



# COLLINS RADIO COMPANY

CEDAR RAPIDS, IOWA, U. S. A.

AMATEUR SERVICE AGENCY BULLETIN

NO. 1003

DATE: August 2, 1960

EQUIPMENT TYPE: KWM-2, KWM-2A

SUBJECT: Trouble Shooting Aids

The following items are intended to be used only as aids in trouble shooting Transceivers KWM-2/2A.

1. Capacitor C25 is 3 uuf in some transceivers and results in poor coupling between R2 and L4. Changing C25 to 6 uuf (CPN 916-0122-00) will improve coupling.
2. VIF alignments: Transformer T2 is properly aligned when the top slug is out, or closest to the top of the can. Inductor L4 is correctly peaked when the slug is in or closest to the center of the coil. L4 should be peaked with the dial set at 55.
3. Low output on 10 meters is sometimes caused by the parasitic suppressor coils L15 and L16 having their turns too closely spaced. Separating them too far can result in parasitic oscillations.
4. Low crystal injection voltage on 10 meters can be helped with a new crystal or 6U8A tube.
5. Low P.A. output can be caused by a too-low screen voltage. Check resistors in screen circuit.
6. The 6CL6 plate trimmer capacitor C132 used on 20 meters should be set at one-third capacitance and L14 adjusted to resonate with C132.\* It is necessary to then realign the 15 meter trimmer C138 and the 10 meter trimmer C134.
7. Poor grounding of the r-f coil shield cans may cause oscillations, particularly on 80 meters. This can be remedied by loosening the two nuts holding the shield cans and retightening them.
8. If the receiver lacks sensitivity, check the coaxial leads near the relay cover on the r-f coil shield cans. Dressing the leads away from these cans will help.
9. A low "S" meter reading might be caused by R150 being less than 180 ohms.
10. Resistor R140 is a value selected for transmitter gain. It usually is 12K to 18K ohms and is connected across T1.

11. There are some 6AZ8 tubes which develop positive voltage at the grid causing avc and alc trouble. They may also cause excessive "S" meter and alc meter zero drift. If the voltage (no signal condition) at V1 or V3 grid differs from avc or alc line by more than 0.1 volt, the offending 6AZ8 tube should be replaced. The nominal avc line voltage is in the vicinity of 1.0 volts. The alc line will be approximately -1.3 to -1.8 volts.
12. Resistor R175 (47 ohms) and capacitor C262 (0.01 uf) is added between tube socket XV3, pin 3 (6AZ8 cathode) and ground to provide bias voltage and improve the operation of the i-f amplifier.
13. Vox instability can be reduced by adding a 0.1-uf capacitor across contacts 12 and 13 of relay K2.
14. Insufficient carrier suppression is sometimes caused by power supply ripple. It may be reduced by adding 4.0-uf capacitor C264 (CPN 183-1763-00) between tube socket XV3, pin 8 and ground.
15. A machine gun effect of the vox relay can be remedied by adding a 0.01-uf capacitor (CPN 913-3013-00) from tube socket XV1, pin 7 to ground. This effect is caused by relay transients fed through the ground lead of R3 which is connected to emission switch S9C.
16. If the alc meter will not zero, resistor R170 (220 ohms) across alc zero potentiometer can be removed. This will extend the range of the adjustment.
17. The value of capacitor C14 at the input of the mechanical filter has been selected in some cases to resonate with the mechanical filter and will not always agree with the schematic diagram.

A number of these suggestions and changes are incorporated in the KWM-2/2A of late serial numbers. It is suggested that these changes not be made unless trouble is encountered in that particular area.

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