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FROM: Publications Engineering Department, Cedar Rapids, Iowa 52406

**KWM-2/KWM-2A TRANSCEIVERS
SERVICE BULLETIN NO 8**

AMATEUR PRODUCT LINE

EQUIPMENT: KWM-2 Transceiver (522-1611-000)
KWM-2A Transceiver (522-1792-000)

SUBJECT: A. Eliminate AGC overshoot on noise pulses and provide dual time-constant action
B: Change source of delay bias to the AGC rectifier
C. Add delayed-decay (hang) AGC to the rf amplifier

Part A is applicable to KWM-2/2A Transceiver manufactured prior to March 1964, at which time production units incorporated the modification. Part A modification is recommended as it results in significantly improved performance.

Part B is applicable to all KWM-2/2A Transceivers built before August 1970 as this modification will be incorporated in production units at about the time of issuance of this service bulletin. Part B is also recommended as it also results in significantly improved performance. This change eliminates coupling from the AGC rectifier to the first audio tube.

Part C aids in reducing the effect of strong adjacent channel SSB signals on weaker wanted signals. Part C applies to all KWM-2/2A Transceivers built before August 1970. It is to be performed at the option of the customer. This change will be incorporated in production units.

For modification parts, price quotations, and availability dates, contact Collins Radio Company, Service Parts Department, Cedar Rapids, Iowa 52406. All parts orders must specify the Collins part numbers, quantity of parts required, and reference KWM-2/2A Service Bulletin No 8.

Serial numbers are assigned to amateur equipment in random sequence and give no indication of age or status. It often proves possible to estimate the approximate manufacture date by observing the date code on the tubes. Ideally, your unit must be circuit-traced to positively determine whether these revisions are, or are not, included.

MODIFICATION PROCEDURES:

1. Remove transceiver from cabinet as follows:
 - (a) Remove all four feet and the screw that is midway between the two rear feet.
 - (b) Turn the transceiver right side up, lift lid, remove the two bright-plated screws in the style-frame under the lid.

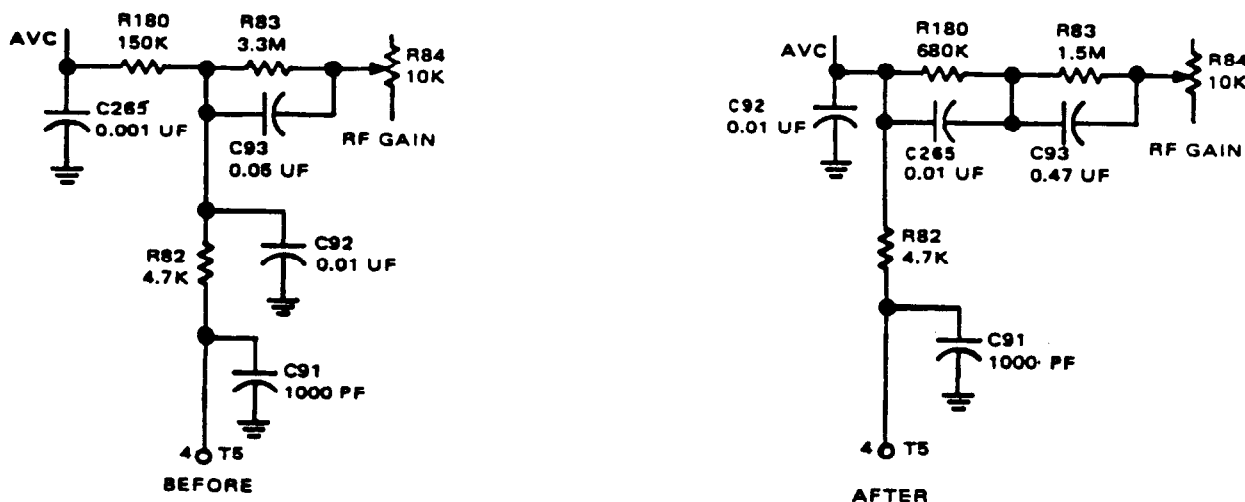
(c) Carefully slide the chassis forward, and set cabinet aside.

2. Examine unit to determine which of these modifications; A, B, or C might be installed. Disregard procedures for any that are incorporated.

NOTE: Refer to the KWM-2/2A instruction book for location and identification of components and terminals located in figure 7-2 on pages 7-3/7-4.

CAUTION: WHEN PERFORMING ANY OF THE MODIFICATIONS, IF THE TRANSCEIVER IS WIRED WITH POLYVINYL CHLORIDE-INSULATED WIRE EXERCISE EXTREME CARE SO AS NOT TO DAMAGE THE INSULATION WITH A SOLDERING IRON.

3. Part A: Eliminate AGC overshoot on noise pulses and provide dual time-constant action:



Part A, Schematic Change

NOTE: If both modifications A and C are to be installed, it is suggested they be done together.

(a) Place transceiver upside down on workbench with knobs to the right. Remove and save the screws used to attach the two nylon cable buttons to the strengthening rail. Remove and save the screw attaching the rear of the strengthening rail to the chassis. Remove and save the screw attaching the front of the strengthening rail to the chassis, taking care not to lose the nut, lockwasher, and flat washer underneath the rail. Remove the rail, saving any protective material located between the cable and the rail.

(b) Remove all components attached to E30-C, as follows:

- 1) 4700-ohm 1/4-W resistor, R82, connected from T5 terminal, 4 to E30-C.
- 2) 0.01 μ F disc ceramic capacitor, C92, connected from E30-I to E30-C.
- 3) 3.3-m Ω 1/4-W resistor, R83, connected from E30-C to E30-J.
- 4) 0.05- μ F capacitor, C93, connected from E30-C to E30-J.

NOTE: TS8 has been referred to as TB8 in some publications.

- 5) 150-k Ω 1/2-W resistor, R180, connected from TS8-1 to E30-C.

- (c) Remove 0.001- μ F disc ceramic capacitor, C256, connected from TS8-1 to ground ring on power connector.
- (d) Connect R83, 1.5-M Ω 1/2-W resistor (745-1485-00), from E30-C to E30-J.
- (e) Connect C93, 0.47- μ F capacitor (913-3804-00) from E30-C to E30-J.

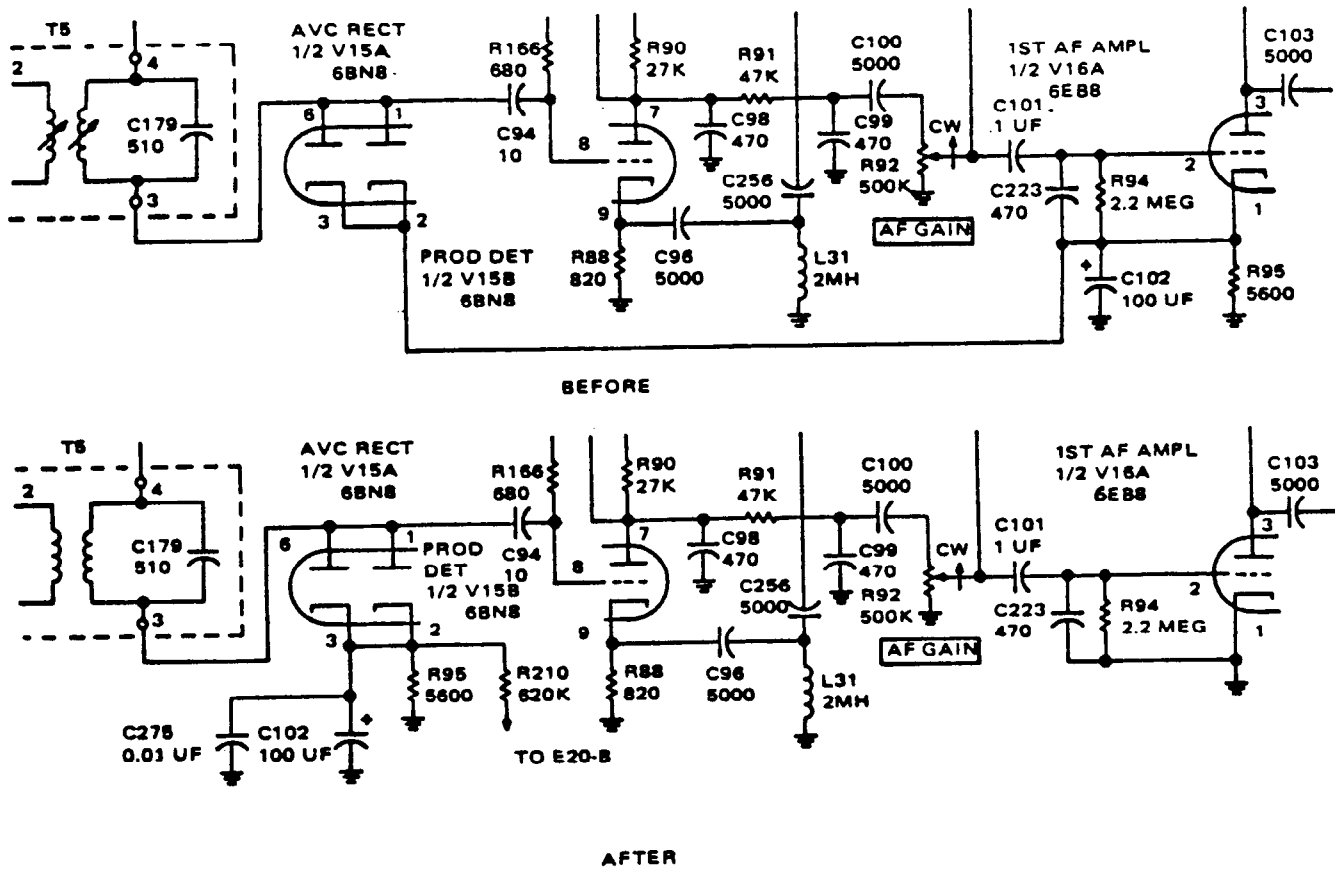
NOTE: In following steps (f), (g), (h), and (i) do not solder if you intend to perform modification C (refer to part C steps (d), (e), and (i) involving TS8).

- (f) Connect R82, 4700-ohm 1/2-W resistor (745-1380-00), from T5 terminal 4 to TS8-1. Use sleeving on leads and route this resistor around E30.
- (g) Connect R180, 680-k Ω 1/2-W resistor (745-1471-00), from TS8-1 to E30-C.
- (h) Connect C265, 0.01- μ F disc ceramic capacitor (913-3013-00), from TS8-1 to E30-C.
- (i) Connect C90, 0.01- μ F disc ceramic capacitor (913-3013-00), from TS8-1 to ground ring on power connector.
- (j) If no additional modifications are to be implemented, replace all hardware by reversing step (a).
- (k) Mark SB 8A on information chart (280-3778-010) and apply chart to convenient location on unit, or mark existing chart if one is present.

PARTS REQUIRED LIST: Part A

<u>QTY</u>	<u>COLLINS PART NUMBER</u>	<u>DESCRIPTION</u>
1	745-1380-000	Resistor, 4700 ohms, 1/2 W, R82
1	745-1471-000	Resistor, 680 k Ω 1/2 W, R180
1	745-1485-000	Resistor, 1.5 M Ω , 1/2 W, R83
2	913-3013-000	Capacitor, 0.01 μ F disc ceramic, C92, C265
1	913-3804-000	Capacitor, 0.47 μ F disc ceramic, C93
4.0 inches	152-2513-000	Sleeving, insulation, R82
1	280-3778-010	Chart, information

4. Part B: Change source of delay bias to the AGC rectifier:



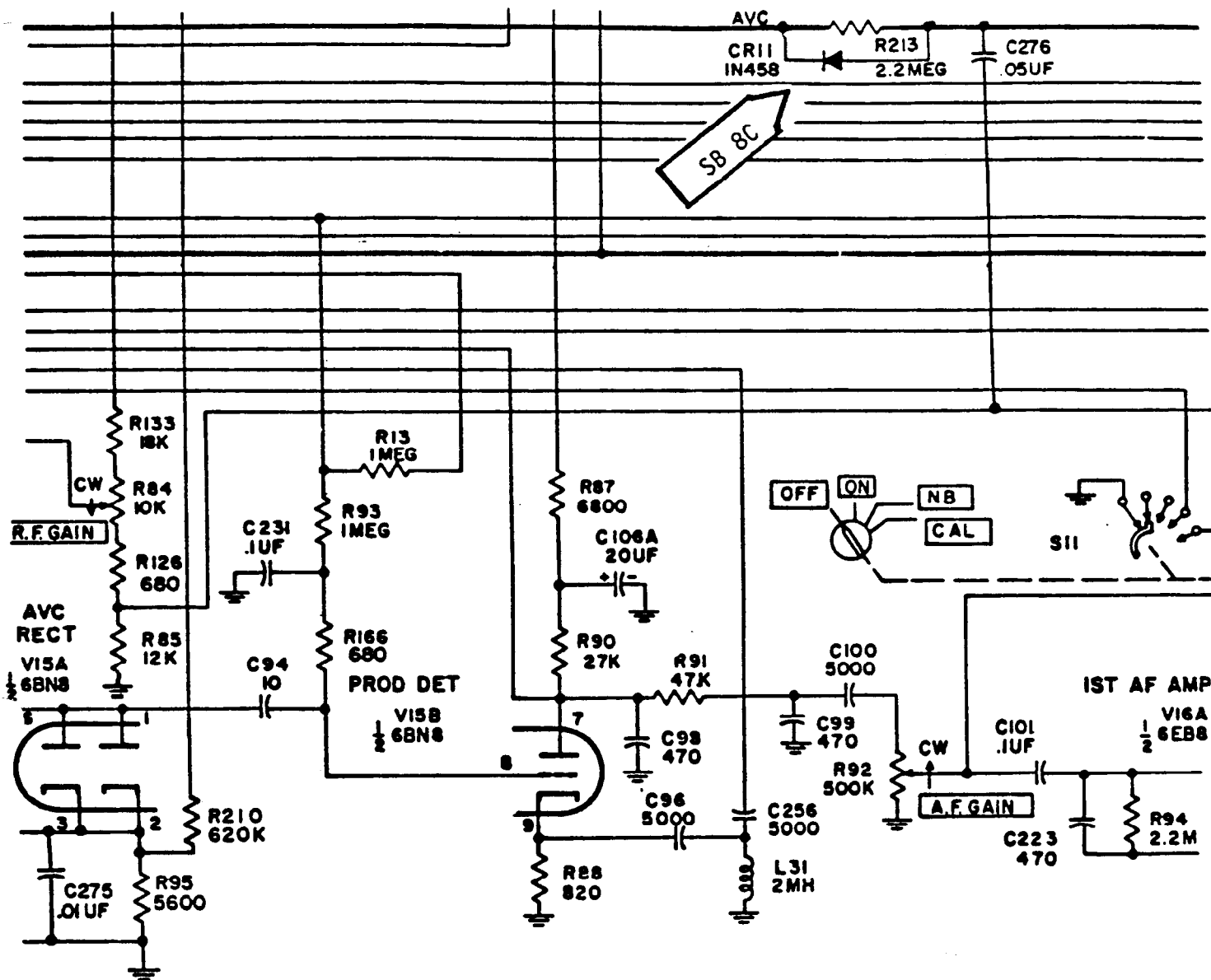
Part B Schematic Change

- Disconnect bus wire at tube socket XV15-2. Remove sleeving and route wire to center shield on XV16. Shorten wire as necessary, connect and solder.
- Add 620 k Ω resistor R210 (745-1469-000) from E20-B to XV15-2.
- Add 0.01 μ F capacitor C275 (913-3013-000) from XV15-3 to nearest ground.
- Mark information chart (280-3778-010) SB 8B. Apply chart to convenient location on unit if one is not present.

PARTS REQUIRED LIST: Part B

QTY	COLLINS PART NUMBER	DESCRIPTION
1	745-1469-000	Resistor, 620 k Ω 1/2 W, R210
1	913-3013-000	Capacitor, 0.01 μ F, ceramic, C275
1	280-3778-010	Chart, information

5. Part C: Add delayed-decay (hang) AGC to the rf amplifier:



Part C Revised Circuitry

- (a) Perform step (a) of Part A.
- (b) Remove and save the screw and lockwasher, nearer the front panel, used to mount audio output transformer T6.
NOTE: Production units that contain this modification use a 3-terminal strip for TS8 in place of adding TS11.
- (c) Install TS-11 (306-0299-000) using the screw and lockwasher removed in step (b).
- (d) Disconnect the white-green-blue wire from TS8-1, pull it back through the cabling and reconnect it to TS11-1.
- (e) Connect R213, 2.2-M Ω 1/2-watt resistor (745-0869-000), from TS8-1 to TS11-1. Sleeve resistor leads with (152-2513-000) as necessary.

- (f) Connect CR11, 1N458 diode, from TSS-1 (cathode/banded end) to TS11-1 (anode end). Sleeve diode leads with (152-2513-000) as necessary.
- (g) Connect C276, .05- μ F capacitor, from TS11-1 to E30-B.
- (h) Of the two white-green-blue wires connected to E40-I, disconnect, tape, and tie back the one showing continuity to the wire on TS11-1.
- (i) Connect a white-green-blue wire (439-4020-000) from E40-I to TS8-1, routing it through the cabling.
- (j) Replace all hardware by reversing step (a).
- (k) Mark information chart (280-3778-010) SB 8C. Apply chart to convenient location on unit if applicable.

PARTS REQUIRED LIST: Part C

QTY	COLLINS PART NUMBER	DESCRIPTION
1	745-0869-000	Resistor, 2.2 M Ω 1/2 W, R213
1	913-3153-000	Capacitor, .05 μ F, disc ceramic, C276
1	353-0205-000	Diode, 1N458, CR11
1	306-0299-000	Terminal strip, TS11
3 inches	152-2513-000	Sleeving
1	280-3778-010	Chart, information
1 foot	439-4020-000	Wire, A22, white-green-blue

- 6. Inspect unit for damage incurred during modification, dress wires and cables, and remove debris.
- 7. Reassemble unit by reversing step 1.
- 8. Check transceiver for proper operation.