

**507A AND 507B PBX
BUSINESS SERVICES TRAFFIC ENGINEERING
MANUAL PBX SYSTEMS**

1. GENERAL

1.01 This section face sheet is issued to assign its 9-digit number to Business Services Facilities Engineering Practices.

Division B, Section 3.

This is part of the conversion of all Business Services Facilities Engineering Practices (BSFEPs) to the 9-digit Bell System Practices (BSPs) series as described in GL 78-05-195, dated May 22, 1978, and SL-IL-78-10-209, dated October 10, 1978.

1.02 When this section is reissued, all references to BSFEP numbers will be changed to the appropriate 9-digit BSP numbers.

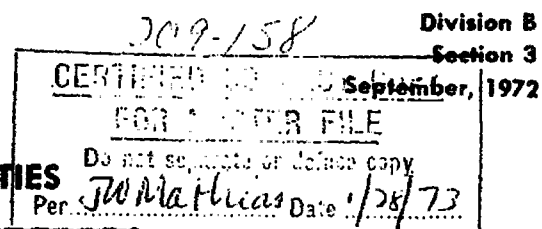
1.03 Recommendations for changes, additions, or deletions to this section should be forwarded on Form E-3973 as specified in Section 000-010-015.

1.04 BSFEP to BSP cross-reference information can be found in SL-IL-78-10-209, dated October 10, 1978, and in Section 788-100-100.

NOTICE

This document is either
AT&T - Proprietary, or WESTERN
ELECTRIC - Proprietary

Pursuant to Judge Green's Order of August 5, 1985,
beginning on January 1, 1986, AT&T will cease to use
"Bell" and the Bell symbol, with the exceptions as set
forth in that Order. Pursuant thereto, any reference to
"BELL" and/or the BELL symbol in this document is here-
by deleted and "expunged"



ATTENDANT FACILITIES 507A AND 507B SWITCHBOARDS

*(RATED MD)

1. GENERAL

1.01 Both the 507A and 507B manual PBX switchboards are single positioned, key operated, self-contained units for establishing telephone connections between local PBX stations and also between these stations and tie trunks or central offices. The serving central office can be of step-by-step, cross-bar or electronic switching type.

1.02 As illustrated in Fig. 1 and Fig. 2, the switchboard housing is a small all metal assembly with a sloping surface and rounded corners. The standard finish is neutral beige with gray trim. A fine wrinkled texture is used to minimize glare.

1.03 Connections to another PBX switchboard can be made through the use of a tie trunk circuit which is housed in an auxiliary unit.

1.04 Both the 507A and 507B manual PBX switchboards measure 19 inches from front to rear, and 8 inches high at the highest point. The 507A switchboard is 13 1/4 inches wide and weighs 39 pounds, while the 507B switchboard is 19 1/4 inches wide and weighs 54 pounds.

1.05 All keys and lamps essential to the operation of the switchboard are mounted on a sloping keyshelf located near the front of the switchboard.

1.06 All trunks, station and attendant keys are two-way locking which lock in both operated positions. The one exception is the lower operated position of the bottom row of keys, which is nonlocking and is used for station ringing and trunk holding. (See 4.03.)

1.07 Key handles are of the snap-on type and are tan in color, the station key handles

being darker in color than the trunk and attendants key handles.

1.08 Supervisory lamp caps are red for stations and white for trunks. Each lamp is located immediately below its corresponding circuit.

1.09 A removable designation strip sufficiently wide to accommodate two names for each station extends across the switchboard at the lower front edge. It is protected by a transparent lucite cover.

2. CAPACITIES

2.01 The capacities of these switchboards are as follows:

No. 507A	No. 507B
3 Trunks	5 Trunks
7 Stations	12 Stations
5 Connecting Paths*	5 Connecting Paths*

* Maximum simultaneous calls thru PBX

2.02 On the 507B switchboard additional incoming central office calls may be answered and held with all five connecting paths busy, using the "External Trunk Pickup" feature as described later in this practice.

2.03 A very important consideration for Business Services is to be certain that the switchboard has the capacity to give good services to the customer, while protecting the Network against ineffective attempts due to insufficient trunking or abandoned calls caused by slow answers.

*MD—Manufacture Discontinued

3. FEATURE AND CIRCUIT DEFINITIONS

- 3.01** The following features are provided with these switchboards:

Attendant's Telephone Set: The attendant's telephone set is normally a 500 type. The six button 1A-KTS 500 type telephone can also be used to provide the external trunk pickup feature explained later in this practice.

Tie Trunks: The first station key is wired for either station or tie trunk use. When used as a ringdown tie trunk, a circuit unit is separately mounted in a 105A apparatus box. The initial incoming ringing signal, as well as the ring-off signal, appears on the line lamp of the first station key. The initial signal is locking and ring-off signal nonlocking.

Audible Switchboard Signal: The ringer of the attendant's telephone set is normally used as the audible signal for the switchboard. It may be turned on or off by the operation of a turn button key at the lower left of the switchboard face. With this key in the "ON" position the ringer will sound whenever any switchboard lamp lights.

Through Dialing and Through Supervision: These two features are provided in the 507 type switchboard. With through dialing, the attendant selects an outgoing trunk to the central office, a tie trunk, etc., but the station user dials the digits on the call. Through supervision (or signaling) is under control of the station user, even though the connection has been set up through an attendant's position.

Line Relays: The last station key is equipped with a line relay for use on long station loops generally required for off-premise stations. When more than one line relay is required, additional ones should be provided locally and housed in a 105A apparatus box.

External Trunk Pickup: On the 507B, the attendant can answer incoming calls, when all five connecting paths are busy, by means of a six-button 1A-KTS attendant's telephone set. The first five keys are wired to pick up the five trunks. The sixth key is associated with the attendant's connecting

keys in the PBX. If an incoming trunk call is offered with all five connecting paths busy, the call is answered by depressing the associated trunk key on the attendant's telephone set. The trunk lamp which remains lighted can be extinguished by momentarily operating the bottom attendant key to the night position. If desired, the trunk call can be held by operation of the trunk holding key on the switchboard. When a connecting path becomes available the trunk call is completed to the station in the usual manner. When an increasing volume of incoming trunk calls is offered with all paths busy, this is symptomatic of traffic backing up into the network. An alert Service Adviser should detect this condition by observation or consultation with the customer and measure the extent of it by providing a Veeder register to be manually scored by the attendant whenever this condition occurs.

Instruction Plate: A metal plate containing brief condensed operating instructions is provided in a slide mounting at the base of the switchboard.

4. DESCRIPTION OF OPERATION (See Fig. 1 and 2.)

4.01 Five connecting paths are provided in each switchboard. Each horizontal row of keys, except the bottom row, controls two connecting paths corresponding to the upper and lower operated key positions. The bottom row of keys control only one connecting path corresponding to the upper operated key position. Each trunk and station circuit is multiplied vertically.

4.02 The lower operated position of the bottom row of trunk keys is the trunk holding position. The same operated position of the station keys in this row is used for ringing on station lines. The same operated position of the attendant's key in the bottom row is used when establishing night connections to cut off battery supply from the switchboard lamps.

4.03 A station-to-station connection is established by operating two station keys in the same horizontal row to the same operated position. Thus the attendant, upon receiving a lamp signal from a station, removes the receiver, selects an idle connecting path by visual inspection and operates

an attendant's connecting key to connect with this path. (See Attendant's Telephone Set under Feature and Circuit Definitions.) The calling station is connected with the attendant by operating the calling station key to the same path. The call can then be answered. The connection can be extended to another station by operating the proper station key to connect with the same connecting path. The station can be rung by operating the called station's ringing key.

4.04 A trunk-to-station connection or a station-to-trunk connection is established by the attendant in a manner similar to the station-to-station procedure. Thus the attendant, upon receiving a signal from a trunk or station, removes the receiver, selects an idle connecting path and operates an attendant's connecting key to connect with this path. The calling trunk or station is connected with this same path by operating the key associated with the incoming signal. The call can then be answered. The connection can then be extended by operating either the proper station key for an incoming trunk-to-station call or the proper trunk key for an outgoing station-to-trunk call. For the

trunk-to-station call, the called station can be rung by operating the station's ringing key. For the station-to-trunk call, with the operation of the proper trunk key, central office dial tone is heard.

5. TRAFFIC ENGINEERING CONSIDERATIONS

5.01 Provision of the 507A or 507B switchboards are on a service order basis and do not require the preparation of a Traffic Order. However, traffic engineering should have a working agreement with Marketing whereby all 507A or B installations should first be evaluated and recommended by the Business Services Facilities Engineer. This will forestall an adverse network effect caused by busies, don't answer, slow answers, etc. It will also provide administrative service as required by Service Adviser contacts.

5.02 Trunk circuits shall be recommended in sufficient quantity to provide a P.01 service level. This service objective ensures good service to the customer, and also protects the Network against excessive ineffective attempts.