



DATAFILE BULLETIN

Equipment: 406-470 MC MASTR Progress Line Receivers

Symptom:

RUMBLE AT LOW VOLUME SETTING

This condition is noticed as a low rumble when the VOLUME control is set at a low level and the SQUELCH control is set at critical.

Cause:

Excessively sharp voltage variations on DC amplifier output which were coupled into audio amplifier.

Factory Solution:

Model Numbers

Revision

4ER42B10-15 and 22-27

D

4ER42B16-21 and 28-45

E

This revision provided decoupling between the output of the DC amplifier and the input of the first audio stage to reduce rumble at low volume settings. Resistor R46 was replaced by decoupling network R74-R75-C71 on the IF/Audio & Squelch Board.

This revision also reduced discriminator output variations from receiver to receiver by changing Q4 and Q5 on the IF/Audio & Squelch Board from part 19A115123-P1 to part 19A11552-P1. Temperature compensation for the low IF circuits was improved by changing the temperature coefficient of C10, C11 and C22 from -470 PPM to -330 PPM.

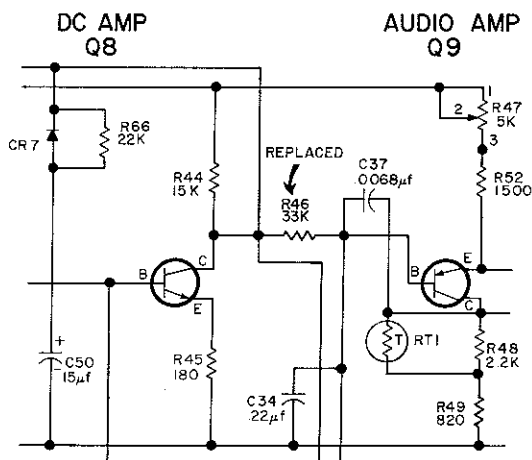


Fig. 1 - Old Circuit

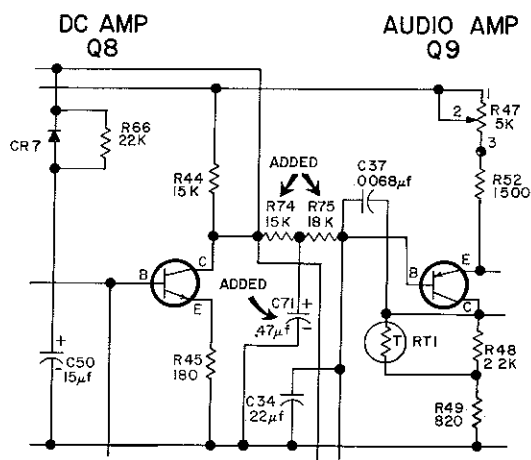


Fig. 2 - New Circuit

Field Solution: If rumble is noticed at low volume settings, it can be eliminated by adding the decoupling network on the IF/Audio & Squelch Board as follows:

1. Remove R46 (33K ohms $\pm 10\%$, 1/2 watt) from the IF/Audio Board.
2. Mount R74 (15K ohms $\pm 10\%$, 1/2 watt) and R75 (18K ohms $\pm 10\%$, 1/2 watt) in the holes from which R46 was removed. See Figure 3.

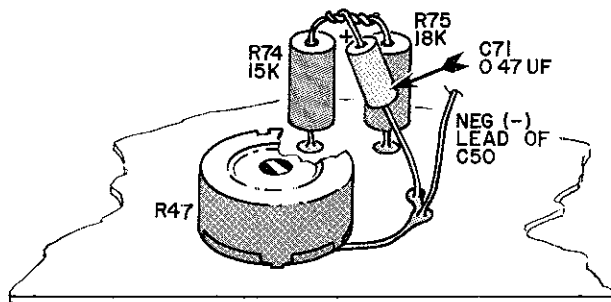


Fig. 3 - Decoupling Network

3. Solder the leads of R74 and R75 together with the positive (+) lead of C71 (0.47 μf $\pm 20\%$, 35 VDCW), as shown.
4. Solder the negative (-) lead of C71 into the unused hole next to the negative lead of C50, as shown in Figure 3.

Ordering Info:

To eliminate rumble at low volume settings as described above, only R74, R75 and C71 are required. These components are available from Service Parts.

Symbol Number	G-E Part No.	Description
C10 and C11	5496219-P566	Capacitor, ceramic: 130 pf $\pm 5\%$, 500 VDCW, -330 PPM temp coef.
C22	5496219-P564	Capacitor, ceramic: 110 pf $\pm 5\%$, 500 VDCW, -330 PPM temp coef.
C71	5496267-P28	Capacitor, tantalum: 0.47 μf $\pm 20\%$ 35 VDCW.
Q4 and Q5	19A115552-P1	Transistor, silicon: NPN, sim to Type 2N2714.
R74	3R77-P153K	Resistor: 15,000 ohms $\pm 10\%$, 1/2 watt.
R75	3R77-P183K	Resistor: 18,000 ohms $\pm 10\%$, 1/2 watt.

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