

1A SPEAKERPHONE SYSTEM INSTALLATION AND MAINTENANCE

1. GENERAL

Select the location for the components of the 1A speakerphone system after consulting the customer. Place the components in position before running inside wiring cable and fastening. This usually will result in a more favorable installation from the customer's viewpoint as well as service-wise.

2. INSTALLATION

2.01 Locate and install the control unit according to the following requirements:

- Control unit shall be no more than 20 cable feet from the 592-type telephone or the 656A transmitter unit.



The customer shall furnish and maintain a 105- to 125-volt 60-cycle ac commercial power outlet located within 6 feet of the control unit. The power outlet shall not be under control of a wall switch. It need not be on a separate circuit unless the additional 8 watts of power consumed by the control unit causes the operation of the fuse device in the commercial power fuse box.

- The control unit should always be mounted on a backboard of suitable size (9-5/8 by 7-1/8 inches), e.g., 165A backboard when installed on a metal surface to prevent control unit from becoming grounded.

- A separate cable must be run between the control unit and the other components. Never include other circuits in this cable. This prevents crosstalk interference.

Under no circumstance connect the power cord of the control unit until all physical work is complete. If there is reason to work on the control unit again during the testing of the system, disconnect the power cord of the control unit from the power outlet.

- The service offered by the speakerphone system may be interrupted by the inadvertent removal of the power cord of the control unit from the commercial power outlet. To avoid this, fasten the cord by the use of an assembly, clamp cord and bracket ED1070-30 GR2. Attach a tag (form P-2053) to the bracket. This is the same tag that is used on ground wire clamps. In certain areas where local ordinances prohibit this method of securing the cord, only the tag may be placed near the plug end of the cord. Be guided by local instructions.

2.02 Connect the components of the 1A speakerphone system by using the following equipment:

- 44A connecting blocks
- A 12-pair inside wiring cable
- Telephone set cords
- Terminal strip of the control unit

2.03 Conceal connecting blocks if possible. Install in knee wells or on back of desk. Use 168-type backboard for connecting blocks. This will help group them to fit under the 101-type cover.

2.04 When locating and installing the telephone set used with the 1A speakerphone system, consider the following factors:

- Cord should not be exposed to moisture.
- Excess cord should be kept off the floor by coiling slack and fastening with cable clamp to wall or desk.

2.05 It is recommended that the 656A transmitter (Fig. 2) be installed as follows:

- Install near the telephone set.
- Connect directly to the terminal strip of the control unit if possible.
- Fasten the cord from the 656A transmitter to rear of desk by the use of a No. 3 cable clamp near the top of the desk. Allow

enough slack to move transmitter on top of the desk but not enough to allow transmitter to strike the floor if knocked off desk.

2.06 When locating and installing the 758A loudspeaker:

- Install loudspeaker at least 3 feet away from telephone set.
- Caution customer not to place objects in front of loudspeaker.
- Connect cord from loudspeaker to a separate 42A connecting block to maintain the 3-foot minimum distance.
- Fasten cord from the 758A loudspeaker to rear of desk by the use of a No. 3 cable clamp near the top of the desk. Allow enough slack to move the loudspeaker to determine the best position but not enough

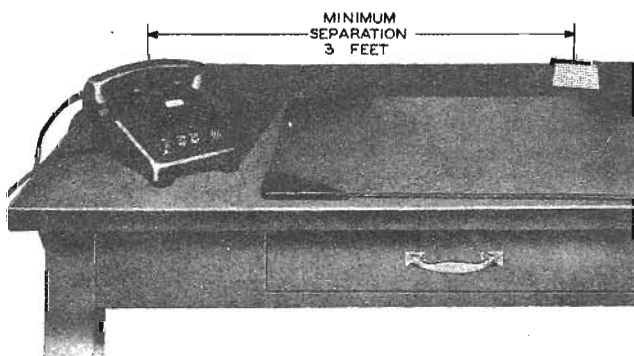


Fig. 1 — General Location of Speakerphone System 1A Components with 592B Telephone Set

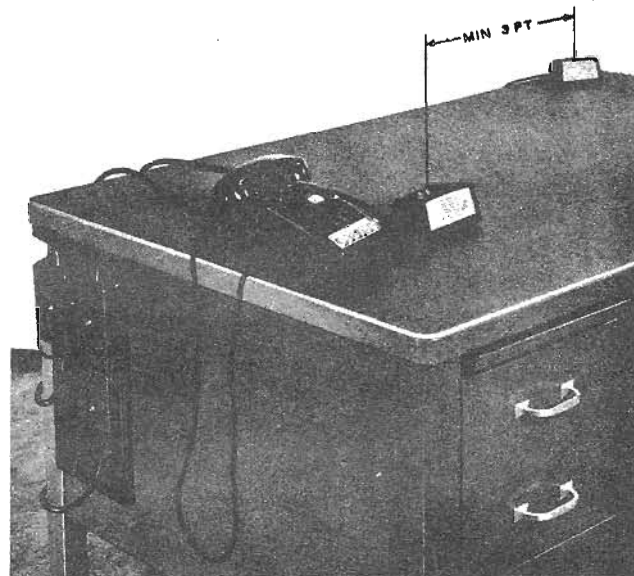


Fig. 2 — General Location of Speakerphone System 1A Components with Key Telephone Set and 656A Transmitter

to allow loudspeaker to strike the floor if inadvertently it is knocked off the desk.

- Final position of loudspeaker can be determined by the customer's trying different positions.



If loudspeaker is too close to transmitter, it will set up a feedback noise in the loudspeaker when volume is turned up too high.

2.07 For operating procedure refer to the section entitled 1A Speakerphone System, Operation. Check the system for the following:

- The ON button should be lighted when speakerphone is being used.
- If the system is used with a key plan, and busy lamps are employed, the busy lamp shall light.
- Check the loudspeaker volume by operating the volume-control knob on the 592-type set or the 656A transmitter. Be sure the customer understands that the volume will vary on each call and should be adjusted accordingly.
- Transmitting volume is preset at the time of manufacture and should not be changed.
- Make sure that all features of any key plan when used with the 1A speakerphone system operate properly.
- The 1A speakerphone system should be able to transfer from a regular call using the handset to the speakerphone and back to the handset.
- The OFF button should restore the circuit to normal and all features of any key plan should be returned to normal.

2.08 Fluorescent lights, transformers, motors, or other similar apparatus on the customer's premises may cause an inductive noise in the loudspeaker. Grounding the amplifier chassis may eliminate this noise. In certain areas local ordinances may not permit grounding. Be guided by local instructions.

2.09 In some cases the amplifier may pick up an inductive hum from 60-cycle ac power supply located near the 1A speakerphone system. A special modified HC3 receiver is substituted for the regular modified U1 receiver to correct this. See the section entitled 1A Speakerphone System, Maintenance.

2.10 Where radio interference is experienced in the telephone set, a suppressor may be installed. See section entitled Radio Signal Suppression in Telephone Sets.

3. MAINTENANCE

592-TYPE TELEPHONE SET

3.01 In maintaining the 592-type telephone set, refer to the appropriate section for those items that are common to all 500-type sets.

3.02 By visual means inspect and, if found defective, replace:

- Window-strip assembly
- Volume-control knob
- Key buttons

3.03 Clean exterior of set with a soft, water-dampened cloth. Check wiring for loose connections and for obstructions to movable parts.

3.04 With the cover assembled, the set shall meet the following requirements:

- The key buttons shall be free and shall return to their unoperated positions after being depressed fully.
- The volume-control knob shall be free to rotate over its entire range of operation.

A failure of either of these requirements usually can be corrected by shifting the key assembly; if this does not clear the trouble, replace the set.

3.05 The contacts that make on operating the ON and OFF keys shall have a perceptible follow. If defective:

- Adjust springs by making bends at spring pile-up with a 363 tool.
- Clean contacts by using 265C tool with clean burnisher blade.

3.06 The flanged edge of the soft neoprene gasket around the 655A transmitter (U1-type receiver) shall not be cut or deformed. Replace entire transmitter in case of defect.



Where the regular 655A transmitter (U1-type receiver) is troubled by inductive interference from power source, the trouble may be remedied by using a 658A transmitter (HC3 receiver with a cold-rolled steel shield). These transmitters are completely interchangeable but available only on a maintenance basis by special order.

4. 656A TRANSMITTER

When performing maintenance on 656A transmitter, proceed as follows:

- Replace chipped or cracked housing.
- Replace any soiled or missing friction pads.
- Clean exterior of transmitter with a soft, water-dampened cloth.
- See that key buttons are free and returned to their unoperated positions after being depressed fully.
- See that volume-control knob is free to rotate over its entire range of operation.
- Check contacts that make on operating the ON and OFF keys for perceptible follow.
- Adjust springs with 363 tool.
- Clean contacts with 265C tool, using clean burnisher blade.

- In addition to the above requirements, check those in 3.06.

5. LOUDSPEAKER 758A

When performing maintenance on a 758A loudspeaker, proceed as follows:

- Replace chipped or cracked loudspeaker housing.
- Replace any bent or missing grids.
- Replace any soiled or missing friction pads.
- Clean loudspeaker housing with a soft, water-dampened cloth.
- If trouble develops in speaker itself, replace complete 758A loudspeaker unit.

6. CONTROL UNITS KS-14964, LIST 2

6.01 For maintenance on control unit KS-14964, List 2, proceed as follows:

- Check to see that the power cord of the control unit is secured in the commercial power outlet by an assembly, clamp cord and bracket ED1070-30 GP 2. In certain areas where local ordinances prohibit this method of securing cord, attach a tag (form P-2053) to plug end of cord. This is the same tag that is used on ground wire clamp.
- Press the ON button in the 592-type set or the 656A transmitter. If the pilot lamp does not light, and no sound comes from the 758A loudspeaker, check the power outlet with a neon voltage tester or equivalent.
- Have customer take the necessary action to restore power in case of power-off condition.

The power cord should always be removed from the power outlet while work is being done on control unit.

- When commercial power is entering the control unit, and amplification seems to be deficient in either receiver or transmitter circuit or both, replace the KS-14990 amplifier unit with one known to be serviceable.
- If changing the amplifier clears the trouble, interchange the tubes, one at a time, from good amplifier to defective amplifier. Orient them so that the red mark on the tube base faces both the top of the card and the dot near the top end of the socket. If this does not clear the trouble, it can be assumed that trouble is internal in the KS-14990 amplifier. Leave serviceable amplifier in place and return defective amplifier according to local instructions.

Note: Do not change amplifier gain controls.

- If trouble still persists, exchange complete unit with a KS-14964, List 2 unit.

6.02 Fluorescent lights, transformers, motors, or other similar apparatus on the customer's premises may cause an inductive noise in the loudspeaker. Grounding the amplifier chassis may eliminate this noise. In certain areas local ordinances may not permit grounding. Be guided by local instructions.

7. RADIO INTERFERENCE

Where radio interference is experienced in the telephone set, a suppressor may be installed. See section entitled Radio Signal Suppression in Telephone Sets.