

Section 5
MAINTENANCE

SYMBOL	TYPE	FUNCTION
V108	6BA6	Third 500 kc i-f amplifier
V109	6BA6	Fourth 500 kc i-f amplifier
V110	12AX7	Detector and AVC rectifier
V111	12AU7	AVC amplifier and i-f output cathode follower
V112	12AX7	Noise limiter and first audio amplifier
V113	6AQ5	Audio power amplifier
V114	6BA6	Beat frequency oscillator
V115	5V4	Power rectifier
V116	OA2	Voltage regulator
V001	6BA6	Variable frequency oscillator
V002	6BA6	Oscillator isolation amplifier

5.2. TROUBLE SHOOTING.

5.2.1. GENERAL. - Improper performance of radio equipment is usually due to tube failure. Refer to paragraph 5.1.4. In general, the type of trouble encountered in radio apparatus can be ascertained by means of various tests and measurements. Components in the associated circuit may then be checked and the cause of trouble located.

Useful resistance and voltage measurements will be found in table 5-1.

NOTE

NO ONE BUT AN AUTHORIZED AND COMPETENT SERVICE MAN EQUIPPED WITH PROPER TEST FACILITIES SHOULD BE PERMITTED TO SERVICE THIS EQUIPMENT.

5.2.2. FUSES. - This equipment contains fuses of the correct rating. Replace blown fuses only after carefully examining affected circuits to make certain that no permanent fault exists. Use only 1.5 ampere, slow blow fuses.

5.3. ALIGNMENT.

5.3.1. GENERAL. - Should the receiver get out of alignment, return it to satisfactory performance by means of the following procedure.

5.3.2. EQUIPMENT AND TOOLS USED FOR ALIGNMENT.

- (a) 500-kc to 30.5-mc signal generator.
- (b) D-c vacuum tube voltmeter.
- (c) Oscilloscope.

(d) Detuning network consisting of a .01 capacitor and 4700-ohm resistor in series with clip leads.

(e) Fiber or bakelite adjusting tool, 1/8-inch diameter with screwdriver type bit. (Supplied)

(f) Fiber or bakelite adjusting tool, 5/16-inch diameter with screwdriver type bit. (Supplied)

(g) Small screwdriver.

NOTE

IF A SIGNAL GENERATOR IS NOT AVAILABLE, THE CALIBRATION OSCILLATOR MAY BE USED FOR ALIGNMENTS 5.3.5 (a through b) AND 5.3. (9 through 14). USE THE PROCEDURE OUTLINED BELOW BUT LEAVE THE CALIBRATION OSCILLATOR ON. SET THE BFO AT EXACTLY 500 KC AS IN PARAGRAPH 5.3.6. COUPLE THE OUTPUT OF THE CALIBRATION OSCILLATOR, AT C173, TO PIN 7 OF V106 WITH A CLIP LEAD. TUNE THE RECEIVER TO EACH ALIGNMENT FREQUENCY BY ZERO BEATING WITH THE BFO. THEN TUNE TRIMMERS AND CORES, USING INPUT METER TO INDICATE MAXIMUM READINGS.

5.3.3. CRYSTAL OSCILLATOR TRIMMER ADJUSTMENT.

(a) By means of a "Q" meter or accurate bridge measuring device, adjust trimmer C167 marked XTAL on chassis, to provide an input capacitance of 32 mmf across the crystal holders. This value will occur at or near minimum capacitance setting. Make measurement by removing any one of the hfo crystals