

## SERVICE BULLETIN Amateur Radio Division

**SUBJECT**  
TS-950S Rear Panel Cooling Fan

**DATE**  
January 24, 1992

The 50 watt power down circuit will begin to operate if the cooling fan on the rear panel fails to operate after 15 minutes of continuous transmission in order to protect the final amplifier circuit. Failure of the fan will prevent the power down circuit from returning transmit power to normal levels since the transformer temperature remains high. This trouble can sometimes be traced to a pinched/burnt wire near resistor R17 of the AVR unit (X43-3070-01.)

**Cause:**

If the red wire attached to connector CN2 of the AVR unit is pinched between the chassis and ground the insulation might be damaged and allow this line to short to the chassis. This wire supplies 15 vdc to the fan motor thru resistor R17. Excessive current is drawn thru R17 under this circumstance, approximately 1.5A rather than the normal .5A. This can cause the resistor to become red hot and damage the surrounding circuit board, since R17 is a metal oxide film resistor.

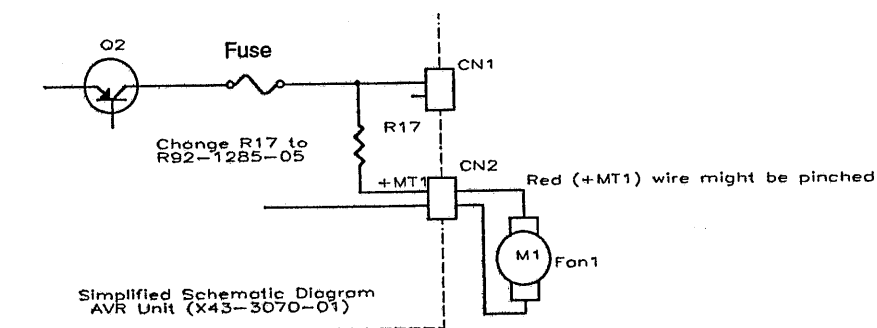
**Corrective action:**

R17 should be replaced with a ceramic resistor if this symptom is encountered. Replacing the metal oxide film resistor with a ceramic resistor will prevent damage to the circuit board should the red lead become shorted.

**Parts Required:**

10 ohm 2 Watt Ceramic resistor

R92-1285-05



(C) January 28, 1992 Kenwood U.S.A.

Communications & Test Equipment Group

KENWOOD U.S.A. CORPORATION  
Communications & Test Equipment Group  
2201 E. Dominguez Street  
Long Beach, California 90810  
Phone: (310) 639-7140  
FAX: (310) 631-3913

## SERVICE BULLETIN

Amateur Radio Division

current. It is essential, however, that these resistors be in good working order as they ensure stable operation of the final amplifiers.

4. R17 and R18 must be replaced whenever you replace the final transistors. The ceramic resistors are easy to identify. They are rectangular and white in color.

### Replacement Procedure:

1. Replace the bad MRF-429 transistors.
2. Remove R17 and R18 from the component side of the Final circuit board.
3. Solder the ceramic resistors directly to the base and emitter of the final transistors. The stability of the circuit is improved by soldering R17 and R18 directly to the base and emitter of the finals. Do not install them in the old locations!

### Final Unit (X45-3330-00) Component Side View

