

# SERVICE BULLETIN

EQUIPMENT TYPE 75A-3 and 75A-2A BULLETIN NO.

1

DATE

1-22-54

**Subject:** Modification to reduce internal noise in the receiver and effectively improve the signal to noise ratio under average operating conditions.

**Procedure:**

1. Short out the cathode resistor R-48 on I.F. amplifier V-5.
2. Short out the cathode resistor R-78 on I.F. amplifier V-18. This can be done most easily by removing the tube from the socket on the mechanical filter assembly and soldering a small bus jumper from pin 2 to pin 3 on the tube itself.
3. Connect a 100,000 ohm 1/2 watt resistor between pins 1 and 2 on the bottom of the mechanical filter adapter. A suitable resistor for this purpose can be obtained free of charge by contacting the Service Parts Department, Collins Radio Company, Cedar Rapids, Iowa. The part number to specify is 745-1128-00.

**Explanation**

It has been determined that in early 75A-3 receivers, the tube noise from V-18 was sufficient to over-ride the front-end noise of the receiver. This has been corrected in later sets by grounding the cathodes of these stages and allowing the front-end noise to predominate. These changes increased the overall gain of the set to the point where there may be a slight tendency to oscillate. The 10,000 ohm resistor serves to lower the plate load of V-18 and reduce the overall gain to about its original figure.

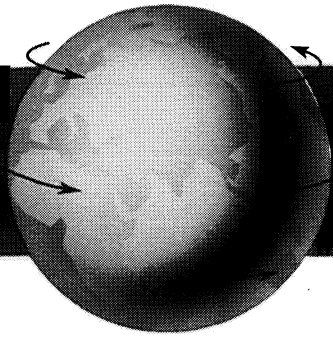
As a simple check on operation after these changes have been made, the following test can be made. Removing the first RF amplifier tube with the antenna disconnected should result in a drop of audio noise of at least 6 db. Make this test with the audio volume control set at about mid-scale to preclude any possibility of audio overloading. Set the emission switch to the AM position, the RF gain full on and the frequency dial at about 14.2 mc. Also, peak the antenna trimmer for maximum noise output before removing the RF amplifier tube. This test will give you a pretty good idea of how your set is performing and will tell you whether your receiver gain is correct and whether the receiver noise is coming from the first tube, as it should be.

Address any inquiries concerning this Bulletin to:

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COLLINS RADIO CO., FIELD SERVICE ENGINEERING DEPT. • 1930 HI-LINE DRIVE • DALLAS, TEXAS





# SERVICE BULLETIN

**EQUIPMENT TYPE 75A-3****BULLETIN NO. 2****DATE 10-27-54**

**Subject:** Suggest modifications of receivers, Serial No. 1300 and over having low-loss mechanical filters.

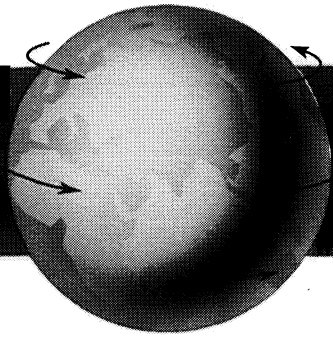
**Procedure:** The following changes in the 75A-3 will result in a 2 to 1 improvement in the blocking point of the receiver, and similar improvements in cross modulation characteristics of the receiver.

1. Change V-1 from 6CB6 to 6DC6.
2. Remove R-66 (120 ohms) and C-106 (cathode bypass), tie pins 2 and 7 of RF amplifier to ground.
3. Remove R-65 (1.5 megohm).
4. Change R-7 from 68 ohms, 1/2 watt to 180 ohms, 1/2 watt.
5. Change R-81 from 4.7K, 1/2 watt to 10K 1/2 watt.
6. Change R-67 to 150 ohms, 1/2 watt (meter shunt).
7. Remove AVC from pin 3 of mechanical filter box assembly. Connect pin 3 filter box to junction of R57, R58 (RF gain control and minimum bias resistor).

The above changes apply to sets using the low-loss mechanical filter. Similar revisions will also be made to receivers employing high-loss filters.

R. W. Bellew/C. M. Lowder





## SERVICE BULLETIN

EQUIPMENT TYPE 75A-3

BULLETIN NO. 3B

DATE 11-24-54

**SUBJECT:** The following modification can be made to 75A-3 Receivers, Serial Number 1299 and under using the high-loss F455B series filters, and will improve the receiver performance.

**Procedure:** The following changes to the 75A-3 will result in a 2 to 1 improvement in the cross modulation and blocking characteristics of the receiver.

1. Change V1 from 6CB6 to 6DC6.
2. Remove R66 (120 ohms) and C106 (cathode bypass), tie pins 2 and 7 of RF amplifier to ground.
3. Remove R65 (1.5 megohm).
4. Change R7 from 68 ohms 1/2 watt to 180 ohms, 1/2 watt.
5. Check to see that pins 2 and 7 of V18 are grounded. If not, ground them.
6. Remove AVC from pin 3 of mechanical filter box assembly. Connect pin 3 of filter box to junction of R57, R58 (RF gain control and minimum bias resistor).
7. Add R84, 100 ohm, 1/2 watt resistor and connect between pin 7 of V7 and R50. Move present connection junction R67 and negative side of meter from junction of R50 and R49 to junction of R50 and R84.
8. Change R67 to 220 ohms, 1/2 watt  $\pm$  5%.
9. Change R47 to 220 ohms, 1/2 watt  $\pm$  5%.
10. Change R50 to 56 ohms, 1/2 watt  $\pm$  10%.

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**Note:** This bulletin replaces Revised Bulletin No. 3A dated November 18, 1954, and corrects step 7.

