DEAR OM:

We have received a few complaints indicating receiver blocking. This condition is obvious after a period of transmission or after changing band switch by a decided loss in gain. The receiver cannot be returned to normal gain unless either the function switch is thrown into different positions or sometimes, the receiver turned off completely and then on again by means of the AC switch on the sensitivity control. This trouble will only prevail in the 7 mcs to 50 mcs bands.

This condition is due entirely to the Sylvania type 6BE6 being employed in Position V3 as discussed in Paragraph 4 of the attached Summary. Usually, changing the Sylvania type 6BE6 to an RCA tube will eliminate this blocking condition. However, in addition, we suggest the following change to make the receiver less susceptible to blocking in addition to making the circuit less critical to tube changes or aging.

Please refer to the schematic diagram in your HQ-110 instruction manual on Page 19. Refer to tube V3 or the second converter and trace the wiring from Pin 6 to the B+ bus. It will be noticed that R10 is now 15K 2 watts and is the screen dropping resistor. Changing the value of R10 from 15K 2 watts to 27K 2 watts will usually result in the complete elimination of blocking, providing an RCA 6BE6 is employed. Some of the Sylvania tubes will also operate satisfactorily; however, this particular brand of tubes is more subject to the blocking condition than any of the other brands we have tried. Since only a very limited number of HQ-110 receivers were shipped equipped with Sylvania 6BE6 tubes, the change to the RCA brand is suggested.

The 2 watt resistor, R10, will be found located close to the rear of the function switch; and since this is the only 2 watt resistor employed in the receiver, no trouble should be experienced in locating the resistor and making the suggested change. In the event that this does not provide satisfactory performance, please follow the procedure suggested for returning the receiver to us at Mars Hill, North Carolina.

Although tubes are not covered by our warranty, should you purchase an RCA tube and desire to return the Sylvania 6BE6 to us, please pack the tube carefully and ship it to us at Mars Hill, North Carolina with a letter of explanation and reference to this form, and a prompt replacement with another RCA 6BE6 tube will be made. This will then be available as a spare.

Thank you for your cooperation. 73

Very truly yours,

THE HAMMARLUND MFG. COMPANY, INC.

Frank I. Lester, W2AMJ
Sales Manager, Communications Produ

FIL-SVM
Attachment

SUMMARY OF FIELD COMPLAINT WITH SUGGESTED PROCEDURE FOR ELIMINATING THE TROUBLE

Most of the trouble that has developed in the field has been due entirely to one or more defective tubes. In the event your receiver has excessive hum or erratic "S" meter operation, the two tubes most likely to cause this condition is V-7 in the schematic diagram on Page 19 of our Instruction Manual. This is a 6B07. V6A or the 6AZ8 tube type has also developed internal shorts.

Failure of the "Q" multiplier to operate properly or another possible source of excessive hum may be due entirely to the 12AX7, V6A and V4B, since this is a combined "Q" multiplier tube and first audio amplifier. Please do not rely too much on testing the tubes in a tube tester for unless t[illegible]y are internally shorting, there is a possibility that a tube tester will not prove reliable. [illegible] the fact that most tube testers do not provide a [illegible] excessive heater to cathode leakage, which is the most common cause of hum complaints. It is, therefore, suggested that any suspicious tube be replaced with a new one, since this is by far the best method of definitely eliminating this possible cause of complaint.

3. Excessive oscillator drift which would be most noticeable on all of the high frequency bands plus a microphonic condition is usually the result of a poor type 6C4 high frequency oscillator or V-10 in the schematic diagram. This tube is also capable of producing a poor beat note that may have a ripple in it, especially noticeable on the high frequency bands.

4. Spurious responses or what may appear to be image responses, can usually be attributed entirely to the 6 BE6 employed in the V-3 position. This is especially true in the event that you find a Sylvania type 6BE6 being employed in this position. Replacing the Sylvania tube with a new RCA 6BE6, will usually completely eliminite the spurious responses and intermittent operation, sich as a vaeiation in signal strength which may take place after a short period of operation. It has also been found that this tube may have to be shocked into the spurious oscillator, either by changing from transmit to receive or turning the receiver off and then on again.

CALIBRATION COMPLAINTS:

Please remember that the 100 kc calibrator was built into the HQ-110 receiver as a means of detecting dial error. The incorporation of the 100 kc crystal oscillator does not mean that you will find the 100 kc markers exactly at 100 kc intervals, insofar as dial readings are concerned. Obviously, if the 100 kc calibrator would line up at each of the 100 kc dial markers, there would be no point in incorporation the 100 kc crystal calibrator. Dial error in the order

continued.....

of 5 to 10 kc for the lower frequency bands, and 25 to 50 kc error on the 10 and 6 meter bands, is within our production tolerance. The procedure for correcting frequency deviations in excess of those previously specified will usually involve only a minor adjustment of the high frequency oscillator trimmer capacitor.

Please refer to Pages 10 and 11 of your instruction manual where the various alignment points are clearly indicated. All of the oscillator trimmer adjustments are clearly marked in figure 8, and obviously the proper trimmer for the particular band is the only adjustment to make. Please be sure, therefore, before attempting to make minor frequency corrections, that the proper trimmer is selected, then make the adjustments very slowly and carefully.

This procedure is only being incorporated in this resume for the more experienced amateur operator, in an effort to avoid the return of the receiver with the resultant delay. If you are in the least bit hesitant about making these adjustments, please do not attempt it. We might also point out at this time that any minor adjustments of the oscillator will in no way effect the tracking of the oscillator with the R.F. and mixer circuits involving complete realignment of the front end of the receiver. Complete realignment of the front end should only attempted when the necessary equipment and knowledge is available.

NOISY SENSITIVITY CONTROL:

A few noisy sensitivity controls have developed after a short period of use in the field. Should your receiver be suffering from this defect, please write directly to us at Mars Hill, North Carolina, mentioning the serial number of your receiver and the date of purchase. If our ninety-day warranty is still applicable, a new sensitivity control will be sent to you free of charge, and under these circumstances, we request that the defective control be returned. If our warranty has expired, a new sensitivity control part number K-38940-1 is available from us at Mars Hill, North Carolina at $1.25.

NOTE: NOTE: NOTE:

If the procedure referred to previously pertaining to the change of the screen resistor from 15K to 27K does not have the desired effect after making this change, the resistor R9 should be changed from 22K to 47K. This change should only be made as a last resort and will usually produce the desired results when the previous suggestions fail.