3A SPEAKERPHONE SYSTEM

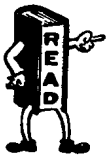
OPERATION

1.00 GENERAL

1.01 This section covers operating instructions, description, and information on speakerphone circuitry.

1.02 When using the speakerphone, 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 an arm's length from transmitter.



Transmitter and loudspeaker should be placed 2 feet or more apart and in such a way that they do not face each other. There should be no obstructions in front of the instruments.

1.03 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. 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 when handset has been replaced.

Muting Switch

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. The distant party still will be heard over the speakerphone. Release ON button when it is desired to resume conversation.

3.00 3A SPEAKERPHONE CIRCUITRY DESCRIPTION

3.01 As compared to 1A speakerphone, which is nonswitching, the 3A speakerphone incorporates a voice-switching circuit which permits a substantial 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 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. The amount of the gain change depends upon the setting of the receive volume control, the gain change being smaller at the lower settings (counterclockwise) which are most used on local calls.

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. In the presence of steady ambient room noise a special circuit automatically raises the required threshold level in order to prevent operation of the switching control circuit by the noise. Talkers will still switch satisfactorily because they increase their levels under noisy conditions.