 1, SD-66596-01, Fig. 1	8	8	
Alm Ckt, SD-65761-01: Release Mag Alm Ckt, Fig. 2	1	1	
Fuse Alm Ckt, Fig. 6	1	1	
Test Line Ckt, SD-66037-01, Fig. 2 and Leads to Bank Mult TS	1	1	

- List 3** — Framework, assembly, wiring, and equipment for one unit for four selector-connectors, hunting incoming connectors, or 2-digit rotary selectors.

	WIRE	EQUIP
Alarm Ckt, SD-65761-01, Shelf PS Alarm Ckt, Fig. 1	1	1

- List 4** — Framework, assembly, wiring, and equipment for one unit for eight selector-connectors, hunting incoming connectors, or 2-digit hunting selectors.

	WIRE	EQUIP
Alarm Ckt, SD-65761-01, Shelf PS Alarm Ckt, Fig. 1	1	1

Note

- A. See Notes A through G listed under J58831H.

J58831L (AT&T Co Std) — Ringing Leads Unit — Relay Rack Mounted — For No. 701B and 711B PBXs

Equipment — J58831L-()

List 1 — Assembly, wiring, and equipment for one ringing leads unit per SD-65771-01, 12 Fig. 1, and Fig. 2 or 7. (See Note A.)
(No. of Mtg Plts 1 — No. of Ckts 19)

List 2 — Assembly, wiring, and equipment for one supplementary ringing leads unit per SD-65771-01, 16 Fig. 1. (See Note A.)
(No. of Mtg Plts 1 — No. of Ckts 16)

List 3 — Assembly, wiring, and equipment for one ringing leads unit per SD-65771-01, Fig. 1 and Fig. 2 or 7. (See Note A.)
(No. of Mtg Plts 1 — No. of Ckts 8)

Note

A. See J58831S for application and numbering of the ringing leads circuits.

J58831M (AT&TCo Std) — Test Line Unit — For Testing Connector or Selector-Connector Circuits

Equipment — J58831M-()

List 1 — Assembly, wiring, and equipment for one test line unit per SD-66037-01, Fig. 1 including ringer. (See Note A.)

Note

A. See J58831S and SD-66037-01, Note 203, for application of this unit, which is required, one per PBX.

J58831N (AT&TCo Std) — Aisle Pilot Lamp Assembly — For Indicating an Alarm Condition Originating in the Equipment in a Line-Up of Switch Frames or Relay Racks — For No. 701B and 711B PBXs and No. 3A Automatic Call Distributing System

Equipment — J58831N-()

List 1 — Assembly, wiring, and equipment for one aisle pilot lamp assembly equipped with three alarm lamps and arranged for fastening to frame upright per SD-65761-01, Fig. 4 and SD-65973-01, Fig. 14.

List 2 — Assembly, wiring, and equipment for one aisle pilot lamp assembly equipped with one alarm lamp and arranged for fastening to upright, per SD-65761-01, Fig. 8.

J58831P (AT&TCo Std) — Traffic Register Unit Equipment — J58831P-()

List 1 — Framework, assembly, wiring, and equipment for one initial traffic register unit with *black* finish per ED-66565-70, Group 1 with one PC BAT key and five BY registers per SD-65774-01, one Fig. 4 and five Fig. 2. (See Notes A, B, and F.)

List 2 — Framework, assembly, wiring, and equipment for one supplementary traffic register unit with *black* finish per ED-66565-70, Group 2 with one AFB register, three PC registers, and two BY registers per SD-65774-01, one Fig. 3, three Fig. 1, and two Fig. 2. (See Notes A, C, and F.)

List 3 — Framework, assembly, wiring, and equipment for one supplementary traffic register unit with *black* finish per ED-66565-70, Group 2 with six BY registers per SD-65774-01, six Fig. 2. (See Notes A, D, and F.)

List 4 — Framework, assembly, wiring, and equipment for one supplementary traffic register unit with *black* finish per ED-66565-70, Group 2, with six PC registers for incoming and/or second selectors per SD-65774-01, six Fig. 1. (See Notes A and F.)

List 5 — Framework, assembly, wiring, and equipment for one initial traffic register unit with *black* finish per ED-66565-70, Group 1, with one PC BAT key and five switchboard peg count registers per SD-65774-01, one Fig. 4 and five Fig. 7. (See Notes A, E, and F.)

List 6 — Framework, assembly, wiring, and equipment for one supplementary traffic register unit with *black* finish per SD-66565-70, Group 2, for six switchboard peg count registers per SD-65774-01, six Fig. 7. (See Notes A, E, and F.)

List 7 }
List 8 } Reserved.
List 9 }
List 10 }

- List 11** — Same as list 1, except with *light gray-beige* finish (assembly per ED-66565-70, Group 4).
- List 12** — Same as list 2, except with *light gray-beige* finish (assembly per ED-66565-70, Group 5).
- List 13** — Same as list 3, except with *light gray-beige* finish (assembly per ED-66565-70, Group 5).
- List 14** — Same as list 4, except with *light gray-beige* finish (assembly per ED-66565-70, Group 5).
- List 15** — Same as list 5, except with *light gray-beige* finish (assembly per ED-66565-70, Group 4).
- List 16** — Same as list 6, except with *light gray-beige* finish (assembly per ED-66565-70, Group 5).

Notes

- A. These traffic register units may be mounted in any one of the following ways:
1. On the wall in the attendant switchboard room (on backboards).
 2. In multiple jack space in the head section of circuit distributing frame 552- or 608-type switchboards.
 3. On a 23-inch relay-rack bay in the switchroom.
- The choice between these methods depends on who will be expected to read and report the traffic data. The backboards or mounting plates for the register units shall be ordered separately as shown on ED-66565-70.
- B. The trunk group busy registers are to be assigned on a job basis and cross connected accordingly at the circuit distributing frame.
- C. The supplementary traffic register units per list 2 or 12 are each suitable for one line finder group and they provide one all-finders-busy register, one first selector peg count register, two connector peg count registers (one for each hundreds group), and two last-connector-busy registers (one for each hundreds group).

- D. A supplementary traffic register unit per list 3 or 13 is required when more than five trunk groups are to be served by individual trunks-busy registers.
- E. The switchboard peg count circuits require an initial unit which includes a PC BAT key and enough registers for five switchboard positions. Supplementary units should be ordered, one for each six additional positions, as required.
- F. The color of the units should harmonize with the switchboard face equipment if the units are to be mounted in the switchboard or in the operating room. The black finished units are recommended for relay-rack-mounted installations.

J58831R — Reserved**J58831S (AT&T Co Std) — Ringing and Alarm Bay Equipment Unit**

Equipment — J58831S-()
Switchboard Cable — ED-5E010-10

- List 3** — Framework, assembly, wiring, and equipment for one ringing and alarm bay equipment unit with 1-foot 0-inch base (front to rear) including fuses, ringing leads, miscellaneous alarm and test line units, 806G ringing power plant with two ringing machines, and 404D dial tone generator.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66562-70, Groups 1 and 3		1	A
Fuse Panel, J58833A, List 1		1	B
Initial Ringing Leads Unit, J58831L, List 1	1	1	C
Miscellaneous Alarm Unit With Battery Cutoff Relay, J58831AE, List 1, 2	1	1	
Test Line Unit, J58831M, List 1	1	1	
806G Ringing Power Plant J86472A, List 1	1	1	
Ringing Machine per KS-15804, List 1		2	D,E
Mounting Detail, J86472A, List 2		2	D
404D Tone Generator, J86472A, List 9	1	1	F

List 4 — Same as list 3 except for the frame base which is 1-foot 9-1/2 inches (front to rear) as follows.

	EQUIP	SEE NOTES
Framework, ED-66562-70, Groups 2 and 3	1	A

List 5 — Framework, assembly, wiring, and equipment for one ringing and alarm bay equipment unit with 1-foot 0-inch base (front to rear) including fuses, ringing leads, miscellaneous alarm and test line units, 806G ringing power plant with two ringing machines, and 405B dial tone generator.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66562-70, Groups 1 and 3		1	A
Fuse Panel, J58833A, List 1		1	B
Initial Ring Leads Unit, J58831L, List 1	1	1	C
Miscellaneous Alarm Unit With Battery Cutoff Relay, J58831AE, List 1, 2	1	1	
Test Line Unit, J58831M, List 1	1	1	
806G Ringing Power Plant, J86472A, List 1	1	1	
Ringing Machine per KS-15804, List 1		2	D,E
Mounting Detail, J86472A, List 2		2	D
405B Tone Generator, J86472A, List 10	1	1	F

List 6 — Same as list 5 except for the frame base which is 1-foot 9-1/2 inches (front to rear) as follows:

	WIRE	EQUIP	SEE NOTES
Framework, ED-66562-70, Groups 2 and 3		1	A

List 7 — Framework, assembly, wiring, and equipment for one ringing and alarm bay equipment unit with 1-foot 0-inch base (front to rear) including fuses, test line, manual conference, selector intercept, connector intercept, ringing leads, miscellaneous alarm, four at-

tendant trunks, 404D dial tone generator and 806G ringing power plant with two ringing machines.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66562-70, Groups 1 and 3		1	A
Fuse Panel, J58833A, List 10		1	B
Initial Ring Leads Unit, J58831L, List 3	1	1	C
Test Line Unit, J58831M, List 1	1	1	
Manual Conference Unit, J53120R, List 1	1	1	
Selector Intercept Unit, J58842AU, List 1	1	1	
Connector Intercept Unit, J58824AY, List 1	1	1	
Miscellaneous Alarm Unit With Battery Cutoff Relay, J58831AE, List 1, 2	1	1	
Attendant CO Trunk Unit, J58824AY, List 1	4	4	
Attendant Trunk Unit, J58824BF, List 1	2	2	
806G Ringing Power Plant, J86472A, List 1	1	1	
Ringing Machine per KS-15804, List 1		2	D,E
Mounting Detail, J86472A, List 2		2	D
404D Tone Generator, J86472A, List 9	1	1	F

List 8 — Same as list 7 except for the frame base which is 1-foot 9-1/2 inches (front to rear) as follows.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66562-70, Groups 2 and 3		1	A

List 9 — Framework, assembly, wiring, and equipment for one ringing and alarm bay equipment unit with 1-foot 0-inch base (front to rear) including fuses, test line, manual conference, selector intercept, connector intercept, ringing leads, miscellaneous alarm, four attendant CO trunks, two attendant trunks, 405B dial tone generator, and 806G ringing power plant with two ringing machines.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66562-70, Groups 1 and 3		1	A
Fuse Panel, J58833A, List 10		1	B
Initial Ring Lead Unit, J58831L, List 3	1	1	C
Test Line Unit, J58831M, List 1	1	1	
Manual Conference Unit, J53120R, List 1	1	1	
Selector Intercept Unit, J58824AU, List 1	1	1	
Connector Intercept Unit, J58824AY, List 1	1	1	
Miscellaneous Alarm Unit With Battery Cutoff Relay, J58831AE, List 1, 2	1	1	
Attendant CO Trunk Unit, J58824AY, List 1	4	4	
Attendant Trunk Unit, J58824BF, List 1	2	2	
806G Ringing Power Plant, J86472A, List 1	1	1	
Ringing Machine per KS-15804, List 1		2	D,E
Mounting Detail, J86472A, List 2		2	D
405B Tone Generator, J86472A, List 10	1	1	F

List 10 — Same as list 9 except for the frame base which is 1-foot 9-1/2 inches (front to rear) as follows.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66562-70, Groups 2 and 3		1	A

Notes

A. This unit is furnished assembled with wiring between units provided by the shop to minimize installation effort. Vacant mounting plate spaces are available for mounting supplementary ringing leads units below the initial ringing leads unit if specified; otherwise this space may be utilized for trunks or miscellaneous units as required.

B. Fuse mountings associated with the units specified on this bay shall be stenciled by the shop in accordance with the circuit drawings involved. The remaining fuse

mountings shall be stenciled by the installer in the field to meet job requirements.

- C. The initial ringing leads unit shall be furnished in all cases. Any deviation from the arrangement of resistance lamps furnished shall be made by the installer in accordance with local instructions.
- D. The ringing machines specified shall be shipped separately and mounted by the installer.
- E. When only one ringing machine is required for the ringing and alarm bay equipment unit, the component parts of the bay equipment shall be ordered separately and assembled and wired on the job by the installer.
- F. The 404D dial tone generator is furnished for 200 lines or less and the 405B dial tone generator is for over 200 lines or where a reserve supply is necessary.
- G. Existing jobs may add J86472A, List 6, if chatter of the LV relay is objectionable.

J58831T (AT&T Co Std) — Common Group and Subgroup Unit for Line or Trunk Finders

Equipment — J58831T-()

List 1 — Assembly, wiring, and equipment for a trunk finder group and subgroup unit per SD-65871-01, Fig. 1, 2, and 4, with wiring options X, Q, and W.

(No. of Mtg Plts 2 — No. of Ckts 1)

List 2 — Assembly, wiring, and equipment for a line finder group and subgroup unit per SD-65871-01, Fig. 1, 2, and 3, with wiring options X and Q.

List 3 — Assembly, wiring, and equipment for a trunk finder group and subgroup circuit for 6-wire trunk finders per SD-65871-01, Fig. 1, 2, and 5, with X wiring.

List 4 — Assembly, wiring, and equipment for one intergroup finder common group and subgroup unit equipped with one common group circuit and ten subgroup circuits, with wiring options N and V.

J58831U (AT&T Co Std) — Relay-Rack Station Line Switch Frame — Arranged for 100 Dial Station Lines, Eight Line Finder Switches, and Eight Selector-Connector Switches for 1- or 2-Digit Dialing

Equipment — J58831U-()
 Switchboard Cable — ED-66561-10
 Local Cable — ED-66580-10

List 1 — Framework, assembly, wiring, and equipment for one relay-rack-type switch frame, 2 feet 0-11/16 inch long, equipped with 60 dial extension line relays, one 8-capacity line finder shelf, and one 8-capacity selector-connector shelf, less switches.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66560-70, Groups 2, 3, and 4		1	K
Station Line Ckt, SD-66715-01, Fig. 1, With T and N Wiring	100	60	A,D, E,H, I,M
Supplemental Line Finder Unit per J58831D, List 2		1	A,B, C,F, G,L
Supplemental Selector-Connector Unit per J58831J, List 4		1	A,B

List 2 — Framework, assembly, wiring, and equipment for one relay-rack-type switch frame, 2 feet 0-11/16 inch long, equipped with 80 dial extension line relays, one 8-capacity line finder shelf, and one 8-capacity selector-connector shelf, less switches.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66560-70; Groups 2, 3, and 4		1	K
Station Line Ckt, SD-66715-01, Fig. 1, With T and N Wiring	100	60	A,D, E,H, I,M
Supplemental Line Finder Unit per J58831D, List 2		1	A,B, C,F, G,L
Supplemental Selector-Connector Unit per J58831J, List 4		0	A,B

List 3 — Framework, assembly, wiring, and equipment for one relay-rack-type switch frame, 2 feet 0-11/16 inch long, equipped with 100 dial extension line relays, one 8-capacity line finder shelf, and one 8-capacity selector-connector shelf, less switches.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66560-70, Groups 2, 3, and 4		1	K
Station Line Ckt, SD-66715-01, Fig. 1, With T and N Wiring	100	60	A,D, E,H, I,M
Supplemental Line Finder Unit per J58831D, List 2		1	A,B, C,F, G,L
Supplemental Selector-Connector Unit per J58831J, List 4		1	A,B

List 4 — One group and subgroup unit to be provided in addition to list 1, 2, or 3 for the lower group of hundreds numbers for each 200-line group. (See Note A.)

	WIRE	EQUIP
Group and Subgroup Unit per J58831T, List 2	1	1
Fuse Panel per J58833A, List 4	1	1

Notes

- A. A group and subgroup unit per list 4 is required for each 200-line group and is mounted on the station line switch frame of the lower hundreds group.
- B. Line finder switches and selector-connector switches shall be ordered separately as required.
- C. A line finder group consists of all line finders connected to find the line mounted on two relay-rack-type switch frames; one frame is equipped with the station line relays for the lower hundreds numbers and the other frame is equipped with station line relays for the upper hundreds numbers in the same 200-line group. All line finders of a group are numbered consecutively from one up. These switches are divided into ten subgroups, each subgroup consisting of the switches having the same last digit in their number.

- D. One relay-rack-type switch frame will mount, on the front, 100 dial station line relays and one 8-switch line finder shelf unit and, on the rear, an 8-switch selector-connector shelf unit. The group and subgroup unit, with associated fuses, is mounted on the lower hundreds numbers switch frame of each 200-line group.
- E. The station line circuits are provided as specified, in sets of ten circuits, for 1-, 2-, or 3-digit dialing. Lines 19 and 10 are used for test lines and are disconnected on a 1- or 2-digit system because level nine is required for central office trunks. However, when 3-digit dialing is provided, lines 99 and 90 are used for test lines and the relays omitted instead of 19 and 10.
- F. The line finder unit designation shall be per J58831A, Note D.
- G. The start lead functions are described in J58831A, Note G.
- H. A package of 100 red plastic sleeves per P-32B126 is furnished with each switch frame for use in obtaining unrestricted service.
- I. A method of blocking open the contacts of the CO relays prior to cutover is covered by Section 069-020-801.
- J. When message waiting service is required, V option per SD-66715-01 shall be applied locally as covered on ED-66557-10.
- K. To facilitate delivery of this unit to the subscriber's premises, the base shall be shipped separately and designated as part of this unit.
- L. When 3-digit dialing is required, a 4- or 8-switch relay-rack-type switch frame connector shelf unit is required for each 100-line group to be mounted on another switch frame and the cabling arranged between units to meet local traffic requirements.
- M. When outgoing restriction is required, a terminal strip providing lead terminations can be obtained by means of a lettered list.

J58831W (AT&TCo Std) — Batteryless Power Bay

Equipment — J58831W-()

List 1 — Framework, assembly, wiring, and equipment for one preassembled batteryless power bay with ringing lamps and fuses, miscellaneous alarm, test line, power distribution, load capacitors, 404D dial tone generator and 1-foot 0-inch base (front to rear) arranged for console operation.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66562-70, Group 1 and 3		1	A,B, C,D
Test Line Unit, J58831M, List 1	1	1	
Circuit Breaker and Power Distribution Panel, J58831AB, List 1, 4	1	1	E
Ringing Lamp and Fuse Unit, J58831AC, List 1	1	1	F
Load Capacitor Panel, J58831AD, List 1	1	1	
Miscellaneous Alarm Unit, J58831AE, List 1, 4	1	1	
404D Dial Tone Generator, J86472A, List 9	1	1	

List 2 — Same as list 1, except for frame base which is 1-foot 9-1/2 inches (front to rear) as follows.

		EQUIP	SEE NOTES
Framework, ED-66562-70, Group 2 and 3		1	A,B, C,D

List 3 — Framework, assembly, wiring, and equipment for one preassembled batteryless power bay with ringing lamps and fuses, miscellaneous alarm, test line unit, power distribution panel, load capacitors, 404D dial tone generator, and 1-foot 0-inch base (front to rear) arranged for switchboard operation.

	WIRE	EQUIP	SEE NOTES
Framework, ED-66562-70, Group 1 and 3		1	A,B, C,D
Test Line Unit, J58831M, List 1	1	1	

	WIRE	EQUIP	SEE NOTES
Circuit Breaker and Power Distribution Panel, J58831AB, List 1 and 3	1	1	H
Ringling Lamp and Fuse Unit, J58831AC, List 1	1	1	F
Load Capacitor Panel, J58831AD, List 1	1	1	
Miscellaneous Alarm Unit, J58831AE, List 1 and 2	1	1	G
404D Tone Generator, J86472A, List 9	1	1	

List 4 — Same as list 3 except for frame base which is 1-foot 9-1/2 inches (front to rear) as follows.

	EQUIP	SEE NOTES
Framework, ED-66562-70, Group 2 and 3	1	A,B, C,D

List 5 — Power unit required in addition to lists 1, 2, 3, or 4 to furnish 1-10 amperes, negative 47-52 VDC plus ringing, busy tone and AC clock power per SD-81954-01. KS-20119, List 1 for 117V, 60Hz input.

List 6 — Same as list 5 except for 208/230V, 60 Hz input, KS-20119, List 2.

List 7 — Rectifier unit required to supplement list 5 when additional 20-ampere supply is required, per SD-81956-01. KS-20121, List 1 for 117V, 60Hz input.

List 8 — Rectifier unit required to supplement list 6 when additional 20-ampere supply is required, per SD-81956-01. KS-20121, List 2 for 208/230V, 60Hz input.

List 9 — Assembly, wiring, and equipment required to furnish additional 25-ampere circuit breakers for list 1, 2, 3, or 4 in accordance with SD-5E031-01, App Fig. 6, S option (max 3 additional).

Notes

A. This unit is furnished assembled with wiring between units provided by the shop to minimize installation effort. Vacant mounting spaces are available for mounting one

KS-20119 power unit and one KS-20121 rectifier unit.

- B.** The second rectifier unit when required is mounted on a miscellaneous relay rack. This rectifier shall be located as close as possible to the power bay to keep voltage drop in cabling to a minimum.
- C.** Power unit and rectifiers may be shipped separate from assembled power bay and are mounted and wired in by the installer.
- D.** A power failure transfer unit per J58831AA is required. This 2- by 23-inch unit, which transfers from 6 to 18 station lines per mounting plate, mounts on the miscellaneous relay rack or where convenient.
- E.** One 25-ampere circuit breaker is always provided. Additional circuit breakers will be ordered for individual load distribution requirements (max 3 additional).
- F.** Fuse positions associated with the units specified on this bay shall be stenciled by the shop in accordance with the circuit drawings involved. Remaining fuse positions shall be stamped by the installer to meet job requirements.
- G.** Miscellaneous alarm unit equipped with battery cutoff circuit per SD-65773-01, Fig. 6. Maximum load of 30 amperes.
- H.** Circuit breaker and power distribution panel is equipped with one 25 ampere and one 15 ampere circuit breaker. Additional 25 ampere circuit breakers are available for individual load distribution requirements (max 3 additional).

J58831Y (AT&TCo Std) — Station Restriction Unit — Arranged for Key Selected Outgoing and/or Incoming Station Restriction

Equipment — J58831Y-()

List 1 — Assembly, wiring, and equipment for one station restriction unit arranged to restrict ten station lines. There is no PBX-ANI, +48 message register operation, or camp-on busy potential on the S lead.

WIRE EQUIP

Station Restriction,
SD-5E012-01

1 1

List 2 — Assembly, wiring, and equipment required in addition to list 1 for one group restriction unit arranged to restrict a group of up to 120 station lines, required once per twelve list 1. (See Note A.)

WIRE EQUIP

Station Restriction,
SD-5E012-01

1 1

List 3 — Wiring and apparatus required in addition to list 1 for PBX-ANI, +48 message register operation, or when campaign busy potential is on the S lead.

WIRE EQUIP

Station Restriction,
SD-5E012-01

1 1

Note

A. Provide list 2 once for up to twelve list 1 provided. One list 2 provides station line restriction for a total of twelve list 1.

J58831AA (AT&TCo Std) — Power Failure Transfer Unit — Relay Rack Mounted — For Use With Batteryless Power Bay — No. 701B or 711B PBX

Equipment — J58831AA-()

List 1 — Assembly, wiring, and equipment for one power failure transfer unit for six station lines per SD-5E040-01, App Fig. 1, 2 circuits.

List 2 — Assembly, wiring, and equipment required in addition to list 1 to provide one additional power failure transfer circuit for three station lines per SD-5E040-01, App Fig. 1, 1 circuit (max 4 list 2).

J58831AB (AT&TCo Std) — Power Distribution Panel — Relay Rack Mounted — For Use With Batteryless Power Bay — No. 701B or 711B PBX

Equipment — J58831AB-()

List 1 — Assembly, wiring, and equipment for one power distribution panel per SD-5E031-01, App Fig. 1 and 5, one circuit.

List 2 — Wiring and equipment required in addition to list 1 when additional 25 ampere circuit breaker is required, per SD-5E031-01, App Fig. 6, S option (max 3 circuits).

List 3 — Wiring and equipment required in addition to list 1 when 15 ampere circuit breaker is required for attendant switchboard operation, per SD-5E031-01, App Fig. 6, T option, one circuit.

List 4 — Wiring and equipment required in addition to list 1 when arranged for console operation, per SD-5E031-01, App Fig. 4, one circuit.

J58831AC (AT&TCo Std) — Ringing Lamp and Fuse Unit — Relay Rack Mounted — For Use With Batteryless Power Bay — No. 701B or 711B PBX

Equipment — J58831AC-()

List 1 — Assembly, wiring, and equipment for one ringing lamp and fuse unit per SD-5E031-01, App Fig. 2, X and W wiring, App Fig. 3, 3 circuits, and SD-65779-01, Fig. 3, Z wiring, 1 circuit.

J58831AD (AT&TCo Std) — Load Capacitor Panel — Relay Rack Mounted — For Use With Batteryless Power Bay — No. 701B or 711B PBX

Equipment — J58831AD-()

List 1 — Assembly, wiring, and equipment for one load capacitor panel, per SD-5E031-01, App Fig. 8, one circuit.

J58831AE (AT&TCo Std) — Miscellaneous Alarm Unit — With Battery Cutoff Relay — Relay Rack Mounted — For No. 701B or 711B PBX

Equipment — J58831AE-()

List 1 — Assembly, wiring, and equipment for one miscellaneous alarm unit per SD-65761-02, App Fig. 3 and R option, one circuit.

List 2 — Assembly, wiring, and equipment required in addition to list 1 to provide battery cutoff circuit per SD-65773-01, Fig. 6, maximum load of 30 amperes.

List 3 — Assembly, wiring, and equipment required in addition to list 1 to provide battery cutoff circuit per SD-65773-01, Fig. 5, maximum load of 60 amperes.

List 4 — Wiring and equipment required in addition to list 1 when 5- or 6-type consoles are provided, per SD-65761-02, App Fig. 3, M apparatus and wiring.

List 5 — Wiring and equipment required in addition to list 1 when alarm is in the same building, per SD-65761-02, App Fig. 3, W apparatus and wiring.

List 6 — Not applicable with this equipment.

List 7 — Assembly, wiring, and equipment required in addition to list 1 for one ROTS alarm unit, required for each aisle of ROTS.

Miscellaneous Equipment

J58833A — *Fuse Panel Unit With Alarm — Relay Rack Mounted*

5. GENERAL NOTES

5.01 Grounding of Frames and Racks: Power plant and protector grounds shall be run in accordance with Section AA618.001. This ground arrangement is sufficient for all frames in the installation, provided they have metal-to-metal contact with each other through the cable racks or other means. Any frame or line-up of frames which is not so grounded to the protector ground lead shall be bonded to the other frames using No. 6 gauge stranded wire per KS-5482-01 and two KS-5517, List 12 terminal lugs.

5.02 Power Feeders: Power is supplied to the switch frame shelf units and relay-rack fuse panels in accordance with ED-66574-10 and

the power discharge circuit for the particular power plant used.

5.03 Battery Stands: Battery stands and batteries covered by J87118 are recommended where a power plant requires a separate battery stand. These stands accommodate the more popular sizes of batteries and require a minimum of floor space. Interconnecting leads for each size of battery are included as covered by lists in the specification. Where batteries too large for these stands are required, the central-office-type stands per J87109 may be specified.

5.04 Battery charge and discharge conductors require proper separation, "pairing," and segregation as covered in Section AA618.201.

5.05 Switchboard Cabling: The gauge and insulation of wires in switchboard cables for the No. 701B and 711B systems are specified on the various cabling plan drawings. In general, No. 24 gauge leads are used, except for leads to switchboard jacks and lamps which shall be No. 22, 24, or 26 gauge as specified on the various switchboard cable equipment codes, and for certain cables to traffic register units and to ringing leads resistance lamps, which shall be 22BH to permit dressing them to the units in a manner similar to surface wiring.

5.06 Test Terminals for Battery and Ground: Test battery and ground terminals shall be provided as indicated on SD-65677-01 to facilitate maintenance. The test battery and ground connecting block assemblies are covered by ED-66577-70 and the leads are extended throughout the PBX as indicated on the distributing power terminal strip drawing ED-66575-10.

5.07 Fuse Identification: A fuse panel is always installed at the top of each miscellaneous relay-rack bay and the mounting plates are designated as specified in Section AA613.011. The fuse or fuses serving the equipment units on the bay shall be stamped with the corresponding individual or top mounting plate designation of the unit. They shall be shown in line with and preceding the functional designation of the fuse; for example, 6A, 9B, etc. Fuses connected to circuits external to each bay shall be stenciled with the functional fuse designation

and this fuse assignment reflected in the miscellaneous relay-rack wiring list job drawing.

5.08 "PC" register lead "R", requiring a traffic register, should have SD-65761-01, Fig. C added on a local basis.

5.09

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
ED-66556-70, G4	A&M Only	3	—

EQUIPMENT	RATING	DETAILS LAST SHOWN IN ISSUE	REPLACING EQUIPMENT
ED-66570-70, G1 and G2	Mfr Disc.	2	—
G5	Mfr Disc.	1	—
G13	A&M Only	3	—
J58831K,L1	Mfr Disc.	2	J58831K,L2 or L3
L2, L3, L4 L5, L6* and L7	Mfr Disc.	5	J58831AE,L1 L2, L3, L4, L5, L6*, and L7
J58831S,L1	Mfr Disc.	2	J58831S,L3 or L4
L2	Mfr Disc.	2	J58831S,L5 or L6

* List 6 is not applicable with this equipment.

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