# HAMMARLUND

## SHORT WAVE MANUAL

TEN CENTS
THE COPY

1939 EDITION

# *The Hammarlund 1939 Short Wave Manual*

FIFTH EDITION

DEVOTED TO THE
AMATEUR
EXPERIMENTER
AND
SHORT WAVE
LISTENER

PUBLISHED BY
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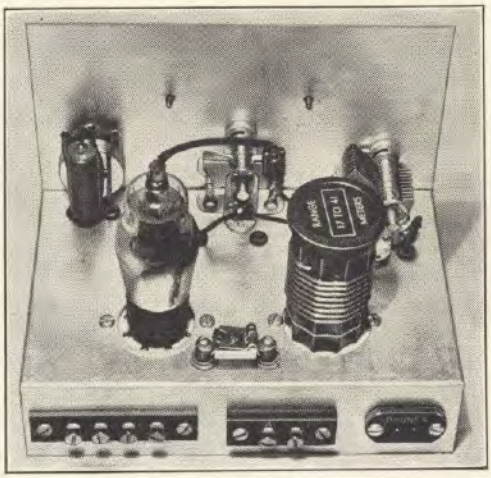
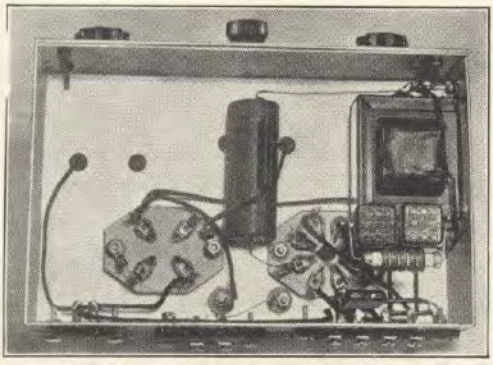
# *1—2 S. W. Receiver*

## *Using 6F8-G*



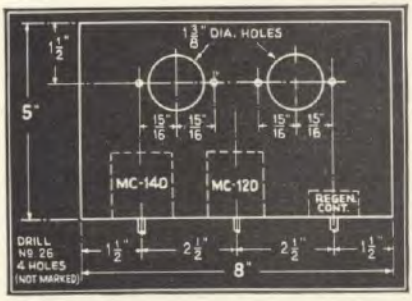
THIS one-tube receiver is intended for operation from batteries or a power supply. The power supply which we describe on page 18 can be used, of course. If batteries are used, 6 volts are required for the "A" supply, and approximately 90 volts for the "B" supply.

The entire receiver is mounted on an 8″ x 5″ chassis with the four sides bent down 2″. The rear view shows the tube at the left and the coil at the right. Between them can be seen the "MEX" antenna trimmer which is mounted on small insulators. A bakelite strip or two small stand-off insulators can be used for supporting the condenser. Still looking at the rear view, we find the potentiometer at the extreme left of the panel and the band spread condenser (MC-20-S) located in the center of the panel with the "MC-140-M" band setting condenser on the extreme right.



*Bottom view, "1—2 Receiver".*

The tube employed is a twin triode 6F8-G. The grid of one of the triodes is connected to a cap on the glass envelope. This triode is employed as the regenerative detector. The other triode, having its grid terminating in the base of the tube, is used as the audio amplifier. Regeneration is obtained via the cathode circuit. The tickler of the "SWK" coils is connected in series with the cathode of the detector. It will be noticed, by referring to diagram, that the antenna is connected to the cathode side of this tickler coil with an "MEX" trimming condenser for coupling. Thus employed, the cathode coil serves not only to bring about regeneration, but also as the antenna coupling coil. Regeneration is controlled in the detector with a 50,000 ohm potentiometer, connected in the plate circuit. From 45 to 90 volts should be applied to the potentiometer terminal. The correct value will depend upon the particular make of tube employed; some tubes vary. Although transformer coupling is shown in the diagram, resistance coupling could be used with a slight decrease in volume but a considerable saving insofar as weight is concerned. If resistance coupling is employed, the plate resistor should be a value of 50,000 ohms and the grid resistor 250,000 ohms. The coupling condenser between the two should have a value of .1 mf. The diagram shows a 3,000 ohm cathode biasing resistor and a 1 mf. by-pass condenser. Experiments with different tubes prove that this




*Chassis dimensions for one-tuber.*

cathode resistor is not always necessary. In the majority of cases the condenser and resistor could be left out and the cathode connected directly to the B-minus.

When first tested, this receiver had a very annoying audio howl which appeared after the regeneration control was advanced beyond the point of oscillation. It was found that this could be readily cured by reversing the connections to the secondary of the audio transformer. If you experience such a howl, we suggest that you try reversing the connections to the grid and B-minus side of the audio transforemr.

In order to keep unwanted R. F. out of the audio amplifier circuit, we have employed a 2.1 mh. R.F. choke (Hammarlund "CHX") and two .0005 mf. bypass condensers, one connected on each side of the R. F. choke. The socket connections in the illustrations represent the bottom view. When wiring the receiver, be sure that this is taken into consideration because otherwise parts of each triode will be transposed and the receiver will not function. In fact, all socket connections shown in this book represent the bottom views. The plug in coils are standard Hammarlund SWK-4 four-prong two winding coils which are available already wound. The four coils comprising the set cover a range of 17 to 270 meters in the following steps: 17 to 41 for coil No. 41; for No. 42, 33 to 75; No. 43, 66 to 150; No. 44, 135 to 270 meters. If reception in the broadcast band is desired, a broadcast coil covering a range of from 250 to 560 meters is also available. If a set of this type is used in a camp or some other remote point where ordinary broadcast receivers are not available, we highly recommend that the broadcast coil be included in the set. The quality of the receiver is very good and the volume on ear phones is sufficient to permit very comfortable reception of all local and moderately distant stations.

Tuning and adjustment for this receiver are extremely simple. First, we suggest backing off the antenna coupling condenser by loosening the adjustment screw. Advance the regeneration control about midway and tune for "whistles".

### *Parts List*

**HAMMARLUND**

1—MC-140-M Condenser
1—MC-20-S Condenser
1—S-8 8-prong socket
1—CHX R.F. choke
1—SWK-4 coil kit 17-270 meters
1—MEX antenna trimmer

**I. R. C.**
*(resistors)*

1—2 meg. ½ watt
1—3,000 ohm ½ watt
1—50,000 ohm potentiometer

**CORNELL DUBILIER**
*(Condensers)*

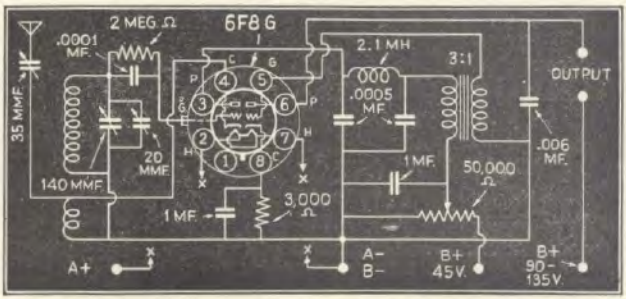
2—.0005 mf. mica
1—100 mmf mica
1—.006 mf. mica
2—1 mf. tubular

**STANCOR**

1—3:1 audio transformer

**MISC.**

1—Chassis 5" x 8" x 2"
1—Panel 8" x 6" (1/16" aluminum)
1—Dial
2—Knobs
1—6F8-G tube




*Wiring diagram and parts values for "1—2 Receiver".*