MCW OPERATION

"MCW" operation (keyed tone with constant carrier) may be accomplished very easily by simply running a wire from the p-a connector (phono jack) on the rear of the transmitter chassis back via a telegraph key to the hot microphone terminal on a PL-68. A 1200 ohm ½ watt resistor should be connected from the hot microphone terminal to ground (shell) of this PL-68 and the microphone switch thrown to "CRYSTAL" position. The tone may be varied as desired by adjustment of the a-f gain control on the rear of the transmitter.

Polarity of the voice coil winding on current production sets is such as to give the correct feedback for audio oscillation using this method. However, it is conceivable that sets may be produced in the future which would require reversal of the voice coil leads to obtain audio oscillation in this manner.

USING COMMUNICATIONS RECEIVER AS I-F STRIP

For home station use it is possible to use any good communications receiver having (or adjustable to) an I-F bandwidth of not less than about 10 kc. following the I-F strip in the COMMUNICATOR, thus in effect making a composite "double conversion" superheterodyne having much greater selectivity than the COMMUNICATOR receiver alone.

This is accomplished by running a piece of coax to the input of the communications receiver from a 1 uufd. (approximately) condenser or "gimmick" connected to the plate of the last I-F tube in the COMMUNICATOR. The communications receiver is tuned to 6 Mc. The trimmers on the last I-F transformer in the COMMUNICATOR should be touched up after making this installation, as connection of the "gimmick" condenser will affect the tuning slightly.

MISCELLANEOUS NOTES

When removing the receiver from the main cabinet for any reason, it is extremely important that the dressing of the high frequency R-F leads not be disturbed, as some are quite critical.

On the tune-up positions of the tuning eye switch, screen voltage is removed from the 2E26 P-A tube. However, a few milliwatts of power will be radiated under these conditions, which is sufficient to be heard several blocks, if the set is hooked to an antenna. Therefore, tune-up should be accomplished as quickly as possible or else a dummy antenna used if this amount of radiation is likely to bother a net, such as CAP.

Trouble sometimes is encountered in getting positive contact in the microphone jack when a worn PL-68 plug is employed. The jack spring contacts are adjusted for use with a new plug, and if trouble is encountered when using a worn plug it is suggested that a new plug be substituted rather than tamper with the spring adjustment.

COMMUNICATOR II (DeLuxe Model)

The COMMUNICATOR II is basically the same as the standard model except for the addition of a speaker-disabling earphone jack and an adjustable squelch circuit using a 6BG7 dual triode. This is a highly effective carrier-actuated squelch circuit which may be used or not as desired. In the absence of a signal the exceptionally flat a-v-c characteristic of the COMMUNICATOR receiver normally will cause a high background noise which becomes objectionable if prolonged, as when maintaining a standby watch on C.D., C.A.P., or other net frequencies. The squelch facility permits muting of this background noise.

The squelch circuit employs a series gate diode following a d-c amplifier or "clamp tube" which, in turn, is actuated by the a-v-c voltage. The combination is very effective, gating cleanly on an a-v-c voltage change as small as 0.1 volt when the threshold control is set carefully. The circuit is designed so that compensating factors tend to hold the threshold setting substantially constant over a moderate change in supply voltage to the COMMUNICATOR.

To disable the squelch, just turn the squelch control slightly past the point where the gate "opens" on background noise with no station tuned in. It is not necessary to turn it full clockwise.

To use the squelch, back off the threshold control counter-clockwise just to the point where the background noise disappears, and stop there. This makes the squelch the most sensitive (so that it will open on weak signals). Unfortunately, this also makes the squelch sensitive to electrical noise that is sufficiently strong to cause the a-v-c voltage to change. This means that, if such noise (such as very strong ignition noise or interferences from a nearby commutator motor) is intermittent in nature, the threshold control must be backed off enough to prevent the intermittent noise from triggering the squelch. It will then take a stronger carrier to open the squelch. In extremely noisy locations it may be necessary to turn the threshold control full counterclockwise to prevent triggering of the squelch by noise. Such operation will be possible only if the desired signals are quite strong.

Certain limitations to the operation of the squelch should be kept in mind. For instance, the normal change in quiescent a-v-c voltage that occurs as the receiver is tuned over the band will cause the threshold setting to change slightly as one tunes over the band. For this reason it is recommended that the squelch be used only after a station is tuned in, and that it be disabled when "looking around the band." For best operation of the squelch, the noise clipper should be left on at all times.

AIRPORT UNICOM MODEL #3043

The airport "Unicom" model of the COMMUNICATOR is basically the same as the deluxe amateur model (COMMUNICATOR II) except for frequency coverage, a spring-loaded T/R switch, and the fact that transmitter tune-up adjustments, crystal, and eye switch are normally covered by an access plate, with only a push-button crystal spotting switch accessable in normal operation. Transmitter frequency normally furnished is 122.8 Mc., with tunable receiver coverage from 108 to 128 Mc. Other transmitter frequencies in this range are available on special order. Crystal multiplication factor in the transmitter is 18.