SEARCH, very little movement of the spot by the spot deflection controls was possible. The trouble was found to be a high resistance in relay K–2 of the TACU. This trouble was cleared by burnishing the contacts of K–2. It was also noted that when operating in SEARCH, the movement of the spot by the elevation spot control was reversed. The trouble was found to be that the leads on R–1–R–2 on B–2 were reversed. The following changes were made on the equipment: 1) A 51-mmfd capacitor was added from pin 4 of V–404 to ground, which completely eliminated the shortening of the precision sweep at short ranges. 2) The value of R–481 was changed from 0.82 megohms to 0.62 megohms which gave a better control over the amplitude of the main sweep. 3) The value of R–516 was changed from 0.2 megohms to 0.39 megohms which stabilized the operation of the modulation blocking oscillator, thereby eliminating the tendency of this particular radar to double trigger at some repetition rates.

MARK 25 MOD 2

U.S.S. Macon

The *U.S.S. Macon* reports the following operational difficulties and corrective remedies on the Mark 25/2:

1—Radar out of commission—no transmitter pulse—no magnetron current—no high voltage. A check of the power supply revealed an open filament in the high voltage rectifiers. Replacement of the tube and energizing of equipment resulted in a blown fuse (F–15). Replaced fuse and again energized with same result—blown F–15. Further checking and testing revealed Modulator Tube (4C35) was shorting. After replacing this tube and putting in a new fuse, operation of the equipment returned to normal.

2—Slow slew not operating—fast slew and handwheel control operating satisfactorily — slew satisfactory when operating in AUTOMATIC—slew switch checked satisfactory. Megging of cables from slew switch to range unit revealed a short between Junction Box #5 and radar unit assembly. Disconnected the grounded lead and replaced with a spare wire in the same cable. After obtaining slew operation, next adjusted slew potentiometer to provide a 0 to 500-yards-per-second rate of slew.

3—Radar out of commission—no sweeps, main or precision, on all scopes. Checked range sweep chassis—found no output, but input satisfactory. Tubes all tested good. Checked cable from range sweep chassis to indicators, found it shorted. Replaced shorted lead with a spare in same cable. Sweeps returned to normal in all indicators but the "A" scope. Found lead to aquadag coating in tube broken. Replaced lead and operation returned to normal in all respects.

4—The Delta E sweep would not follow director dials—would follow only up to 45°. Tried a different computer with no improvement. Checked angle sweep chassis and found R–51 and R–52 had changed value. Replaced these components and adjusted Delta E sweep and operation returned to normal.

5—Targets would appear and disappear at intervals, ringtime unstable—AFC would not lock in. All tubes checked good. Voltage checks revealed that line voltage was not constant. Inspection of regulating transformers disclosed an open filter capacitor and arcing between output leads and ground. Replaced the capacitor and insulated the output leads, after which operation was normal.

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