

ATTENDED DIAL PBX SYSTEM 756A TYPE

GENERAL

The 756A is a two-digit attended dial PBX system furnished in either a 40 or a 60-station line package with capacity for a maximum of 10 combination type central office trunks.

In capacity, the 756A falls between (1) the 755A 20-line, 4 trunk, key station dial PBX and (2) the 740E 80-station attended dial PBX, both described in other sections of Part VI of this manual.

Like the 755A PBX, the 756A utilizes crossbar dial equipment. It cannot be expanded further to a capacity comparable to that of the 740E step-by-step type of dial PBX.

The 756A may also be used as an unattended dial PBX associated by tie lines with a large manual PBX.

COMMUNICATION PATHS

The crossbar switching equipment used with the 756A provides for the equivalent of 16 links or paths. Each intercom call (between two PBX stations) and each tie line-to-station call requires two links. A central office trunk-to-station call (or vice versa) requires only one link. Thus, if 8 central office trunks are connected to stations at the same time, 4 station-to-station calls are possible.

Where a cord type switchboard is used instead of the push button console, no equipment link or path is required on incoming central office calls. This makes more paths available for calls between PBX stations. (See "Cord Switchboard" below.)

LINE NUMBERING PLAN

In the 40-line 756A PBX, the lines are numbered from 20 to 59; in the 60-line PBX, from 20 to 79.

Ten of the line terminals are of a universal type used for station lines, tie lines, customer-owned field lines, conference circuits, and other miscellaneous services. Each tie line used reduces the number of available station lines by one. Tie lines are numbered 80 to 89. When dial PBX conference equipment is provided, five lines are used.

Central office trunks are coded "9" and attendant's trunks are "O."

(Note: With the 756A, code ringing on field lines cannot be employed.)

DIAL EQUIPMENT CABINET

The dial equipment is enclosed in an attractive sound-proof cabinet (see exhibits). The metal cabinet has a

beige-gray wrinkle finish and occupies only about 12 square feet of floor space unless a stand-by power plant is used when about 18 square feet are required. In addition to the space actually occupied by the equipment cabinet, about 18 square feet (2½ x 7 feet) in front of the cabinet are required for access to the equipment for maintenance purposes.

No separate room is required for the equipment cabinet which may be located in practically any available office space. The cabinet may be placed against a wall. For example, it fits readily into a row of office file cabinets because of its comparable dimensions.

ATTENDANT'S CONSOLE

The attendant's console is a small push button type of switchboard consisting of several sections called modules (see exhibits). It is provided in two sizes:

12 TRUNK KEYS

- 3 attendant's trunks
- 6 central office trunks
- 3 central office trunks or tie lines

18 TRUNK KEYS

- 3 attendant's trunks
- 6 central office trunks
- 4 central office trunks or tie lines
- 5 PBX station lines or individual central office lines (permits 5-line pickup the same as if attendant had key equipment)

A handset or headset may be used with the console.

Two consoles may be used at two different locations but only one can operate at a time.

A six-button key telephone may be used at two locations instead of consoles if not more than four central office trunks and one attendant's trunk are required. The key telephone may also be used as an auxiliary attendant's position with night connection arrangements.

A cord switchboard may also be used in lieu of the consoles as explained under "Cord Switchboard" below.

TIE LINES

"Two-way repeating" and "one-way repeating—one-way dial" tie lines are standard with the 756A (see Part X). These two types terminate in the universal type line terminals in the dial equipment, as indicated under "Line Numbering Plan" above, and reduce the station capacity of the PBX by one. They do not appear on the attendant's console because the attendant is not involved in such calls.

ATTENDED DIAL PBX SYSTEM 756A TYPE

TIE LINES — (Continued)

In addition to the two types of tie lines mentioned above, there is a special type of tie line provided optionally with the 756A. On outgoing calls this tie line is manual or dial selected. On incoming calls, magneto signaling is used and the tie line has the camp-on and automatic disconnect features, the same as a central office trunk. This tie line is also terminated in one of the universal type line terminals in the dial equipment and each of tie line reduces the station capacity of the PBX by one. Because the attendant is involved in this type of tie line call, this tie line appears on the attendant's console and reduces the central office trunk capacity of the console by one.

FEATURES AND ARRANGEMENTS

PBX STATIONS — Any standard or conventional station equipment arrangements, including key telephones and key equipment, may be used with the 756A.

CONSECUTIVE STATION GROUPS — Consecutive station line service may be provided in each group of ten lines.

DELAYED THROUGH SUPERVISION — On a central office call, there is an interval of delayed through supervision for one or two seconds. This means that the central office does not receive the disconnect signal for one or two seconds. This feature prevents premature disconnection of a central office call when a PBX station user attempts to recall the PBX attendant perhaps to transfer a call. A single momentary operation of the station switchhook causes the station lamp at the PBX console to flash continuously until the attendant answers. The station user, therefore, can make the single momentary operation of the switchhook during the one or two-second interval and will not send a supervisory signal to the central office. (For complete explanation of through and non-through supervision see Section 1 in Part VI.)

"CAMP-ON" FEATURE — On calls from the central office or from a magneto tie line to a busy PBX station, the dial equipment will set the trunk or tie line to "camp on" the PBX station line and complete the call automatically when the station becomes idle.

PBX CONFERENCE EQUIPMENT — Dial conference equipment is provided optionally with the console type key switchboard. The dial conference circuit arrangement provides for five stations or three stations and two central office trunks or tie lines. The operation is of the "meet me" type. For example, a particular station user may call several other stations asking them to dial the conference code (say "85") "at 10:00 AM tomorrow."

Manual conference equipment may be provided when a cord switchboard is used.

TOLL DIVERTING — Certain dial PBX stations may be denied direct access to central office and tie lines. Attempts to dial out-going calls or to place long distance calls are intercepted by the PBX attendant. Special central office equipment is required. The availability of the toll diverting feature locally should be checked. Any type of restricted PBX station arrangement is generally discouraged.

NIGHT CONNECTIONS — Night connections on four central office trunks are provided through use of a common key on the console. When this key is operated, stations 30 to 33 are connected to the first four central office trunks. This is the same thing that happens automatically when there is a power failure (see "Power Supply" below). A six-button key telephone may also be used for this purpose.

POWER SUPPLY

The 756A features a self-contained batteryless 48-volt rectifier type power supply fed from a commercial appliance outlet. However, an external battery reserve may be provided on an optional basis by adding a third equipment module.

Momentary power interruptions will not affect the telephone service. In event of complete power failure, the first four central office trunks are automatically connected to stations 30 to 33.

CORD SWITCHBOARD OPTION

A single-position 556A cord switchboard (see Section 5, Part VI) may be used with the 756A instead of an attendant's console where required, as for example, when there are an unusual number of trunks or tie lines. Additional equipment is required with requires additional floor space (about 2½ x 1 feet).

With the cord board, no links are required on incoming central office calls and, therefore, more links are available for calls between PBX stations. Operation is practically the same as that of any other dial PBX.

The following features are not provided when a cord board is used:

- Automatic line splitting to permit attendant to talk to called station while central office trunk is excluded (with cord PBX, attendant uses manual split key).

- Flashing recall from all PBX stations.

- Delayed through supervision on central office calls.

- "Camp on" busy PBX station line for all central office calls handled by attendant.

- Night connections on four central office calls through operation of a common key.

- Vacant terminal intercept by attendant.

756A PBX—ATTENDANT'S CONSOLE



18-Trunk Key Type Illustrated
Approximately Over-all Dimensions
12" Wide, 7" High, 9" Deep

Beige-Gray Wrinkle Finish.
(On older type assemblies
arrangement of modules is
different.)

CONSOLE WITH 12 TRUNK KEYS

- 3 Attendant's Trunks
- 6 Central Office Trunks
- 3 Central Office Trunks
or Tie Lines

CONSOLE WITH 18 TRUNK KEYS

- 3 Attendant's Trunks
- 6 Central Office Trunks
- 4 Central Office Trunks
or Tie Lines
- 5 PBX Station Lines or Individual
Central Office Lines (Permits 5-
Line Pick-up the Same As If At-
tendant Had Key Equipment)

Each module contains six trunk pick-up keys with a trunk and a station lamp associated with each key. One module also has four common keys:

Buzzer Cutoff — Two-position locking turn button.

Battery and No Test — Button turns battery on and off. Button (non-locking) is pushed to dial and override the busy condition on a PBX station which has previously asked attendant to place a central office call.

Holding — Non-locking push-button common holding key.

Release — Non-locking push button. Disengages a pick-up key and releases attendant from connection.

A headset or plug-in type handset may be used with the console.

A red trouble lamp is mounted on one module.

A six-button key telephone may be used instead of the console.

756A PBX OPERATION WITH CORDLESS CONSOLE OR KEY TELEPHONE

ANSWERING INCOMING CENTRAL OFFICE CALL

Intermittent audible signal heard by attendant. Trunk lamp flashes 120 interruptions per minute.

Attendant operates trunk key to answer trunk. Audible signal stops. Trunk lamp becomes steady.

After receiving number of station desired, attendant operates hold key. Hears PBX dial tone. Trunk lamp winks 30 ipm. Dials PBX station. Attendant operates release key to disengage trunk pickup key and release her from connection.

If called *station idle*, attendant hears ringing but person calling will not hear at this time. Trunk lamp steady and station lamp winks (if key set, trunk lamp winks). If attendant restores trunk key, person calling hears ringing. When called station answers, ringing stops and both lamps become steady. When called station hangs up there is a one or two second delay in transmitting supervisory signal to central office. Trunk lamp steady and station lamp dark. When person calling hangs up, trunk released at central office and both lamps dark at PBX.

If called *station busy*, attendant hears busy tone. Station lamp flashes 60 ipm (with key set, trunk lamp flashes).

Attendant tells person calling station is busy. If person waits attendant restores trunk key. Waiting call *camp's on* busy station line unless there is already a camp on. Camp-on condition identified by station lamp flashing 60 ipm. When station becomes idle, waiting call automatically completed to station. If a previous camp-on exists, trunk can be held if person calling wants to wait.

PLACING OUTGOING CENTRAL OFFICE CALL THROUGH ATTENDANT

If a PBX station, such as a restricted station, dials attendant for central office connection, attendant instructs station to remain off-hook. Operates hold key. Pickup key of idle central office trunk is then operated releasing the pickup key in attendant's trunk and connecting central office dial tone through to attendant.

When called number is dialed, attendant operates hold key to hold central office trunk and direct attendant into PBX dial tone. Attendant operates no-test key and dials the calling station. Operation of no-test key causes the dial equipment to override busy condition of calling station (when it is called by attendant).

After calling station is dialed, previously held attendant trunk releases and a "split" connection exists on central office trunk-to-station connection until attendant operates release key. "Split" connection means attendant and PBX station user may converse with person on central office trunk excluded. This operation will close through the transmission path between central office trunk and station and release attendant from connection.

If a station restricted from long distance calls dials central office directing code, an idle central office trunk is seized which connects station to central office dial tone. All calls not handled by long distance operator may be dialed without further action by trunk circuit. However, if toll code is dialed, station is diverted to busy tone and toll trunk is freed.

CALLS FROM STATION TO ATTENDANT

On a call from a station to the attendant, audible signal is heard at attendant's position. Attendant answers attendant trunk.

If station calling requests a central office line or outside telephone number, attendant puts hold condition on trunk and calling station remains off-hook. The attendant selects idle central office trunk and dials desired number.

Central office trunk is then placed on hold, no-test key is operated, and attendant dials back the number of the PBX station which is being held by the attendant trunk. The dial equipment then prepares a circuit from central office trunk to PBX station, disregarding the busy condition. Attendant's trunk recognizes this double connection and responds by releasing. Connection is now "split" between calling PBX station and central office trunk and cuts through when attendant disconnects from circuit by operating release key.

756A PBX—DIAL EQUIPMENT CABINET



Beige-Gray Wrinkle Finish
Two Modules Illustrated
Dimensions of Each Module

	Feet	Inches
Width	2	$3\frac{1}{4}$
Depth	2	$6\frac{1}{2}$
Height	5	$3\frac{3}{8}$

The dial equipment cabinet consists of two modules or sections, each with plug-in interconnecting cable. One module houses apparatus basic to a 40 or 60-line unit. The second module houses station line equipment. The PBX can grow from 40 to 60 lines by replacing the second module. Each of the two modules comprising the equipment cabinet has three apparatus racks which slide out when pulled. Since only one rack can be pulled out at one time, the cabinet cannot be tipped over and no floor bolts are needed. A third module is added if provision is made for emergency reserve power.

UNATTENDED DIAL PBX SYSTEMS

General

An unattended dial PBX system is similar to an attended system except that:

1. No manual switchboard is associated with the dial switching equipment.
2. The unattended PBX is ordinarily an auxiliary system connected by tie lines to an attended dial or manual PBX.

Where the principal requirement in a plant or warehouse separated from the main office of the customer is for intercommunicating service, and only a small number of incoming central office or outgoing assistance calls are involved, an unattended system connected to an attended PBX will most likely be more efficient and economical for the customer than a large number of off-premises PBX stations, or a separate PBX with central office trunks, or a customer-owned intercommunicating system. Moreover, an attended PBX connected to an unattended PBX provides the efficiency and flexibility of one PBX system, with one telephone number, one point of control over incoming calls, and one force of PBX attendants.

EQUIPMENT AND CAPACITIES

The dial switching equipment used with unattended systems is the same as that used with attended dial PBX's. For 3-digit unattended systems, the 710-C and the 711-A dial PBX systems are used. However, the 710-C system, employing line switches instead of line finders, is superseded by the 711-A. For 2-digit systems, the 740-E supersedes the 711-A. The capacities of these systems are the same as the dial switching equipment capacities of the attended dial PBX systems described in Part VI, Section 5.

OPERATION

INTERCOMMUNICATING CALLS—A station user served by the unattended system reaches another station on the PBX directly by dialing the station number of the desired station. To reach a station on the attended PBX, the user dials a tie line code number and either has the attendant complete the call or dials the number of the station desired. The method used depends on whether the attended PBX is manual or dial and the type of tie lines used.

CENTRAL OFFICE CALLS—Incoming central office calls are completed by the attendant at the main PBX over tie lines to the stations served by the unattended PBX. Outgoing central office calls are either routed over tie lines and completed by the attendant at the main PBX, or such calls may be routed over direct dial trunks terminated in the unattended PBX.

FEATURES AND ARRANGEMENTS

STATIONS—All types furnished except manual. (See Part VI, Section 5.)

TIE LINES—Where the attended PBX is a dial system, two-way repeating (with 740-E, 700-701 systems only) or one-way repeating and one-way dial tie lines are usually provided. Where the attended PBX is a manual system, the one-way repeating and one-way dial type are usually furnished. (See Part X, Section 1, for information on the tie line operation.)

CODE CALLING SYSTEM—The dial type code calling system may be used. (See Part III, Section 4.)

CONFERENCE EQUIPMENT—Dial type PBX conference equipment may be furnished. (See Part VI, Section 1.)

SPACE REQUIREMENTS—Approximately the same space requirements as for dial switching equipment and power plant of attended dial PBX systems.

KEY STATION DIAL PBX SYSTEMS

GENERAL

A key station dial system is a PBX requiring no associated manual switchboard. Calls are originated and received at any one of several combination type telephones equipped with push buttons or at telephones with separately mounted push buttons. When a central office trunk call or an intercommunicating call has been established, all other stations not involved are denied access to the call.

The 755A employs crossbar switches and has a maximum capacity of four central office trunks or combination of trunks and tie lines, twenty station lines and three intercommunicating paths. It is a two-digit system with the station lines numbered from 20 to 39. The dial equipment is provided as a complete unit housed in a metal cabinet located on the customer's premises.

The system is designed primarily for use in small business establishments where there are requirements for:

1. **Twenty-four hour service**—Calls may be originated or received at any key station. Incoming calls may be transferred from any key station to other stations in the system, either day or night since the assistance of an attendant is not required.
2. **Rapid communication between stations**—Station users dial other stations direct.
3. **Privacy**—Complete privacy may be provided for all calls. However, a non-lockout feature may be furnished so that certain stations in the PBX system may have access to the same central office line simultaneously.

TYPES OF STATIONS

The following types of stations may be provided:

1. **Key Stations**—Usually are combination handsets with six push buttons mounted in the base. If a different type of instrument is desired, the buttons are in a separately mounted key. The first button is a non-locking hold button. The second, third, fourth and fifth buttons are pickup buttons used to establish connections to central office trunks or tie lines. The sixth button picks up the PBX station line and is used to make intercommunicating calls. The hold feature cannot be applied on an intercommunicating call.

Lamp signals, either illuminated keys or separately mounted lamp indicators, may be provided at key stations to operate as combined line-and-busy signals on central office calls. These lamps flash to indicate incoming calls and burn steadily when the

call is answered. They are provided in addition to the usual audible signals. Lamp indicators may also be provided to work with the PBX station lines.

2. **Keyless Stations**—Since each key station requires nine wires, it may not be suitable where:
 - a. The distance from the dial equipment to the station exceeds the normal operating limits of a key station, for example, off-premises stations.
 - b. It is inconvenient or too expensive to provide more than two wires to a station. Regular mileage charges apply to each pair of wires.
 - c. It is desired to limit the station to intercommunicating calls only.

In such cases keyless stations requiring only two wires may be provided.

A keyless station may be any type of instrument equipped with a dial. Since it is not equipped with buttons, central office connections, incoming and outgoing central office calls must be set up at the associated key station. Keyless stations are normally provided for intercommunication only.

3. **Extension Stations**—Extension stations may be provided on key and keyless station lines. A maximum of two extensions with bells may be provided if the line is to be used for conference service. If the line is not to be used for conference service, a maximum of four extensions may be provided. Conference service is described later in this section.
4. **Portable Stations**—Portable key and keyless stations may be used on station lines. For key stations the eight-conductor type plug and jack, described in Part III, may be used if no more than three trunks are involved. No nine conductor plugs and jacks are available. Portable keyless stations may be provided on the same basis as for any PBX station.
5. **Restricted Stations**—Key stations may be restricted from placing outgoing central office calls by a simple modification of the circuit. However, this modification does not prevent the receipt of incoming calls if a hold has been placed on the line at some other instrument. Where it is desired to restrict a station to intercommunicating calls only, a keyless station is used.

OPERATION

Incoming central office calls are answered at key stations. This is accomplished by pressing the button associated with the line over which the call is being

KEY STATION DIAL PBX SYSTEMS

OPERATION (Continued)

received. The call is indicated by an audible signal and, if provided, by the flashing of an associated line lamp. If the call is to be transferred to another station, it may be held while the person answering calls the person desired over the PBX station line and informs him there is a call for him, indicating which line is to be answered. The person called may then press his associated trunk button and pick up the trunk call.

If the station of the person desired is in use when a transfer is attempted, the person attempting the transfer receives a busy signal.

An outgoing central office call from a key station is made by lifting the receiver and depressing the push button associated with an available trunk. This connects the station user to a central office trunk. Unless visual trunk busy signals are provided, a key station user must select a trunk by depressing the trunk buttons successively until an available trunk is obtained.

Intercommunicating calls can be made by either key or keyless station users. Both types of stations are dial equipped and station users dial the desired station number after obtaining a local dial tone. This is obtained by lifting the receiver at a keyless station, or by lifting the receiver and pressing the "local" pickup button at a key station.

SIGNALING

Incoming calls on trunks and station lines are indicated by audible signals which may be supplemented by visual signals. Where there are individual audible signals for each trunk, visual signals may not be required if the bells are toned differently. If common audible signals are employed, a visual signal for each trunk is required. A buzzer may be used instead of a bell where trunk lamp indicators are provided. Buzzers cannot be connected directly to trunk or station lines.

Only one bell is provided on a station line unless extensions or extension bells are required. If there is a requirement for a key station user to pick up an intercommunicating call for another station user, this may be accomplished through the use of a spare trunk button or an external pickup key to pick up the additional station line. In this event, visual signals may be required on the station line to indicate an incoming call or a busy condition.

Where a central office trunk is equipped with individual audible signals, the ringing current is supplied from the central office and the number of bells associated with the trunk and any station having access to the trunk is limited to four.

Where common audible signals are used to indicate incoming central office calls, the ringing current is obtained from the PBX supply and the maximum number of audible signals that may be associated with the trunks of the system, regardless of the number of station signals, is twelve.

TRUNK CONNECTIONS TO KEYLESS STATIONS

Arrangements for connecting a keyless station to the central office trunks are provided by means of a control key located at any one of the key stations. The control key is a two-way, non-locking lever type key. Two keyless stations can be associated with the same key, one of its operated positions being for one station and the other operated position for another station.

To originate an outgoing trunk call from the keyless station, the key station at which the control key is located (control station) is first dialed and the person at the control station is advised of the central office number desired and the trunk call is completed by this person. After the trunk connection is established by the control station and the desired number is dialed or passed to a central office operator, the control key is operated momentarily to its position associated with the keyless station. The operation of this key automatically connects the keyless station to the central office trunk. Then the key is released and the telephone set at the control station is restored to the hook. This disconnects the control station from the trunk and thereafter this key station is free for use on other calls. The person at the keyless station becomes aware of the completion of the connection when he hears the audible ringing signal or the answer of the called person. When the switch hook of the keyless station is restored, the connection is automatically released.

To receive an incoming call at a keyless station, the call must be answered at a control station and transferred to the proper controlled station for completion. The hold key at the control station is depressed and the keyless station is called over an intercommunicating path. When the person at the keyless station answers, the person at the control station informs him of the trunk connection, operates the trunk button in his set, and then operates the control key associated with the keyless station. After the connection is completed to the keyless station in this manner, the telephone set is restored at the control station, which is then free for other service. After the telephone set is restored at the keyless station, the connection is automatically released.

CONFERENCE CALLS

Local conference connections can be originated by dialing from any PBX station. A third station may be

KEY STATION DIAL PBX SYSTEMS

CONFERENCE CALLS (Continued)

connected after the usual type of intercommunication connection has been established if the number of the third station is dialed at the calling station after the receiver is restored to the hook at the called station. Example:

Station A dials Station B.

Station B answers and is informed that a conference call is being established.

Station B hangs up.

Station A, without restoring the switch hook, dials Station C—after the first digit is dialed, the bell at Station B rings.

Station B does not answer at once but waits a short interval for the second digit to be dialed (waits for second ring).

Station C's bell rings, if station is not busy, in synchronism with Station B.

Stations B and C, on lifting the receiver, will be connected with Station A.

Trunk conference connections can be made as follows:
Station A is a station with non-lockout service.

Station A—establishes the trunk connection that is to be in on conference.

—depresses hold key.

—dials Station B the lockout station desired in conference.

Station B—answers local ring and is informed that a trunk conference is to be established.

Station A—asks Station B to depress the trunk button on which the outside connection is being held.

Station B—presses proper trunk button and is connected to the trunk.

Station A—goes back on proper trunk and the conference connection is completed.

Where both stations involved have non-lockout service, either station may originate the trunk conference call and proceed as mentioned above.

On conference connections to outside trunks, unsatisfactory transmission may result if the outside call is at too great a distance away. Such service, however, may prove satisfactory if the distant telephone is in the same central office area as the PBX.

FEATURES AND ARRANGEMENTS

Consecutive Service—Stations 26-27 and 36-37 can be arranged to work consecutively. In order to obtain consecutive service, the lower number must be dialed first, and if this station line is busy, the call will automatically go to the higher numbered station.

Non-Lockout Feature—If it is desired that more than one key station line have access to trunk calls simultaneously, a non-lockout feature may be provided by means of a minor wiring change on the station lines involved. This feature is not available for use on intercommunicating calls. Where conference service on central office trunk calls is desired, it is necessary to have at least one of the station lines equipped with the non-lockout feature.

Line Pick-up Keys—There may be a requirement for one station user to answer calls on another station line. It might also be desirable to arrange for a keyless station to have access to more than one local line to permit common usage by several lines by several stations. In other instances, terminations might be required for central office lines in addition to those terminating in the PBX equipment. One example might be where more than four central office trunks are required due to a relatively large volume of traffic. Another example would be where one or more central office lines are required for the exclusive use of a few stations even though the trunk capacity of the system has not otherwise been reached.

Accordingly, there are several arrangements whereby stations can be equipped to pick up more than one local line or one or more central office lines in addition to those terminated in the PBX equipment. The pickup arrangements for this purpose may consist of:

- a. Spare trunk buttons at key stations.
- b. Non-locking key separately mounted at key stations.
- c. Key telephones at the so-called keyless stations.

At a key station where an externally mounted key is used, the connection is established by depressing the "local" button before operating the other key. The connection is released by the release of the local push button or by restoring the station instrument to the hook.

KEY STATION DIAL PBX SYSTEMS

FEATURES AND ARRANGEMENTS (Continued)

Such pickup arrangements at key stations do not include facilities for holding calls. Therefore, if it is desired to transfer a call on the additional central office line from one PBX station to another, it would be advisable for the first party to remain on the line until the second party has answered, since there is a chance that the call might be lost.

Tie Lines—The type of tie line most commonly used with the 755A system is the station-to-trunk tie line operating as a station on the 755A dial PBX.

However, by employing combinations of specially engineered circuits and terminating equipment, two-way magneto, two-way repeating, and one-way repeating one-way dial type tie lines can be provided.

Power Equipment—The power required for the operation of the 755A system is obtained from storage batteries located in the equipment cabinet. These batteries are usually charged from the central office or building battery supply over a pair of wires. However, where this is not feasible, a small charging unit is located on the customer's premises. In this case, the customer provides the commercial power for the operation of the charging unit.

Trouble Alarm Bell—An alarm bell is provided to indicate when a fuse is operated in the PBX cabinet. This bell is located adjacent to a station where trouble can be reported to the telephone company. A non-locking lever type key is also provided to retire the alarm bell for the duration of the trouble.

Emergency Key for Trunk Service—Included as part of this service is an emergency key at one of the key stations so that the station user by operating this key can be connected directly to one of the central office trunks. This provides a path to the central office to report trouble and for temporary service under emergency conditions.

Limitations—Since the 755A system is limited in its capacity, careful consideration should be given in cases where the initial customer requirements approach these limitations. Although extension telephones and additional central office lines with external pickup keys may be provided, the use of too many may result in loss of efficiency in handling calls through the system, since all stations would not have access to all lines through the regular 755A switching arrangements. Where a large volume of incoming calls is to be transferred, the use of this system may result in relatively slow call completion, since the transfer procedure is not as fast as with a manual system, or an attended dial system. In this type of case, the heavy load on the intercommunicating paths may overload them and interfere with normal handling of intercommunicating calls. Difficulty may also be encountered on an attempted transfer if another station chooses the trunk on which a call is being transferred. In this case it is necessary for the party who inadvertently selected the trunk to depress his hold button so that he will not lock out the desired station. This condition can usually be avoided, however, through the provision of sufficient visual trunk signals.

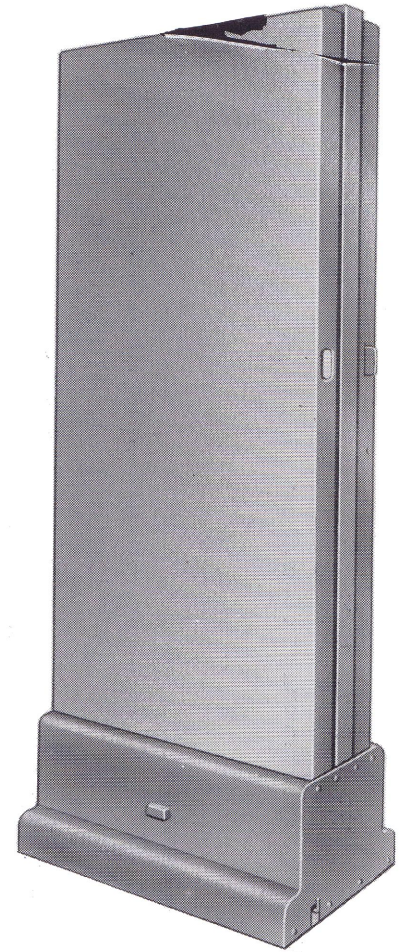
Since the equipment has certain key station operation limitations, special arrangements are sometimes required where key stations are beyond the normal operating distances.

KEY STATION DIAL PBX SYSTEM 755-A

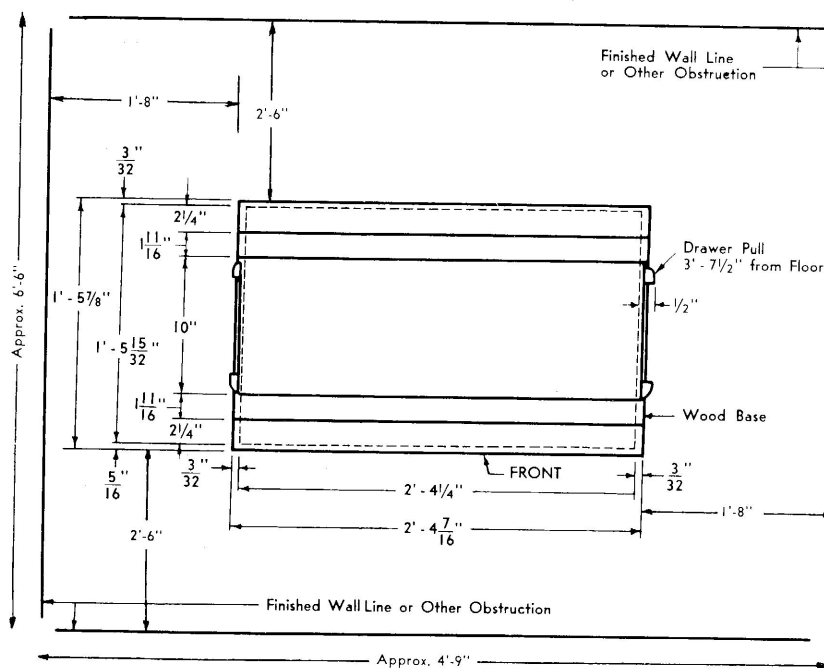


6-BUTTON KEY STATION
Combination Hand Set Used with 755-A
Dial PBX System.

Visual lamp signals may be provided by means of illuminated key buttons or by separately mounted lamp indicators.



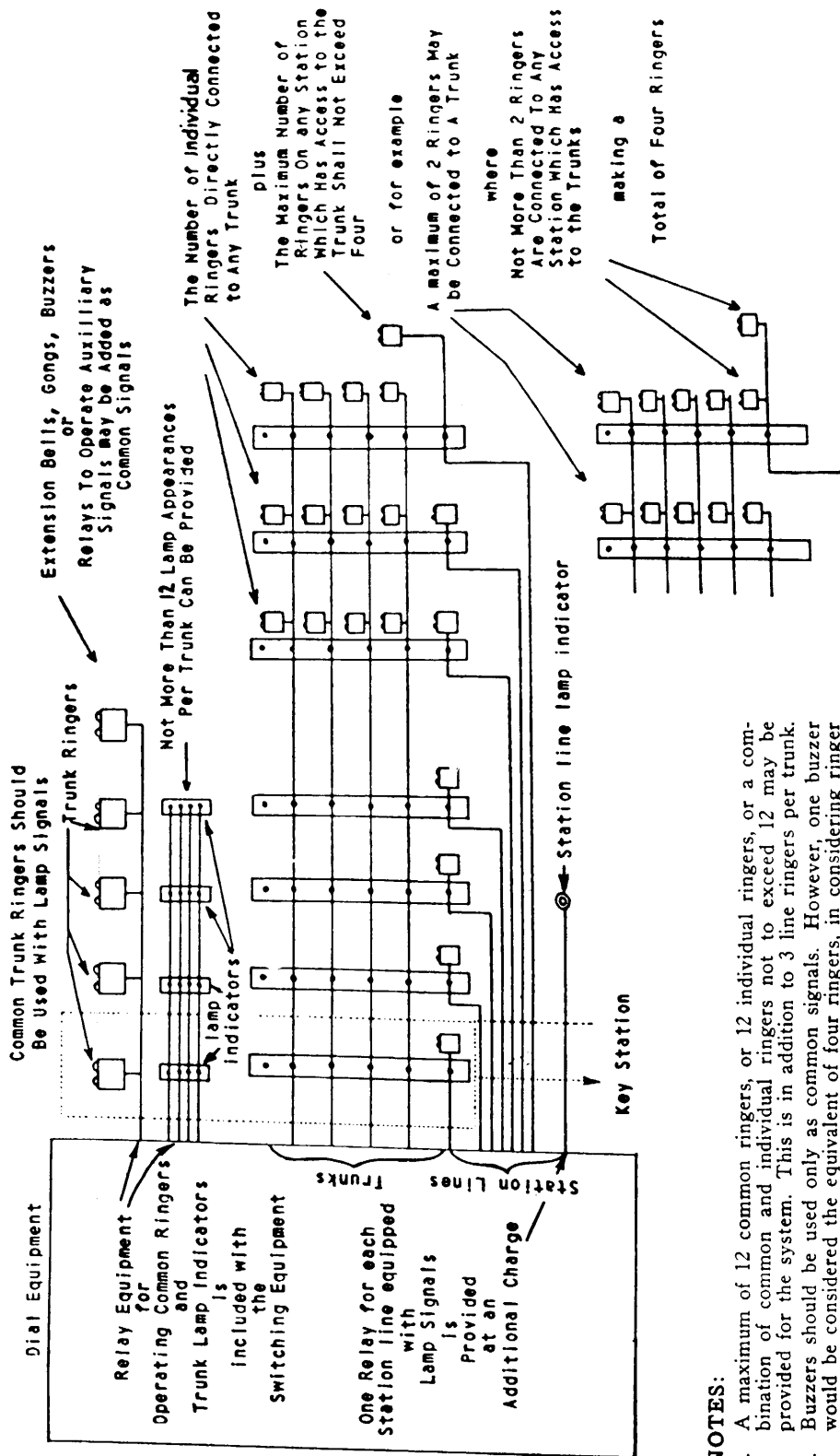
DIAL EQUIPMENT CABINET
Used with 755-A Dial System
2' 4½" Wide; 6' High; 1' 6" Deep



**FLOOR PLAN FOR
755-A DIAL EQUIPMENT**

755-A DIAL PBX

Signaling Arrangements and Limitations



NOTES:

1. A maximum of 12 common ringers, or 12 individual ringers, or a combination of common and individual ringers not to exceed 12 may be provided for the system. This is in addition to 3 line ringers per trunk.
2. Buzzers should be used only as common signals. However, one buzzer would be considered the equivalent of four ringers, in considering ringer limitations.