

**Heathkit Service Bulletins - GR-78 Portable Shortwave Receiver**

February 9, 1970

GR-78  
Transistor General Coverage Rcvr

**Bulletin No:**  
**GR-78-1**

Rocker Switches

[PN 60-45] S.P.S.T. switch is being replaced by [PN 60-48] D.P.D.T. switch with improved contacts. Four of the six lugs are removed when it is used as a S.P.S.T. switch. The new improved contact switch [PN 60-48] will also be used to replace the [PN 60-32] D.P.D.T. switch.

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August 11, 1970

GR-78  
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**Bulletin No:**  
**GR-78-2**

GR-78 Modifications

Band F Oscillator Problem:

OSC. BOARD

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1. Remove existing osc. FET and discard [PN 417-207].
2. Replace with MPF-105 [PN 417-169]. SS hole will not be used.
3. Remove and discard R300 [100 ohm] and run white wire directly to hole.
4. Remove and discard R305 [10K ohm] on foil side of board.
5. Remove and discard R304 [10K ohm] across Band F coil L306. Replace with 2.2K ohm 1/2 W [PN 1-44].
6. Drain voltage will now be 9.6 volts DC or slightly higher.

MIXER BOARD

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1. Remove and discard R203 [1000 ohm 1/4 W] and replace with 5600 ohm 1/4 W [PN 1-26-12].
2. Remove and discard R204 [5600 ohm 1/4 W] and replace with 22K ohm 1/4 W [PN 1-45-12].

\*\*\*Oscillator trimmers will have to be re-adjusted slightly.

500 KHZ CRYSTAL CALIBRATOR

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Replace C402, 68pf with [PN 21-21] 200pf disc. ceramic. This change assures oscillation.

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FRONT-END AGC

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Replace C419, .05mfd disc with [PN 20-102] 100pf mica. This change provides improved AGC and also improves distortion.

Also replace C511, 10mfd electrolytic on terminal strip with [PN 25-123] 2 mfd electrolytic.

FILTER PASSBAND

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To improve passband, make the following changes:

Replace C406, 100pf mica with 3300 ohm 1/2W resistor [PN 1-14]. Stand resistor on end.

Remove and discard C413, 100pf mica. Replace with 3300 ohm 1/2W resistor and .05 mfd disc in series. Stand resistor on end.

HUM ELIMINATION

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While using whip antenna indoors and power cord plugged in [charging].

1. Remove and discard C508 and C509 [.001 mfd line by-passes].
2. Remove existing 2 wire AC receptacle and replace with 3 wire receptacle [PN 432-76]. Run wires from new receptacle to existing terminal strip.
3. Replace existing 2-wire line cord [PN 89-3] with 3-wire cord [PN 89-30].

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March 23, 1973

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**Bulletin No:**  
**GR-78-3**

Microphonics

PROBLEM: Squealing - howling - general instability.

SOLUTION: Replace tuning capacitor C501, [PN 26-123] with [PN 26-143].

This change will go into effect with level 11 production having series numbers [11----] or higher.

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November 20, 1974

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**Bulletin No:**  
**GR-78-4**

Low Battery Life and Inoperative "S" Meter

This problem can be caused by the "S" Meter terminals shorting to chassis.

To correct this problem, perform the following:

-- Straighten the meter terminals and then install a 1 1/4" X 1 1/4" piece of insulating paper [PN 75-108] on the rear of the meter.

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April 16, 1975

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**Bulletin No:**  
**GR-78-5**

FM Interference on Band F

Install the following change to minimize this type of interference:

Change:

1. Install ground spring clip [PN 258-183] between tuning capacitor and chassis. Scrape both capacitor and chassis to assure good contact.
2. Change R304 across Band F oscillator coil from 5.6K ohm to 2.2K ohm [PN 1-44].

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September 27, 1976

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**Bulletin No:**  
**GR-78-6**

Band F Too Broad at Low End

A resistor change was made in this unit in Bulletin GR-78-5 to minimize FM interference on band F. The resistor, R304, was originally a 5.6K ohm and was changed to a 2.2K ohm. This lower value resistor has caused some units to tune too broad at the lower end of band F. If this complaint is received, R304 may be changed back to the 5.6K ohm to correct the problem.

Check the receiver for FM interference before returning the unit to the customer.

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November 9, 1976

GR-78  
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**Bulletin No:**  
**GR-78-7**

Cannot Align Band E and F

If Band E and F cannot be aligned at the low end, change:

C315 from .1 uf to .05 uf [PN 21-143].

Be sure to check all bands for oscillation after this capacitor change.

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November 10, 1976

GR-78  
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**Bulletin No:**  
**GR-78-8**

Low Sensitivity

If the sensitivity of the receiver is low and no background noise can be heard, check for one or more open ceramic filters [PN 404-399]. This defect is usually caused by excessive heat applied during soldering.

Sometimes pushing on or wiggling the suspected filter will cause the unit to operate - unless another one is defective.

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September 20, 1979

GR-78  
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**Bulletin No:**  
**GR-78-9**

Oscillator Will Not Align

If you cannot achieve a high enough frequency on the high end of bands E and F, and also, cannot lower frequency enough on high end of band A; do this:

- Remove jumper wire from circuit board to top of trimmer capacitors C305, C306, and
  - Install a 1.5 pf [PN 28-4] or 2.2 pf [PN 28-1] phenolic capacitor in series, as necessary for proper tracking.
  - Also, install a 24 pf capacitor [PN 20-77] in parallel with C301 if necessary.
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February 29, 1984

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**Bulletin No:**  
**GR-78-10**

Calibrator Inoperative or Intermittent

Disconnect the lead of C504 going to connector CH on the large circuit board. Bend the capacitor 180 degrees and reconnect the free lead to the center lug of connector CF. This moves the output lead of C504 to G1 of Q201, increasing the level of the calibrator signal and reducing the oscillator load.

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This is all that I hold on the GR-78. After you asked for it Dave, thought I would just do it, or if I put it on the 'back burner' it would be there for awhile. Hope it will help you out. Enjoy!

73 de Joe W7LPF/4 [NNN0KUU]  
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