HARRIS

SERVICE BULLETIN

MAINTENANCE AND MODIFICATION DATA

Broadcast Group

Bulletin No. AM-194-TLH

Equipment: MW-5/10, A, B

Date January 1984

SUBJECT: HV Protection board, nuisance trips

Some problems have come to our attention which result in unwanted fault detection by the HV Protection board:

1. Timing Circuit Too Fast. The capacitor on the HV Protection board which determines the speed at which a fault condition is detected is too small. This can result in an unwanted trip off when an apparent fault condition is only very momentary.

   Change capacitor C28 from 0.15 mfd to 47 mfd (included with this bulletin). Install the 47 mfd capacitor with the negative end to ground. Pin 1 of U6 is ground and is designated by the black dot on the printed circuit board.

   CAUTION

   DISCONNECT ALL PRIMARY POWER AND DISCHARGE ALL HIGH VOLTAGE COMPONENTS BEFORE SERVICING.

2. HV Supply Filtering. In the transition from MW-5 to MW-5A a few years ago, one of the product improvements made was the use of larger value capacitors in the filter circuit of the high voltage supply. The purpose in this change was to lower intermodulation distortion (IMD).

   Implementation of the HV Protection board has brought attention to this difference between the older MW-5 transmitters and the later A and B models.

   The HV Protection board can sense the audio ripple in the HV supply if it falls in the 90-130Hz range at a sufficient level. Since the older models had less filtering, the audio ripple in the HV supply is higher. On peaks of modulation in the 90-130Hz range, it is possible that a HV fault will be detected.

   There are two solutions to this problem:

   A. Increase the HV supply filtering by replacing the existing 1 mfd capacitors in the 1C1 and 1C15 positions with the 2.9 mfd size used in the A and B models. This will improve the distortion performance of the transmitter.

   The part number of the 2.9 mfd HV filter capacitor is 510-0706-000 and sells for $525.00.

HARRIS CORPORATION P.O. Box 4290, Quincy, Illinois 62305 217/222-8200

B. Raise the threshold of fault detection by increasing R27 on the HV Protection board from 2200 ohms to 2700 ohms (supplied with this bulletin). This will make the HV Protection less sensitive.

The resistor change does not represent a compromise in protection since transmitters with the smaller value filter capacitors have a higher level of 120Hz ripple.

If you choose to install the larger HV supply capacitors, it is advisable to leave R27 at the original value.

CAUTION

DISCONNECT ALL PRIMARY POWER AND DISCHARGE ALL HIGH VOLTAGE COMPONENTS BEFORE SERVICING

3. HV Capacitor Case Grounding. Check to see that the case of 1 C15 is actually grounded: If not already done so, route the copper strap grounding 1C15 between the case of the capacitor and the capacitor holding bracket. Scrape paint off of the capacitor as necessary to assure contact with the copper strap. If left ungrounded, the case of the capacitor may become charged up to a high voltage. When it discharges (via an arc under the capacitor) a transient can be sent to the HV Protection board in a manner which disrupts its operation, causing false trips

CAUTION

DISCONNECT ALL PRIMARY POWER AND DISCHARGE ALL HIGH VOLTAGE COMPONENTS BEFORE SERVICING

Verification of operation of the HV Protection board is the same as described in the manual, except a fault recognition time of about two seconds can be expected. Previously, the fault recognition time was practically instantaneous.