

## 1A AND 1A1 SPEAKERPHONE SYSTEMS

### OPERATION

#### 1.00 GENERAL

**1.01** This section includes operating instructions for 1A and 1A1 speakerphone plus descriptive information on the 1A1 speakerphone circuitry.

**1.02** When using the hands-free telephone, it is important that the user follow certain procedures. These concern:

- Location of transmitter and loudspeaker.
- Loudspeaker volume.
- Proper interval between received and transmitted speech.
- Talking distance of approximately 2 feet from transmitter.



*Transmitter and loudspeaker should be placed so that they do not face each other.*

**1.03** Satisfactory operation can be obtained in quiet and acoustically treated rooms even when the user is as much as 3 to 5 feet from transmitter. In noisy or reverberant rooms, the user must remain closer.

**1.04** The telephone set associated with the speakerphone is used in the same manner as a regular telephone set.

#### 2.00 MAKING AND RECEIVING CALLS ON SPEAKERPHONE

##### Initiating a Call on Speakerphone

**2.01** Proceed as follows:

1. Press ON button momentarily.
  - Pilot lamp lights.
  - Dial tone or operator is heard in loudspeaker.
2. Dial or give desired number.
3. Adjust volume of loudspeaker.

##### Terminating a Call

**2.02** On completion of a call, momentarily press the OFF button. This extinguishes the pilot lamp.

##### Answering Call Using Speakerphone

**2.03** Follow this procedure:

1. Press ON button momentarily.
  - Pilot lamp lights.
2. Conversation may start after approximately a 1-second warmup period.
3. Adjust loudspeaker volume.

##### Transferring Call from Speakerphone to Telephone Handset

**2.04** If, during the course of a hands-free conversation, it is desired to change to normal handset use, simply lift the handset. Pilot lamp is extinguished. On completion of call, replace handset on cradle.

**Transferring from Handset to Speakerphone**

**2.05** If, during the course of a handset conversation, it is desired to transfer to speakerphone operation, press and hold ON button until the handset has been replaced on the cradle. Pilot lamp lights.

**Muting Switch (Only with 661A Transmitter)**

**2.06** If, when using the speakerphone, it is desired to prevent transmission over the line, depress and hold ON button for desired time. This operation will not release the line but shorts out transmitter for local private conversation. Release ON button when it is desired to resume conversation.

**3.00 1A1 SPEAKERPHONE CIRCUITRY DESCRIPTION**

**3.01** As compared to 1A speakerphone which is nonswitching, the 1A1 speakerphone incorporates a self-switching circuit which permits up to a 12-db increase in receiving volume, eliminates singing, and essentially eliminates far-end talker echo.

**3.02** When there is no locally produced speech, gain is automatically removed from the transmitter circuit and automatically added to the loudspeaker circuit. This reduction of gain in the transmitter branch while the set is receiving permits more gain to be used in the receiving circuit than for a nonswitched speakerphone. This allows the switched set to reproduce incoming speech at greater volume without singing. When locally produced speech is present, the gain of the transmitter circuit is automatically increased to normal; and simultaneously, the gain of the loudspeaker circuit is lowered so that singing does not occur as a result of the increased transmitter gain.

**3.03** A circuit, referred to as a switch guard, utilizes the voltage across the loudspeaker to prevent false switching by any incoming speech from the loudspeaker which may reach the transmitter. This switch guard counteracts the main switching control circuit while an incoming signal is present. It also reduces the possibility that surrounding room noise will cause false operation of the switching circuit while there is incoming speech.

**3.04** A predetermined voice level is necessary to switch from the receiving to the transmitting condition.