

### 3A SPEAKERPHONE SYSTEM INSTALLATION AND MAINTENANCE

#### 1.00 INSTALLATION

##### Speakerphone Components

1.01 This section is reissued to:

- Add information concerning the use of the proper transformer for powering the 55A control unit.
- Provide additional maintenance information.
- Replace Fig. 1.

1.02 Locate and install the control unit in accordance with the following:

- The maximum allowable distance between the control unit and other components of the speakerphone is 100 feet.
- Mount control unit:
  - a. On an insulated surface.
  - b. A standard 120-volt ac receptacle is ← required for the operation of the 2012B-42 transformer. This receptacle shall be on a circuit that is not controlled by a switch. Power outlet shall be furnished and maintained by the customer.



*Due to the lower voltage rating, the 2012A transformer should never be used to power the 55A control unit.*

- c. For proper operation of the control unit, the length of wire between the transformer and the control unit should not exceed 100 feet of standard inside wire.

- Place transmitter and loudspeaker:

- a. Within convenient reach of customer.
- b. With 2 feet minimum spacing between the transmitter and loudspeaker.

*Note:* There should be no obstruction between the customer and the transmitter and loudspeaker.

*Caution: Do not, under any circumstances, plug in the power transformer of the control unit until all work is completed.*

##### Associated Components

1.03 Fig. 1 shows a typical installation.

##### Voice-Switching Circuit

1.04 Voice-switching is the automatic transfer from receiving to transmitting condition. This circuit is controlled principally by speech from the speakerphone user. The level of signal necessary to cause switching has been predetermined.

1.05 If possible, place audible signals away from the transmitter unit where there will be no interference with the voice-switching feature. It may be necessary to lower the volume of the audible signal or install audible signal using the cutoff feature of the 55A control unit.

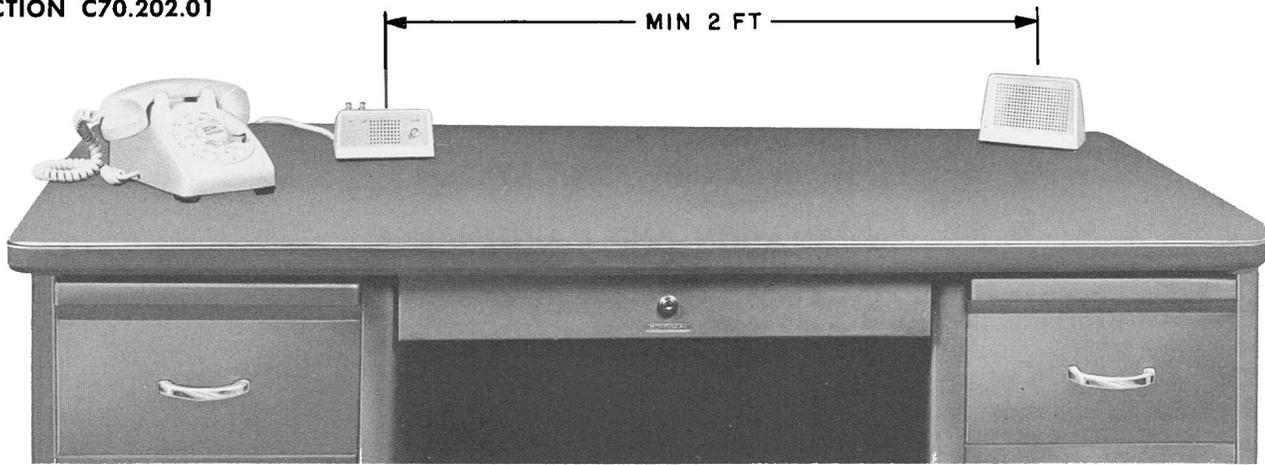


Fig. 1 – 3A Speakerphone System Installation and Maintenance

## 2.00 ADJUSTMENTS AND TESTS FOR 3A SPEAKERPHONE



*No potentiometer adjustments are provided.*

**2.01** Adjustments consist of connecting the *SP1* loudspeaker lead to one of the two terminals of the 55A control unit. Proper connection is provided to compensate for strongly reverberant condition of the room by inserting a resistor in series with the loudspeaker.

**2.02** If voice-switching occurs during a test call, the *SP1* loudspeaker lead should be connected for a more reverberant room condition. It is, however, desirable not to use the resistor in series with the *SP1* loudspeaker lead.

**2.03** As a guide in connecting the *SP1* loudspeaker lead for room adjustments, rooms are classified into two types.

- *Type 1 — Low to moderately high reverberation:* A room in this category will have one or more of the following sound-absorbing materials: acoustic ceiling, carpeting, rugs, window draperies, wall draperies, and upholstered furniture.
- *Type 2 — High reverberation:* A room with high reverberation will have practically no sound-absorbing qualities. In this condition the *SP1* loudspeaker lead should

be tried on terminal 33 of the control unit and, if voice-switching occurs, be moved to terminal 24.

## 3.00 TEST CALL FOR 3A SPEAKERPHONE

When all connections have been made:

- Place a call to test desk.
- Adjust the loudspeaker volume to a moderately loud listening level.
- Have the test center repeat the question, "In what suburb does Joe live?" several times.
- If choppiness is detected in the sentence, particularly in the first **b** in suburb and the **t** in what, change *SP1* loudspeaker lead from terminal 33 to terminal 24.
- Repeat this test at a high listening level by turning the volume control clockwise.
- When there is no choppiness, the room adjustment is satisfactory.

## 4.00 MAINTENANCE

**Caution:** Always remove the 2012B-42 transformer from the power outlet or disconnect *TF1* and *TF2* leads before working on control unit.

4.01 Table A provides maintenance procedure for source of the troubles which may be encountered.

4.02 After working on equipment, test the complete system as specified in 3.00.

5.02 Where radio interference is experienced in a speakerphone system, place a KS-13814, List 7 capacitor across the terminals of the AC1 transmitter unit in the 666A transmitter.

**5.00 RADIO INTERFERENCE**

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

5.03 To eliminate radio interference when the 667A transmitter is used, place KS-13814, List 7 capacitor from terminal 4 (A1 lead) to chassis ground.

**TABLE A**

Trouble Indication	Probable Cause	Check
Pilot light does not light.	No power	Power supply outlet with a neon lamp voltage tester or equivalent
Lamp does not light but set works.	Light burnt out	Lamp in transmitter
Lamp lights but does not stay lit when ON button is released.	Loose connection in local wiring	LK lead
Amplification seems deficient in receiver or transmitter circuit or both.	Local wiring Defective transmitter Faulty control unit	(1) Local wiring for loose or broken connection (2) Replace transmitter. (3) Replace control unit if Steps 1 and 2 fail.
Set transmits but does not receive.	Loose or open wiring to loudspeaker	SP1 and SP2 leads Loudspeaker
Set receives but does not transmit.	Local wiring open	M lead Transmitter
No variation in volume when control is rotated	Open or loose local wiring	P1 lead
Dial heard over loudspeaker	Dial Wiring	For proper dial P3 and P4 leads