

INTERCOMMUNICATING SYSTEMS
WEBSTER ELECTRIC TELETALK
1200 SERIES (LOW-LEVEL)
DESCRIPTION

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1. GENERAL

1.01 This section describes the 1200 series, or zero-level Teletalk equipment manufactured by the Webster Electric Company.

1.02 Teletalk systems are made up of two or more stations joined by interstation wiring. These may be either master stations or speaker stations, depending on the type of system employed and the kinds of intercommunication desired at each particular point where a station is to be located.

1.03 A master station consists of a cabinet containing an amplifier, a speaker-microphone, and the necessary switches and controls for operation. All master stations require an alternating-current power supply.

1.04 Master stations can originate calls with other master stations or speaker stations. They are used at points where it is necessary to communicate with several other stations. The number of stations on one master station can vary from a minimum of six, in multiples of six, that is, 6, 12, 18, and 24. Master stations can communicate with other master or speaker stations over high-level intercommunication wiring (separate from telephone wiring). They can also communicate with remote speaker stations over zero-level telephone cable. If zero-level communication to master or remote speaker stations is desired, an applique unit must be connected between each pair of the line terminals in the terminal box, and the telephone line assigned

to these stations. Master stations are designed for "S" circuit (secret) or "M" circuit (nonsecret) applications.

1.05 With "M" circuit any master station can eavesdrop on a speaker station or another master station. In a high-level system, any master station can listen in on a conversation between any two stations by manipulating the talk-listen switch from the "Idle" (up) to "Listen" (horizontal) position. This is necessary to prevent double amplification, (a high-level signal from another master, amplified again by the listening master). In a zero-level system, a master station can listen to a conversation between any two stations by operating the appropriate selector key and placing the talk-listen switch in the "Listen" (horizontal) position. On high-level lines only, the -14 silencing feature can be used to prevent eavesdropping on speaker stations.

1.06 In zero-level systems, a master station can be prevented from eavesdropping on a remote speaker station if the call-in switch of the remote is left in the "Listen" (horizontal) position.

1.07 A "S" circuit is secretive and is used for high-level communication only. Conversations between two high-level master stations cannot be listened to by any other station, nor can any master station "monitor" or be listened to on another master station except when set up for conference.

1.08 Several variations of the master stations are available to meet special conditions and are described later in this section.

1.09 The 1200 Series and the 700 Series of master stations can be used interchangeably in high-level systems only.

1.10 There are two types of speaker stations, high-level and zero-level.

Speaker-Station - High-Level

1.11 These stations consist of a speaker-microphone, without amplifier, used to converse only with a master station. Two-way conversation is possible with master stations when connected for "M" circuit operation. When a speaker station is connected to the "S" circuit of a master station, only one-way conversation is possible from master to speaker station. It is possible to originate a call from each speaker station equipped with either an annunciator push button or call-in switch.

Remote Speaker Station - Zero-Level

1.12 This station consists of a speaker-microphone, amplifier, and zero-level applique unit, where alternating-current power supply is required. Two-way conversation is possible when connected to the "M" circuit of a master station. It is possible to originate a call from a zero-level remote speaker station. In a simple system consisting of two stations, the zero-level remote speaker stations can be used.

1.13 Typical system layouts including both high-level and zero-level circuits are shown in figure 16.

2. STATION EQUIPMENT

Master Station

2.01 The Teletalk coding system is designed to combine all the necessary information on a particular model, its variations, and equipment into a single code number.

2.02 The basic model code number gives only the series number and capacity number (number of stations).

TABLE A

<u>Number Added to Series Number</u>	<u>Capacity</u>
06	6 Stations
12	12 Stations
18	18 Stations
24	24 Stations
48	48 Stations

2.03 Other letters, and numbers preceded by a dash, are used in the code number to designate model variations as indicated.

TABLE B

<u>Variation Number</u>	<u>Variation</u>
-A	Annunciator
-C	Earphone
-L	Busy Signal
-T	Telephone Handset
-V	230 Volts ac
-Z	25-Cycle
-1	All-Call Switch
-3	Three-Position Selector Key
-8	Gray Finish Cabinet
-12	Hospital White Finish Cabinet
-14	Silencing Circuit
-15	Paging Switch
-18	All-Call Paging
-25	Blonde Cabinet
-30	Western Electric Type Headset
-31	Remote Control

See figure 1 for further details.

2.04 The following example shows how a typical code may be made up of series number, capacity, and model variation letters or numbers.

Example (1206A-1-3)

<u>12</u>	<u>06</u>	<u>A</u>	<u>-1</u>	<u>-3</u>
1200 Series	6-Station Capacity	Annunciator	All-Call Switch	Three-Position Selector Key

2.05 Figure 2 illustrates the 1200 series master station without annunciators, and figure 3 illustrates the 1200 series master station with annunciators.

2.06 The cabinets house the speaker-microphone and the chassis equipment consisting of the power supply apparatus, amplifier, three-position talk-listen switch, pilot light, and the combined power cut-off switch and volume control. A 6-foot cable extends from the key cabinet to a station terminal box. A brown rubber-covered cord approximately 7-feet long is

provided for connection to the power supply. The front panel of these cabinets holds a metal grille with the speaker-microphone located behind the grille. A switch panel containing the selector keys, annunciators, and designation strips is mounted in the panel to the right of the grille.

2.07 The selector keys are made as a unit strip of six. Two strips of these are used for 12-line cabinets and located so that the levers extend through the switch panel.

2.08 Designation strips are provided in the face plate directly above the lever-type keys.

2.09 Individually mounted plunger-type annunciators are located directly above the designation strip to correspond with the selector keys. These annunciators are operated electrically, but must be restored manually.

2.10 The talk-listen switch is a three-position rotary-type switch and is arranged as follows:

- (a) "Idle" (up) is a locking position. When in this position, the speaker-microphone is connected and is ready to receive any incoming calls from other master stations. "Idle" (up) is a call-in position only.
- (b) "Listen" (horizontal) is also a locking position and the amplifier is connected to handle incoming speech.
- (c) "Talk" (down) is a nonlocking position and the amplifier is connected in the circuit to handle the outgoing speech.

2.11 The pilot light is provided to show when the power is turned on. It is located directly behind the grille on the lower left side.

2.12 The conductors in the cable furnished with each cabinet are terminated directly on the selector keys and annunciators. At the other end, these conductors are soldered to screw terminals of the station junction box. This cable is made up of 26-gauge conductors, each insulated with a thermoplastic material. It has a woven brown cotton jacket overall.

Speaker Stations - High-Level

2.13 The following types of speaker stations may be used as single stations on high-level master station selector keys:

- (a) Speaker station 5G45 shown in figure 4 is a 5-inch speaker mounted in a simulated walnut finish plastic cabinet with a gold tone metal grille. Screw terminals for wire connections are provided beneath the cabinet. This unit is generally used in locations having average room noise. Maximum power handling capacity is 5 watts. For wall or ceiling mounting use the B10 mounting bracket.
- (b) Speaker station 5G45-R is the same as the 5G45 except it is equipped with a call-in switch on the side.
- (c) Speaker station 5G45-R6 is the same as the 5G45 except it is equipped with a switch to call in to six master stations.
- (d) Speaker station 5G45-B is the same as the 5G45 except it is equipped with a push button mounted on top for use with annunciator systems. Two or three buttons can be provided by affixing a "B" for each.
- (e) Speaker station 5G45-S is the same as the 5G45 except it is equipped with a silencing circuit (reply-back) button mounted on the top. It is to be used with -14 master stations to prevent return speech from the speaker station unless the button on the speaker is pressed.
- (f) Speaker station 5G45-BS is the same as the 5G45 except it is equipped with both the annunciator and reply-back buttons.
- (g) Speaker station 5K45 is the same as the 5G45 except this speaker is a flush mounting type for interior locations where only a moderate area is to be covered and the noise level is relatively low. The face plate is a brown perforated metal grille concealing the speaker opening. The customer provides the necessary mounting and wiring facilities such as outlet box or conduit.

(h) Speaker station 5K45-R is the same as the 5K45 except it is equipped with a call-in switch mounted in the lower portion of the face plate.

(i) Speaker station 5K45-BS is the same as the 5K45 except it is equipped with an annunciator push button and silencing circuit button mounted in the lower portion of the face plate.

(j) Speaker stations 3D45, shown in figure 5, 3D45-B, 3D45-R or 3D45-S consist of a 3-inch weatherproof speaker mounted on a polished brass plate with clear enamel finish for flush mounting. Push buttons or switches are mounted in the lower portion of the face plate to operate features as described above. Maximum power handling capacity is 3-1/2 watts.

(k) Speaker station 8C45 shown in figure 6 uses an 8-inch moisture resistant speaker housed in a brown finished metal housing, protected at the front and back by a wire screen. This model is designed for use in damp locations and it may be used outdoors if protected against direct moisture. It is equipped with a bracket and fittings to mount at various angles as required. Maximum power handling capacity is 8-watts.

(l) Speaker station 10G45 shown in figure 7 consists of a 10-inch speaker mounted in a walnut cabinet with a plastic grille at the front and back. It is equipped with a bracket and fittings to mount the speaker at various angles. Maximum power handling capacity is 10-watts.

(m) Speaker station MIL-45 shown in figure 8 is a 6-inch diameter reflex air-column horn, directional in operation, with built-in hermetically sealed driver for use in high moisture conditions and outside locations. Maximum power handling capacity is 3-watts.

2.14 Any of the above speaker stations can be used with annunciator, call-in, or silencing circuit-type master stations. Where the particular button or switch can be provided on the speaker station, it should be ordered equipped that way. Where the particular button or switch can not be provided on the speaker station, an external type will be necessary. Use the 551- or 6017-C-type keys.

2.15 Handset HS-45-3, shown in figure 9, is a remote auxiliary station consisting of a dynamic handset with a press-to-talk button and a flush mounting-type switchhook. This unit is used in conjunction with any speaker station in areas where the speaker station is inaccessible or where there is a high noise level. The switchhook transfers the conversation from the speaker station to the handset. The handset has a 4-1/2-foot, 2-conductor, rubber-covered cord. The transmitter and receiver units are each 45-ohms and the power handling capacity is 5-watts. The switchhook, figure 10, is mounted on a black 4-1/2-inch by 2-3/4-inch mounting plate with spacing for 3/32-inch mounting screws. Two single-pole, double-throw micro switches with screw terminals, extend 1-3/8-inch beyond the back of the plate. It fits any customer-provided, standard, double outlet box.

2.16 Universal mounting bracket B-10, is used to mount 5G45-type speaker stations on walls or ceilings.

RM-B Remote Speaker Station - Zero-Level

2.17 This zero-level remote speaker station may be used as a single line station with two-way conversation on zero-level telephone lines from master station selector keys arranged for "M" circuit operation. It can be used with either annunciator or call-in-type master stations.

2.18 The RM-B remote speaker station, shown in figure 11, is housed in a walnut grain plastic cabinet. These cabinets house a speaker-microphone, amplifier, pilot light, three-position call-in switch, combined volume control and power on-off switch, and a built-in applique unit. A brown rubber cord approximately 7-feet long is provided for connection to the customers alternating current power supply. The front panel is a gold-toned metal grille. There is no means for station selection.

2.19 The call-in switch is a three-position rotary-type switch. "Idle" (up) is a locking position. When in this position all calls from a master station can be answered without manual operation, with the switch being controlled by the master station. This position allows the master station to eavesdrop. "Listen" (horizontal) is also

a locking position. In this position the remote speaker station will handle incoming speech, and will be used to listen to a reply from a master station after a call is initiated by the remote RM-B. This position can also be used to prevent eavesdropping by a master station and calls can still be received by the remote RM-B. "Call-in" (down) is a nonlocking position used to initiate calls to a master station.

2.20 Screw terminals for connections are provided at the rear of the amplifier chassis. Provisions are made on the terminal strip, by means of a strap, to add a speaker-microphone in parallel with or in place of the speaker-microphone mounted in the unit. Provisions are also made on the terminal strip to vary the tone of the unit to meet the conditions of the various type telephone lines used.

2.21 The volume control at the front of the cabinet regulates incoming volume only. The control, or attenuator, at the rear of the chassis regulates both the incoming and outgoing signal at the telephone line. At full output position, the energy level should not exceed +5 dbm.

AP-B Applique Unit - Zero-Level

2.22 The AP-B applique unit shown in figure 12A is used only with 1200 series master stations when zero-level communication is desired over telephone cable to other 1200 series master stations or RM-B remote speaker stations. This unit can be used with either the annunciator or buzzer call-in type master station.

2.23 Four applique units can be mounted in a 105A apparatus box. Screw terminals are provided for connections to the telephone line and the master station terminal box.

2.24 The applique unit consists of a line matching coil, call-in relay, and an attenuating pad or control for regulating the incoming and outgoing signal at the telephone line. Provision is made at the terminal strip, by means of a strap, to vary the tone at the master station to meet the conditions of the various telephone lines used.

Paging and All-Call Booster Amplifiers

2.25 The 85-25 amplifier is a 25-watt booster for high power paging. It is to be used with the -15 or -18 features on master stations where there are eight or more speaker stations.

2.26 The 90-25 amplifier is a 25-watt booster to be used only with the 85-25 amplifier. It gives an additional 25-watts of power. Up to two of these can be used with the 85-25 amplifier giving a maximum total of 75-watts.

3. OPERATING FEATURES

3.01 The master station is designed so that connections between master stations can be "S" circuit. "S" circuit operation is for high-level communication only. If zero-level communication is desired, "M" circuit operation must be used. The wiring of the talk-listen switch is such that when the switch is in the "Idle" (up) position, the speaker-microphone is connected directly to the green pair (home line) of the master station, and is ready to receive incoming calls from other master stations (see figure 13). In "S" circuit applications, the amplifier handles outgoing speech from the master station in the "Talk" (down) position, and incoming speech in the "Listen" (horizontal) position. In the "Listen" (horizontal) position, the high-level speech from another master is attenuated by a pad in the input of the amplifier, and then amplified to speaker level. The volume control is provided in the amplifier circuit, and it regulates the volume in the "Listen" (horizontal) and "Talk" (down) positions only. The "Idle" (up) position is for receiving calls, and the talk-listen switch should be kept in this position when not in use

"M" Circuit Systems

3.02 A "M" circuit system is composed of one or more master stations and one or more speaker stations. Any master station may talk to, and receive a reply from, any other master station or speaker station in the system. The calling master

station must control the direction of conversation, that is, press the talk-listen switch to the "Talk" (down) position to talk and release it to the "Listen" (horizontal) position to hear the reply.

The "Idle" (up) position is for receiving calls and the talk-listen switch should be kept in this position when not in use. The volume control is in the amplifier circuit, and it regulates the volume in the "Listen" (horizontal) and "Talk" (down) positions only. (See figure 13).

3.03 When high-level communication is desired, a master station used for only "M" circuit operation or placed into an existing "M" circuit system should have incoming voice lines from other master stations connected to its green pair (home line) and the outgoing lines connected to the assigned terminals in the junction box. Thus, with its talk-listen switch in the "Idle" (up) position, calls from other master stations will go directly to the speaker. In the "Listen" (horizontal) position, incoming calls from other master stations are first attenuated by a pad in the amplifier input and then amplified to give full output at the speaker.

3.04 When high-level "M" circuit operation is desired between a master station and a speaker station, only one line is necessary, and it is connected to the assigned terminals in the junction box. If the call-in feature is used, whereby the speaker station can originate a call to the master station, another line is necessary. This line is connected to the call-in terminals of the junction box.

3.05 When zero-level communication is desired with remote speaker stations or other master stations, "M" circuit-type operation is used. Only one line (pair) is necessary as features are "simplexed" on this pair. This line is connected to an applique unit (AP-B), which in turn is connected to the assigned terminals in the junction box. Both master stations and remote speaker stations can receive a call and call in. (See figure 14).

3.06 A "M" circuit system is not secretive, since any master station may listen in on, or eavesdrop on, any line by operating the selector key for that line and moving the talk-listen switch to the "Listen" (horizontal) position.

3.07 To prevent eavesdropping at a high-level speaker station, the -14 silencing circuit can be used. To prevent eavesdropping at a zero-level remote speaker station, its call-in switch can be placed in the "Listen" (horizontal) position. To answer a call, the switch must be placed back in the "Idle" (up) position.

3.08 To prevent eavesdropping of a high-level line to a master station its talk-listen switch can be placed in the "Listen" (horizontal) position. The talk-listen switch must be operated to "Idle" (up) or "Talk" (down) to answer a call. This method can only be used in a system where the busy signal feature (-L) is not used.

Speaker Station, Call-In - High-Level

3.09 The speaker call-in feature is standard on all models with the exception of annunciator models. The call-in feature is used in conjunction with the "R"-type speaker stations. The call-in key at both the master station and speaker station is a double-pole, double-throw, two-position key. In the normal position of the master station's call-in key (last key with red dot), the voice line is connected in series with the buzzer and a 12-volt ac supply. When a call is originated at a speaker station, the call-in key is operated, connecting the speaker in series with the voice line and buzzer at the master station. As a result, the buzzer will be heard at both the master and speaker station. The attendant at the master station operates his call-in key to connect the voice line to the amplifier and then carries on a conversation by using the talk-listen switch. (See figure 15.)

3.10 The call-in circuit of a speaker station can be connected to only one master station in a system, but any number of speaker stations can be connected to one master station.

RM-B Remote Speaker Station - Call-In - Zero-Level

3.11 The call-in feature is standard on all zero-level remote speaker stations. When a call is originated from a remote speaker station the call-in switch is momentarily operated to the call-in position and released to the "Listen" (horizontal)

position. This operates a relay in the applique unit, which completes the master stations buzzer circuit. The buzzer tone is heard at both the master station and remote speaker station. (See figure 15).

3.12 The call-in circuit of a zero-level remote speaker station can be connected to only one master station in a system, but any number of remote speaker stations can be connected to one master station.

4. MASTER STATION VARIATIONS

Annunciators (-A)

4.01 Annunciators are used on master stations for call-in indications from other stations. A low-toned buzzer signals the call, and a plunger over the selector key identifies the station calling. It also serves as a call-back memo, in case the person called is absent from his desk, in that the plunger is operated electrically but must be restored manually. Annunciators prevent interruptions of voice calls from other master stations and leave an indication of the call until it is answered. On zero-level between two master stations, both must have annunciators and three-position keys. On zero-level systems, annunciator-type master stations and nonannunciator-type master stations can not be mixed.

Three-Position Selector Key (-3)

4.02 In annunciator-equipped master stations, special three-position selector keys provide a third position (down) so that the selector key may be used in place of a separate push button for operating the annunciator of another master station when placing a call.

Busy Signal Models (-L) (Cannot be used in Zero-Level or With -14 Silencing Circuits)

4.03 A sensitive relay combined in the teletalk circuit turns out the pilot light as a busy signal to indicate when a called station is busy. This prevents breaking in on a conversation, and avoids double amplification which will result if a second master station cuts in on a call.

4.04 The pilot light is controlled by a relay which, when the unit is idle, is energized to close the circuit to the pilot light and thus cause it to glow. When the selector key on a busy line is raised, the relay is shorted out through the center tap of the resistors bridging the line. This causes the relay to open the circuit to the pilot light, which will then go out, to indicate that the line selected is busy.

4.05 When calling a remote speaker station or master station connected to a zero-level line with a busy signal model, it is not possible to determine if that station is busy except by monitoring the line. There is no possibility of double amplification when zero-level communication is used.

4.06 Operation of Busy Signal:

(a) The talk-listen switch must be in the "Idle" (up) position to determine if a station is busy.

(b) During a conversation the busy signal lamp will remain on when the talk-listen switch is operated to the "Talk" (down) or "Listen" (horizontal) positions.

(c) When the master station is not in use the talk-listen switch must be left in the "Idle" (up) position. If the talk-listen switch is left in the "Listen" (horizontal) position, a busy indication will always be given to a calling station.

(d) On busy signal models with handsets (-T) the handset should be left on the switchhook when determining if a station is busy. When the handset is used in a "S" circuit system with the talk-listen switch in the "Idle" (up) position, the pilot lamp will go out and a busy indication will be given to any calling master station. When the handset is used in a "M" circuit system with the talk-listen switch in either the "Listen" (horizontal) or "Talk" (down) position, the pilot lamp will not go out but a busy indication will be given to any calling master station.

(e) On the 1200 series a busy indication will be given if a speaker station being called is busy.

Silencing Circuit (-14)

4.07 A silencing circuit unit may be incorporated in a system employing any number of master stations provided that all master stations are equipped with a silencing circuit and connected for "S" circuit operation. If more than one master station is used, all units should be the -14 type. The busy signal feature cannot be used on master stations arranged for silencing.

4.08 Master stations having the -14 feature include a sensitive relay the same as the one used in busy signal models. When communicating at high-level to a speaker station with the talk-listen switch in the "Listen" (horizontal) position and a speaker station reply-back button normal, the relay is energized through a ground at the speaker station which in turn grounds the audio circuit to silence the amplifier. When this ground is removed by pressing the reply-back button at the speaker station, the relay is de-energized to place the amplifier back in service and permit the master station to listen to the speaker station. It is impossible for a master station to listen in on speaker stations unless the reply-back button at the speaker station is depressed. When the talk-listen switch is placed in the "Talk" (down) position, the relay is de-energized so that the amplifier may be used to call or talk to speaker stations.

4.09 When communicating over zero-level lines to a zero-level remote speaker station, the operator at the remote speaker station (RM-B) can prevent monitoring by placing the call-in switch in the "Listen" (horizontal) position. In this position calls can still be received by the remote speaker station. Though the silencing relay of the master station is not used, the same features of the silencing circuit are obtained.

Telephone Handset (-T)

4.10 The telephone handset is for use in locations where confidential information must be exchanged. It is used without operation of the talk-listen switch on "S" circuit systems, but with "M" circuit systems the talk-listen switch must be operated in the regular manner. Only the calling station uses the handset in a "M" circuit sys-

tem. With the handset on the switchhook the master station operates the same as units not equipped with the handset.

4.11 When the handset is off the switchhook, the transmitter is connected across the input of the amplifier and the receiver is switched into the speaker-microphone circuit. A connection is also made which gives a busy indication to any master station calling over high-level lines.

4.12 Handsets can be mounted on -18 models or may be mounted externally. (Special order only.)

Earphone Models (-C)

4.13 Earphone models are designed for listening to other master stations which are connected for high-level operation only.

4.14 On earphone models, the receiver is connected across the green pair (home line) at all times. Removing the earphone from the hook shorts the input to the amplifier in the "Listen" (horizontal) position, thus preventing incoming speech from being heard in the speaker.

4.15 Earphones can be provided on -18 models.

All-Call Switch (-1) (maximum of eight stations)

4.16 A special all-call switch may be added so that all stations can be called simultaneously with the power output provided by the amplifier of the master station. It is possible to make an all-call to both master stations and speaker stations. When master stations are used in an all-call system, their talk-listen switches must be left on "Idle" (up) if they are to hear the all-call.

4.17 A rotary-type switch parallels all stations. On standard-type masters having the call-in switch, the last selector key is not connected to the all-call switch.

All-Call Paging to Stations in Teletalk System (-18) (booster amplifier)

4.18 When it is required to page simultaneously through more than eight high-level speaker stations, a special all-call switch may be added. An external high-power amplifier (85-25) is used and inserted by pressing this switch on the master station. Such a system is recommended to page speaker systems only, though it is possible to page master stations. When high-power paging is used, it is only possible to call the zero-level remote speaker stations at regular power.

4.19 If a station being paged desires to answer a paging call in this type of system, a means must be provided such as an annunciator or call-in switch.

4.20 -C and -T features can be provided with the -18 master station. Can also be mounted externally on special order.

Paging Model (-15)

4.21 On this type master station, the last selector key (key with green dot) connects the output of the master station with the input of a paging amplifier. It also closes through the "B" supply relay circuit of the paging amplifier. On these models the second from the last key is designated the call-in key. In this type system, speaker stations which are not part of the intercommunication system are paged.

4.22 It is possible to page a speaker station or group of speaker stations over a zero-level line. The output of the master station from the last selector key must be attenuated or padded down to zero-level prior to connecting to the telephone line. Connections are made to a paging amplifier at the receiving end of the line, and the speakers to be paged are connected to this amplifier. The "B" supply circuit of this amplifier must always be on.

Western Electric Type Headset Models (-30)

4.23 These master stations are designed for use with Western Electric 52- and 53-type headsets. Headset connections are brought out to terminals to be connected to external jacks. Plugging the headset into the external jacks disconnects the speaker-microphone of the master station from its amplifier circuit.

Remote Control Models (-31M and -31S)

4.24 These master stations use a relay in place of the talk-listen switch. The master station is provided with terminals to connect to a remote foot switch. Provisions are also made on the front panel of the master station for operation of the relay. This type master station is constructed for either "M" or "S" circuit operation (not both), and must be ordered accordingly. "M" circuit models are designated by the code -31M and "S" circuit models are designated by the code -31S.

4.25 Since the three-position talk-listen switch is replaced with a relay, it is not possible to add the busy signal feature (-L) to these master stations.

5. PICTURES AND DRAWINGS

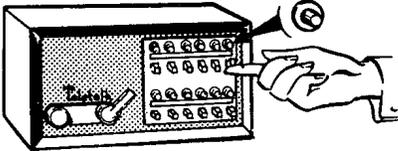
5.01 The following pictures and drawings are attached:

- Figure 1 - Special Features and Master Station Variations
- Figure 2 - 1206 Master Station
- Figure 3 - 1212A Master Station
- Figure 4 - 5G45 Speaker Station
- Figure 5 - 3D45 Speaker Station
- Figure 6 - 8C45 Speaker Station
- Figure 7 - 10G45 Speaker Station
- Figure 8 - MIL-45 Speaker Station
- Figure 9 - HS45-3 Handset
- Figure 10 - HS45-3 Switchhook
- Figure 11 - RM-B Remote Station
- Figure 12 - AP-B Applique Unit
- Figure 13 - High-Level Operation
- Figure 14 - Zero-Level Operation
- Figure 15 - Call-In Circuit
- Figure 16 - Typical System

MASTER STATION VARIATIONS

ANNUNCIATORS

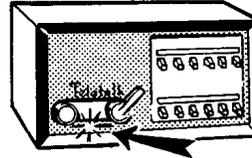
CODE Letter A precedes circuit letter in code number.
Example: 212AM or 712A.
 On 200, 300, 500, 700, P700, 800 and 900 Series only.



Annunciators are used on Master Stations for call-in from other stations. A low-toned buzzer signals the call, and plungers over the Selector keys identify the station calling and serve as a call-back memo in case the person called is absent from his desk. In "M" circuit systems, annunciators provide two-way communication by permitting Speaker Stations to call-in to Master Stations. On "S" circuit Masters, annunciators prevent the necessity of interrupting by voice and leave an indication to the call until it is answered.

BUSY SIGNAL

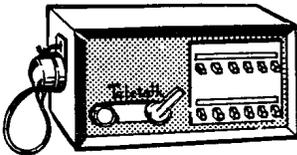
CODE Letter L follows circuit letter in code number.
Example: 212ASL or 712L.
 On 200, 700 and P700 Series only.



A sensitive relay combined in the Teletalk circuit turns out the pilot light as a busy signal to indicate when a station called is busy. This prevents "breaking in" on a conversation. The busy signal is particularly desirable to tell that a station is busy and thus prevent the interruption of conversations by a voice from another station. The busy signal is standard on all 500 and 900 Series Teletalks. On "M" circuit Masters the busy signal, by indicating that a line is busy, prevents the double amplification which results when a second Master Station cuts in on a call.

EARPHONE

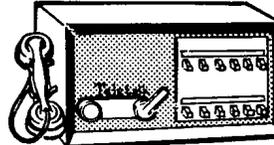
CODE Letter C precedes circuit letter in code number.
Example: 712C or 912C.
 On all Series Models.



The earphone, hung from a convenient hook at the left side of the Master Station unit, provides private reception when desired. Teletalks equipped with the earphone operate just the same as other units when the earphone is on the hook. When it is lifted from the hook, however, all incoming calls come through the earphone instead of the speaker. The Talk-Listen lever is used in the conventional manner on all models except 200S and 600S units. In 700 Series and 800 Series units, the earphone can only be used for conversation with other "S" circuit Master Stations only.

TELEPHONE HANDSET

CODE Letter T precedes circuit letter in code number.
Example: 206T, 712T, or 912T.
 On 200, 700, and 900 Series only.

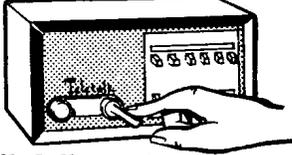


The telephone handset is for use in locations where confidential information must be exchanged. It is used just like a telephone without operation of the Talk-Listen switch on "S" circuit applications, but with "M" circuit systems the Talk-Listen switch must be operated in the regular manner. Only the calling station uses the handset in an "M" circuit system. With the handset on its rest at the left side of the cabinet the Master Station unit operates just the same as units not equipped with the handset.

FIG. 1

ALL-CALL

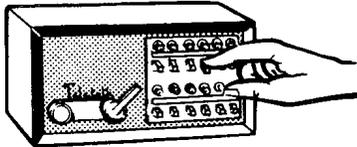
CODE -1 Number -1 added to code number.
Example: 206M-1 or 712-1.
 On 200 and 700 Series only.



A special "All-Call" switch may be added to "M" circuit models so that all stations may be called simultaneously. The Models A105M and 605M have an "All-Call" position on the selector dial as standard equipment. It is recommended that "All-Call" be connected to Speaker Stations only. Where a high-power amplifier is required for paging, see code "-18."

3-POSITION SELECTOR SWITCHES

CODE -3 Number -3 added to code number.
Example: 712A-3 and 912A-3.
 On 200, 300, 500, 700, P700, 800, and 900 Series.



For use in annunciator-equipped models, special 3-position Selector switches provide a third position (down) so that the Selector key may be used in place of a separate push button for operating the annunciator of another Master Station when placing a call.



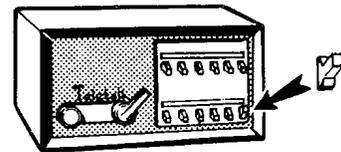
SILENCING CIRCUIT

CODE -14 Number -14 added to code number.
Example: 206M-14 or 712-14.
 On 200 Series M-Circuit and 700 and P700 only.

A 200 Series silencing circuit unit can be incorporated in any 200 Series "M" Circuit System employing only one Master Station. A 700 Series silencing circuit unit can be incorporated in any 700 Series system employing any number of Master Stations provided that all Master Stations are "-14" Models and connected for "S" circuit operation. A 700 Series silencing circuit unit should not be added to an existing 200 Series "M" Circuit System. The busy signal feature cannot be used on "-14" Models.

PAGING KEY

CODE -15 Number -15 added to code number.
Example: 712-15 or 912-15.
 On 200, 500, 700, P700, and 900 Series only.



Where high power paging through a separate group of speakers is required, the Teletalk Master Station may be wired so that the last key may be used for paging through an external amplifier and separate paging speakers. The 25-watt, Model 85-25 amplifier is designed especially for this service.

ALL-CALL PAGING

CODE -18 Number -18 added to code number.
Example: 212M-18 or 712-18.
 On 200 and 700 Series only.

When high power paging through the Speaker Stations of the Teletalk system is required, a special "All-Call" switch may be added so that all stations may be called simultaneously through an external high power amplifier by pressing a lever on the Master Station. Such a paging system should be used to page Speaker Stations only. The 25-watt, Model 85-25 amplifier is designed especially for this service. Master Stations in a system should not be connected to the paging circuit of a "-18" Master Station.

FIG. 1A

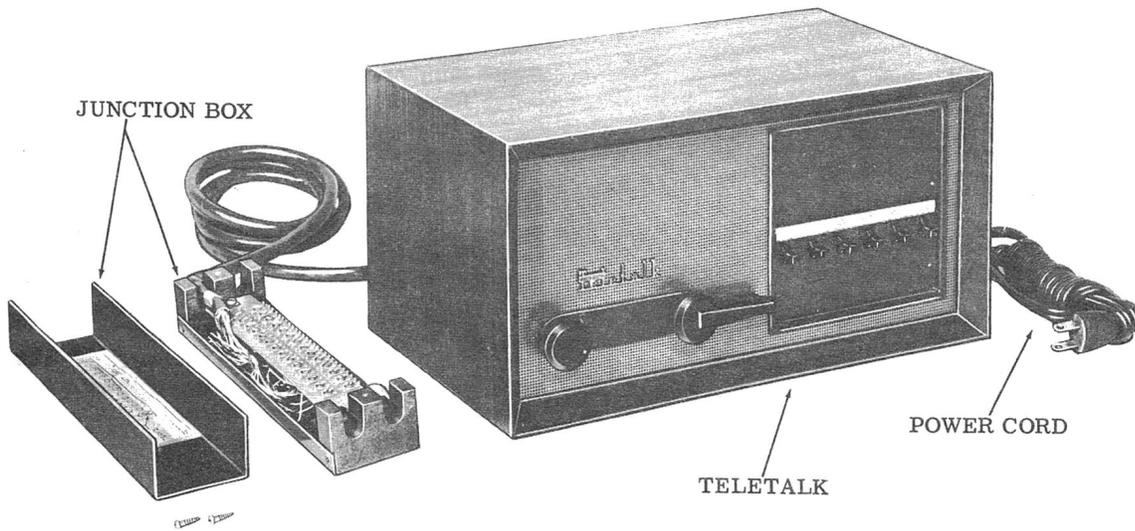


FIG. 2 - 1206 Master Station

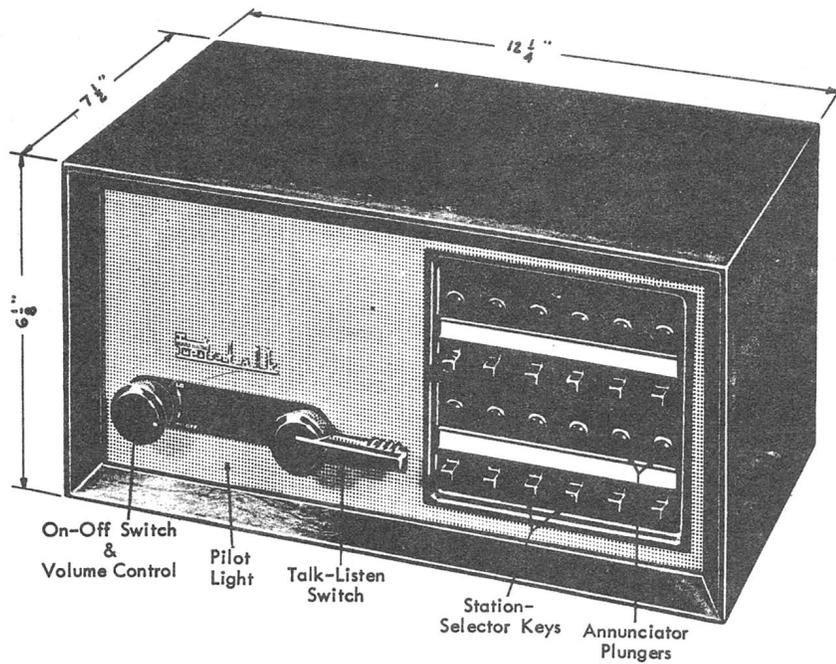


FIG. 3 - 1212A Master Station

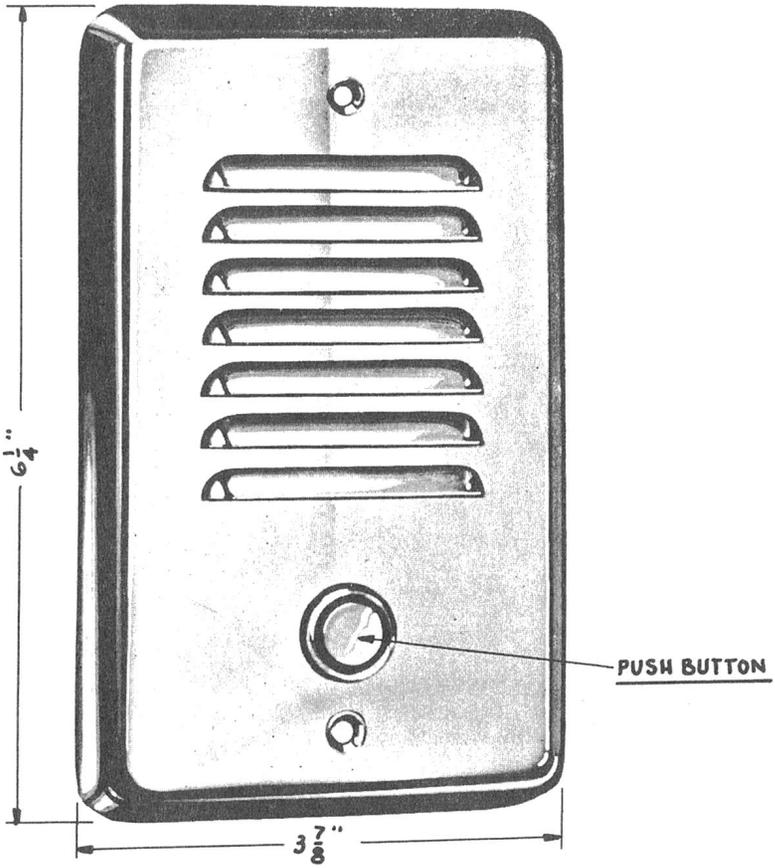


FIG. 5 - 3D45 Speaker Station

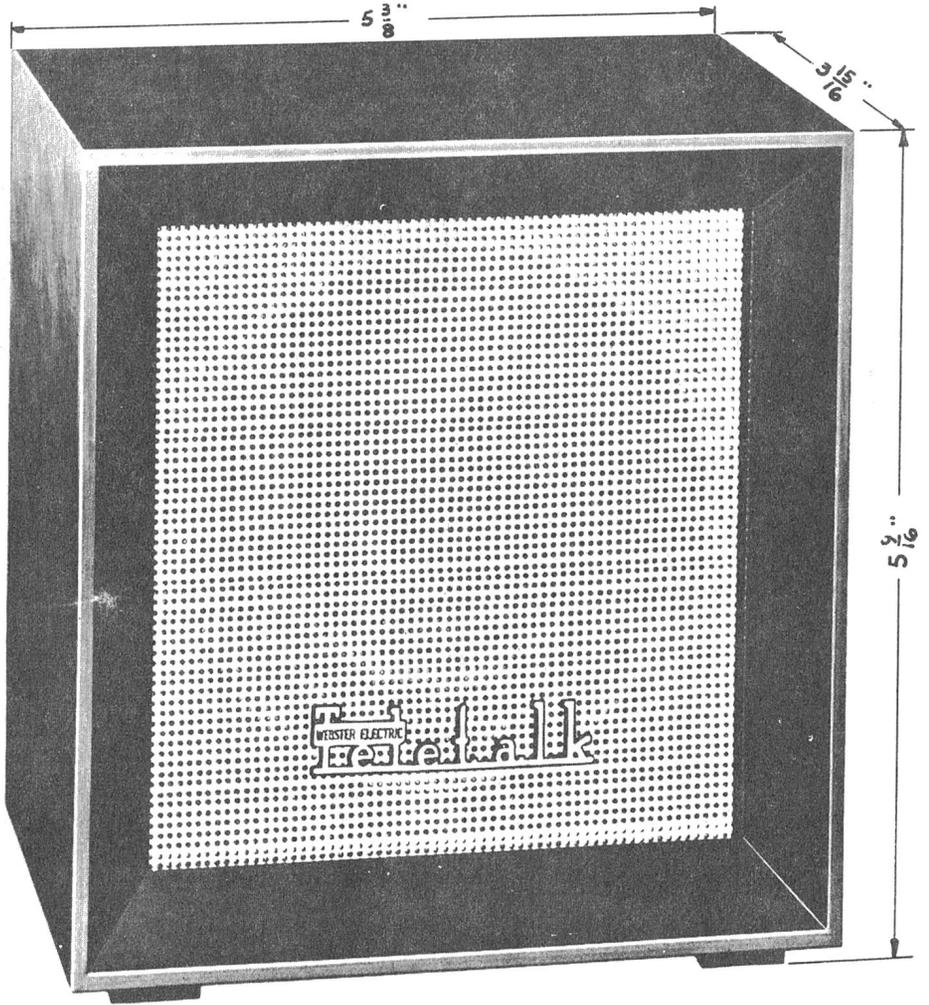


FIG. 4 - 5G45 Speaker Station

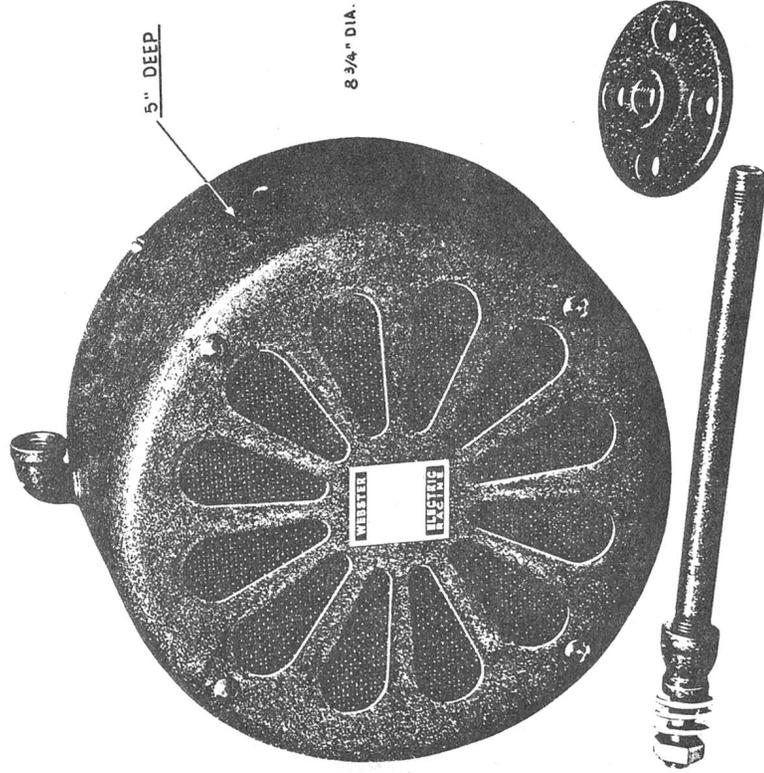


FIG. 6 - 8C45 Speaker Station

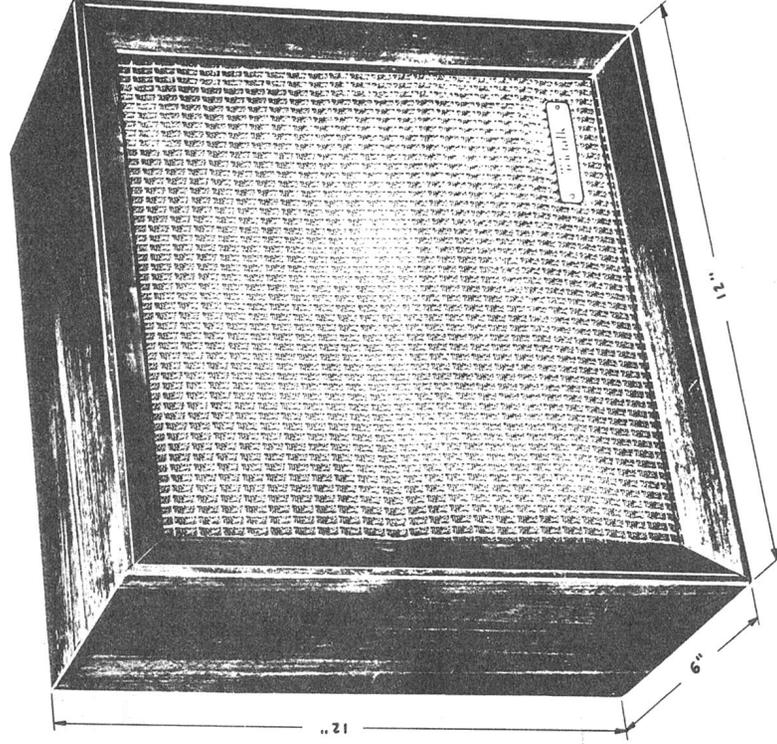


FIG. 7 - 10G45 Speaker Station

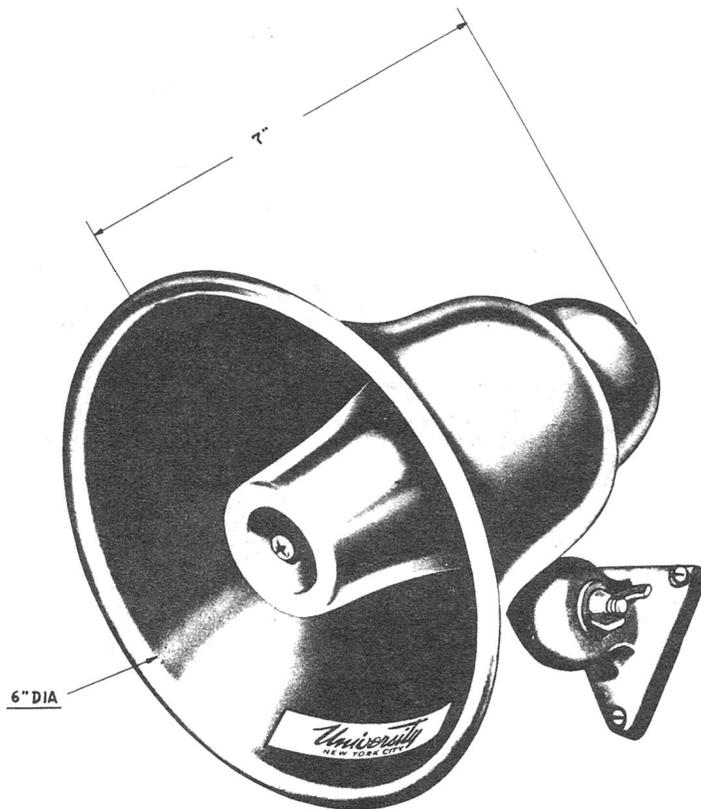


FIG. 8 - MIL-45 Speaker Station



FIG. 9 - Handset Part of HS45-3 Speaker Station

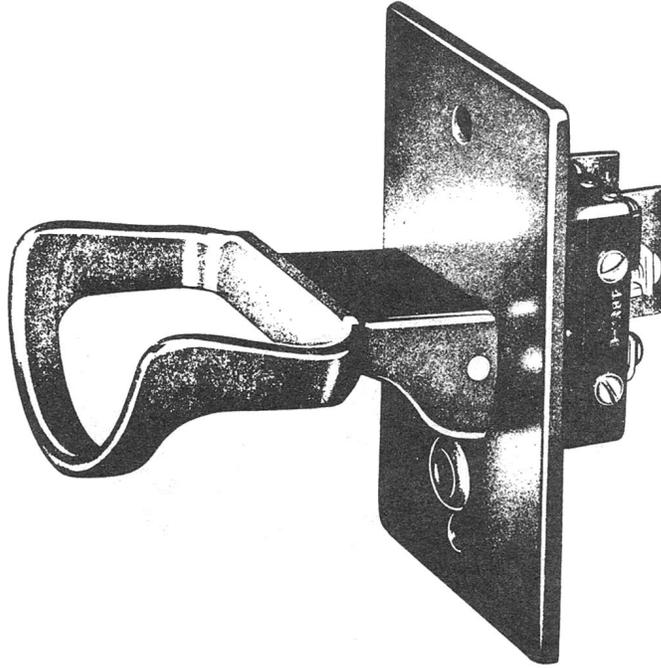


FIG. 10 - Switchhook
Part of HS 45-3 Speaker Station

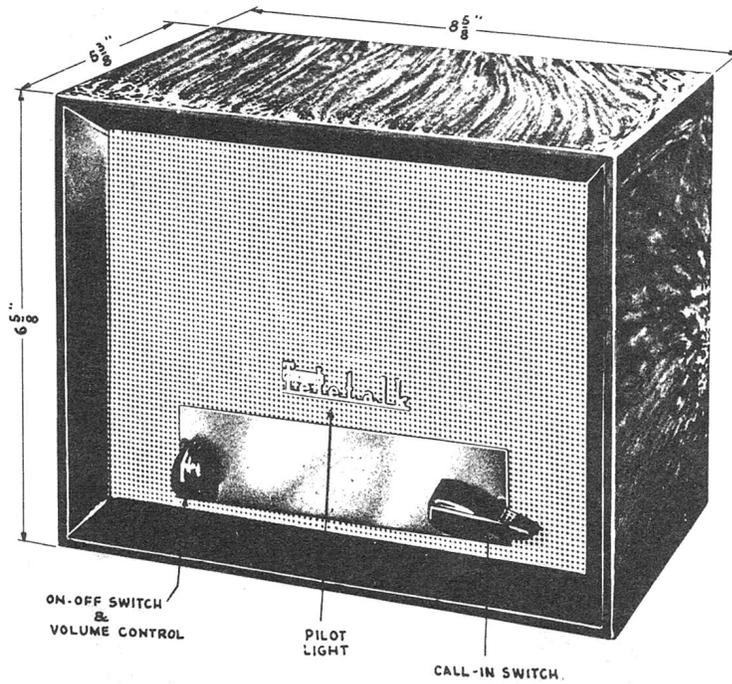


FIG. 11 - RM-B Remote Station

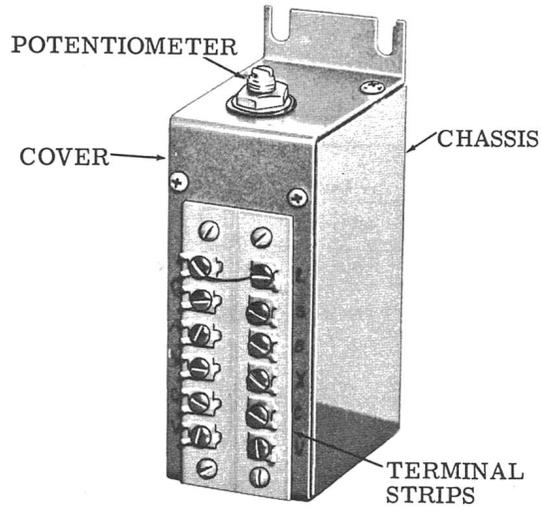


Figure 12A - AP-B Applique Unit

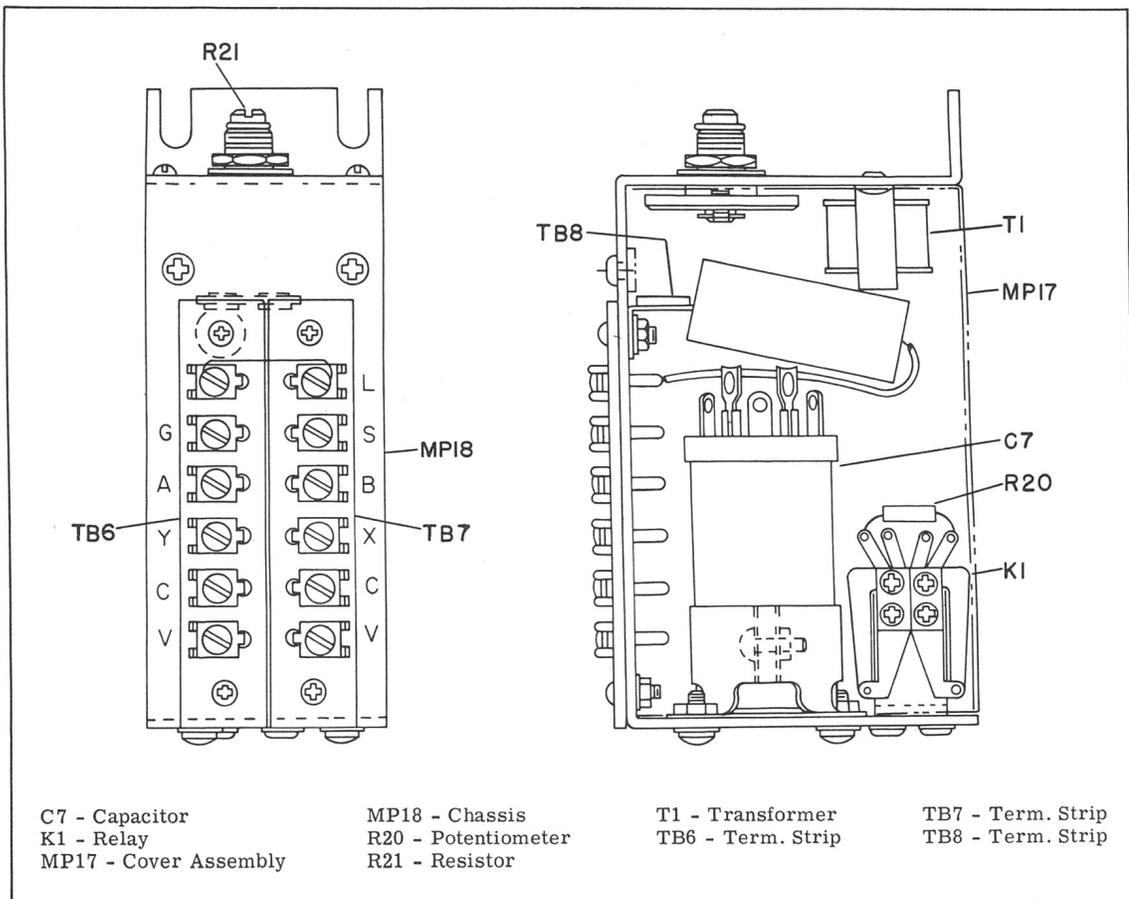


Figure 12B - Applique Unit Assembly

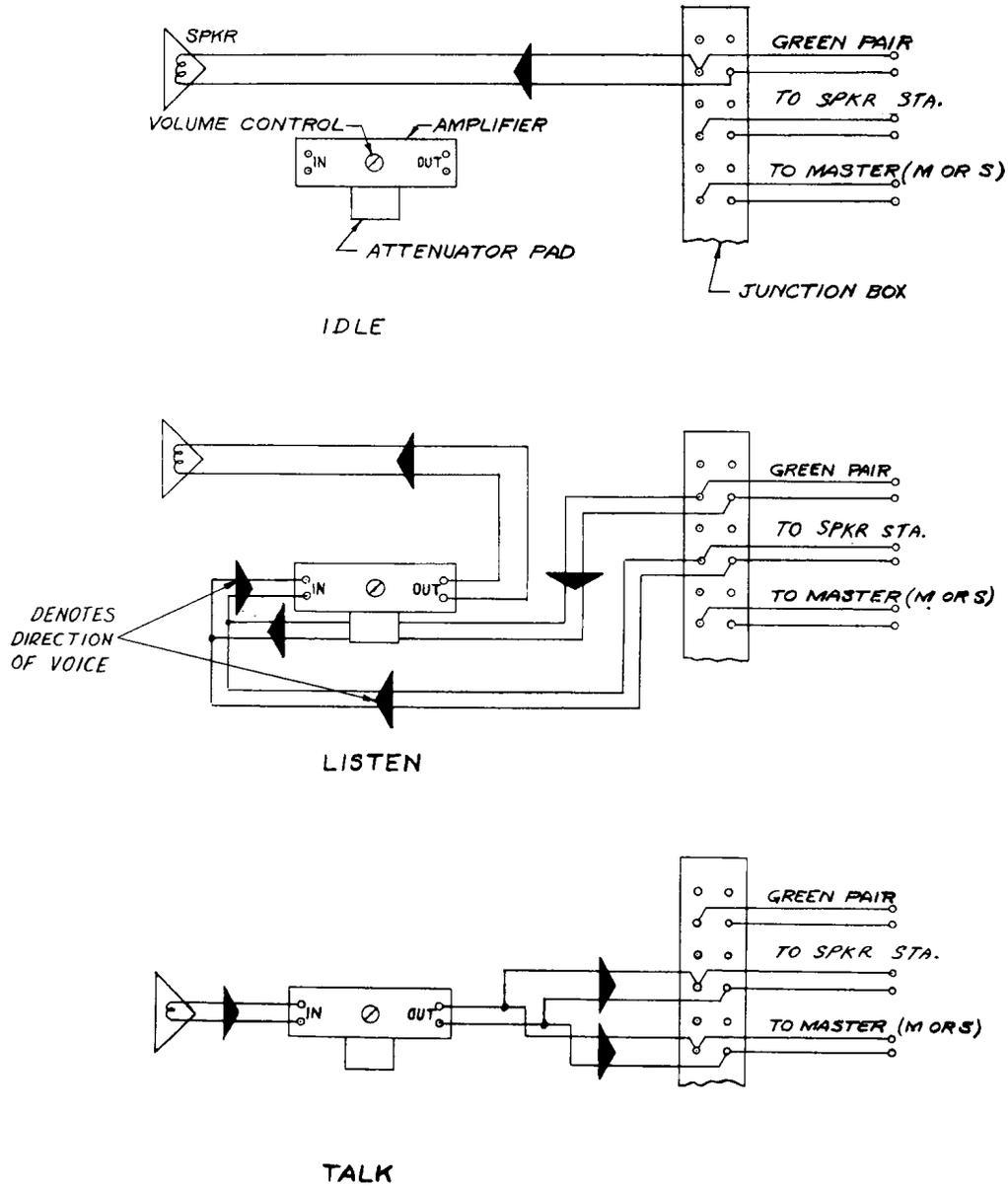


FIG. 13 - High-Level Operation

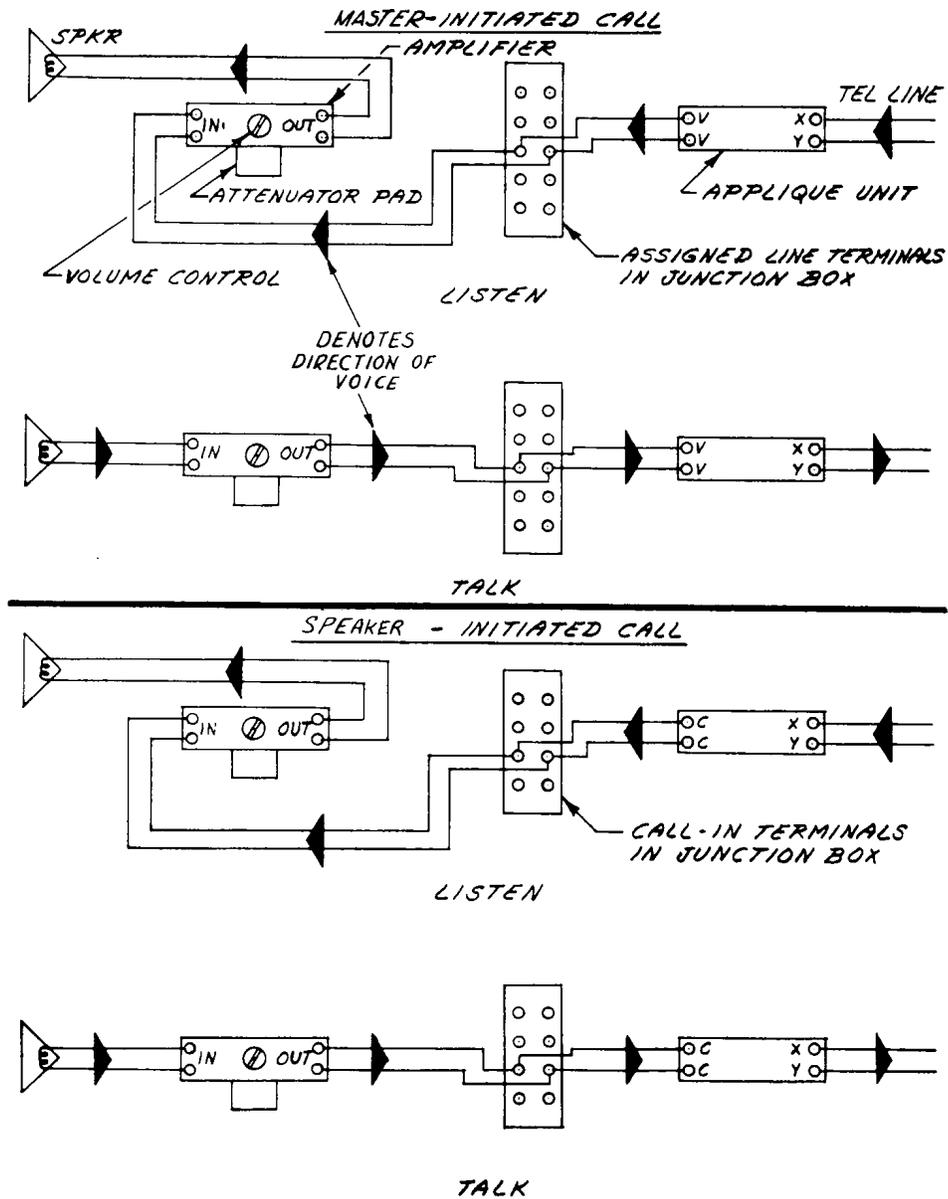


FIG. 14 - Zero-Level Operation

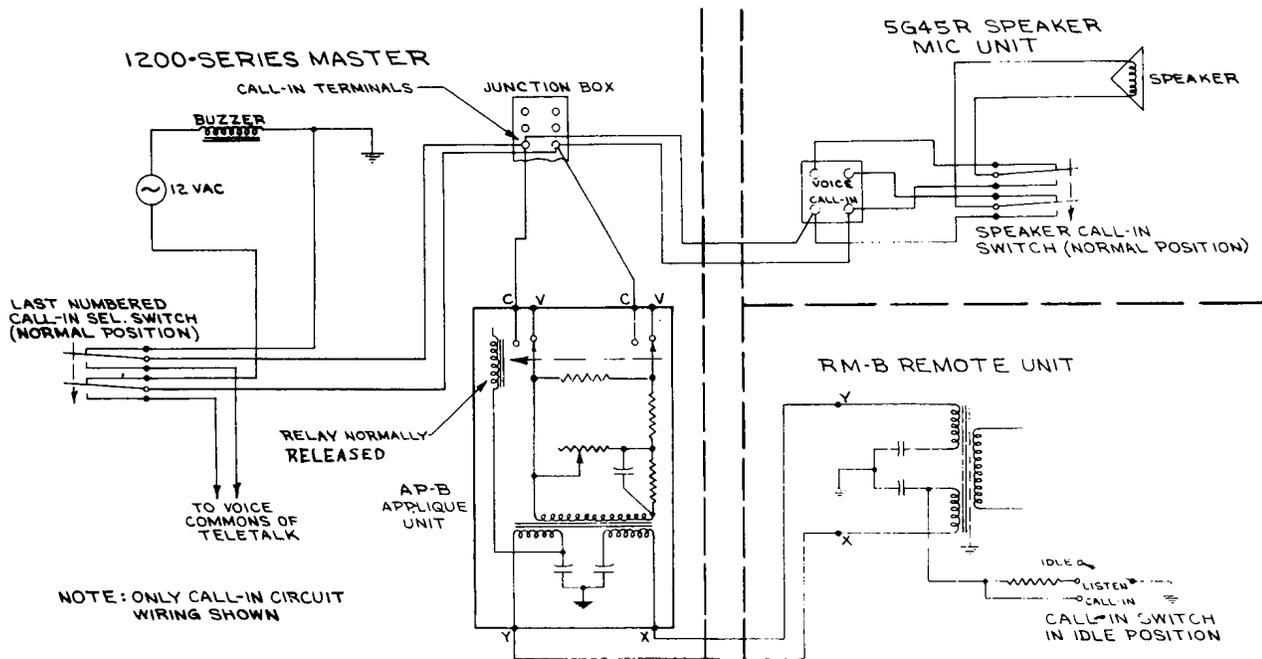


FIG. 15 - Call-In Circuit

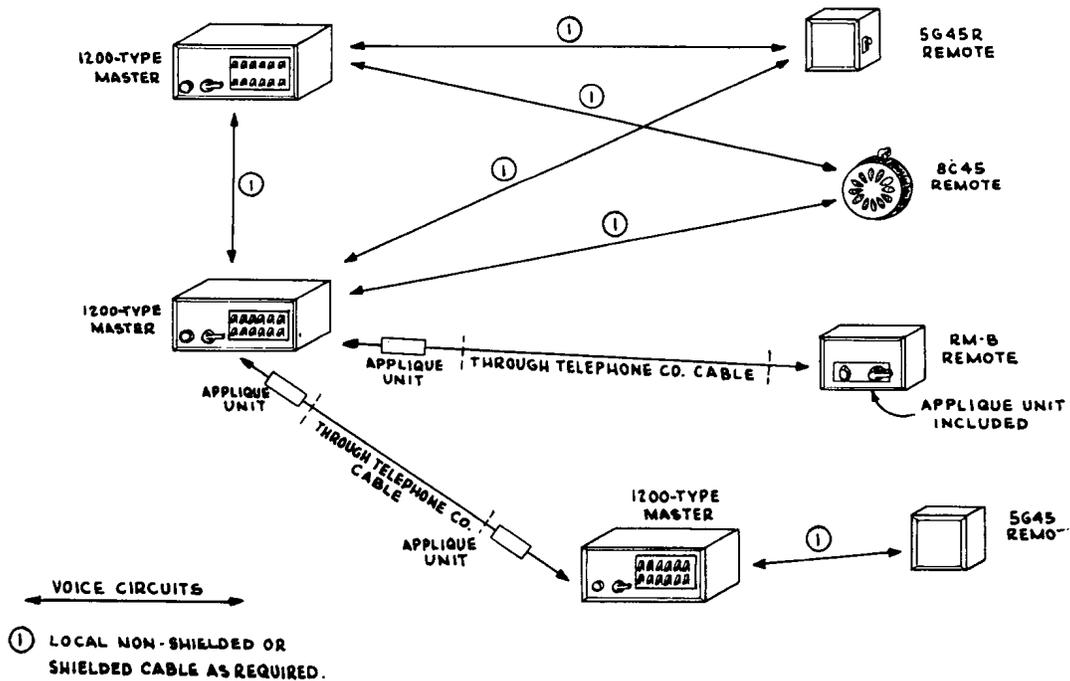


FIG. 16 - Typical System