

TYPE 37 CORDLESS P. B. X.  
**SWITCHBOARD**

**ATTENDANT'S INSTRUCTIONS**

**BULLETIN 487**

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**AUTOMATIC  ELECTRIC**

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# **TYPE 37 CORDLESS P.B.X. SWITCHBOARD**

## **ATTENDANT'S INSTRUCTIONS**

### **1. FOREWORD TO THE ATTENDANT**

Your company and your local telephone company have cooperated to provide the most modern private-branch-exchange (P.B.X.) service for your company. As the attendant at a type 37 cordless P.B.X., you will appreciate the many design features your switchboard offers for your comfort and convenience. The shadowed effect on the slanted key-panel makes the supervisory, trunk, and station lamps easy to see. The color pattern of the keys, lamps, panel, and housing is scientifically arranged to relieve eye strain. The keys, even, are fashioned to protect your fingernails.

The purpose of this bulletin is twofold: first, to point out briefly the essential features involved in operation of the type 37 cordless P.B.X. switchboard; and second, to assist you as a private-branch-exchange attendant to render satisfactory and pleasing service to your employer, to your company's customers, and to your associates.

Suggestions in this bulletin coordinate your operating procedures with those used in the local public central office. Familiarity with the method of operation of your switchboard will enable you to give your company rapid, efficient communication service and to set up connections suited to the greatest convenience of those concerned. The benefits to be gained by learning and following these methods are well worth the modest effort required. Type 37 cordless switchboards are simple and easy to operate.

## 2. DESCRIPTION OF SWITCHBOARD

There are two different sizes of cordless P.B.X. switchboards – ten-line and twenty-line – and they differ slightly as shown in figures 1 and 2 and as described in §2.03. A description of each lamp, key, etc., is given below to acquaint you with the cordless P.B.X. switchboard.

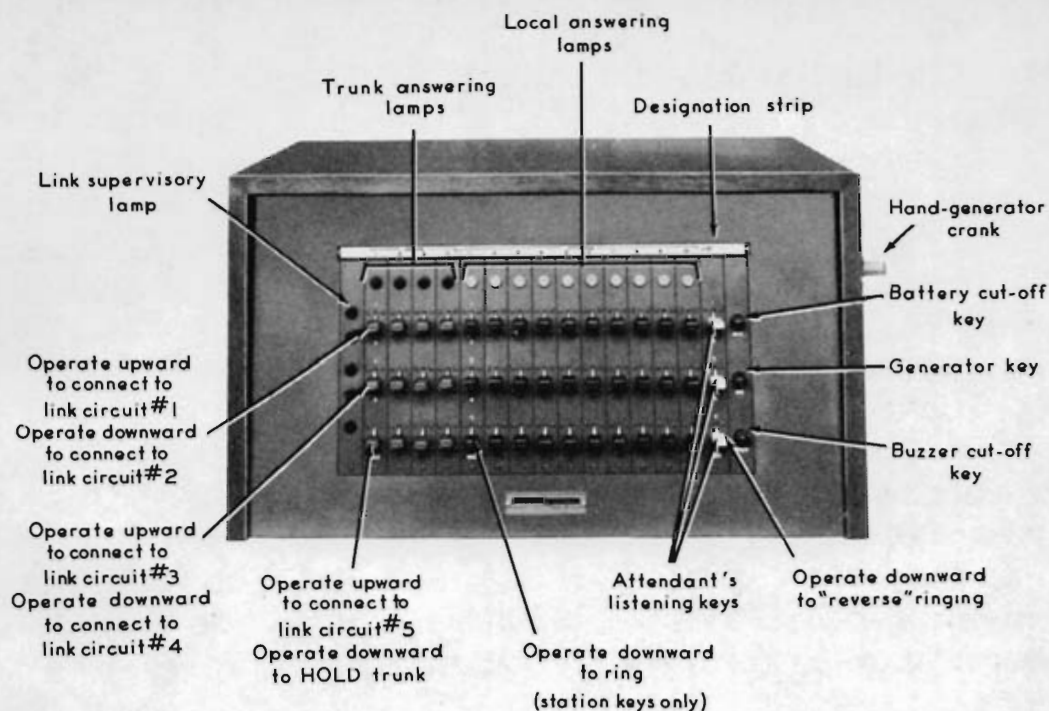
2.01 Trunk keys. The trunk keys are on the left side of the switchboard (see figures 1 and 2) and have red handles. Each vertical row of three keys serves one trunk. The ten-line switchboard can have up to four trunks, and the twenty-line switchboard can have up to five trunks.

2.02 Trunk answering lamps. The trunk answering lamps are located directly above the trunk keys, one associated with each central-office trunk. A trunk lamp will glow when the trunk is seized on an incoming call from the central office (also while the trunk HOLD key is operated). The trunk answering lamps have green lamp caps.

2.03 Trunk HOLD keys. On the ten-line switchboard (see figures 1 and 4) the trunk HOLD keys are the down position of the bottom row of trunk keys.

On the twenty-line switchboard the trunk HOLD keys are turn keys located near the top of the cabinet above the trunk keys (see figures 2 and 5). The holding bridge is placed across the trunk when the trunk HOLD key bar is vertical.

If the attendant cannot remain on the trunk connection until the local station answers, she may operate the trunk HOLD key and thus place a holding bridge across the trunk. The attendant may then retire from the connection, and the trunk answering lamp will glow while the trunk HOLD key is operated, as a reminder to the attendant.

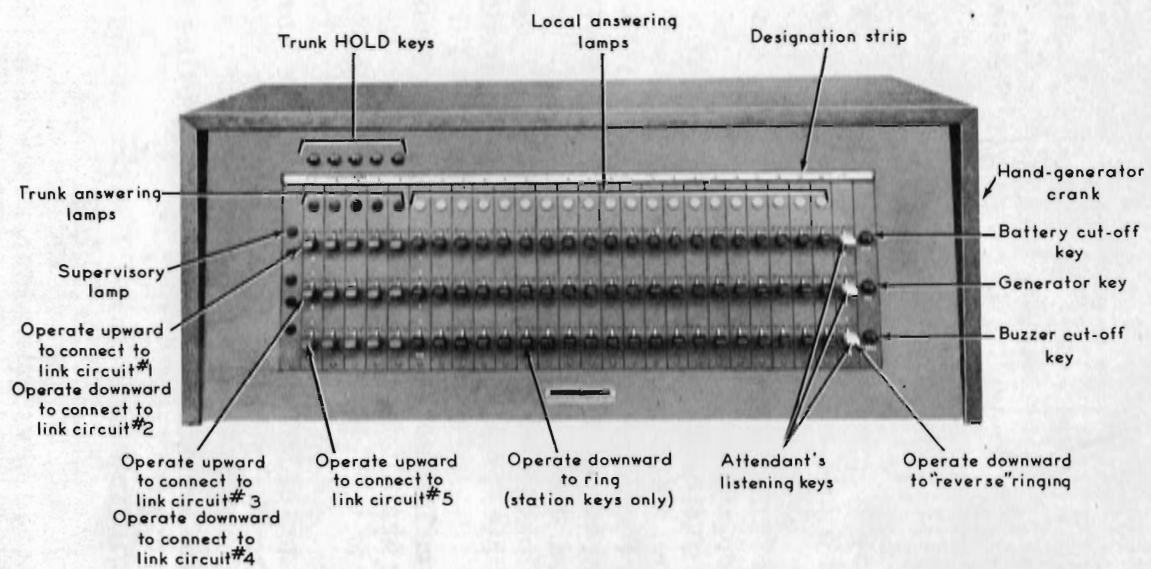


*Figure 1. Ten-line switchboard.*

As soon as the attendant retires from the connection, the supervisory lamp glows to indicate that the called local station has not answered. When the local station answers, the supervisory lamp darkens and conversation with the public-exchange party may proceed. The attendant should then restore the trunk HOLD key to normal.

**2.04 Local-station keys.** The local-station keys are located to the right of the trunk keys (see figures 1 and 2) and have green key handles. Each vertical row of three keys serves one local station. The number of local-station keys varies with the number of local stations equipped and the size of the switchboard (ten-line or twenty-line).

**2.05 Local-station answering lamps.** The local-station answering lamps are located directly above the local-station keys, one associated with each local station. When a caller lifts a local-station handset, that station's answering lamp lights. The local-station answering lamps have white lamp caps.



*Figure 2. Twenty-line switchboard.*

2.06 Ringing keys. When operated downward, the bottom key associated with a local station will ring that station (see figures 1 and 2).

2.07 Attendant's listening keys. The attendant's listening keys are one vertical row of three keys located to the right of the local-station keys. These white-handled keys connect the attendant's telephone to any one of the five connecting links or paths.

2.08 Ringing-reverse key. The ringing-reverse key is the down position of the bottom attendant's key (see figures 1 and 2). If a local-station line is wired as a two-party line, one telephone is signaled in the usual way with the individual ringing key associated with that local-station line, and the other telephone is signaled by operating first the ringing-reverse key and then the station-line ringing key.

2.09 Supervisory lamps. Five supervisory lamps associated with the five connecting links (paths) are mounted in a vertical row to the left of the trunk keys and in horizontal alignment with the associated connecting links. Supervisory lamps have red lamp caps. A supervisory lamp lights as a "phone on hook" signal.

On an intraoffice call, a steadily lighted supervisory lamp indicates that the link keys should be restored because (a) the caller abandoned an unanswered call, or (b) the call was answered and conversation has been concluded.

On a trunk call, a steadily lighted supervisory lamp indicates either (a) that a called local station has not answered, and should be re-rung, or (b) that conversation has been concluded and the link keys should be restored.

A flashing supervisory lamp indicates a local station signaling the attendant to give her instructions, such

as to transfer an incoming trunk call to another department, etc. It may also indicate a local station dialing into the public central office (see §3.121(c)).

2.10 Connecting links (paths). The connecting links (see figures 1 and 2) are five telephone circuits for establishing connections of the following types:

- (a) Public exchange to a local station or stations.
- (b) Local station to public exchange.
- (c) Local station to another local station or stations.
- (d) Public exchange to attendant's telephone.
- (e) Local station to attendant's telephone.
- (f) Attendant's telephone to local station or stations.
- (g) Attendant's telephone to public exchange.
- (h) Night connections.

The five connecting links permit five simultaneous connections by means of the trunk, station, and attendant's connecting keys. The three horizontal rows of connecting keys control the connecting links, the answering of trunk and local-station lamp signals, and the ringing of local stations as follows:

TOP ROW	Push up to connect to link #1. Push down to connect to link #2.
MIDDLE ROW	Push up to connect to link #3. Push down to connect to link #4.
BOTTOM ROW	Push up to connect to link #5. Trunk key (10-line switchboard only): Push down to hold trunk. Station key: Push down to ring. Attendant's key: Push down to reverse ringing (see §2.08).

Any station or trunk can be connected to any of the five connecting links by operating an associated station or trunk key upward or downward to the connecting link to which connection is desired.



2.11 BCO or battery cut-off key. The battery cut-off key, at the right of the attendant's top key, is for disconnecting switchboard battery to prevent waste of current at night, Sundays, holidays, and other times when the attendant is not on duty. Battery is cut-off when the key bar is vertical.

2.12 GEN or generator key. The generator key is located directly below the BCO key and is for switching from central-office ringing power (key bar horizontal) to hand generator (key bar vertical).

2.13 NACO or night-alarm cut-off key. The night-alarm cut-off key is located directly below the GEN key and controls a buzzer. When the attendant is in constant attendance and does not wish to be disturbed by the buzzer, she turns the key so its bar is vertical.

2.14 Hand generator. On the right side of the cabinet is a hand generator to generate ringing current if the central-office ringing power fails.

### 3. OPERATING INSTRUCTIONS

3.1 Call originating at a local station. When the handset is removed from the hookswitch at a local station, a station answering lamp will light at your switchboard and (if not turned off) the buzzer will sound. Proceed as follows:

- (a) Remove your handset from the hookswitch.
- (b) Select an idle connecting link\* and operate the corresponding attendant's key and calling-station key, both up or both down, as required to connect both you and the caller to the same link.

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\*An idle connecting link is one to which no other trunk or station keys have previously been switched.

- (c) Answer by saying for example, "Office" or "Your call, please?" or any other approved expression. It is undesirable for the attendant to answer with "Yes?", "Hello", "What is it?", etc., as such terms imply brusqueness or haste.

### 3.11 Establishing connection to another local station.

If the calling party desires connection to another local station, acknowledge the call by saying, "Thank you" or by repeating the order, for example, "Mr. Jones?" or "Station 5?" or "Shipping room?", and proceed as follows:

- (a) Check that the called station is not busy (all station keys in their normal positions).
- (b) Operate the called-station key that is in line with the keys used to answer the calling station.
- (c) Ring the called station by operating downward the bottom key in the vertical row directly below the called-station number. If the called station does not answer within a reasonable time, give the report to the calling person.

If the called station is busy, report to calling person, saying, for example, "The line is busy". If no further instructions are received, restore the keys to normal and hang up your handset.

If your attention is required on a second call before the called station answers, restore the attendant's key used on the first connection before operating keys for the second call.

- (d) When the called station answers, restore the ringing key and the attendant's key used on the connection and then hang up your handset. Restore the attendant's key before hanging up the handset so the noise of placing the handset on the hookswitch will not disturb the conversation.

### 3.12 Establishing connections through a dial central office.

3.121 Caller dials. If the calling person is at a local station equipped with a dial and he requests to be connected to a central-office trunk, proceed as follows:

- (a) Acknowledge the call, and restore the attendant's key used to answer the station. (Restore the attendant's key before operating the trunk key; otherwise, if the caller begins dialing immediately upon hearing dial tone, the attendant's handset may interfere with the dialing.)
- (b) Select an idle trunk, indicated by no trunk key being pointed upward or downward and the trunk answering lamp being dark.
- (c) In the selected vertical row, operate the trunk key that is in line with the operated calling-station key. Almost immediately after operation of the trunk key, the calling station receives dial tone as a signal that he may start to dial. (The dialing at the local station may cause the supervisory lamp to flicker.)
- (d) Hang up your handset and pay no further attention to the connection unless you are signaled by a disconnect or recall.

3.122 Attendant dials for caller. If the calling person requests you to establish the central-office connection and remains on the line, or if the calling station is not equipped with a dial, proceed as follows:

- (a) Request the desired telephone number and acknowledge the call. Restore the station key, but remember which one it was.

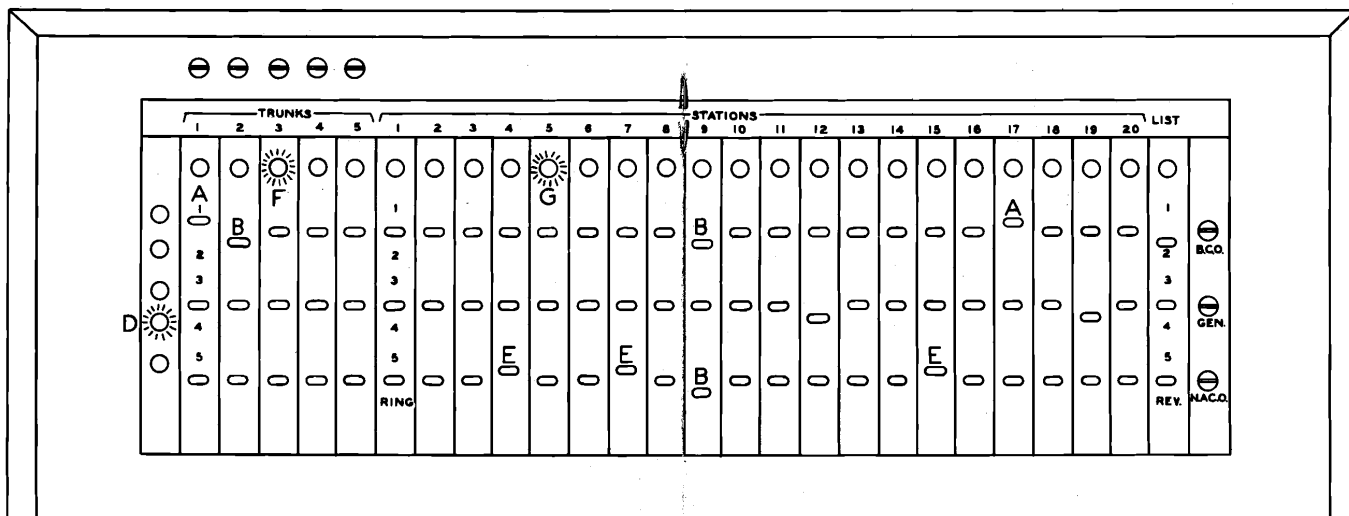


Figure 3. Typical connections.

- (b) Leave the attendant's key operated, and operate to the same connecting link the proper trunk key associated with an idle trunk.
- (c) When you hear dial tone, dial the desired number. The attendant's key must remain operated until the dial returns to normal after the last digit.
- (d) After dialing, reoperate the station key used to answer the calling station, and listen to determine whether the ringing or busy signal is received. If the ringing signal is heard, make sure the calling person still is on the line; then restore the attendant's key and hang up your handset. The calling-station key must be operated and his handset must be off the hook before the attendant's key is restored; otherwise the central-office connection would be released.
- (e) If the busy signal is heard, restore the trunk key and if the calling person does not hang up, report that the number is busy. If no further instructions are received, restore the attendant's and station keys and hang up your handset.

If neither the ringing signal nor the busy signal is heard within a reasonable time after dialing is completed, restore the trunk and station keys, and try to reach the called number over another trunk.

3.123 Attendant gets called party for caller. If the calling person asks you to call him when you have secured the called number or person, proceed as follows:

- (a) Acknowledge the call, restore the station key, and leave the attendant's key operated.



- (b) Reach the called number as outlined above, except, when you finish dialing, leave the calling-station key restored.
- (c) When the called number or person is reached, say for example, "I have a call for you. One moment, please."
- (d) Leave the attendant's key operated and reoperate the station key used to answer the calling person so that it will be in line with the keys used in reaching the called number. Ring the caller and when he answers, start the conversation by saying for example, "Mr. Jones is on the line".
- (e) Listen on the connection until conversation begins and if there is any delay in the start of conversation, add, "Here is your party".

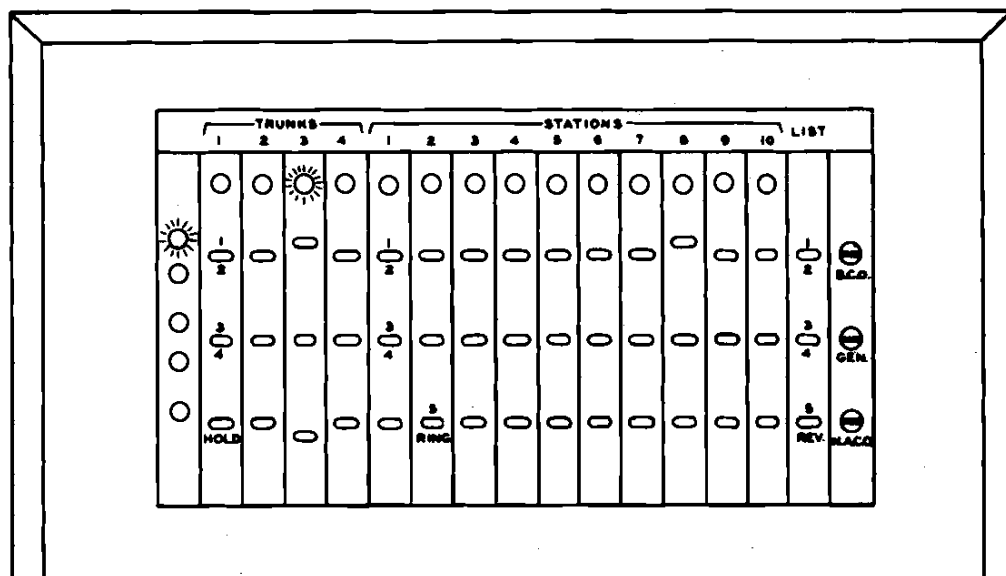
(If, after you have reached the called number, your attention is required on another call before the calling person answers, operate the trunk HOLD key associated with the trunk used in reaching the called number (see figures 4 and 5). The trunk answering lamp will glow as a reminder while the trunk HOLD key is operated. Restore the attendant's key. The link supervisory lamp will glow until the local station answers. When the supervisory lamp darkens, restore the trunk HOLD key.)

- (f) Restore the attendant's key and hang up your handset.

3.13 Establishing connections through a manual central office. Outgoing calls to a manual central office may be placed either by the station user or by the attendant. It is desirable that the station users place their calls direct with the central-office operator, as this practice results in faster service.

Suggest connecting the calling person to a central-office trunk, saying, for example, "I will give you a line". If the person agrees, proceed as follows:

- (a) Restore the attendant's key.
- (b) Select an idle trunk, indicated by no trunk key being pointed upward or downward and the trunk answering lamp being dark.
- (c) Operate the proper trunk key in the vertical row selected so that it is in line with the calling-station key.
- (d) Hang up your handset and pay no further attention to the connection unless you are signaled.



Trunk-to-local connection with HOLD key operated and attendant retired from connection. When the supervisory lamp darkens it will indicate that the called party has answered and that the attendant should restore the HOLD key.

Figure 4. Ten-line switchboard, trunk connection held.

3.131 If the calling local station requests you place the call for him, proceed as follows:

- (a) Acknowledge the call, select an idle trunk, and operate the proper trunk key so that it is in line with the station key used to answer the calling person.
- (b) Place the call with the central-office operator.
- (c) Listen on the connection as necessary to determine whether the ringing signal or busy signal is received.
- (d) The station key must be operated and the caller's handset must be off the hook before the attendant's key is restored; otherwise the central-office operator will receive a disconnect signal.

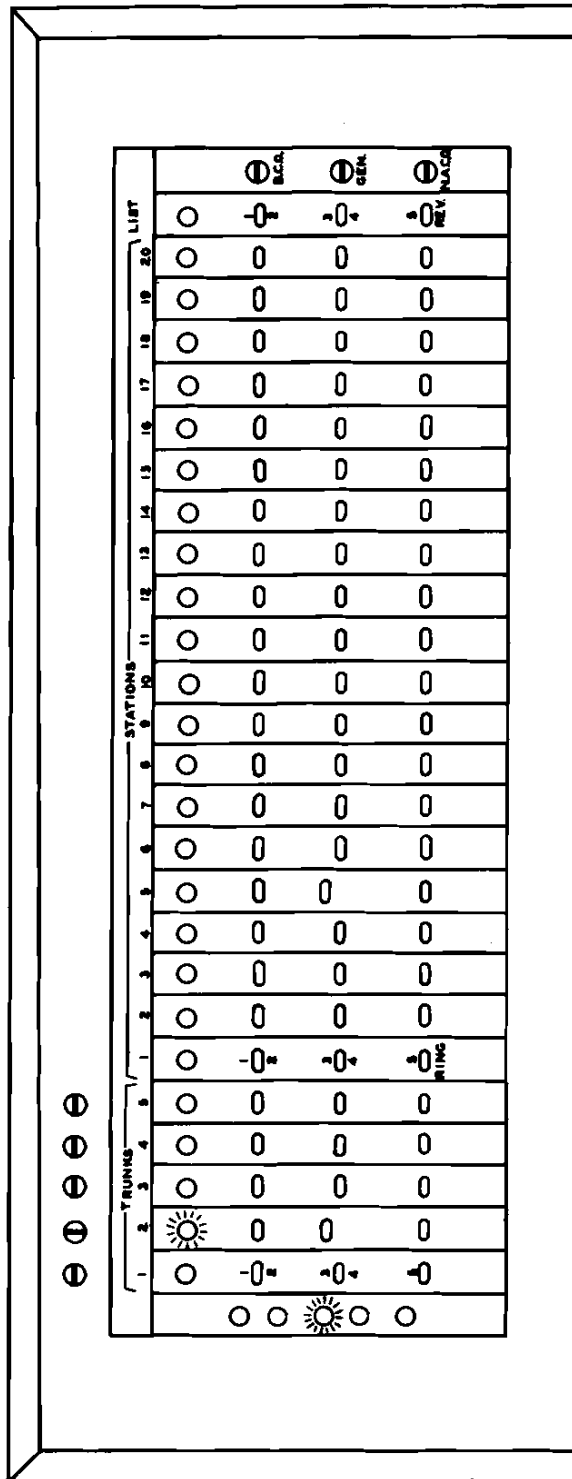
3.14 Placing out-of-town calls. Station users should give the P.B.X. attendant\* their instructions for suburban and out-of-town calls.

- (a) Secure all necessary information and request the station user to hold the line.
- (b) If served by a dial central office, select an idle trunk, operate the proper trunk key, and restore the station key. Dial the code number for the proper operator. Reoperate the station key.

If served by a manual central office, select an idle trunk, operate the proper trunk key, and ask for the long-distance operator.

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\*In many companies, the P.B.X. attendant's records are useful for checking the telephone bill for the month.



Trunk-to-local connection with HOLD key operated and attendant retired from connection. When the supervisory lamp darkens it will indicate that the called party has answered and that the attendant should restore the HOLD key.

Figure 5. Twenty-line switchboard, trunk connection held.

- (c) Pass the information promptly and accurately to the operator when she answers. Remain on the connection until the start of conversation or until the call is otherwise disposed of.

**3.2 Incoming calls from central office.** When a trunk is seized at the central office on an incoming call, the associated trunk answering lamp will light, and if the NACO key bar is horizontal the buzzer will sound. Proceed as follows:

- (a) Remove your handset from the hookswitch, select an idle link circuit, and operate the proper trunk key and attendant's key.
- (b) Answer by giving the firm name. (Use the expression approved by your employer.)
- (c) Obtain the required information as to the local station, person, or department desired. Acknowledge the call by saying, "Thank you" or by repeating the order, for example, "Station 3?", "Mr. Jones?", or "Sales Department?"
- (d) If the called station is not busy, operate the proper station key to the same connecting link, and ring the called station.\*
- (e) When the called station answers, restore the attendant's\*\* key and hang up your handset.
- (f) If the called station is busy, report this to the calling person, saying for example, "The line is busy; will you wait?" or "The line is busy; will

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\*If you cannot wait for the called party to answer, operate the trunk HOLD key before withdrawing from the connection. (This re-lights the trunk answering lamp, as a reminder to restore the HOLD key as soon as the called station answers.) See figure 4 or 5.

\*\*Or, if used, the HOLD key.



you speak with someone else?" If the calling person accepts the report and hangs up, restore the keys and hang up your handset.

3.3 Transferring calls. If upon answering a flashing supervisory lamp of a trunk connection, you are asked to transfer the call from one station to another, proceed as follows:

- (a) Acknowledge the request and leave the trunk key operated.
- (b) Restore the station key of the local station from which the call is to be transferred.
- (c) Operate the station key of the desired station to the same connecting link as that to which the trunk key is operated. Ring the local station.
- (d) Handle the call thereafter as a regular incoming call.

3.4 Night trunk connections. For service during the night or other periods when the switchboard is unattended, certain local stations may be connected to the central-office trunks to receive and originate\* calls during the attendant's absence.

To connect local stations for service when the switchboard is unattended proceed as follows:

- (a) Turn the BCO (battery cut-off key)\*\* and the NACO (night alarm cut-off) key bars vertical.

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\*If your switchboard is served by a dial central office, only stations equipped with dials can make outgoing calls while the switchboard is unattended.

\*\*If conversations are in progress between local stations, do not operate the BCO key until all local conversations have been concluded.

- (b) Consult the list of night connections and connect each station listed to its assigned trunk. To do this, operate a trunk key of the assigned trunk to a connecting link (for example link #1) and operate the proper station key of the listed station to the same connecting link. One or more stations may be assigned to the same trunk.
- (c) In a similar manner connect trunks #2, #3, and #4 (and #5 on a twenty-line switchboard) to the assigned local stations.

Incoming calls from the central office will signal the local station or stations\* connected to the respective trunks, and the local stations so connected may make outgoing calls to the central office. Other local stations cannot make nor receive calls.

By operation of more than one local-station key to a link, more than one local station can be given access at night to a particular trunk.

When releasing night connections to restore the switchboard to full service, proceed as follows:

- (a) Turn the BCO and NACO key bars horizontal.
- (b) On the connecting links whose supervisory signals light, restore the keys. If any link supervisory lamp does not light, a conversation is taking place through that link; do not restore those keys.

3.5 Conference calls. A conference call may be established by connecting more than one local

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\*When a 2-party local line is switched to a trunk for night service, only one of the stations will be signaled from the central office. However, both stations may make outgoing calls to the central office.

station and a trunk to the same connecting link or by connecting more than two local stations to the same connecting link. The connections are made in the same manner as any other trunk-to-local connection or local-to-local connection (see figure 3, example E).

**3.6 Disconnection.** Upon conclusion of conversation, the connecting-link supervisory lamp will glow steadily. When this disconnect signal is received, restore the keys promptly\*; this will extinguish the supervisory lamp.

On incoming trunk calls, do not mistake lighted link supervisory lamps on slow answers for disconnect signals. If you are in doubt, operate the attendant's key to the same connecting link and ask "Are you waiting?"

After incoming and outgoing trunk conversations, as soon as the local station hangs up, the central office can select the trunk for another call. Therefore the attendant should restore link keys promptly after a trunk call; otherwise the next incoming call on the trunk could ring through to the local station left connected to the trunk.

Immediate disconnection of a completed call frees the connecting link for another call.

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\*When disconnecting or restoring the connecting keys, avoid flipping the keys, since, if a connection is up on the opposite connecting link, this may interrupt that connection. When restoring an attendant's, trunk, or station key place the thumb and forefinger on the key and raise or lower it to the normal position.



