TECHNICAL MANUAL
OPERATOR,
ORGANIZATIONAL, DIRECT SUPPORT AND
GENERAL SUPPORT MAINTENANCE MANUAL

PERIODIC TESTS OF HAWK SYSTEM
MAJOR ITEMS

HAWK AIR DEFENSE GUIDED MISSILE SYSTEM

This copy is a reprint which includes current pages from Changes 1 thru 10

HEADQUARTERS, DEPARTMENT OF THE ARMY
MARCH 1981

WARNING FOR RADIO-FREQUENCY RADIATION HAZARD

Radio-frequency (rf) radiation from radar antennas and associated equipment is a potential hazard to personnel. Rf radiation is not cumulative but it can be hazardous. It heats the body tissues, and, if the radiation intensity is sufficiently high, will permanently damage the tissue. This damage is not immediately apparent.

Precautions should be taken to ensure that personnel are not exposed to rf radiations of hazardous intensity levels. Personnel who must be within the hazardous distances for the below listed radars should be instructed not to place themselves on the radiating side of the antenna and to never look into a transmitting horn or open waveguide which is connected to an energized transmitter.

Personnel are prohibited from entering areas where they may be exposed to levels of rf radiation above 10 milliwatts per square centimeter (10 mw/cm^2). This level, though not considered hazardous, is stipulated by AR 40-583 as the maximum permissible exposure level for personnel.

A power intensity of at least 10 mw/cm^2 is present along the axis of each radar's transmitted beam, for the distances listed below. These distances are based on calculations and actual measurements and may be used as a guide to prevent radio-frequency radiation injury. In each instance, radiation intensity rapidly diminishes as the distance is increased.

ANTENNA	DISTANCE
High-powered Illuminator Radar	111.5 m (366 ft)
Cw Acquisition Radar non-scanning	74 m (243 ft)
scanning	36 m (118 ft)
Pulse Acquisition Radar	15.2 m (50 ft)
Range-only Radar	45.1 m (148 ft)

In HIPIR AN/MPQ-61, the wide angle illuminator (WAI) antenna, which provides low altitude simultaneous HAWK engagement (LASHE) has the capability to produce a power density level greater than 10 mw/cm^2 to a range of 11 meters (36 feet) in the main beam.

The 36 m distance for the scanning CWAR antenna does not mean the system constitutes a hazard to personnel while the antenna is scanning. When the antenna stops scanning and is stationary, those systems capable of producing power densities greater than 50 mw/cm^2 must be controlled so that under no circumstances will personnel be exposed to intensities equal to or greater than 50 mw/cm^2. When the radar is energized to full radiate, personnel must not be within 74 meters (243 feet) of the antenna along the designated azimuth.

No radiation hazard exists at radar ground level if the radars are not depressed below zero degrees elevation. When at all possible during maintenance, however, place the antenna at a high elevation. Personnel are restricted from the area atop the radars or other elevated locations in front of the antennas when radiating.

Personnel may move in and around the CWAR to zero range at ground level provided they are below the horizontal center line of the antennas. There is no height restriction to either side or rear of the antennas.

Potentially hazardous power density levels do not exist in the radiation field of the pulse acquisition radar when scanning.

The above information is applicable to typical HAWK sites. The services of the U.S. Army Environmental Hygiene Agency are available, in accordance with the provisions of AR 40-583 for the evaluation of potential radio-frequency hazards at sites where unusual operating or site conditions may exist.

WARNING

DANGEROUS VOLTAGE

is used in the operation of this equipment

DEATH ON CONTACT

may result if personnel fail to observe safety precautions

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technician is aided by operators, he must warn them about dangerous areas.

Whenever possible, the power supply to the equipment must be shut off before beginning work on the equipment.

Take particular care to ground every capacitor likely to hold a dangerous potential. When working inside the equipment, after the power has been turned off, always ground every part before touching it.

Use extreme caution when operating equipment protected by interlocks. Ensure that interlocks (doors, panels, and drawers) are functioning properly. (TM 9-1425-525-12-4)

Be careful not to contact high-voltage connections when installing or operating this equipment.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through the vital organs of the body.

WARNING

Do not be misled by the term "low voltage." Potentials as low as 60 volts may cause death under adverse conditions.

For artificial respiration, refer to FM 21-11.

EXTREMELY DANGEROUS POTENTIALS

greater than 500 volts exist in some of the units tested in this manual. Warnings covering these units are contained in the individual chapters.

For the pulse acquisition radar:

MECHANICAL HAZARD

When performing maintenance procedures in the vicinity of the antenna, ensure that the antenna SAFE/ OPERATE switch, located on the receiver-transmitter group, is in the SAFE position, and the stow lock is engaged.

For the IFF antenna:

MECHANICAL HAZARD

When performing maintenance procedures in the vicinity of the IFF antenna, ensure that both of the two antenna safety switches (one located on the IFF antenna pedestal and the other on the whip antenna base) are set to SAFE. In addition, not more than three personnel should occupy the roof of the ICC or PCP at any time.

For the cw acquisition radar:

MECHANICAL HAZARD

When performing maintenance procedures in the vicinity of the antenna, ensure that the antenna SAFETY SWITCH, located on the radar set group, is in the SAFE position.

For the range-only radar:

MECHANICAL HAZARD

When performing maintenance procedures in the vicinity of the antenna, ensure that the antenna SAFETY SWITCH, located on the base of the pedestal, is in the SAFE position.

For the high-powered illuminator radar:

MECHANICAL HAZARD

When performing maintenance procedures in the vicinity of the antenna, ensure that the antenna PEDESTAL SAFETY SWITCH, located on the motor-generator assembly, is in the SAFE position.

For the launcher:

MECHANICAL HAZARD

When performing maintenance procedures in the vicinity of the LCHR boom, ensure that the correct LAUNCHERS SAFE-OPERATE-ALERT switch for the LCHR to be checked, located on the launching section control box, is set to the LAUNCHERS SAFE position.

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Insert the latest changed pages in accordance with the instructions on the transmittal sheet.

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TECHNICAL MANUAL
No. 9-4935-1548-14*

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., *30 March 1981*

OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL PERIODIC TESTS OF HAWK SYSTEM MAJOR ITEMS HAWK AIR DEFENSE GUIDED MISSILE SYSTEM

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publication and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Missile Command, ATTN: AMSMI-MMC-LS-LP,Redstone Arsenal, AL 35898-5238. A reply will be furnished to you.

TABLE OF CONTENTS

'This manual supersedes TM 9-4935--1548--14, 23 July 1979, including all changes.

CHAPTER 1
INTRODUCTION

1-1. Scope

a. This manual contains the periodic test procedures for the major items of the HAWK air defense guided missile system using the calibrator standard (cal std), digital multimeter (DMM), and calibration test set TF8-1020.

b. The requirement for nomenclature distinction between "Basic and Improved" HAWK Systems and major items is no longer applicable. Action to delete this distinctive terminology will be taken as the respective pages of this manual are changed for other reasons.

1-2. Destruction of Materiel to Prevent Enemy Use

Destruction of materiel to prevent enemy use will be undertaken by the user upon order of the unit commander. His decision will be based upon orders and policies established by the Army Commander.

Procedures for destruction of the major item and related materiel are contained in TM 43-0002-24.

1-3. Forms, Records, and Reports

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS). The DA PAM is published in the Maintenance Management UPDATE. Units may subscribe to Maintenance Management UPDATE by submitting a completed DA Form 12-13.

1-4. General Instructions

Observe the following instructions to ensure optimum results.

a. Procedures. Unless otherwise stated, all control settings or adjustments in the procedures pertain to the cal std. Refer to TM 9-4935-1540-14-1 for periodic test intervals. The weekly test procedure should be performed on each major item after completion of the periodic tests. Within each major item procedure, blocked or shaded areas will be encountered. If during the performance of these procedures you are performing all of the checks on a particular major item, ignore the steps in the blocked or shaded areas. If on the other hand you are performing checks on only one particular panel or circuit of a major item, perform all the steps or substeps in that particular procedure, including the blocked or shaded areas. Pages containing shaded areas will be changed to the "blocked style" of presentation as changes occur for other reasons.

b. Assistance for Intermediate Maintenance Personnel. A battery mechanic familiar with the major item should be present to assist in performing the tests.

c. Mechanical Zeroing of Meters. The meter under test must be at mechanical zero before starting the check. If the meter has a mechanical adjustment on the face, set the meter to zero. If the meter does not indicate zero, and there is no external adjustment, refer to d below.

d. Out-of-Tolerance Conditions. Circuits that are not within specified tolerances should be repaired. If immediate repair cannot be made to the circuit, the percentage of tolerance degradation should be noted and located in the vicinity of the circuit display. The test procedure should be continued and the major item operational status should not be downgraded.

e. Erratic Readings. Meters do not always indicate the exact current through the meter. This may be caused by friction inertia, magnetized movements, etc. To achieve optimum indications, tap lightly on the panel adjacent to the meter under test. Refer to TM 9-1425-525-12-4 for meter demagnetizing.

1-5. Data

Refer to TM 9-4935-542-12 for the physical and operating data for the cal std and DMM, and to TM 9-4935-1540-14-1 and -2 for information on the cal test set.

1-6. Reporting Equipment Improvement Recommendations (EIRs)

If your equipment needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment.

Let us know why you don't like the design. Tell us why a procedure is hard to perform. Put it on an SF 368 (Quality Deficiency Report). Mail it to the address stated in DA PAM 738-750. We'll send you a reply.

CHAPTER 2
OPERATION

Section I. CALIBRATOR STANDARD OPERATING INSTRUCTIONS

2-1. Maintenance

Refer to TM 9-4935-1540-14-1 for maintenance and testing instructions for the calibrator standard (cal std).

2-2. Service Upon Receipt

When a new or reconditioned cal std is first received, inspect all major units, assemblies, and equipment to make sure that they are properly assembled, secure, and clean. Check all spare parts and accessories to determine that they are in good condition and properly stowed.

2-3. Operating Data

Operating data for the cal std is provided in table 2-1.

2-4. Controls and Indicators

Figure 2-1 and table 2-2 identify and explain the controls and indicators for the cal std.

2-5. Operating Precautions

When using the cal std, observe the following precautions. To use the common mode rejection circuitry, the COMMON and SH GUARD test leads must be used correctly.

a. Low-Level or High-Impedance Sources. When measuring a low-level or high-impedance source with its own ground, connect the SH GUARD lead to the device ground and the DC and COMMON leads to the output terminals.

b. All Other Measurements. For all other measurements, connect the SH GUARD and COMMON leads to one side of the circuit, and connect the appropriate test lead to the other side of the circuit.

c. Overload. When a flashing E is observed in the readout, the digital meter is overloaded.

CAUTION

Never connect a voltage source to the CURRENT/K OHMS test lead.

2-6. Energizing Procedure

a. Remove the cover from the cal std case.

b. Connect power cable 10178673 to jack 32J5.

c. Connect test lead cable 10673120 to jack 32A2J1.

d. Connect rf probe 10178452 to RF PROBE jack 32AlJ1.

e. Connect power cable 10178673 to a 120vac, 400-Hz outlet.

f. Set the PWR switch to ON, and observe that the PWR ON lamp illuminates.

NOTE

Do not operate the digital multimeter until the OPERATE lamp illuminates, indicating that the equipment is at operating temperature.

g. Set the FUNCTION switch to MULTR.

h. Press the CHK toggle switch, and observe an indication of 0.992 to 1.008.

2-7. Operation of the Cal Std Digital Multimeter

The digital multimeter portion of the cal std is operated manually by setting the FUNCTION switch to MULTR. This connects the test probe leads to the digital multimeter and transfers control to the mode select toggle switches on the digital multimeter. Detailed instructions for operation of the digital multimeter are provided in the following procedure.

a. Perform the energizing procedure in paragraph 2-6.

b. Select the desired measurement mode (K OHMS, VRF, VAC, DC MA, or VDC) by pressing the associated toggle switch.

c. Whenever a reading of 10 mv RF or less is required, perform steps (1) through (5) below; otherwise proceed directly to step d.

(1) Connect the rf probe ground clip to the probe tip.

(2) Adjust the RF ZERO control (27, fig. 2-1) full ccw and record the readout as El.

Table 2-1. Cal Sid Operating Data

Item	Data
Input power	108 to 132 vrms, 380 to 420 Hz, 40 to 640 watts.
Digital multimeter 31A1	108 to 132 vrms, 380 to 420 Hz, 20 watts maximum.
Ac-dc power source 31A2	108 to 132 vrms, 380 to 420 Hz, 20 watts maximum.
Heater power	108 to 132 vrms, 380 to 420 Hz, 600 watts maximum.
Outputs (ac-dc power source)	
Meter excitation	209 to 271 vrms, 380 to 420 Hz
Ac volts function	Range: Variable 3.0 mvrms to 500 vrms minimum at 380 to 420 Hz. Minimum load impediance: 10K ohms with TEST SWITCH to LO (3.0 to 500 mv). Current drain: 0.01 ampere maximum with TEST SWITCH set to NORMAL (500 mvrms to 500 vrms). Accuracy: ±0.3% of reading, ±10 digits.
Dc volts function	Range: Variable 3.0 mvdc to 500 vdc minimum. Minimum load impedance: 10 K ohms with TEST SWITCH set to LO (3.0 to 500 mv). Current drain: 0.01 ampere maximum with TEST SWITCH set to NORMAL (500 mvdc to 500 vdc). Peak to peak ripple and noise: Less than 4% of selected output voltage. Accuracy: ±11% of reading, ± four digits.
Dc current function	Range: Variable 10 microamperes to 0.9 ampere. Ripple: less than 4% of selected output current. Accuracy: ±0.3% of reading, ± four digits.
Heaters	Temperature: Internal temperature increase from 32 C to 0°C (25°F to 32°F) within 60 minutes minimum.
Operating parameters (digital multimeter)	
CHK mode	Display: Readout of 1,000 ± 8 digits when instrument is operating correctly. Remote operation: Set ac dc power source FUNCTION switch to MULTR position.
VDC mode	Ranges, full scale: 0.9999, 9.999, and 999.9 vdc. Input impedance: 109 ohms at 0.9999 and 9.999 ranges, and 10 megohms at 99.99 and 999.9 vdc ranges. Accuracy: 500 uv to 500 v, ±0.073% ±5 digits and above 500v, +0.073%, ±6 digits.
VAC mode	Ranges, full scale (rms): 0.9999, 9.999, 99.99 and 999.9 vac. Input impedance with 50 pf shunt: 10 megohms. Accuracy: 0.0020 to 500.0 vrms, ±0.51% ±10 digits at 20 to 50 Hz and at 20 to 30 KHz. Above 500 vrms, ± 51%, ±10 digits at 20 Hz to 30 KHz. 0.0050 to 999.9 vrms, ±3.21%, ±10 digits at 30 to 40 KHz.
DC MA mode	Ranges, full scale: 0.9999, 9.999, 99.99, and 999.9 ma. Input impedance: 1K ohm at 0.9999 range. 100 ohms at 9.999 range. 10 ohms at 99.99 range. 1 ohms at 999.9 range. Accuracy: ±0.33% of reading, ±5 digits from 0.0100 to 999.9 ma. Maximum input current: 2 amps.

Table 2-1. Cal Sid Operating Data

Item	Data
K OHMS mode	Ranges, full-scale: 0.9999, 9.999, 99.99, 999.9, and 9999 K ohms. Accuracy: ±0.32% of reading, ±4 digits +2 ohms from 0.0020 to 9999 K ohms. Flashing E indication: indicates open circuit condition.
VRF mode	Range, full-scale: 0.9999 vrms. Input impedance with 5 pf shunt: 25 K ohms. 100K ohms with 100:1 attenuator. 1 megohm with 1000:1 attenuator. Accuracy: 0.0010 to 0.9999 vrms, ±5.63% ±14 digits at 10 Hz to 3.5 MHz. 0.0010 to 0.9999 vrms, +7.63% ±14 digits at 35 to 50 MHz. 0.1000 to 99.99 vrms, +6.63% ±3 digits at 30 KHz to 35 MHz. 0.1000 to 99.99 vrms, +8.63% ±3 digits at 35 MHz to 50 MHz. 1.000 to 999.9 vrms, +6.63% ±14 digits at 10 KHz to -100 KHz. Maximum input: 25 vdc. 150 vdc with 100:1 attenuator. 400 vdc with 1000:1 attenuator.
Ranging	Automatic for all modes of operation.
Overload indication	Automatic (flashing E indication) for all modes of operation except K ohms, in which case the flashing E indicates an open circuit.

(3) Adjust the RF ZERO control full cw and wait approximately 20 seconds for a readout to appear and stabilize.

(4) Very slowly adjust the RF ZERO control ccw until the displayed reading is within one to three digits higher than the recorded El.

(5) Disconnect the probe ground clip from the probe tip.

d. Connect the appropriate test cable leads for the mode selected to the circuit under test, and observe the value of the measurement on the digital readout.

2-8. Operation of the Cal Std

The cal std is operated with the ac-dc power source front panel to check the calibration accuracy of specified meters in the improved HAWK system. This is accomplished by generating a voltage or current in the ac-dc power source and vernier adjusting this voltage or current while simultaneously measuring it with the digital multimeter. The calibrated output is then applied to the meter under test, which should indicate the calibrated output within its accuracy rating. A SET switch is provided which applies the selected output from the ac-dc power source to the digital multimeter for monitoring, but prohibits this output from appearing on the test leads while vernier adjusting. This prevents excessive voltage or current from damaging the meter under test. A TEST switch applies the selected ac-dc power source output to the test leads and the meter under test. Detailed instructions for operation of the cal std are provided in the following procedure.

a. Perform the energizing procedures in paragraph 2-6.

b. Determine the type and range of the meter under test (for example, microammeter with 50ua full-scale movement).

c. When necessary, remove one or both leads from the meter under test.

d. Set the FUNCTION switch to the position dictated by the type of meter under test (for example, VAC for ac voltmeter, VDC for dc voltmeter, and DC MA for dc current meter).

e. Set the RANGE switch for a range corresponding to the full-scale value of the meter movement (see table 2-3).

f. Hfold the SET switch in the ON position, and adjust the VERNIER control for the desired output value as indicated on the digital-multimeter.

g. Release the SET switch.

h. Connect the test cable COMMON lead to the (-) meter terminal. Connect the appropriate test cable lead (AC VOLTS, DC VOLTS, CURRENT/ KOHMS) to the (+) meter terminal.

i. Press and hold the TEST switch to NORMAL for high ranges or to LO for low ranges.

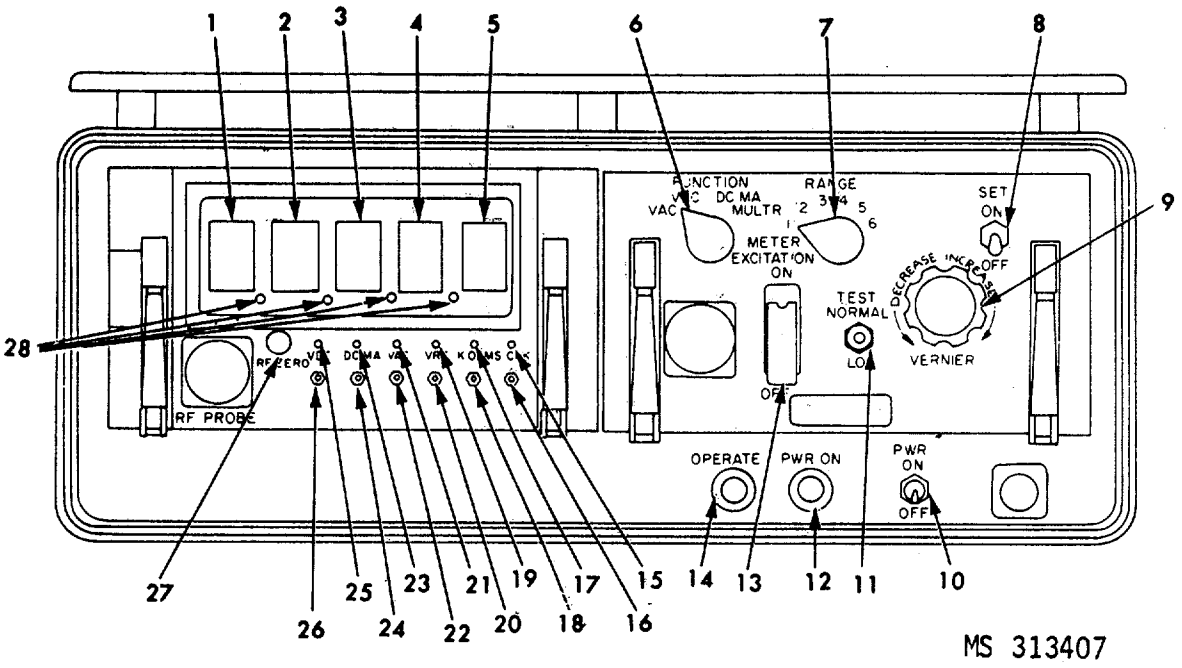


Figure 2-1. Cal std—controls and indicators.

Table 2-2. Cal Std-Controls and Indicators (Fig. 2-1)

Key	Control or indicator	Function
1	Readout tube	Indicates polarity of dc voltage and dc current, or an overload condition.
2	Readout tube	Indicates fourth (most) significant digit.
3	Readout tube	Indicates third significant digit.
4	Readout tube	Indicates second significant digit.
5	Readout tube	Indicates first (least) significant digit.
6	FUNCTION switch	Controls the function of the ac-dc power source and the digital multimeter.
7	RANGE switch	Selects resistor networks which determine the six output ranges of the ac-dc power source.
8	SET switch	Applies the selected output from the ac-de power source to the digital multimeter while prohibiting that output from appearing on the test leads.
9	VERNIER control	Provides continuous vernier control of the six overlapping ac-dc power source ranges.
10	PWR circuit breaker switch	Provides primary 120 vac, 400 Hz to the cal std.
11	TEST switch	Applies the output of the ac-dc power source to the test leads.
12	PWR ON lamp	Illuminates when the PWR circuit breaker is set to ON.
13	METER EXCITATION switch	Applies 240 vac,400 Hz to the meter excitation test leads.
14	OPERATE lamp	Illuminates when the cal std reaches operating temperature.

Table 2-2. Cal Std-Controls and Indicators (Fig. 2-1)-Continued

Key	Control or indicator	Function
15	CHK lamp	Illuminates in CHK mode.
16	CHK switch	Selects self-check function for the digital multimeter.
17	K OHMS lamp	Illuminates in K OHMS mode.
18	K OHMS switch	Selects resistance measurement function for the digital multimeter. Readout is in kilohms.
19	VRF lamp	Illuminates in VRF mode.
20	VRF switch	Selects rf volts measurement function for the digital multimeter. Readout is in rms volts.
21	VAC switch	Selects ac volts measurement function for the digital multimeter. Readout is in rms volts.
22	VAC lamp	Illuminates in VAC mode.
23	DC MA switch	Selects dc milliamp measurement function for the digital multimeter. Readout is in milliamperes.
24	DC MA lamp	Illuminates in DC MA mode.
25	VDC switch	Selects dc volts measurement function for the digital multimeter. Readout is in volts dc.
26	VCD lamp	Illuminates in VDC mode.
27	RF ZERO control	Adjusts meter for zero indication when rf volts measurement function is selected.
28	Decimal indicator lamps	Indicates position in readout.

Table 2-3. Ac-Dc Power Source Ranges

Range switch position	Approximate full-scale voltage		Approximate full-scale current range
	Normal range	LO range	
1	10v	10 mv	100 µa
2	100v	100 mv	1 ma
3	200v	200 mv	10 ma
4	300v	300 mv	100 ma
5	400v	400 mv	1 amp
6	500v	500 mv	None

j. Observe the meter under test for the deflection specified by the test parameters. If the meter is functionally correct, the indications on the digital multimeter and the meter under test will be within tolerance.

2-9. Deenergizing Procedure

a. Set the PWR switch to OFF and observe that the PWR ON lamp extinguishes.
b. Disconnect and stow the cables and leads.
c. Attach and secure the cover to the cal std.

2-10. Preparation for Travel

Stow all cables and accessories in the cal std cover. Inspect the front panels of the digital multimeter and the ac-dc power source to insure that they are flush with the case and locked securely.
Check that the front cover is securely latched to the case.

Section II. DIGITAL MULTIMETER OPERATING INSTRUCTIONS

2-11. Maintenance

Refer to TM 9-4935-542-12 for maintenance and testing instructions for the digital multimeter (DMM).

2-12. Service Upon Receipt

When a new or reconditioned DIMM is received, inspect all major units, assemblies, and equipment to make sure that they are properly assembled, secure, and clean. Check all spare parts and accessories to determine that they are in good condition and properly stowed.

2-13. Operating Data

Operating data for the DANMM is provided in table 2-4.

2-14. Controls and Indicators

Figure 2-2:and table 2-5 identify and explain the controls and indicators for the DMNI.

2-15. Operating Precautions

When using the DMM, observe the following precautions. To use the common mode rejection

Table 2-4. DMM Operating Data

Item	Data
Input power	103.5 to 126.5vrms. 30 to 500 Hz, 10.4 to 115 w. ltts/207 to 253 vrms, 50 to 500 Hz, 10.4 to 115 watts.
Heater power	103.5 to 12.6.5 vrms, 50 to 500 Hz at 104.6 watts maximum/207 to 253 vrms, 50 to 500 Hz at 104.6 watts maximum.
Battery power	3 watts during 8 hours of continuous operation from rechargeable nickel cadmium batteries. **NOTE: Will not operate below 0°C (320F) on battery power.**
Heaters	Temperature (line operation only): Internal temperature increases from -40°C to 4.4°C (-40°F to 40°F) within 20 minutes.
Operating parameters	
VDC mode	RANGE: 1, 10, 100, 1000 volts dc with 20% overrange on all ranges. Input impedance: 10 megohin on all ranges. Accuracy: 20°C to 30°C (68°F to 85°F) ± (0.01% of input +0.01% of range). Temperature coefficient: 0°C to 20°C (32°F to 64°F) and 30°C to 55°C(85°F to 130°F) ± add ± (0.0015%, input +0.001%, of range /°C).
VAC mode	RANGE: 1, 10, 100, 1000 volts ac with 20% over range on all ranges. Frequency range: 50Hz to 10 KHz. Input impedance with 30 pf shunt 1 megohm. Accuracy: 15°C to 35°C (59°F to 95°F) ± (0.2% of input ± 0.05% of range). Temperature coefficient: 0°C to 15°C (32°F to 59°F) and 35°C to 55°C (95°F to 130°F) add ±0.015% of input + 0.005% of range /°C).
Resistance mode	RANGE: 1K, 10K, 100K, 1000K and 10M ohms with 20% over range on all ranges. Accuracy : 20°C to 30°C (68°F to 85°F) ± (0.02% of input + 0.01% ofrange) for 1K to 1000K; ± (0.05% of input + 0.01% of range) for 10M ohms. Temperature coefficient 0°C to 20°C (32°F to 68°F) and 300C to 550C (850F to 1300F), add ± (0.003% of input +0.001';% of range/°C) for 1K to 1000K. Add + (0.008% of input +0.001% of range/°C) for 10M ohms.
Overload indication	Displays 1 for full-scale readout and 20% overranv4on each range. When a maximum over range is applied to the instrument in any operating mode, the readout will be 11999, with the decimal point positioned according to range.

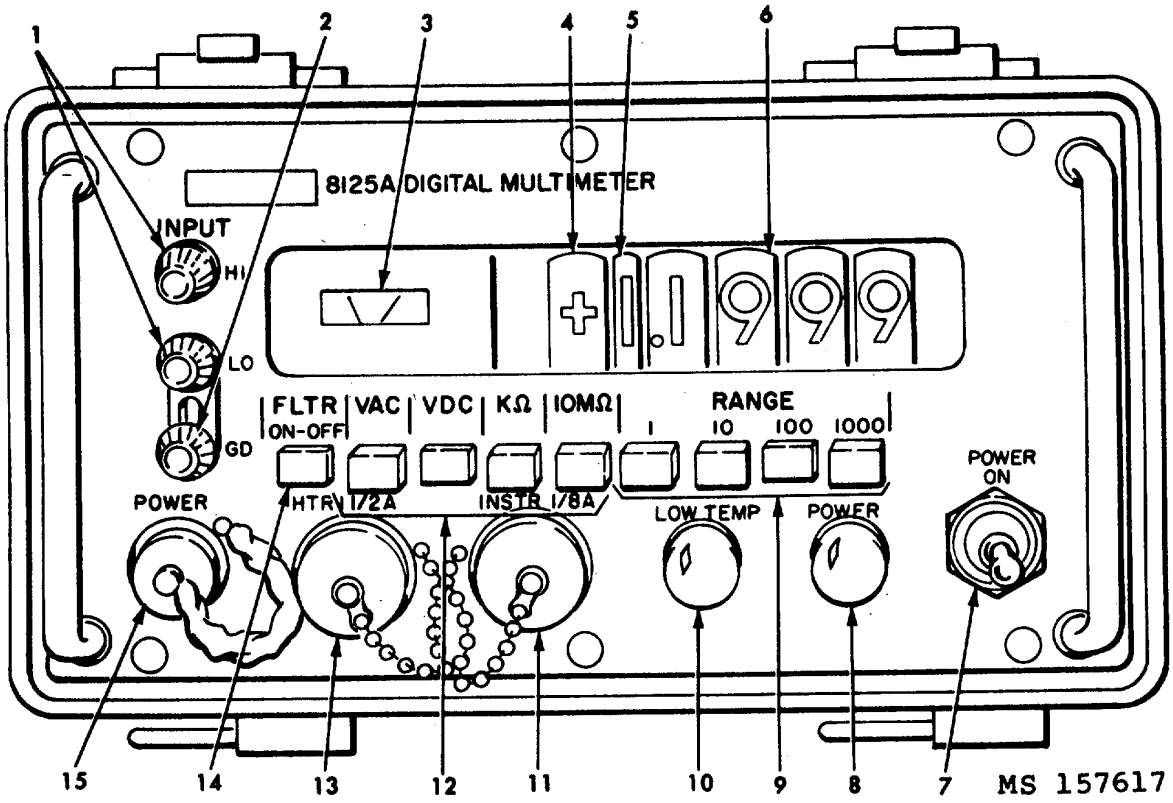


Figure 2-2. DMM—controls and indicators.

Table 2-5. DMM-Controls and Indicators (Fig. 2-2)

Key	Control or indicator	Function
1	INPUT HI/LO terminals	Input connections for dc voltage, ac voltage, and resistance measurement.
2	GD (Guard) terminal	Connects to internal guard chassis. When properly connected externally, provides increased common mode rejection. Guard terminal may be connected directly to the LO terminal or disconnected from the LO terminal an(l driven by a separate guard potential. **CAUTION** **If guarded measurement is not needed, the guard terminal should be connected to the INPUT I,O terminal to preclude possible damage to the instrument.**
3	Battery charger meter	Indicates charge condition of battery when the battery option is installed and the instrument is operating from the batteries. When the instrument is on the line and the batteries are charging, the meter indicates LINE OPR (full scale).

Table 2-5. DMM-Controls and Indicators (Fig. 2-2)-Continued

Key	Control or indicator	Function
4	Polarity indicator	Neon indicator tube indicates "+" when positive voltages are applied to the instrument and "-" when negative voltages are applied.
5	Overrange indicator	Displays "1" for full-scale readout and 20% overrange on each range. When a maximum overrange is applied to the instrument, in any operating mode, the readout will be 11999, with the decimal point positioned according to range.
6	Readout tubes	Displays the instrument readout from left to right, with the most significant digit displayed by the left-most tube. Each tube also displays a decimal point, selected by the range switches.
7	POWER ON switch	Controls input ac and internal battery power to the instrument.
8	POWER indicator	Illuminates when instrument is energized.
9	RANGE 1/10/100/1000 switches	Select the full-scale input range for voltage or resistance measurement. Ranges 1, 10, 100, and 1000 are provided for each function except 10MΩ, which is fixed independent of the range switch.
10	LOW TEMP indicator	Illuminates whenever internal temperature is below 0°C (32°F). Internal heaters will warm up instrument in 20 minutes maximum.
11	INSTR 1/8A fuse	Instrument fuse: 115V, MDL 1/8 SLO BLO 230V, MDL, 1/16 SLO BLO
12	VAC/VDC/Kg/ 10Mil function switches	Select the desired operating mode: VAC ac voltage mode VDC dc voltage mode KΩ kilohm mode 10MΩ 10 megohm mode
13	HTR 1-1/2A power fuse	Power line fuse: 115V, AGC 1-1/2A 230V, AGC 3/4A
14	FLTR ON-OFF switch	Push ON-push OFF switch selects the two-pole active input filter when depressed (ON) and reduces the amount of filtering when released (OFF).
15	POWER input connector	Provides connections to 11f5/2.30 volt, 50 to 500 Hz ac line.

circuitry, the INPUT HI and the INPUT LO and GD terminals with ground strap must be used correctly.

CAUTION

Operating the DMM without the ground strap secured between the LO and GD input jacks may damage the instrument. Do not remove the ground strap except when required by procedure. The DMM LO and GD lead may be connected to any voltage not in excess of 1200 volts ac or dc.

When measuring a low-level or high-impedance source with its own ground, disconnect the ground strap between INPUT LO and GD, ground the GD jack, and apply that input across the INPUT HI and LO terminals with test leads.

For all other measurements, insure that the INPUT LO and GD ground strap is positioned and secured across those terminals. The input voltage or resistance may now be applied across the INPUT HI and the ground strapped INPUT LO and GD terminals. An overload or overrange input is observed as a 11999 digital meter readout with the decimal point determined by the selected RANGE switch position.

2-16. Energizing Procedure

a. Remove the cover from the DMM case.

b. Connect the DMM power cable to the POWER jack.

c. Assemble the DMM banana adapters to DMM test leads and connect to INPUT HI and INPUIT LO.

d. Connect the power cable to a 120-vac, 400-Hz outlet.

e. Set the POWER ON switch to ON. and observe that the POWER lamp lights.

NOTE
Do not operate the DMM until the LOW TEMP lamp is off.

2-17. Operation of the DMM

The DNMM is operated manually by setting the specific function and RANGE switches required for the proposed measurement. This connects internal measurement circuitry through the INPUT connectors and test probe leads to the external input voltage or resistance to be measured. Detailed instructions for operation are provided in the following procedure.

a. Perform the energizing procedure in paragraph 2-16.

b. Select the desired measurement mode function switch (VAC, VDC, KΩ, or 10MΩ).

c. Select the desired RANGE mode switch (1, 10, 100, or 1000).

d. Connect the test cables attached to the INPUT connectors, for the mode selected, to the circuit under test, and observe the digital readout value of the measurement.

2-18. Deenergizing Procedure

a. Set the POWER ON switch to the off position,
and observe that the POWER lamp goes off.
b. Disconnect and stow the adapters, power cable
and leads.
c. Attach and secure the cover to the DMM.

2-19. Preparation for Travel

Stow all cables and accessories in the DMM cover. Inspect the front panel of the digital multimeter to ensure that cables do not interfere with closing of the cover. Check that the front cover is securely latched to the case.

Section III. CALIBRATION TEST SET TF8-1020 OPERATING INSTRUCTIONS

2-20. Maintenance

Refer to TM 9-4935-1540-14-1 for maintenance and testing instructions for calibration test set TF8-1020.

2-21. Service Upon Receipt

When a new o)r reconditioned calibration test set is received, inspect all major units, assemblies, and equipment to make sure that they are properly assembled, secure, and clean. Check all spare parts and accessories to determine that they are in good condition and properly stowed.

2-22. Operating Data

Operating data for the calibration test set is provided in table 2-6.

2-23. Controls and Indicators

Figure 2-3 and table 2-7 identify and explain the controls and indicators for the calibration test set.

2-24. Energizing Procedure

a. Remove the cover from calibration test set TF8-1020.

b. Connect cable W1 10677581-2 P1 to TF8-1020 POWER connector.

c. Connect cable W1 10677581-2 P2 to the 120-vac, 400-Hz utility outlet.

d. Set the POWER ON/OFF switch to ON, and observe that the POWER lamp lights.

e. Set the COUNTER-SELECT switch to TEST.

f. Observe 1000000 on the DISPLAY indicator.

g. Set the COUNTER-FUNCTION switch to FREQ.

2-25. Operation of Calibration Test Set TF8-1020

The calibration test set is operated with the ac power source at the major item under periodic test.

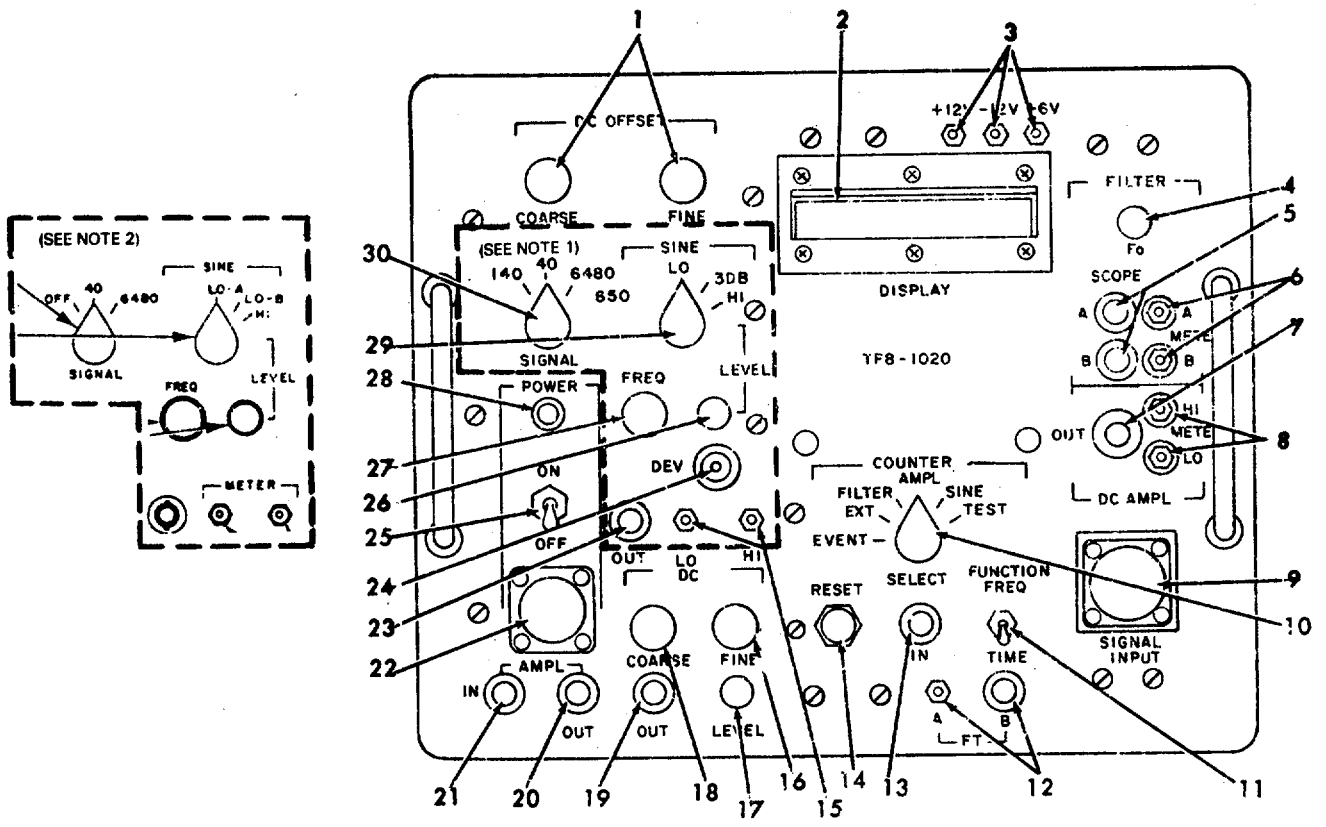
Table 2-6. Calibration Test Set TF8-1020 Operating Data

Item	Data
Input power	103.5 to 126.5 vac, 380 to 420 Hz, 20 watts.
Power supply and regulator (DC volts)	+12 vdc, - 12 vdc, +6 vdc
Electrical counter	Time base: 1 MHz. Frequency range: 10 MHz displayed in hertz. Time period: 1-second period range, displayed in microseconds. Range: 100 million event counter, displayed in unit events. Sensitivity: 250 mvrms typically, desensitizes below 1 KHz and above 1 MHz at 3.5v peak-to-peak maximum. Display: Eight-digit, seven-segment LED display.
Amplifier	Transistorized 3-stage, used to elevate amplitude of low-level signals for electrical counter display. Bandpass: 0.8 to 2 MHz. Gain: 400.
[1]Oscillator	Four frequency, special purpose. Output range 1: 90 to 190 Hz, 0.5 to 3.0 vrms. Distortion: 0.70 maximum at 3.0 vrms. Output range 2: 40 Hz, 10 mvrms to 3.5 vrms. Distortion: 0.55 maximum low-amplitude distortion. Output range 3: 6480 Hz, 6 mvrms to 2 vrms. Distortion: 0.55 maximum at 2.0 vrms. Output range 4: 300 to 900 Hz, 0.5 to 3.0 vrms. Distortion: 0.70 maximum at 3.0 vrms.
[2]Oscillator	Dual frequency, special purpose. Output range 1: 40 Hz, 50 mvrms to 5 vrms. Distortion- 0.54 maximum low-amplitude distortion. Output range 2: 6480 Hz, 100 mvrms to 5 vrms.
Amplifier	High gain, special purpose. Bandpass: 2160 Hz to 17.16 KHz range. Filter bandwidth: 150 Hz. Gain: 7500. Sensitivity: 10 µv, 1 ms. Minimum output: 2.5 vrms before clipping or limiting. Input: Guarded.

[1] Applies to TF8-1020 p/n 13233663.
[2] Applies to TF8-1020 p/n 11570924.

The calibration test set is used to calibrate the CWAR deviation BITE circuitry contained in the OGO, and to frequency modulate the CWAR microwave carrier with a known drive signal to determine FM noise characteristics of the carrier signal. It is also used to measure the PAR pulse repetition frequency. 2The PAR, CWAR, ICC, and PCP clock pulse generator circuit outputs are checked for period or frequency

[1] Applies to TF8-1020 p/n 13233663 used with AN/MPQ-62.
[2] Applies to TF8-1020 p/n 11570924.



NOTES:
1. TF8-1020 p/n 13233663.
2. TF8-1020 p/n 11570924.

MS 602600

Figure 2-3. Calibration test set TF8-1020—controls and indicators.

Table 2-7. Calibration Test Set TF8-1020-Controls and Indicators (Fig. 2-3)

Key	Control or indicator	Function
1	DC OFFSET-COARSE/FINE variable resistors	Provides adjustment for buckoff circuit to enable signal input from uut to be measured.
2	DISPLAY digital counter	LJED provides digital readout for frequency period, or event to be measured.
3	+12V/-12V/,+6V jacks	Test points for internal power supplies.
4	FILTER F_0 variable resistor	Provides adjustment of center frequency of 150-Hz bandwidth filter circuit.
5	FILTER-SCOPE A/B jacks	Provides connection of external oscilloscope to filter circuit.
6	FILTER-METER A/B jacks	Provides connection of external digital multimeter to filter circuit.
7	DC AMPL-OUT jack	Provides connection of external oscilloscope to dc amplifier circuit.
8	DC AMPL-METER HI/LO jacks	Provides connection of external digital multimeter to dc amplifier circuit.
9	SIGNAL INPIJT connector	Provides the uut signal input to filter and dc amplifier circuits

Table 2-7. Calibration Test Set TF8-1020-Controls and Indicators (Fig. 2-3)-Continued

Key	Control or indicator	Function
10	COUNTER-SELECT switch	EVENT - Programs IN jack to enable DISPLAY counter to count events. EXT - Programs IN jack to measure frequency or period of external signal. FILTER - Connects the DISPLAY counter to the filter circuit. AMPL - Connects the DISPLAY counter to the high frequency amplifier circuit. SINE - Connects the D)ISPLAY counter to the sinewaie oscillator. TEST - Enables the DISPLAY counter for self-test.
11	COUNTER-FUNCTION switch	FREQ - Programs the DISPLAY counter to measure frequency. TIME - Programs the DISPLAY counter to measure period.
12	FT A/B jacks	Provides feed through connections from B to A or A to B.
13	COUNTER-IN jack	Provides external connection to DISPLAY counter.
14	COUNTER-RESET switch	When pressed resets the counter to zero.
[1]15	SINE-HI/LO jacks	Provides external test equipment to be connected to oscillator A2.
[2]15	SINE METER-HI/LO jacks	Same as above.
16	DC-FINE variable resistor	Provides fine adjustment of de circuit.
17	DC-LEVEL variable resistor	Provides a dc voltage level from -10.5 to 4.3 vdc at the DC OUT jack.
18	DC-COARSE variable resistor	Provides coarse adjustment of de circuit.
19	DC-OUT jack	Provides a dc voltage when DC LEVEL. is varied.
20	AMPL-OUT jack	Provides connection of oxterital test equipment te amplifier circuit.
21	AMPL-IN jack	Provides connection of uut to amplifier circuit.
22	POWER connector	Provides connection for external power.
23	SINE-OUT jack	Provides sinewave output for uut.
[1]24	DEV JACK	Provides a sinewave and the inverted 3inC wave output across the inner and outer connectors.
25	POWER/ON/OFF switch	Provides application of external power.
26	SINE-LEVEL variable resistor	Adjusts the output level of oscillator A2.
27	SINE-FREQ variable resistor	Adjusts the frequency of oscillator A2.
28	POWER lamp	Lights when external power is applied.
[1]29	SINE-LEVEL switch	Selects either a low, medium, or high (1,0, 3DB, or HI) signal level of oscillator A2.
[2]29	SINE-LEVEL switch	Selects either a low, medium or high (LO-A, LO-B, or HI) signal level of oscillator A 2.
[1]30	SIGNAL switch	Selects either 140-Hz, 40-Hz, 648t)-Hz, or 650-liz frequency of oscillator A2.
[2]30	SIGNAL switch	Selects either 40-Hz or 6480-Hz frequency of oscillator A2.

[1] Applies to TF8-1020 p/n 13233663.
[2] Applies to TF8-1020 p/n 11570924.

accuracy. Those clock output periods or frequencies are measured when applied to the calibration test set COUNTER-IN jack, with the COUNTER-SELECT switch in the EXT position, by the internal electronic counter with a COUNTER DISPLAY indication. The CWAR OGO rf output ramp slope and linearity are also measured. The calibration test set oscillator subassembly SINE OUT jack output is applied as an input to the OGO CALIBRATION BITE jack. The OGO SLOPE/LINEARITY switch selects each position, which is applied to the OGO SCOPE as an output, and is measured on the cal std as ac voltage level indications. Detailed instructions for operation of the calibration test set are provided in the following procedure.

a. Perform the energizing procedures in paragraph 2-24.

b. Determine the type of measurement to be made.

c. To measure a periodic wave form output:

(1) Connect a W-030 cable between the COUNTER-IN jack and the major item test jack, or connect a W8-1032 direct probe set BNC to the COUNTER-IN jack and the W8-1032 test leads to the major item test points.

(2) Set the COUNTER-SELECT switch to EXT.

(3) Set the COUNTER-FUNCTION switch to TIME or FREQ as required.

(4) Momentarily press the COUNTER-RESET switch.

(5) Observe the counter DISPLAY indication.

d. To use the calibration test set as a signal source:

(1) Set the calibration test set controls as follows:

(a) [1]SIGNAL to 140, 40, 6480, or 650 Hz as required.
[2]SIGNAL to 40 or 6480 Hz as required.

(b) [1]SINE-LEVEL to LO or as required.
[2]SINE-LEVEL to LO-A, LO-B, or as required.

(c) COUNTER-SELECT to SINE.

(d) COUNTER-FUNCTION to TIME or FREQ as required.

(2) Set the frequency and level as follows:

(a) [1]Connect SINE-OUT or DEV output to the major item.
[2]Connect FT-B to SINE OUT with W-030 cable.

(b) Set SINE-FREQ for required period or frequency observed on the DISPLAY digital counter indicator.

(c) [1]Monitor and set the frequency OUTPUT level, with cal std AC VOLTS connected to SINE-HI jack and the COMMON to the calibration test set SINE-LO jack, while adjusting SINE-LEVEL control as required for the major item.

[2]Monitor and set the frequency OUTPUT level, with cal std AC VOLTS connected to FT-A jack and the COMMON to the calibration test set DC AMPL METER LO jack, while adjusting SINELEVEL control.

(3) Connect SINE OUT to major item test input.

(4) Observe the cal std indication or indications of the switch selected test point or points at the major item.

2-26. Deenergizing Procedure

a. Set the POWER ON/OFF switch to OFF, and observe that the POWER lamp goes off.

b. Disconnect cable W1 10677581-2 P2 from the 120-vac, 400-Hz utility outlet.

c. Disconnect cable W1 10677581-2 P1 from the TF8-1020 POWER connector and from test leads or adapters utilized, and stow.

d. Attach and secure the cover to calibration test set TF8-1020.

2-27. Preparation for Travel

Stow all cables and accessories in the calibration test set cover. Inspect the front panel of the calibration test set to ensure that cables and adapters do not interfere with closing of the cover. Check that the front cover is securely latched to the case.

[1]Applies to TF8-1020 p/n 13233663 used with AN/MPQ-62.
[2]Applies to TF8-1020 p/n 11570924.

CHAPTER 3
IMPROVED BATTERY CONTROL CENTRAL (IBCC) PERIODIC TEST PROCEDURES

Table 3-1. IBCC Status Indicator Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**XMTR FREQ Meter MI (3, Fig. 3-1).**
a.	Set the SHELTER POWER and CONVENIENCE OUTLETS circuit breakers to ON. Connect and energize the cal std. Remove the connector from jack J1 located on the bottom of the pulse radar frequency control panel (1, fig. 3-1). Open the left panel and remove the pulse radar frequency control panel. Remove the rear cover from the pulse radar frequency control panel. Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Adjust the VERNIER control full ccw. Connect the DC VOLTS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 0 indication on the meter under test. **The cal std indicates 34.07 to 38.43.** XMTR FREQ meter.
b.	Adjust the VERNIER control for a + 50 indication on the meter under test. **The cal std indicates 70.32 to 74.68.** XMTR FREQ meter. Release the TEST switch. Remove the test leads from the meter under test. Replace and secure the rear cover on the pulse radar frequency control panel. Position and secure the pulse radar frequency control panel onto the status indicator panel, and secure the panel. Reconnect the connector to jack J1 located on the bottom of the pulse radar frequency control panel. Deenergize and store the cal std.

Table 3-1. BCC Status Indicator Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2.	**SIG STR Meter (2. Fig. 3-1).**
a.	Set the SHELTER POWER and CONVENIENCE OUTLETS circuit breakers to ON> Connect and energize the cal std. Remove the connector from jack J1 located on the bottom of the pulse radar frequency control panel (1, fig. 3-1). Loosen the fasteners and open the left panel on the status indicator panel and remove the pulse radar frequency control panel. Remove the rear cover from the pulse radar frequency control panel. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Connect the CURRENT/KOHMS test lead to the (+) terminal on the meter under test. Connect the COMMON and SH GUARD test leads to the (-) terminal on the meter under test. Adjust the VERNIER control full ccw. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an 80 indication on the meter under test. **The cal std indicates 0,174 to 0.0213.** SIG STR meter.
b.	Adjust the VERNIER control for a 50 indication on 'the meter under test. **The cal std indicates 0.01 3a -o 0.0136.** SIG STR meter.
c.	Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 0.0047 to 0.0060.** SIG STR meter. Release the TEST switch. Remove the test leads from the meter under test. Replace and secure the rear cover on the pulse radar frequency control panel. Position and secure the pulse radar frequency control panel onto the status indicator panel. Reconnect the connector to jack J1 located on the bottom of the pulse radar frequency control panel. **Deengergize and store the cal std.** **Close and secure the left panel on the status indicator panel.**

Table 3-1. IBCC Status Indicator Panel-Periodic Test Procedure - Continued

Step	Operation Normal indication Corrective procedure
3.	**TARGET ALTITUDE (KILOMETERS) AADCP LOCAL Meters M1 and M2 (4, Fig. 3-1).** **NOTE** **Each pair of AADCP and LOCAL meters is in one case that has four terminals on the rear. The AADCP meter terminals are marked A and B. The LOCAL meter terminals are marked C and D.**
a.	Set the SHELTER POWER and CONVENIENCE OUTLETS circuit breakers to ON. Loosen the fasteners securing the left panel to the status indicator panel and open. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 2. Adjust the VENEER control full ccw. **NOTE** **Perform steps 3h only for the meter that has been replaced.** Connect the CURRENT/KOHMS test lead to the (A) terminal on the left-hand meter un(der test. Connect the COMMON and SH GUARD test leads to the (B) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 20 indication on the meter under test. The cal std indicates 0.1930 to 0.2070. AADCP LOCAL meter.
b.	Adjust the VERNIER control for a 15 indication on the meter under test. **The cal std indicates 0.1430 to 0.1570.** AADCP LOCAL meter.
c.	Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0930 to 0.1070.** AADCP LOCAL meter.
d.	Adjust the VERNIER control for a 5 indication on the meter under test. **The cal std indicates 0.0430 to 0.0570.** AADCP LOCAL meter.
e.	Release the TEST switch. Transfer the CURRENT/KOHMS test lead to the (C) terminal on the meter under test. Transfer the COMMON and SH GUARD test leads to the (D) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 0.1930 to 0.2070.** AADCP LOCAL meter.

Table 3-1. IBCC Status Indicator Panel-Periodic Test Procedure-Continued

Step	Operation Normal indication Corrective procedure
3 f.	Adjust the VERNIER control for a 15 indication on the meter under test. **The cal std indicates 0.1430 to 0.1570.** AADCP LOCAL meter.
g.	Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0930 to 0.1070.** AADCP LOCAL meter.
h.	Adjust the VERNIER control for a 5 indication on the meter under test. **The cal std indicates 0.0430 to 0.0570.** AADCP LOCAL meter.
	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Repeat steps 3a through 3h above for the right-hand AADCP LOCAL meter. Secure the left panel to the IBCC status indicator panel. Deengergize and store the cal std.

Table 3-2. Power Supply Control Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE **Step 1 is performed using the cal std only.**
1.	**Power Supply Control Panel (Fig. 3-2).**
a.	Remove the cover of the reference voltage regulator located to the right of the power supply control panel. Set the EQUIPMENT BLOWERS circuit breaker to ON. Set the POWER circuit breaker (1, fig. 3-2) on the power supply control panel to ON, and wait until the time delay is complete. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Insert the DC VOLTS test lead into jack J7 (6, fig. 3-3) on the reference voltage regulator. Insert the COMMON test lead into jack J2 (5, fig. 3-3) on the reference voltage regulator. Adjust - 250V ADJUST control (1, fig. 3-3) on the reference voltage regulator for a - 250.0 indication on the cal std. Transfer the DC VOLTS test lead to jack J5 (3, fig. 3-3) on the reference voltage regulator.

Table 3-2. Power Supply Control Panel-Periodic Test Procedures Continued

Step	Operation Normal indication Corrective procedure
1a. Cont.	Transfer the COMMON test lead to jack J4 (4, fig. 3-3) on the reference voltage regulator. Adjust +250V ADJUST control (2, fig. 3-3) on the reference voltage regulator for a +250.0 indication on the cal std. Remove the test leads from the reference voltage regulator. Secure the cover to the reference voltage regulator. **WARNING** **In the following steps, 416 vac is present on the power supply chassis.** Loosen the fasteners that secure the front panel of the power supply control panel and lower the panel. Connect the DC VOLTS test lead to the (-) terminal on BALANCE meter M1 (5, fig. 3-2). Connect the COMMON test lead to chassis ground. Position the power supply control panel as close as possible to its operating position, taking care not to damage the test leads. Set the BALANCE SELECTOR switch (7, fig. 3-2) on the power supply control panel to A1 (.+250V). Adjust the A1 (+ 250V) control (6, fig. 3-2) on the power supply control panel for a center-scale indication on the BALANCE meter. Record the cal std indication as E. Adjust the A1 (+250V) control on the power supply control panel for an indication of E minus 1.0 on the cal std. **The meter under test deflects to the left of center.** BALANCE meter.
b.	Adjust the A1 (+ 250V) control on the power supply control panel for an indication of E plus 1.0 on the cal std. **The meter under test deflects to the right of center.** BALANCE meter.
c.	Adjust the A1 (+ 250V) control on the power supply control panel for a center-scale indication on the BALANCE meter. **The cal std indicates 247.5 to 252.5.** A1.
d.	Set the BALANCE SELECTION switch on the power supply control panel to A9 (+100V). Adjust the A9 (+ 100V) control (8. fig. 3-2) on the power supply control panel for a center-scale indication on the BALANCE meter. **The cal std indicates 99.0 to 101.0.** R17, R18.
e.	Set the BALANCE SELECTOR switch on the power supply control panel to A12 (-100V).

Table 3-2. Power Supply Control Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1e. Cont.	Adjust the A12 (-100V) control (9, fig. 3-2) on the power supply control panel for a center-scale indication on the BALANCE meter. **The cal std indicates -99.0 to - 101.0.** R19, R20. Remove the test leads from the meter under test. Set the BALANCE SELECTOR switch to OFF. Secure the power supply control panel.
	NOTE **Step 2 is performed using DMM 10177187 when the cal std is not available.**
2.	**BALANCE Meter M1 (5. Fig. 3-2).**
a.	Set the SHELTER POWER and CONVENIENCE OUTLETS circuit breakers to ON. Remove the cover of the reference voltage regulator located to the right of the power supply control panel (fig. 3-2). Connect and energize the DMM. Set the EQUIPMENT BLOWERS circuit breaker to ON. Set the POWER circuit breaker (1, fig. 3-2) on the power supply control panel to ON, and wait until the time delay is complete. Press the VDC switch. Press the RANGE 1000 switch. Insert the INPUT HI test lead into jack J7 (6, fig. 3-3) on the reference voltage regulator. Insert the INPUT LO test lead into jack J2 (5, fig. 3-3) on the reference voltage regulator. Adjust - 250 V ADJUST control (1, fig. 3-3) on the reference voltage regulator for a -250.0 indication on the DMM. Transfer the INPUT HI test lead to jack J5 (3, fig. 3-3) on the reference voltage regulator. Transfer the INPUT LO test lead to jack J4 (4, 3-3) on the reference voltage regulator. Adjust the +250V ADJUST control (2, fig. 3-3) on the reference voltage regulator for a +250.0 indication on the DMM. Remove the test leads from the reference voltage regulator. Secure the cover to the reference voltage regulator. **WARNING** **In the following steps, 416 vac is present on the power supply chassis.** Loosen the fasteners that secure the front panel of the power supply control panel (fig. 3-2), and lower the panel. Connect the INPUT HI test lead to the (+) terminal on the meter under test.

Table 3-2. Power Supply Control Panel--Periodic Test Procedures--Continued

Step	Operation Normal indication Corrective procedure
2 a.	Connect the INPUT LO test lead to chassis ground. Position the power supply control panel as close as possible to its operating position, taking care not to damage the test leads. Set the BALANCE SELECTOR switch (7, fig. 3-2) on the power supply control panel to A1 (+250V). Adjust the A1 (+250V) control (6, fig. 3-2) on the power supply control panel for a center-scale indication on the BALANCE meter. Record the DMM indication as E. Adjust the A1 (+250V) control on the power supply control panel for an indication of E minus, 1.0 on the DMM. **The meter under test deflects to the left of center.** BALANCE meter.
b.	Adjust the A1 (+ 250V) control on the power supply control panel for an indication of E plus 1.0 on -the DMM. **The meter under test deflects to the right of center.** BALANCE meter.
c.	Adjust the A1 (+-250V) control on the power supply control panel for a center-scale-indication on the BALANCE meter. **The DMM indicates 247.5 to 252.5.** A1.
d.	Set the BALANCE SELECTOR switch on the power supply control panel to A9 (+100V). Adjust the A9 (+100V) control (8, fig. 3-2) on the power supply control panel for a center-scale indication on the BALANCE meter. **The DMM indicates 99.0 to 101.0.** R17, R18.
e.	Set the BALANCE SELECTOR switch on the power supply control panel A12 (-100V) Adjust the A12 (-100V) control (9, fig. 3-2) on01 the power supply control panel for a center-scale indication on the BALANCE. meter. **The DMM indicates -99.0 to - 101.0.** R19, R20. Remove the test leads. from the meter under te:;t. Set the BALANCE selector switch to OF'. Secure the power supply control panel. Deenergize and store the DMM.
	NOTE **Step 3 is performed using the cal std only.**
3.	**AC LINE Meter M2 (4, Fig. 3-2).** Momentarily set the VAC switch to the (down position.

Table 3-2. Power Supply Control Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
3. Cont.	Connect the COMMON test lead to chassis ground. (Connect the AC VOLTS test lead to the terminal of fuse F9 (2, fig. 3-2) of the power supply control panel. Record the cal std indication as El. Transfer the AC VOLTS test lead to the terminal of fuse F10 (3, fig. 3-2) of the power supply control panel. Record the cal std reading as E2. Add El and E2, and divide the sum by 2. Record the result as E3. **NOTE** **Interpolate the meter scale as follows: The lower limit of the green area is 228V, the center line is 240V, and the upper limit of the green area is 252V. (Meters may differ in color)** **The meter under test indicates E3.** Adjust meter M2 adjusting screw. Set the POWER circuit breaker to OFF. Remove the test leads from the power supply control panel. Position the power supply control panel to its normal position and secure.
4.	**NOTE** **Step 4 is performed using DMM 10177187 when the cal std is not available.** AC LINE Meter M2 (4A Fig. 3-2). Loosen the fasteners that secure the front panel of the power supply control panel (fig. 32), and lower the panel. Set the SHELTER POWER, CONVENIENCE OUTLETS, EQUIPMENT BLOWERS and POWER circuit breakers to ON, and wait until the time delay is complete. Connect and energize the DMM. Press the VAC switch. Press the RANGE 1000 switch. Connect the INPUT LO test lead to chassis ground. Connect the INPUT HI test lead to the terminal of fuse F9 (2, fig. 3-2) of the power supply control panel. Record the DMM indication as E1. Transfer the INPUT HI test lead to the terminal of fuse F10 (3 fig. 3-2) of the power supply control panel. Record the DMM reading as E2.

Table 3-2. Power Supply Control Panel--Periodic Test Procedures- Continued

Step	Operation Normal indication Corrective procedure
4.	Add E1 and E2, and divide the sum by 2. Record the result as E3. **NOTE** Interpole the meter scale as follows: The lower limit of the green area is 228V, the center line is 240V, and the upper limit of the green area is 252V. The meter under test indicates E3. Adjust meter M2 adjusting screw. Set the POWER circuit breaker to OFF. Remove the test leads from the power supply control panel. Position the power supply control panel to its normal position and secure. Deenergize and store the DMM.

Table 3-3. 20- Vdc Power Supply-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE Step 1 is performed using the cal std only.
1.	20-Vdc Power Supply (Fig. 3-4).
a.	Remove the display generator (A) (3. fig: 3-5) located in the fire control groupl Momentarily set the VDC switch to the down position. Set the METER SELECT switch (1, fig. 3-4) to +20V. Connect the COMMON and SH GUARD test leads to chassis ground. Connect the DC VOLTS test lead to A4J8-15 (2, fig. 3-5) in the fire control group. Set the POWER circuit breaker to ON, and wait until the time delay is complete. Adjust +20V REG (2, fig. 3-4) for a center-scale indication. **The cal std indicates 19.7 to 20.30.** 20-Vdc power supply.
b.	Set the POWER circuit breaker to OFF. Transfer the DC VOLTS test lead to A4J8-16 (2. fig. 3-5). Set the POWER circuit breaker to ON, and wait until the time delay is complete.. Set the METER SELECT switch to -20V. Adjust the -20V REG (3, fig. 3-4) for a center-scale indication. The cal std indicates - 19.7 to --20.30. 20-Vdc power supply. Remove the test leads from the unit under test. Replace the display generator (A) into its normal operating position and secure.

Step	Operation Normal indication Corrective procedure
	NOTE Step 2 is performed using DMM 10177187 when the cal std is not available.
2.	**20-Vdc Power Supply (Fig. 3-4).**
a.	**Remove the display generator (A) (3, fig. 3-5) located in the fire control group.** **Set the SHELTER POWER, CONVENIENCE OUTLETS, EQUIPMENT BLOWERS, and POWER circuit breakers to ON.** Connect ,and energize the DMM. Press the VDC switch. Press the RANGE 100 switch. Set the METER SELECT switch (1, fig. 3-4) to +20V. Connect the INPUT LO test: lead to chassis ground. Connect the INPUT HI test lead -to A4J8-15 (2, fig. 3-5) in the fire control group. Set the POWER circuit breaker (1, fig. 3-2) to ON, and wait until time delay is complete. Adjust the +20V REG (2, fig, 3-4) for a center-scale indication. **The DMM indicates 19.7 to 20.30.** *20-Vdc power supply.*
b.	Set the POWER circuit breaker to OFF. Transfer the INPUT HI test lead to A4J8-16 (2, fig. 3-5). Set the POWER circuit breaker to ON and wait until the time delay is complete. Set the METER SELECT switch to -20V. Adjust the -20V REG (3, fig. 3-4) for a center-scale indication. **The DMM indicates -19.7 to -20.30.** 20-Vdc power supply. Remove the test leads from the unit under test. Replace the display generator (A) into its normal operating position and secure. Deenergize and store the DMM.

Table 3-4. Indicator Control Group-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE Step 1 is performed using the cal std only.
1.	**General Test Set (1, Fig. 3-6).**
a.	Set the POWER circuit breaker to OFF. Remove the automatic test set (A2) (5, fig. 3-6) located below the power supply control panel.

Table 3-4. Indicator Control Group--Periodic Test Procedures --Continued

Step	Operation Normal indication Corrective procedure
1*a*. Cont.	Connect the DC VOLTS test lead to the junction of R23 and R24 (3, fig. 3-6). Connect the COMMON and SH GUARD test leads to chassis ground. Set the POWER circuit breaker to ON, and wait until the time delay is complete. **The cal std indicates -6.99 to -8.02.** General test set (A1).
b.	Transfer the DC VOLTS test lead to the junction of R20 and R21 (2, fig. 3-6). **The cal std indicates 0.75 to 0.86.** General test set (A1).
c.	Transfer the DC VOLTS test lead to the junction of R18 and R20 (4, fig. 3-6). **The cal std indicates 1.1 to 1.3.** General test set (A1). Set the POWER circuit breaker to OFF. Remove the test leads from the junction of R18 and R20 and chassis ground. Replace the automatic test set (A2) and secure. Perform the general test set operation checks in TM 9-1430-1526-12-1.
	NOTE Step 2 is performed using DMM 10177187 when the cal std is not available.
2.	**General Test Set (1, Fig. 3-6).**
a.	Set the SHELTER POWER, CONVENIENCE OUTLETS, and EQUIPMENT BLOWERS circuit breakers to ON. Set the POWER circuit breaker (1,.fig. 3-2) to OFF. Remove the automatic test set (A2) (5, fig. 3-6) located below the power supply control panel.. Connect and energize the DMM. Press the VDC switch. Press the RANGE 10 switch. Connect the INPUT LO test lead to chassis ground. Connect the INPUT HI test lead to the junction of R23 and R24 (3, fig. 3-6). Set the POWER circuit breaker to ON, and wait until time delay is complete. The DMM indicates -6.99 to -8.02. General test set (A1).
b.	Transfer the INPUT HI test lead to the junction of. R20 and R21 (2, figs 3-6) **The DMM indicates 0.75 to 0.86.** General test set (A1).

Table 3-4. Indicator Control Group-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
2*c.*	**Transfer the INPUT HI test lead to the junction of R18 and R30 (4, fig. 3-6).** **The DMM indicates 1.1 to 1.3.** General test set (A1). Set the POWER circuit breaker to OFF. Remove the test leads from the junction of R18 and R20 and chassis ground. Replace the automatic test set (A2) and secure. Deenergize and store the DMM. Perform the general test set operation checks in TM 9-1430-1526-12-1.

Step	Operation Normal indication Corrective procedure
1.	**Range Electronic Control Amplifier (A) (11, Fig. 3-5).**
a.	Remove range electronic control amplifier (A) from the fire control group. Set the FUNCTION switch to DCMA. Set the RANGE switch to 2. Adjust the VERNIER control full ccw. Connect the CURRENT /KOHMS test lead to the (+) terminal on the meter M1 under test. Connect the COMMON test lead to the (-)terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a right-hand marker indication on the meter under test. **The cal std indicates 0.900 to 1.100.** Range electronic control amplifier (A).
b.	Release the TEST switch. Adjust the VERNIER control fill ccw. Reverse the test leads connected to the meter under test. Set and hold the TEPST switch to NORMAL. Adjust the VERNIER control for a left -hand marker indication on the meter under test. **The cal std indicates 0.900 to 1.100.** Range electronic control amplifier (A).

Table 3-5. Fire Control Group-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1*c*.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Set the FUNCTION switch to VDC. Set the RANGE switch to 1. Connect the DC VOLTS and COMMON test leads across diodes CR6 and CR7 connected at the terminals on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for maximum indication on the meter under test. **The meter under test indicates between half and full scale.** Range electronic control amplifier (A).
d.	Release the TEST switch. Adjust the VERNIER control full ccw. Reverse the test leads connected to diodes CRY; and CR7. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a maximum indication un the meter under test. **The meter under test indicates between half and full scale.** Range electronic control amplifier (A). Release the TEST switch. Remove the test leads from the electronic control amplifier. Set the VERNIER control full ccw. Replace the electronic control amplifier into the fire control group and secure.
2.	**Range Electronic Control Amplifier -(B) (8, Fig. 3-5).** Remove range electronic control amplifier (B) from the fire control group. Perform the procedure outlined in step 1 above to check the ZERO ADJUST meter contained in range electronic control amplifier (B).
3.	**Elevation Electronic Control Amplifier- (A) (10, Fig. 3-5).** Remove elevation electronic control amplifier (A) from the fire control group. Perform the procedure outlined in step 1 above to check the ZERO ADJUST meter contained in elevation electronic control amplifier (A).
4.	**Elevation Electronic Control Amplifier- (B) (7, Fig. 3-5).** Remove elevation electronic control amplifier (B) from the fire control group. Perform the procedure outlined in step 1 above to check the ZERO ADJUST meter contained in elevation electronic control amplifier (B).

Table 3-5. Fire Control Group-Periodic Test Procedures--Continued

Step	Operation Normal indication Corrective procedure
5.	**Azimuth Electronic Control Amplifier (A) (9, Fig. 3-5).** Remove azimuth electronic control amplifier (A) from the fire control group. Perform the procedure outlined in step 1 above to check the ZERO ADJUST meter contained in azimuth electronic control amplifier (A).
6.	**Azimuth Electronic control Amplifier (1) (6 Fig. 3-5).** Remove azimuth electronic control amplifier (B) from the fire control group. Perform the procedure outlined in step 1 above to check the ZERO ADJUST meter contained in azimuth electronic control amplifier (B).
7.	**Firing Circuits Test Set (B) (5, Fig. 3-5).**
a.	Remove firing circuits test set (B) from the fire control group. Set the FUNCTION switch to DCMA. Set the RANGE switch to 2. Adjust the VERNIER control full ccw. Connect the CURRENT/KOHMS test lead to the.(+) terminal on meter M1 under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Connect the SH GUARD test lead to chassis ground. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a right-hand marker indication on the meter under test. **The cal std indicates 0.9000 to 1.100.** Firing circuits test set (B).
b.	Release the TEST switch. Adjust the VERNIER control full ccw. Reverse the test leads connected to the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a left-hand marker indication on the meter under test. **The cal std indicates 0.9000 to 1.100.** Firing circuits test set (B).
c.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Replace firing circuits test set (B).

Table 3-5. Fire Control Group-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
7*c*. Cont.	Remove display generator (B)(4, fig. 3-5) from the fire control group. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Adjust the VERNIER control full ccw. Connect the DC VOLTS test lead to the junction of R15 and R16 (3, fig. 3-7) in the firing circuits test set. Connect the COMMON and SH GUARD test leads to chassis ground. Set the POWER circuit breaker to ON and wait until the time delay is complete. **The cal std indicates 0.7490 to 0.8610.** Firing circuits test set (B).
d.	Transfer the DC VOLTS test lead to the junction of R16 and R17 (4, fig. 3-7). **The cal std indicates 1.120 to 1.295.** Firing circuits test set (B).
e.	Transfer the DC VOLTS test lead to the junction of R17 and R18 (2, fig. 3-7). The cal std indicates 2.245 to 2.585. Firing circuits test set (B).
f.	Transfer the DC VOLTS test lead to the junction of R18 and R20 (1, fig. 3-7). **The cal std indicates 6.000 to 6.885.** Firing circuits test set (B). Set the POWER circuit breaker to OFF. Remove the test leads from the meter under test.
8.	Firing Circuits Test Set (A) (1, Fig. 3-5). Interchange firing circuits test set (A) and (B) positions. Repeat the procedure outlined in step 7 above to check firing circuits test set (A). Replace display generator (B) into the fire control group and secure. Perform the firing circuits checks in TM 9-1430-1526-12-1.

Table 3-6. Guided Missile Firing Panels A and B-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1	**SIGNAL STRENGTH Meter M2 (3, Fig. 3-8).**
	NOTE **This step is performed first for firing panel (A), then (B).**
a.	**Set the SHELTER POWER and CONVENIENCE OUTLETS circuit breakers to ON.**
	Loosen the two fasteners that secure guided missile firing panel, and lift and secure the panel in the open position.
	Connect and energize the cal std.
	Set the FUNCTION switch to DCMA.
	Set the RANGE switch to 2.
	Adjust the VERNIER control full ccw.
	Connect the CURRENT/KOHMS test lead to the (+) terminal on the meter M2 under test.
	Connect the COMMON test 'lead to the (-) terminal on the meter under test.
	Connect the SH GUARD test lead to chassis ground.
	Carefully lower the guided missile firing panel to its normal position, making certain the protruding test leads are not damaged.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a HIGH indication on the meter under test.
	The cal std indicates 0.1930 to 0.2070. SIGNAL STRENGTH meter.
b.	Adjust the VERNIER control for a MEDIUM indication on the meter under test.
	The cal std indicates 0.0930 to 0.1070. SIGNAL STRENGTH meter.
	Release the TEST switch.
	Lift and secure the guided missile firing panel, and remove the test leads.
	Deenergize and store the cal std.
	Close and secure the guided missile firing panel.
2.	**TARGET ALTITUDE KM Meter Ml (1, Fig. 3-8).**
a.	Set the SHELTER POWER and CONVENIENCE OUTLETS circuits breakers to ON.
	Connect and energize the cal std.
	Set the FUNCTION switch to DCMA.
	Set the RANGE switch to 2.
	Loosen the two fasteners that secure the guided missile firing panel and lift and secure the panel in the open position.

Table 3-6. Guided Missile Firing Panels A and B--Periodic 7est Procedures Continued

Step	Operation Normal indication Corrective procedure
2*a.* Cont.	Adjust the VERNIER control full ccw. Connect the CURRENT/KOHMS test lead too the (+) terminal on the meter M1 under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Connect the SH GUARD test lead to the chassis ground. Carefully lower tile guided missile firing panel to its normal position, making certain the protruding test leads are not damaged. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 0.1930 to 0.2070.** TARGET ALTITUDE KM meter.
b.	Adjust the VERNIER control for a 15 indication on the meter under test. **The cal std indicates 0.1430 to 0.1570.** TARGET ATTITUDE KM meter.
c.	Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0930 to 0.1070.** TARGET ALTITUDE KM meter.
d.	Adjust the VERNIER control for a 5 indication on the meter under test. The cal std indicates 0.0430 to 0.0570. TARGET ALTITUDE KM meter. Release the TEST switch. Deenergize and store the cal std. Lift and secure the guided missile firing panel, and remove the test leads. Close and secure the guided missile firing panel.
3.	**TARGET SPEED KM/HIR Meter M3 (2, Fig. 3-8).** **NOTE** **If the IBCC is connected to the IHIPIR'S those data cables must be disconnected. If the meter being tested is located on firing panel A. disconnect ILI. A data cable; from J1and J2 of the IBCC. If located on firing panel B, disconnect ILI. B data cables from J3 and J4 of the IBCC.**
a.	Set the SHELTER POWER and CONVENIENCE OUTLETS circuit breakers to ON. Loosen the two fasteners that secure the guided missile firing panel and list and secure the panel in the open position. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 2.

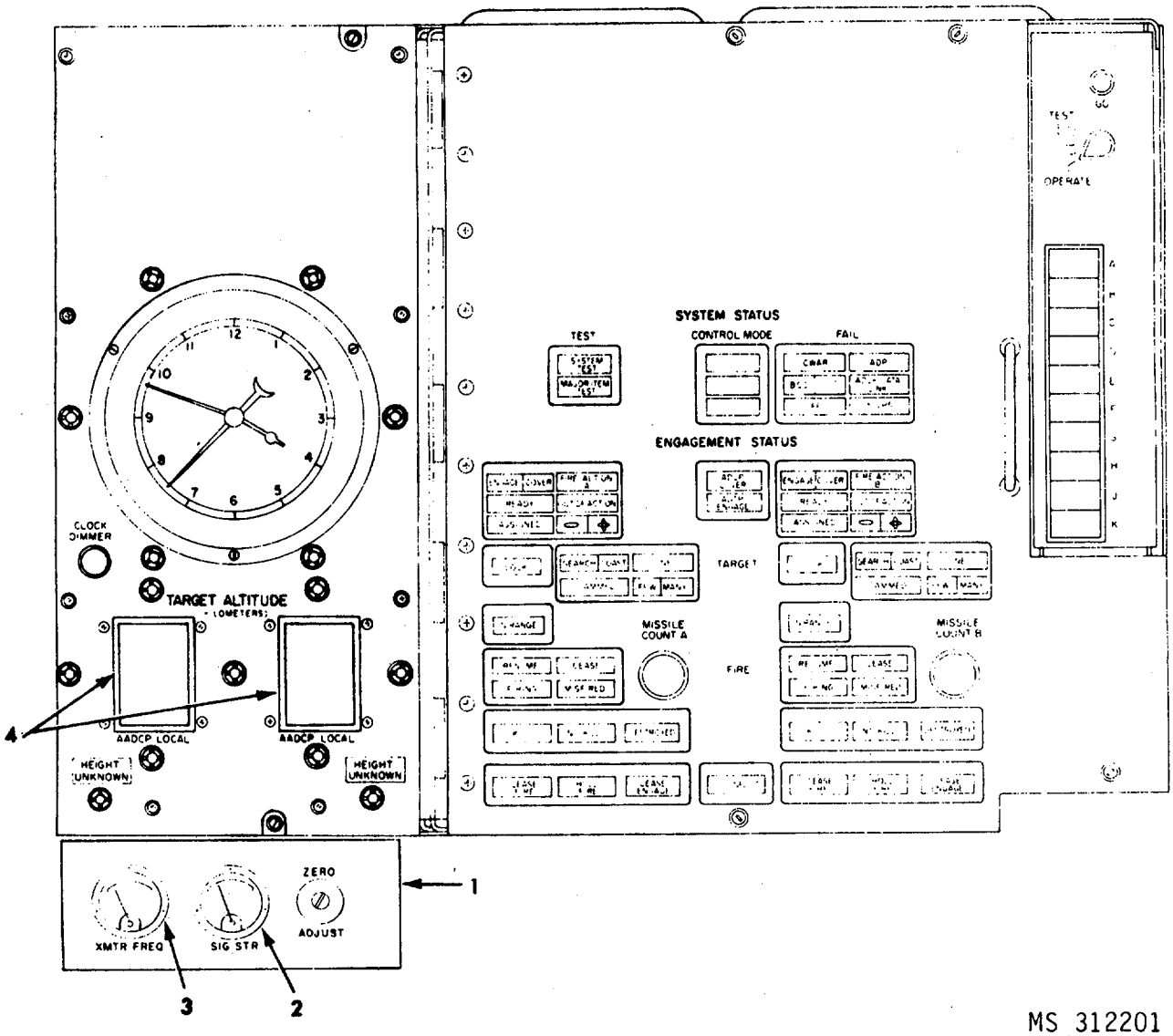
Table 3-6. Guided Missile Firing Panels A and B-Periodic Test Procedures--Continued

Step	Operation Normal indication Corrective procedure
3*a.* Cont.	Adjust the VERNIER control full ccw. Connect the CURRENT/KOHMS test lead to the (+) terminal on the meter M3 under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Connect the SH GUARD test lead to chassis ground. Carefully lower the guided missile firing panel to its normal position, making certain the protruding test leads are not damaged. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 0.1930 to 0.2070.** TARGET SPEED KM/HR meter.
b.	Adjust the VERNIER control for a 15 indication on the meter under test. **The cal std indicates 0.1430 to 0.1570.** TARGET SPEED KM/HR mete
c.	Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0930 to 0.1070.** TARGET SPEED KM/HR meter.
d.	Adjust the VERNIER control for a 5 indication on the meter under test. **The cal std indicates 0.0430 to 0.0570.** TARGET SPEED KM/HR meter. Release the TEST switch. Lift and secure the guided missile firing panel, and remove the test leads. Reconnect the IHIPIR data cables that were previously removed. Lower the guided missile firing panel to its normal position and secure. Deenergize and store the cal std.
4.	**GUIDED MISSILE Firing Panel (B).** Repeat the procedure outlined in steps 1 through 3 for guided missile firing panel (B).

Table 4-7. Tactical Control Console- Periodic Test Procedures.

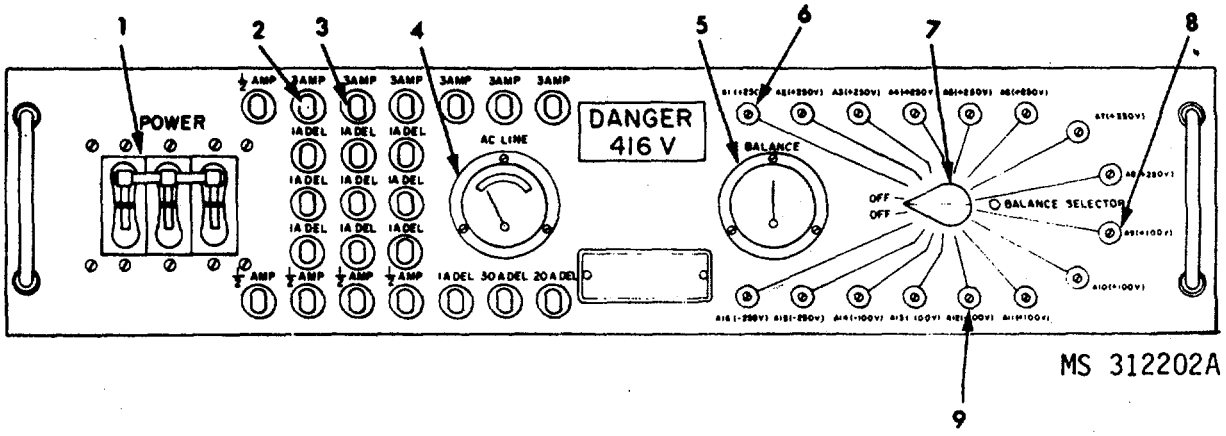
Step	Operation Normal indication Corrective procedure
	NOTE **Step 1 performed using the cal std only.**
1.	On the tactical control console (fig. 3-9), loosen 6 screws and open the panel to allow access to the power supply assembly (5.4V). Set the POWER circuit breaker (1, fig. 3-2) to ON. Set the CONSOLE POWER switch (fig. 3-9) to the on position. Set the 5.41V ON/OFF circuit breaker (2, fig. 3-9) to ON. Set the FUNCTION to MULTR. Momentarily set the VDC, switch to the down position. Connect the COMMON and SH GUARD test leads to J2 GND jack (1, fig. 3-10) on power supply assembly (5.4V). Connect the DC VOLTS test lead to J15.4V jack (2, fig. 3-10) on power supply assembly (5.4V). On the power supply assembly (5.4V) adjust R12 (5, fig. 3-10) ccw to decrease the reading on the cal std until a 5V PS FAIL indication, but not less than 4.45 vdc, is obtained. **The cal std indicated 4.45 to 4.90 vc.** Adjust R12 ccw for a reading of 4.45 to 4.90 vdc. Adjust LO REF R36 (4, fig. 3-10) cw on the summing detector circuit card just to the point at which a 5V PS FAIL indication is obtained, then ccw until the 5V PS FAIL lamp just extinguishes. Power supply assembly (5.4V), summing detector circuit card.
b.	Adjust R12 cw to increase the reading on the cal std until a 5V PS FAIL, indication, but not more than 5.50 vdc is obtained. **The cal std indicates 4.45 to 5.50 vdc.** Adjust R12 ccw for a reading of 5.45 to 5.05 vdc on the cal std. **There is no 5V PS FAIL indication.** Power supply assembly (5.4V), summing detector circuit card. Remove the test leads, close and secure the panel on the tactical control console. Deenergize and store the cal std.

Step	Operation Normal indication Corrective procedure
	NOTE **Step 2 is performed using DMM 10177187 when the cal std is not available.**
2.	**Power Supply Assembly (5.4) BITE (Fig. 3.10).**
a.	Set the SHELTER POWER, CONVENIENCE OUTLETS, and EQUIPMENT BI,OWERS circuit breakers to ON. Connect and energize the DMM. On the tactical control console (fig. 3-9), loosen 6. screws and open the panel to allow access to the power supply assembly (5.4V). Set the POWER circuit breaker (1, fig. 3-2) to ON. Set the CONSOLE POWER switch (1, fig. 3-9) to the on position. Set the 5.4V ON/OFF circuit breaker (2, fig. 3-9) to ON. Press the VDC switch. Press the RANGE 10 switch. Connect the INPUT LO test lead toJ2GND jack (1, fig. 3-10) on power supply assembly (5.4V). Connect the INPUT HI test lead to J1 5.4V jack (2, fig. 3-10)on power supply assembly (5.4V). On the power supply assembly (5.4V), adjust R12 (5, fig. 3-1,0) ccw to decrease the reading on the DMM until a 5V PS FAIL indication, but not less than 4.45 vdc, is obtained. **The DMM indicates .4.45 to 4.90 vdc.** Adjust R12 ccw for a reading of 4.45 to 4.90 vdc. Adjust LO REF R36 (4, fig. 3-10) cw on the summing detector circuit card until the 5V PS FAIL lamp just illuminates, then ccw until the 5V PS FAIL lamp just extinguishes. Power supply assembly (5.4NV), summing detector circuit card.
b.	Adjust R12 cw to increase the reading on the DMM until a 5V PS FAIL indication, but not more than 5.50 vdc, is obtained. **The DMM indicates 5.45 to 5.50() vdc.** Adjust R12 cw for a reading of 5.45 to 6.50 vdc. Adjust HI REF R37 (3, fig. 3-10) ccw on the summing detector circuit card just to the point at which 5V PS FAIL indication is obtained. Power supply assembly (5.4V), summing detector circuit card.
c.	Adjust R12 ccw for a reading of 4.95 to 5.05 vdc on the DMM. **There is no 5V PS FAIL indication.** Power supply assembly (6.4V), summing detector circuit card. Remove the test leads and close and secure the panel on the tactical control console. Deenergize and store the DMM.



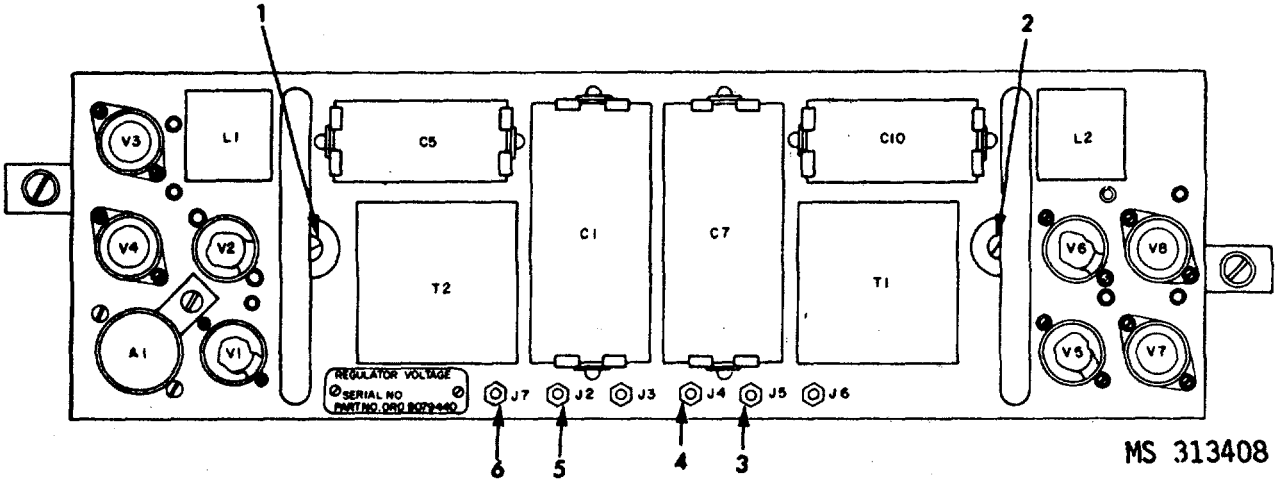
1—Pulse radar frequency control panel
2—SIG STR meter
3—XMTR FREQ meter
4—TARGET ALTITUDE (KILOMETERS) AADCP LOCAL meters

Figure 3-1. Status indicator panel.



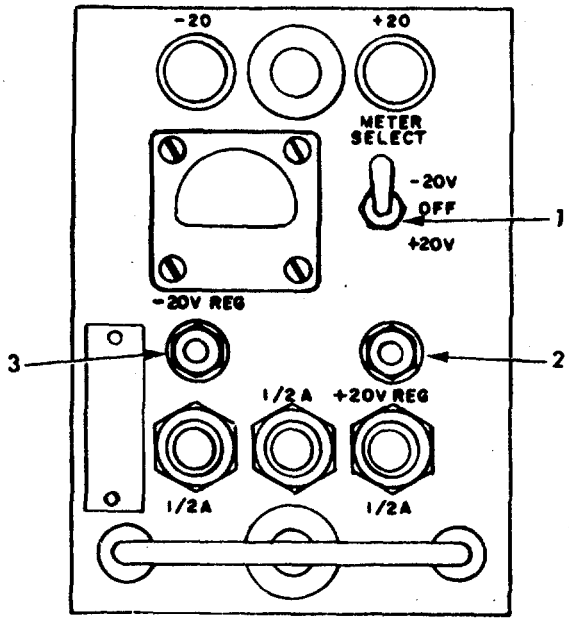
1—POWER circuit breaker
2—Fuse F9
3—Fuse F10
4—AC LINE meter M2
5—BALANCE meter M1
6—A1 (+250V) control
7—BALANCE SELECTOR switch
8—A9 (+100V) control
9—A12 (—100V) control

Figure 3-2. Power supply control panel.



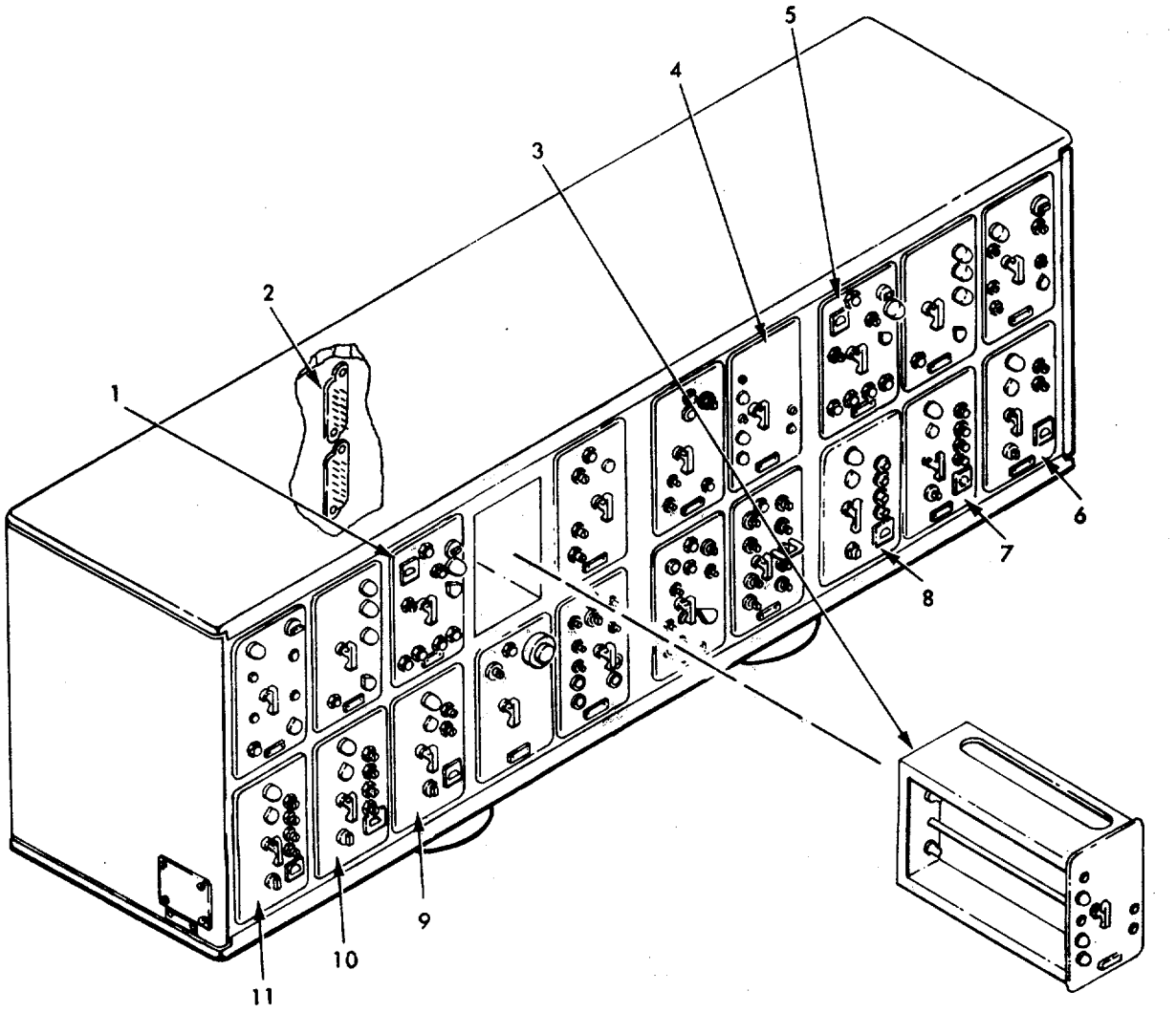
1—-250 ADJUST control
2—+250 ADJUST control
3—Jack J5
4—Jack J4
5—Jack J2
6—Jack J7

Figure 3-3. Reference voltage regulator.



1—METER SELECT switch
2—+20V REG adjust
3—−20V REG adjust

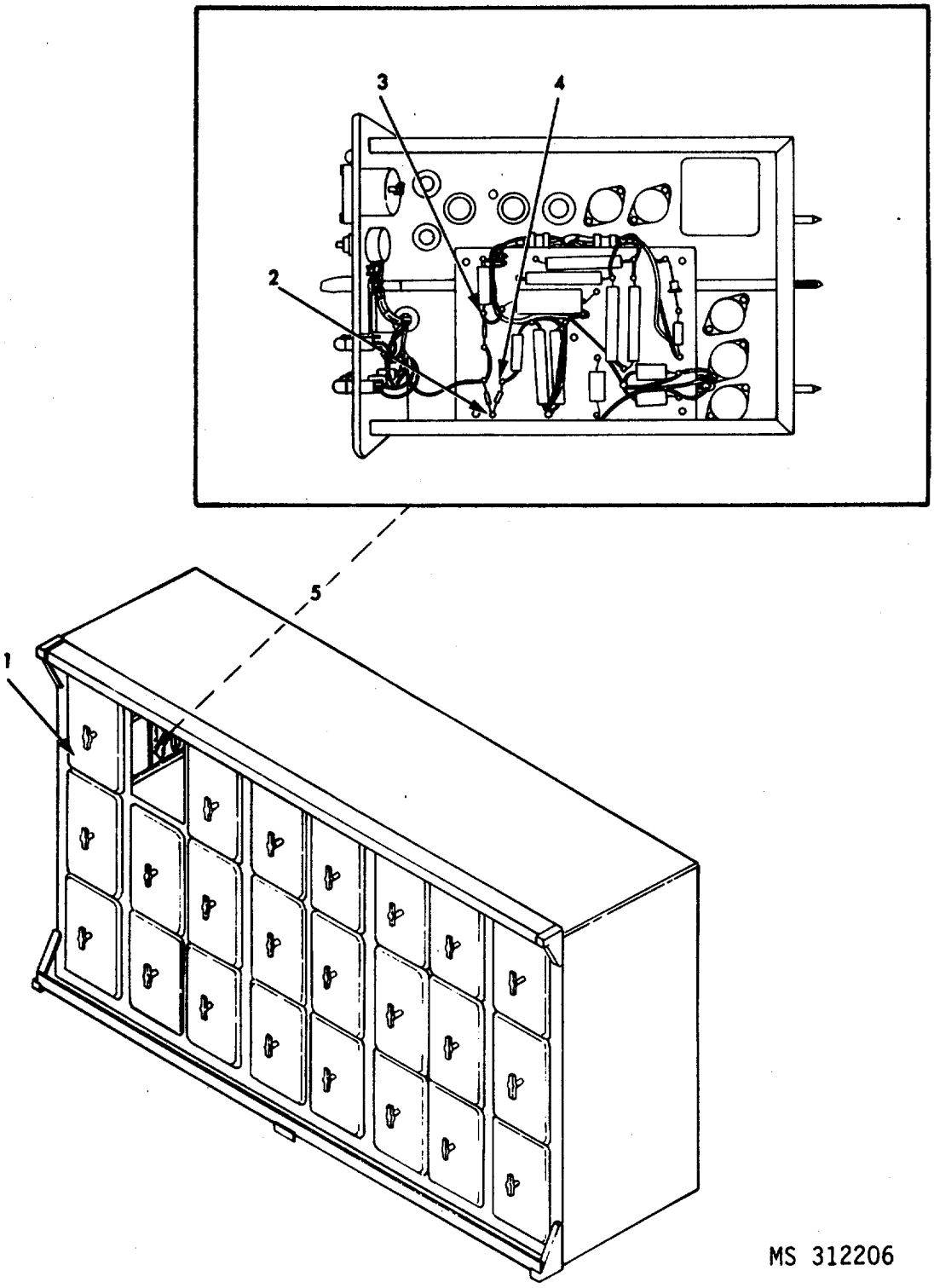
Figure 3-4. 20-Vdc power supply.



MS 312205

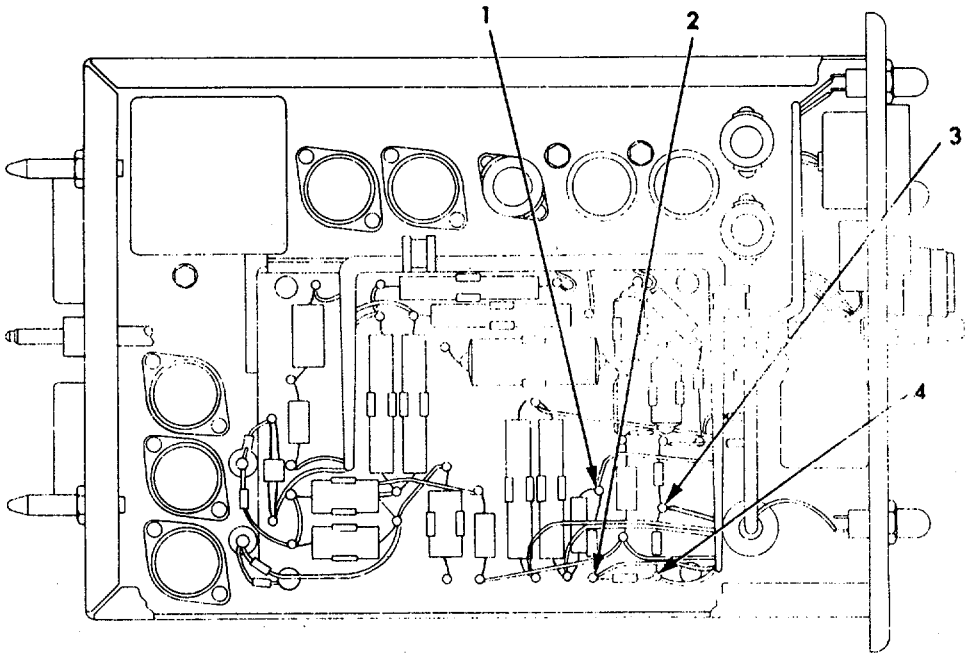
1—Firing circuits test set (A)
2—A4J8
3—Display generator (A)
4—Display generator (B)
5—Firing circuits test set (B)
6—Azimuth electronic control amplifier (B)
7—Elevation electronic control amplifier (B)
8—Range electronic control amplifier (B)
9—Azimuth electronic control amplifier (A)
10—Elevation electronic control amplifier (A)
11—Range electronic control amplifier (A)

Figure 3-5. Fire control group.



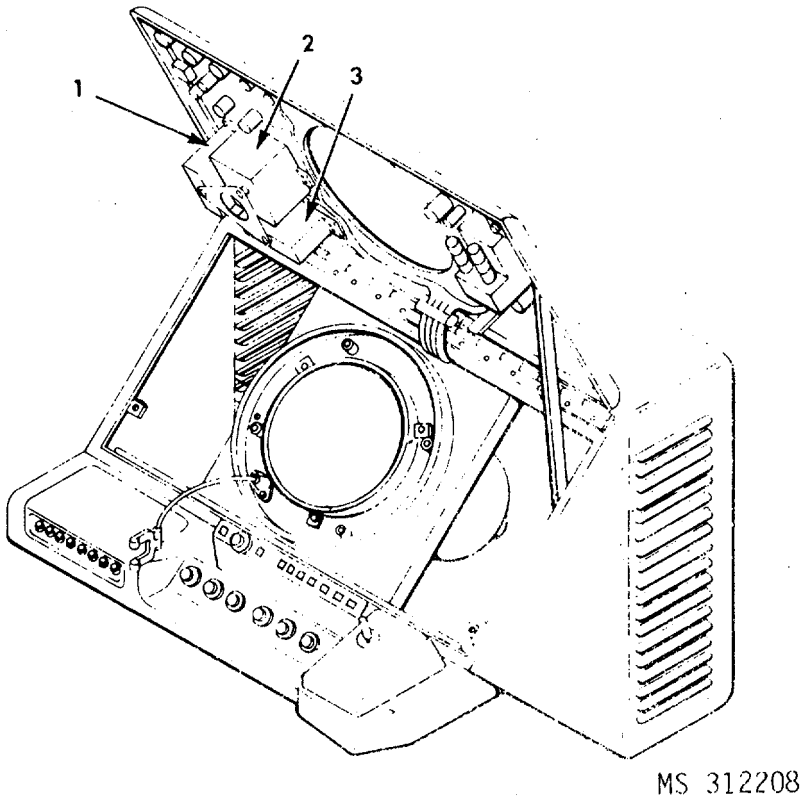
1—General test set (A1)
2—Junction R20, R21
3—Junction R23, R24
4—Junction R18, R20
5—Automatic test set (A2) (removed)

Figure 3-6. Indicator control group.



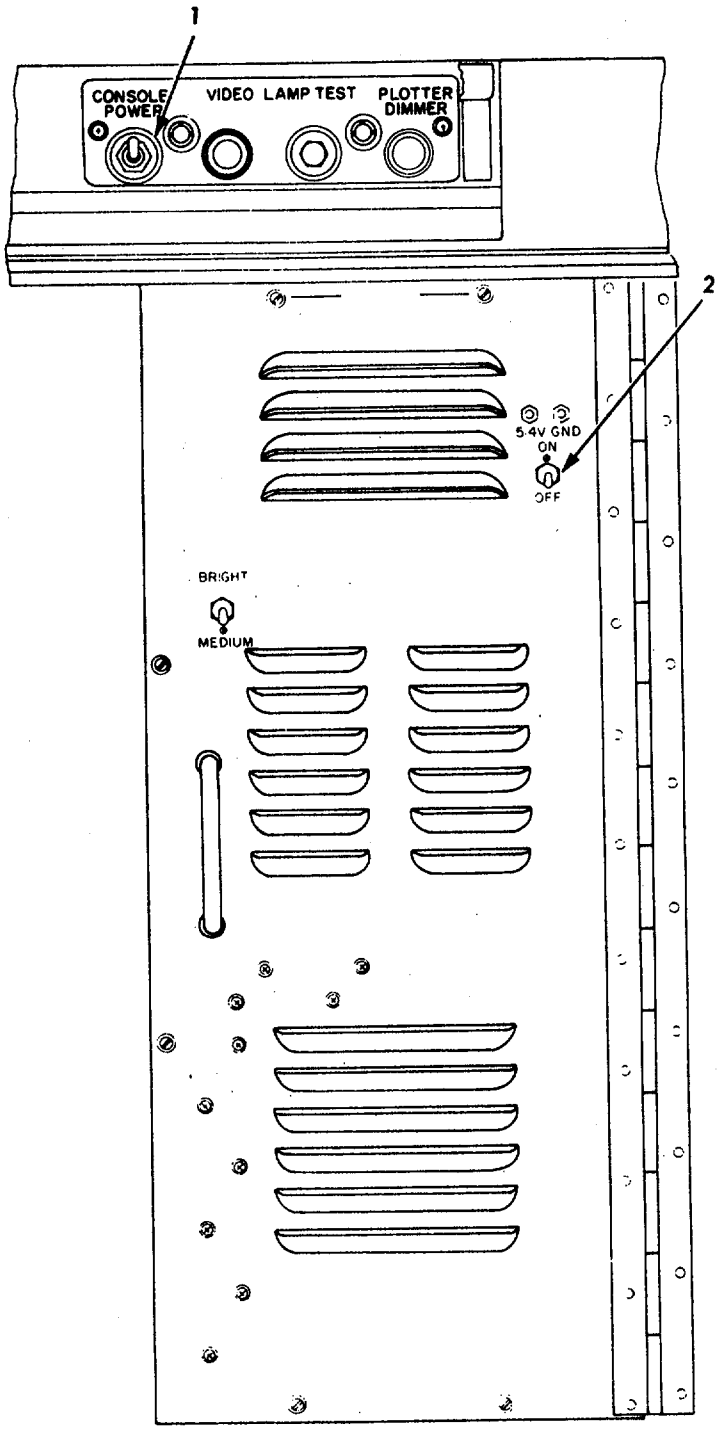
1—Junction R18, R20
2—Junction R17, R18
3—Junction R15, R16
4—Junction R16, R17

Figure 3-7. Firing circuits test set (A) and (B).



1—TARGET ALTITUDE KM meter M1
2—TARGET SPEED KM/HR meter M3
3—SIGNAL STRENGTH meter M2

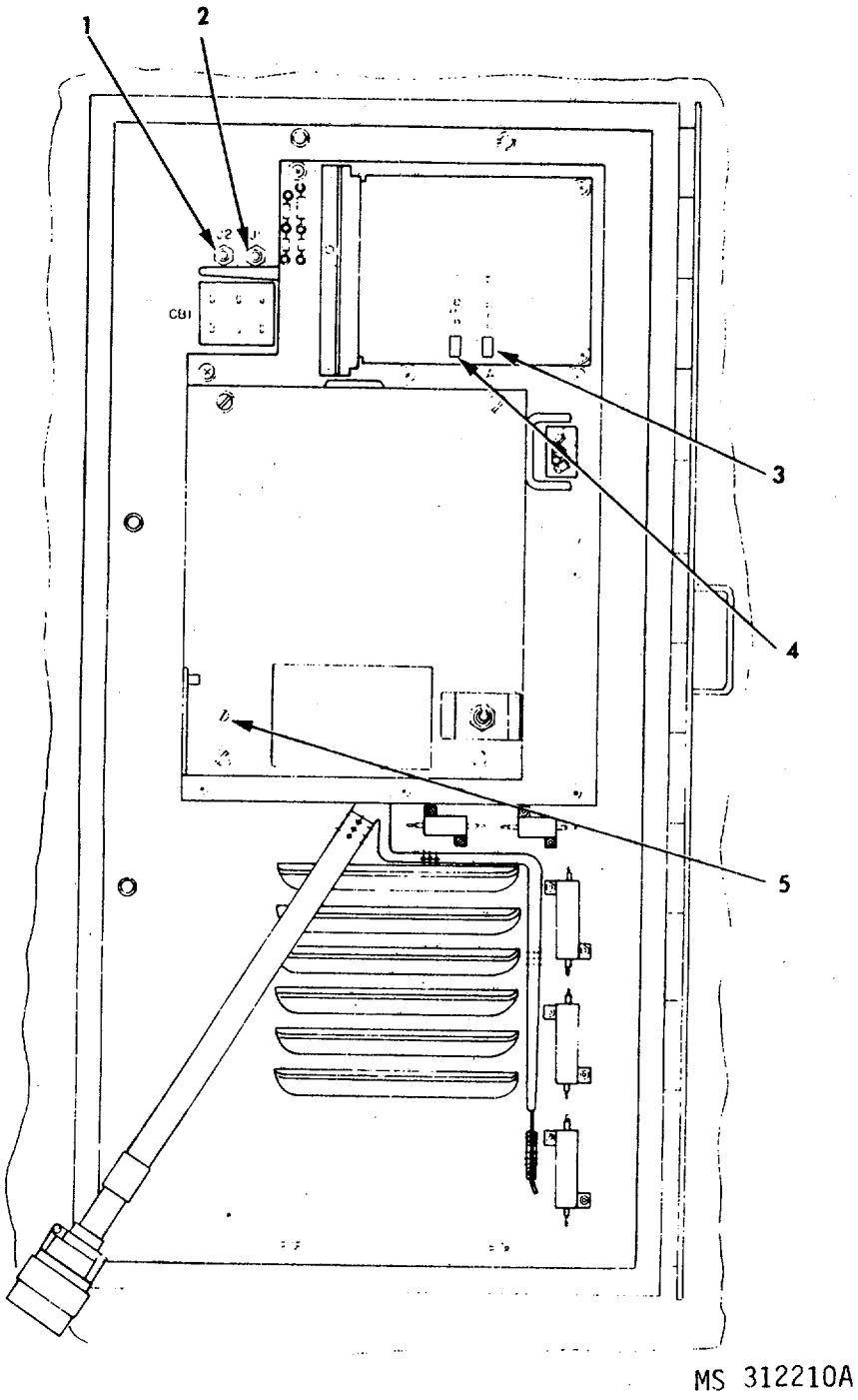
Figure 3-8. Guided missile firing panels A and B.



MS 312209

1—CONSOLE POWER switch
2—5.4V ON/OFF circuit breaker

Figure 3-9. TCC control panel and lower base panel (*front view*).



1—J2 GND jack
2—J1 5.4V jack
3—HI REF R37 control
4—LO REF R36 control
5—R12 control

Figure 3-10. 5.4-Vde power supply.

CHAPTER 4
IMPROVED PULSE ACQUISITION RADAR (IPAR)
PERIODIC TEST PROCEDURES

Table 4-1. Power Control Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	***ANTENNA-CT ZERO INDICATOR Meter Ml (1, Fig. 4-1).**
a.	Set MAIN POWER switch 5S1 on the cable entry panel to OFF.
	Set circuit breakers CB2 through CB7, and CB9 through CB11, CB16, and CB17 located on the power control panel (fig. 4-1) to ON.
	Connect and energize the cal std.
	Connect the COMMON test lead to one terminal on the meter under test.
	Connect the AC VOLTS test lead to the other terminal on the meter under test.
	Set the FUNCTION switch to VAC.
	Set the RANGE switch to 1.
	Adjust the VERNIER control full ccw.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a 1.0 indication on the meter under test.
	The cal std indicates 1.440 to 1.560 ANTENNA-CT ZERO INDICATOR meter.
b.	Release the TEST switch.
	Adjust the VERNIER control full ccw.
	Set MAIN POWER switch 5S1 to OFF.
	Remove the test leads from the meter under test.
	Reconnect the previously removed lead to the meter under test.
	Connect the COMMON test lead to the right-hand junction of diodes CR14 and CR15 (2, fig. 4-2).
	Connect the AC VOLTS test lead to the right-hand side of resistor R1 (1, fig.4-2).
	Set MAIN POWER switch 5S1 to ON.
	Set and hold the TEST switch to NORMAL.

Table 4-1. Power Control Panel-Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1b. Cont.	Adjust the VERNIER control for a maximum indication on the meter under test. **The meter under test indicates 0.5 maximum.** CR14, CR15, R1. Release the TEST switch. Adjust the VERNIER control full ccw. Set all power control panel circuit breakers to OFF. Set MAIN POWER switch 5S1 to OFF. Remove the test leads from CR14, CR15, and right-hand side of resistor R1 Deenergize and store the cal std. Close and secure the read panel on the power control panel. Close and secure the power control panel.
2.	**115V LINE Meter M2 (2, Fig. 4-1).**
a.	Set the VOLTAGE S9 switch (4, fig. 4-1) to OFF. Loosen the fasteners that secure the power control panel and open the panel. Loosen the fasteners and swing the rear panel and open the panel of the power control panel. Set circuit breakers CBZ through CB7, CB9 through CB11, CB16, and CB17 located on the power control panel to ON. Connect and energize the cal std. Set the RANGE switch to 2. Connect the COMMON test lead to one terminal on the meter under test. Connect the AC VOLTS test lead to the other terminal on the meter under test. Set MAIN POWER switch 5S1 to ON. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 26.50 to 33.50.** 115V LINE meter.
b.	Adjust the VERNIER control for a 90 indication on the meter under test. **The cal std indicates 86.50 to 93.50.** 115V LINE meter.
c.	Adjust the VERNIER control full ccw. Set the RANGE switch to 3.

Table 4-1. Power Control Panel-Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
2c. Cont.	Adjust the VERNIER control for a 150 indication on the meter under test. **The cal std indicates 145.5 to 154.5.** 115V LINE meter. Release the TEST switch. Adjust the VERNIER control full ccw. Set all power control panel circuit breakers to OFF. Set MAIN POWER switch 5S1 to OFF. Remove the test leads from the meter under test. Close and secure the rear panel on the power control panel Close and secure the power control panel. Deenergize and store the cal std.
3.	**40V LINE Meter M3 (3, Fig. 4-1).**
a.	Set the VOLTAGE S10 switch (5, fig. 4-1) to OFF. Loosen the fasteners that secure the power control panel and open the panel. Loosen the fasteners and swing open the rear panel of the power control panel. Set circuit breakers CB2 through CB7, and CB9 through CB11, CB 16, and CB17 located on the power control panel to ON. Set MAIN POWER switch 5S1 to ON. Connect and energize the cal std. Set the FUNCTION switch to VAC. Set the RANGE switch to 2. Connect the COMMON test lead to one terminal on the meter under test. Connect the AC VOLTS test lead to the other terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 100 indication on the meter under test. **The cal std indicates 91.00 to 109.0.** 240V LINE meter.
b.	Adjust the VERNIER control full ccw. Set the RANGE switch to 3. Adjust the VERNIER control for a 200 indication on the meter under test. **The cal std indicates 191.0 to 209.0.** 240V LINE meter.

Table 4-1. Power Control Panel-Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
3c.	Adjust the VERNIER control full ccw. Set the RANGE switch to 4. Adjust the VERNIER control for a 300 indication on the meter under test. **The cal std indicates 291.0 to 309.0.** 240V LINE meter. Release the TEST switch. Adjust the VERNIER control full ccw. Set all power control panel circuit breakers to OFF. Set MAIN POWER switch 5S1 to OFF. Remove the test leads from the meter under test. Close and secure the rear panel on the power control panel. Close and secure the power control panel. Deenergize and store the cal std.

Table 4-2. Low-Voltage Power Supply - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**NOTE** **Step I is performed using the cal std only.** **Low-Voltage Power Supply (Fig. 4-3).**
a.	Loosen the fasteners that secure the low-voltage power supply panel, and withdraw the panel. Press and lock the interlock switch located beneath the low-voltage power supply panel. Set power control panel circuit breakers CB1 through CB7, CB9 through CB12, CB14, CB16, CB17, CB19, CB20, CB24, and CB25 to ON. Set MAIN POWER switch 5S1 to ON. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Set the BALANCE SELECTOR switch (4, fig. 4-3) to OFF. Insert the DC VOLTS test lead into jack J7 (6, fig. 4-4) on the reference voltage regulator, located on the right-hand side of the low-voltage power supply panel. Insert the COMMON test lead into jack J2 (5, fig. 4-4) on the reference voltage regulator. Set the azimuth and range indicator SYSTEM CONTROL LOCAL-REMOTE switch (5, fig. 4-7) to LOCAL. Press and hold the azimuth and range indicator POWER-STANDBY pushbutton (3, fig. 4-7) for 2 seconds.

Table 4-2. Low-Voltage Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1a. Cont.	**NOTE** **Allow one minute for the timer to run down before proceeding.** Adjust the reference voltage regulator -250 ADJUST control (1, fig. 4-4) for a -250.0 indication on the cal. std. Connect the DC VOLTS test lead to jack J5 (3, fig. 4-4). Connect the COMMON test lead to jack J4 (4, fig. 4-4). Adjust the reference voltage regulator 4250 ADJUST control (2, fig. 4-4) for a 250.0 indication on the cal std. Remove the test leads from jacks J4 and J5. Set the BALANCE SELECTOR switch to Al. Observe the BALANCE meter (7, fig. 4-3), and adjust the Al control (5, fig. 4-3) first full cw and then full ccw. **The meter under test deflects to each side of center scale and limits between half and full scale in each direction.** BALANCE meter, CR1, CR2, power supply Al (-18),R4-R6.
b.	Adjust the Al control for a center-line indication on the BALANCE meter. Loosen the fasteners that secure the balance selector and adjustment panel (8, fig. 4-3), and lower the panel. Connect the DC VOLTS test lead to the (-) terminal of the BALANCE meter. Connect the COMMON test lead to chassis ground. **The cal std indicates --17.82 to -18.18.** Power supply Al (-100), R4-R6.
c.	Set the BALANCE SI,ELECTOR switch to A2. Adjust the A2 control (6, fig. 4-3) for a center-line indication on the BALANCE meter. **The cal std. (indicates -99.)00 to --101**.00. Power supply A2 (-100), R4-R6.
d.	Set the BALANCE SELECTOR switch to A3. Adjust the A3 control (1, fig. 4-3) for a center-line indication on the BALANCE meter. **The cal std indicates 99.0 0 to 101.00.** Power supply A3 (+100), R2, R3.
e.	Set the BALANCE SELECTOR switch to A6. Adjust the A6 control (3, fig. 4-3) for a center-line indication on the BALANCE meter. **The cal std indicates 2.1.7.5 to 252.5.** Power supply A6 (+250), R13. Press the azimuth-range indicator POWER-OFF pushbutton (4, fig. 4-7). Set circuit breakers CB1 through CB7, CB9 through CB12, CB14, CB19, CB20, CB24, and CB25 to OFF.

Table 4-2. Low-Voltage Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1e. Cont.	Remove the test leads form the meter under test and chassis ground. Close and secure the balance selector and adjustment panel. Replace and secure the low-voltage power supply panel.
2.	**NOTE** **Step 2 is performed using DMM 10177187 when the cal std is not available.** **Low-Voltage Power Supply (Fig. 4-3).** Loosen the fasteners that secure the low-voltage power supply panel, and withdraw the panel. Press and lock the interlock switch located beneath the low-voltage power supply panel. Set MAIN PWER switch 5S1 to ON. Set power control panel circuit breakers CB1 through CB7, CB9 through CB12, CB14, CB16, CB17, CB19, CB20, CB24, and CB25 to ON. Connect and energize the DMM. Press the VDC switch. Press the RANGE 1000 switch. Set the BALANCE SELETOR switch (4, fig. 4-3) to OFF. Insert the INPUT HI test lead into jack J7 (6, fig. 4-4) on the reference voltage regulator, located on the right-hand side of the low-voltage power supply panel. Insert the INPUT LO test lead into jack J2 (5, fig. 4-4) on the reference voltage regulator. Set the azimuth and range indicator SYSTYEM CONTROL LOCAL-REMOTE switch (5, fig. 4-7) to LOCAL. Press and hold the azimuth and range indicator POWER-STANDBY pushbutton (3, fig. 4-7) for 2 seconds. **NOTE** **Wait one minute for the timer to run down before proceeding.** Adjust the reference voltage regulator -250 ADJUST control (1, fig. 4-4) for a -250.0 indication on the DMM. Connect the INPUT HI test lead to jack J5 (3, fig. 4-4). Connect the INPUT LO test lead to jack J4 (4, fig. 4-4). Adjust the reference voltage regulator +250 ADJUST control (2, fig. 4-4) for a 250.0 indication on the DMM Remove the test leads form jacks J4 and J5. Set the BALANCE SELECTOR switch to A1. Observe the BALANCE meter and adjust the A1 control (5, fig. 4-3) full cw and then full ccw. **The meter under test deflects to each side of center scale and limits between half and full scale in each direction.** BALANCE meter, CR1, CR2, power supply A1 (-18), R4-R6.

Table 4-2. Low-Voltage Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
2b.	Adjust the A1 control for a center-line indication on the BALANCE meter.
	Loosen the fasteners that secure the balance selector and adjustment panel (8, fig. 4-3), and lower the panel.
	Press the RANGE 100 switch.
	Connect the INPUT HI test lead to the (-) terminal on the BALANCE meter.
	Connect the INPUT LO test lead to chassis ground.
	The DMM indicated -17.82 to -18.18, R4-R6.
c.	Set the BALANCE SELECTOR switch to A2.
	Adjust the A2 control (6, fig. 4-3) for a center-line indication on the BALANCE meter.
	The DMM indicated -99.00 to -101.00
	Power supply A2 (-100), R4-R6.
d.	Set the BLANCE SELECTOR switch to A3.
	Adjust the A3 control (1, fig. 4-3) for a center-line indication on the BALANCE meter.
	The DMM indicates 99.00 to 101.0.
	Power supply A3 (+100), R2, R3.
e.	Set the BALANCE SELECTOR switch A6.
	Press the RANGE 1000 switch.
	Adjust the A6 control (3, fig. 4-3) for a center line indication on the BALANCE meter.
	The DMM indicates 247.5 to 252.5.
	Power supply A6 (+250), R13.
	Press the azimuth and range indicator POWER-OFF pushbutton.
	Set all power control panel circuit breakers to OFF.
	Remove the test leads from the meter under test and chassis ground.
	Close and secure the balance selector and adjustment panel.
	Replace and secure the low-voltage power supply panel.
	Deenergize and store the DMM.

Table 4-3. Digital Signal Processor - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**POWER SUPPLY MONITOR VDC Meter M2 (4, Fig. 4-5).**
a.	Loosen the fasteners and withdraw the digital signal processor chassis.
	Loosen the fasteners and swing open the front panel of the digital signal processor chassis.
	Set circuit breakers CB10, CH16, and CB17 to ON.
	Connect and energize the cal std.
	Set the FUNCTION switch to VDC.
	Set the RANGE switch to 2.
	Connect the DC VOLTS test lead to the (+) J21 jack (4, fig. 4-6).
	Connect the COMMON and SH GUARD test leads to the (-) J22 jack (6, fig. 4-6).
	Set the digital signal processor POWER SUPPLY MONITOR VDC switch (5, fig. 4-5) to OFF.
	Set the digital signal processor voltage monitor/meter cal switch S20 (3, fig. 4-6) to METER CAL.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a 3O-Nvdc indication on the meter under test.
	The cal std indicates 29.1 to 30.
	POWER SUPPLY MONITOR VDC meter.
b.	Adjust the VERNIER control for a 15-vdc indication on the meter under test.
	The cal std indicates 14.1 to 15.90.
	POWER SUPPLY MONITOR VDC meter.
c.	Set the RANGE switch to 1.
	Adjust the VERNIER control for a 5-vdc indication on the meter under test.
	The cal std indicates 4.1 to 5.90.
	POWER SUPPLY MONITOR VDC meter.
	Release the TEST switch.
	Adjust the VERNIER control full ccw.
	Set all power control panel circuit breakers to OFF.
	Set voltage monitor/meter cal switch S20 to VO()TA(GE MONITOR.
	Remove the test leads from † .J21 and T22 jacks.
	Deenergize and store the cal std.
	Close and secure the front panel on the digital signal processor.
	Close and secure the digital signal processor chassis.

Table 4-3. Digital Signal Processor - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
2.	**PROC ADJUST meter MI (2, Fig. 4-5).**
a.	Loosen the fasteners and withdraw the digital signal processor.
	Loosen the fasteners and swing open the front panel of the digital signal processor.
	Set circuit breakers CB10, CB16, and CB17 to ON.
	Connect and energize the cal std.
	Set the FUNCTION switch to DCMA.
	Set the RANGE switch to 2.
	Set the ADJUST SELECT switch (7, fig. 4-5) to OFF.
	Set the PROC ADJUST REF control (3, fig. 4-5) full cw.
	Remove connectors P23 and P24 from jacks J23 and J24 (1 and 6, fig. 4-6).
	Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test (2,fig. 4-6).
	Connect the COMMON and SH GUARD test leads to the ccw terminal on the PROC ADJUST REF control.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a full-scale indication on the meter under test.
	The cal std indicates 0.9500 to 1.050.
	PROC ADJUST meter, PROC ADJUST REF control.
b.	Slowly adjust the PROC ADJUST REF control full ccw.
	The cal std indication decreases smoothly.
	PROC ADJUST REF control.
c.	Release the TEST switch.
	Adjust the VERNIER control full ccw.
	Remove the test leads from the meter under test.
	Connect connectors P23 and P24 to jacks J23 and J24.
	Set circuit breakers CB10, CB16, and CB17 to OFF.
	Deenergize and store the cal std.
	Close and secure the front panel on the digital signal processor.
	Close and secure the digital signal processor chassis.

Table 4-3. Digital Signal Processor - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
3.	**Oscillator BITE** Set circuit breakers CB10, CB16, and CB17 to ON. Set power panel circuit breakers CB1 through CB7, CB9 through CB12, CB14, CB16, CB17, CB19, CB20, CB24 and CB25 to ON. Connect and energize calibration test set TF8-1020. Set the PROCESSOR MONITOR PRF switch (1, fig. 4-5) to FIXED. Set the calibration test set COUNTER select switch to EXT. Set the FUNCTION switch to TIME. Momentarily press the RESET switch. Press the azimuth and range indicator POWER-STANDBY pushbutton to ON. Connect cable W-030 between calibration test set COUNTER IN jack and digital signal processor TRIGGERS SYNC jack (6, fig. 4-5). **The calibration test set DISPLAY indicates 1472 to 1500.** DSP clock card. Press the azimuth and range indicator POWER-OFF pushbutton. Set all power panel circuit breakers to OFF. Remove cable W-030 and store in calibration test set. Deenergize and store the calibration test set.

Table 4-4. Azimuth and Range Indicator - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
a.	**FREQ Meter M1 (2, Fig. 4-7).** Loosen the fasteners that secure the control monitor panel (1, fig. 4-7) to the azimuth and range indicator. Disconnect plug P1 at the rear of the control monitor panel and remove the panel. Set circuit breakers CB10, CB16, and CB17 to ON. Connect and energize the cal std. Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Connect the DC VOLTS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 0 indication on the meter under test. **The cal std indicates 34.07 to 38.43.** FREQ meter.

Table 4-4. Azimuth and Range Indicator - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
b.	Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 70.32 to 74.68.** FREQ meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Set circuit breakers CB10, CB16, and CB17 to OFF. Reconnect the plug P1 at the rear of the tuning control panel. Position the control monitor panel into the azimuth and range indicator and secure. Deenergize and store the cal std.

Table 4-5. High-Voltage Power Supply - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**D.C. VOLTS Meter Ml (2, Fig. 4-10).**
a.	Disconnect plug P4 from jack J4. Remove the two screws on the top left side and the rear screw on the top right side of the control and timer panel (1, fig. 4-10). Loosen, but do not remove, the right forward screw on the control and timer panel and swing the panel as far as possible to the right to gain access to the meter terminals. Set circuit breakers CB10, CB16, and CB17 to ON. Connect and energize the cal std. Set the RANGE switch to 2. Set the FUNCTION switch to DCMA. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Connect the SH GUARD test lead to chassis ground. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 3 indication on the meter under test. **The cal std indicates 0.1700 to 0.2300.** D.C. VOLTS meter.

Table 4-5. High-Voltage Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1b.	Adjust the VERNIER control for a 9 indication on the meter under test. **The cal std indicates 0.5700 to 0.6300** D.C. VOLTS meter.
c.	Adjust the VERNIER control for a 15 indication on the meter under test. **The cal std indicates 0.9700 to 1.030.** D.C. VOLTS meter.
	Release the TEST switch.
	Adjust the VERNIER control full ccw.
	Remove the test leads from the meter under test.
	Deenergize and store the cal std.
	Swing the control and timer panel back to its normal position.
	Replace and tighten the four screws previously removed or loosened.
	Reconnect plug P4 to jack J4.
	Set circuit breakers CB10, CB16, and CB17 to Off.
2.	**STABILOTRON CURRENT Meter M2 (3, Fig. 4-10).**
a.	Set circuit breakers CB10, CB16, and CB17 to OFF.
	Connect and energize the cal std.
	Disconnect plug P4 from jack J4.
	Remove the two screws on the top left side and the rear screw on the top right side of the control panel as far as possible to the right to gain access to the meter terminals.
	Set the FUNCTION switch to DCMA.
	Set the RANGE switch to 4.
	Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test.
	Connect the COMMON test lead to the (-) terminal on the meter under test.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 17.00 to 23.00.** STABILOTRON CURRENT meter.
b.	Adjust the VERNIER control for a 60 indication on the meter under test. **The cal std indicates 57.00 to 63.00.** STABILOTRON CURRENT meter.

Table 4-5. High-Voltage Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
2c.	Adjust the VERNIER control for a 100 indication on the meter under test. **The cal std indicates 97.00 to 103.0.** STABILOTRON CURRENT meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Swing the control and timer panel back to its normal position. Replace and tighten the four screws previously removed or loosened. Reconnect plug P4 to jack J4. Deenergize and store the cal std. Set circuit breakers CB10, CB16, and CB17 to OFF.

Table 4-6. Amplifier-Cooler Group- Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**Test Meter M1 (1, Fig**. 4-8).
a.	Set circuit breakers CB10, CB16, and CB17 to ON. Connect and energize the cal std. Loosen the fasteners and remove the cover on the amplifier assembly (CCM control panel), and withdraw the amplifier assembly. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Set the TEST TRANSFER switch (6, fig. 4-8) to VOLTAGE MONITOR. Set the VOLTAGE MONITOR switch (8, fig. 4-8) to +25 VDC. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON and SH GUARD test leads to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the meter under test. **The cal std indicates 0.0094 to 0.0106.** Test meter M1.
b.	Adjust the VERNIER control for a full-scale indication on the meter under test. **The cal std indicates 0.0194 to 0.0206.** Test meter M1.

Table 4-6. Amplifier-Cooler Group- Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1c.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Set circuit breakers CB2, CB3, CB5, CB12, CB14, CB19, and CB25 to ON. Press and hold the azimuth and range indicator POWER-STANDBY switch for 2 seconds. **NOTE** Allow one minute for the timer to run down before proceeding. Observe the meter under test and set the VOLTAGE MONITOR switch in turn, to each position from + 25VDC to 6.3 VAC (F). **The meter under test indicates in the center of the green area for each position.** A7, S2, S3, test meter. Press the azimuth and range indicator POWER-OFF pushbutton. Set circuit breakers CB2, CB3, CB5, CB12, CB14, CB19, and CB25 to OFF. Set circuit breakers CB10, CB16, and CB17 to OFF Deenergize and store the cal std. Slide the amplifier assembly into the NORMAL operating position and secure the cover.
2.	**PRESELECTOR FREQUENCY INDICATION Meter Ml (3, Fig. 4-8).**
a.	Set circuit breakers CB10, CB16, and CB17 to ON. Connect and energize the cal std. Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Loosen the fasteners and remove the cover on the amplifier assembly (CCM control panel), and withdraw the amplifier assembly. Connect the DC VOLTS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to meter under test jack J6. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 0 indication on the meter under test. **The cal std indicates 34.32 to 38.68.** PRESELECTOR FREQUENCY INDICATION meter.

Table 4-6. Amplifier-Cooler Group- Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
2b.	Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 70.32 to 74.68.** PRESELECTOR FREQUENCY INDICATION meter. Release the TEST switch. Adjust the VERNIER control full ccw. Set circuit breakers CB10, CB16, and CB17 to OFF. Remove the test leads from the meter under test. Set the TEST TRANSFER switch to OPERATE & XTAL CURRENT. Slide the amplifier assembly into the normal operating position and secure the cover. Deenergize and store the cal std.

Table 4-7. Receiver -Transmitter Control Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**STABILOTRON CURRENT Meter M4 (1, Fig. 4-9).**
a.	Loosen the fasteners that secure the receiver-transmitter control panel, and open the panel. Set circuit breakers cb10, CB16, and CB17 to ON. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 4. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON and SH GUARD test leads to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 17.00 to 23.00.** STABILOTRON CURRENT meter.
b.	Adjust the VERNIER control for a 60 indication on the meter under test. **The cal std indicates 57.00 to 63.00.** STABILOTRON CURRENT meter.

Table 4-7. Receiver -Transmitter Control Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1c.	Adjust the VERNIER control for a 90 indication on the meter under test. **The cal std indicates 87.00 to 93.00.** STABILOTRON CURRENT meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Close and secure the receiver-transmitter control panel. Deenergize and store the cal std. Set circuit breakers CB10, CB11, CB16, and CB17 to OFF.
2.	**D.C. KV Meter M6 (2, Fig. 4-9).**
a.	Loosen the fasteners that secure the receiver-transmitter control panel, and open the panel. Set circuit breakers CB10, CB11, CB16, and CB17 to ON Connect and energize the cal std. Set the RANGE switch to 2. Set the FUNCTION switch to DSMA. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON and SH GUARD test leads to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 3 indication on the meter under test. The cal std indicates 0.1700 to 0.2300. D.C. KV meter.
b.	Adjust the VERNIER control for a 9 indication on the meter under test. **The cal std indicates 0.5700 to 0.6300.** D.C. KV meter.
c.	Adjust the VERNIER control for a 14 indication on the meter under test. **The cal std indicates 0.9032 to 0.9632.** D.C. KV meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Close and secure the receiver-transmitter control panel. Set circuit breakers< CB10, CB11, CB16 and CB17 to OFF. Denergize and store cal std.

Table 4-7. Receiver -Transmitter Control Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
3.	**CRYSTAL CURRENT Meter M5 (3, Fig. 4-9).**
a.	Loosen the fasteners that secure the receiver-transmitter control panel, and open the panel.
	Set circuit breakers CB10, CBII, CB16, and CB17 to ON.
	Connect and energize the cal std.
	Set the FUNCTION switch to DCMA.
	Set the RANGE switch to 1.
	Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test.
	Connect the COMMON and SH GUARD test leads to the (-) terminal on the meter under test.
	Set the OFF-COHO-SIG switch (4, fig. 4-9) to OFF.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for an indication on the lower edge of the green area on the meter under test.
	The cal std indicates 0.0069 to 0.0081.
	CRYSTAL CURRENT meter.
b.	Adjust the VERNIER control for a red-line indication on the meter under test.
	The cal std indicates 0.0094 to 0.0106.
	CRYSTAL CURRENT meter.
c.	Adjust the VERNIER control for an indication on the upper edge of the green area on the meter under test.
	The cal std indicates 0.0119 to 0.0131.
	CRYSTAL CURRENT meter.
	Release the TEST switch.
	Adjust the VERNIER control full ccw.
	Remove the test leads from the meter under test.
	Close and secure the receiver-transmitter control panel.
	Set circuit breakers CB10, CB11, CB16, and CB17 to OFF.
	Deenergize and store the cal std.
4.	**0-10V D.C. Power M3 (6, Fig. 4-9).**
a.	Set circuit breakers CB10, CB11, CB16, and CB17 to ON.
	Connect and energize the cal std.
	Set the FUNCTION switch to VDC.
	Set the RANGE switch to 1.
	Loosen the fasteners that secure the receiver-transmitter control panel, and open the panel.

Table 4-7. Receiver -Transmitter Control Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
4a. Cont.	Connect the DC VOLTS test lead to the (+) terminal on the meter under test.
	Connect the COMMON test lead to the (-) terminal on the meter under test.
	Set the OFF-FIL-RVR switch (5, fig. 4-9) to OFF.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a 2 indication on the meter under test.
	The cal std indicates 1.700 to 2.300.
	0-10V D.C. meter.
b.	Adjust the VERNIER control for a 6 indication on the meter under test.
	The cal std indicates 5.700 to 6.300.
	0-10V D.C. meter.
c.	Adjust the VERNIER control for a 10 indication on the meter under test.
	The cal std indicates 9.700 to 10.30.
	0-10V D.C. meter.
	Release the TEST switch.
	Adjust the VERNIER control full ccw.
	Set circuit breakers CB10, CB11, CB16, and CB'17 to OFF.
	Remove the test leads from the meter under test.
	Close and secure the receiver-transmitter control panel.
	Deenergize and store the cal std.
5.	**K2 Shunt Current Meter M1 (1, Fig. 4-11).**
a.	Set circuit breakers CB10, CB11, CB16, and CB17 to ON.
	Loosen the fasteners and open the electrical equipment doors (2, fig. 4-11) on the receiver-transmitter cabinet.
	WARNING **Remove the shorting bar from the storage clips on the rear of the left-hand door, and touch all the exposed capacitor terminals with the metal tip of the shorting bar. Replace the shorting bar in the storage clips.**
	Connect and energize the cal std.
	Set the FUNCTION switch to DCMA.
	Set the RANGE switch to 5.
	Connect the CURRENT/K OHMS and SH GUARD test leads to chassis ground.

Table 4-7. Receiver -Transmitter Control Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
5a. Cont.	Connect the COMMON test lead to the junction of R7 and R8 (4, fig. 4-11).
	Adjust the meter under test preset needle (3, fig. 4-11) full cw.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a 50 indication on the meter under test.
	The cal std indicates 38.5 to 64.80.
	K2 shunt current meter, R9.
b.	Adjust the VERNIER control for a 90 indication on the meter under test.
	The cal std indicates 71.2 to 114.0
	K2 shunt current meter, R9.
	Release the TEST switch.
	Adjust the VERNIER control full ccw.
	Remove the test leads from R7, R8, and chassis ground.
	Readjust the meter under test preset needle to 70.
	Close and secure the electrical equipment doors on the receiver-transmitter cabinet.
	Set all the power control panel circuit breakers to OFF.
	Set circuit breakers CB'10, CB11, CB16,and CB17 to OFF.
	Deenergize and store the cal std.
6.	**Control-Oscillator BITE.**
a.	Press the latch releases on the front of the control oscillator, and withdraw the chassis.
	Loosen the four screws securing the meter BITE assembly cover, and remove the cover.
	Set circuit breakers CB10, CB11, CB16,and CB17 to ON.
	Connect and energize the cal std.
	Set the FUNCTION switch to DCMA.
	Set the RANGE switch to 1.
	Connect the COMMON test lead to test point A1-TP21 (2, fig. 4-12).
	Hold the CURRENT/K OHMS test lead on test point A1-TP20 (3, fig. 4-12).
	Set the control-oscillator MONITOR SELECT switch (1, fig. 4-12) to METER CAL.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a center red-line indication on the control-oscillator meter (11, fig. 4-12).
	The cal std indicates 0.099 to 0.1010.
	Adjust A1-R2 (10, fig. 4-12), A1, M1.

Table 4-7. Receiver -Transmitter Control Panel - Periodic Test Procedures - Continued

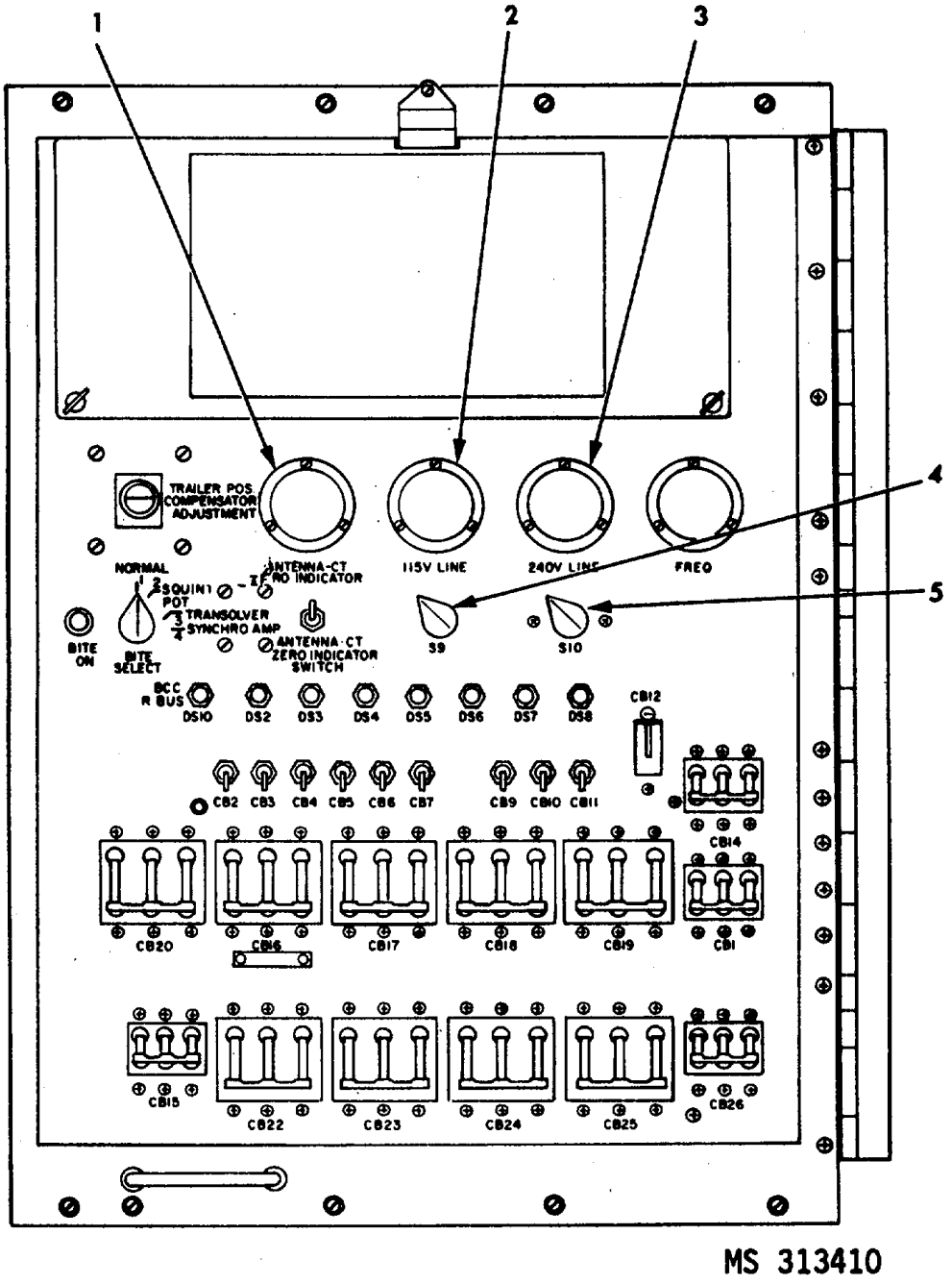
Step	Operation Normal indication Corrective procedure
6b.	Adjust the VERNIER control full ccw. Remove the CURRENT/KOHMS test lead from A1-TP20. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Set the VOLTAGES switch (12, fig. 4-12) to +250V. Set the MONITOR SELECT switch to VOLTAGES. Connect the DC VOLTS test lead to test point A1-TP5 (6, fig. 4-12). Set power control panel circuit breakers CB1 through: CB7, CB9, CB12, CB14, CB19, CB24, and CB25 to ON. Set the azimuth and range indicator SYSTEM CONTROL LOCAL-REMOTE switch (5, fig. 4-7) to LOCAL. Press and hold the azimuth and range indicator POWER-STANDBY pushbutton (3, fig. 4-7) for 2 seconds. **NOTE** Allow one minute for the timer to run down before proceeding. Adjust the A6 control (3, fig. 4-3) on the low-voltage power supply balance selector and adjustment panel for a 249.8 to 250.2 indication on the cal std. **The control-oscillator meter indicates in the green area.** A1.
c.	Transfer the DC VOLTS test lead to Al-TP4 (7, fig. 4-12). **The cal std indicates 98.0 to 102.3.** A1.
d.	Transfer the DC VOLTS test lead to Al-TP3 (8, fig. 4-12). **The cal std indicates 24.5 to 25.5.**
e.	Transfer the DC VOLTS test lead to A1-TP13 (4, fig. 4-12). Set the MONITOR SELECT switch to CAL 4. Adjust the A3 control (1, fig. 4-3) on the low-voltage power supply balance selector and adjustment panel for an 89.4 to 89.6 indication on the cal std. Transfer the DC VOLTS test lead to A1-TP1 (9, fig. 4-12). Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the control-oscillator meter. **The cal std indicates 36.1 to 38.7.** A1.

Table 4-7. Receiver -Transmitter Control Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
6f.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 1. Set the MONITOR SELECT switch to CAL 3. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the control-oscillator meter. **The cal std indicates 9.66 to 11.06.** A1.
g.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Set circuit breaker CB26 to ON. Transfer the DC VOLTS test lead to A1-TP11 (5, fig. 4-12). **The cal std indicates -24.75 to -25.25.** A5.
h.	Transfer the DC VOLTS test lead to A1-TP1 (9, fig. 4-12). Set the MONITOR SELECT switch to CAL 2. **The cal std indicates --1.66 to --1.735.**
i.	Set the FUNCTION switch to VDC. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the control-oscillator meter. **The cal std indicates 0.59 to 0.850.** A1.
j.	Release the TEST switch. Set the FUNCTION switch to MULTR. Set the MONITOR SELECT switch to CAL 1. Momentarily set the VDC switch to the down position. **The cal std indicates -4.1 to --4.280.**
k.	Set the FUNCTION switch to VDC. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the control-oscillator meter. **The cal std indicates 0.54 to 1.100**. A1.

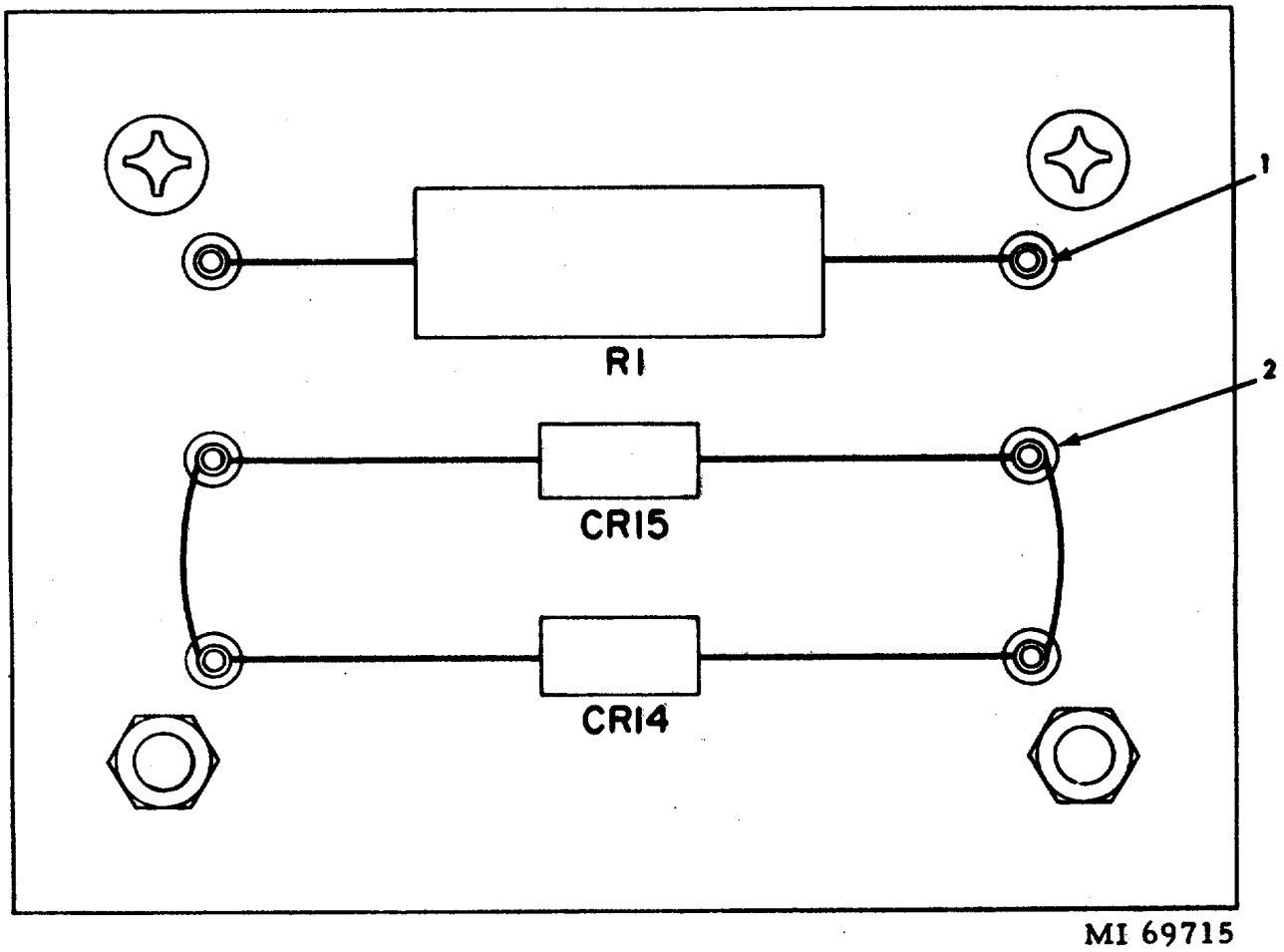
Table 4-7. Receiver -Transmitter Control Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
6k. Cont.	Release the TEST switch. Remove the test leads from the uut. Deenergize and store the cal std. Press the azimuth indicator POWER-OFF pushbutton. Set all power panel circuit breakers to OFF. Install the meter BITE assembly cover. Close and secure the control-oscillator. Close and secure the receiver-transmitter control panel.



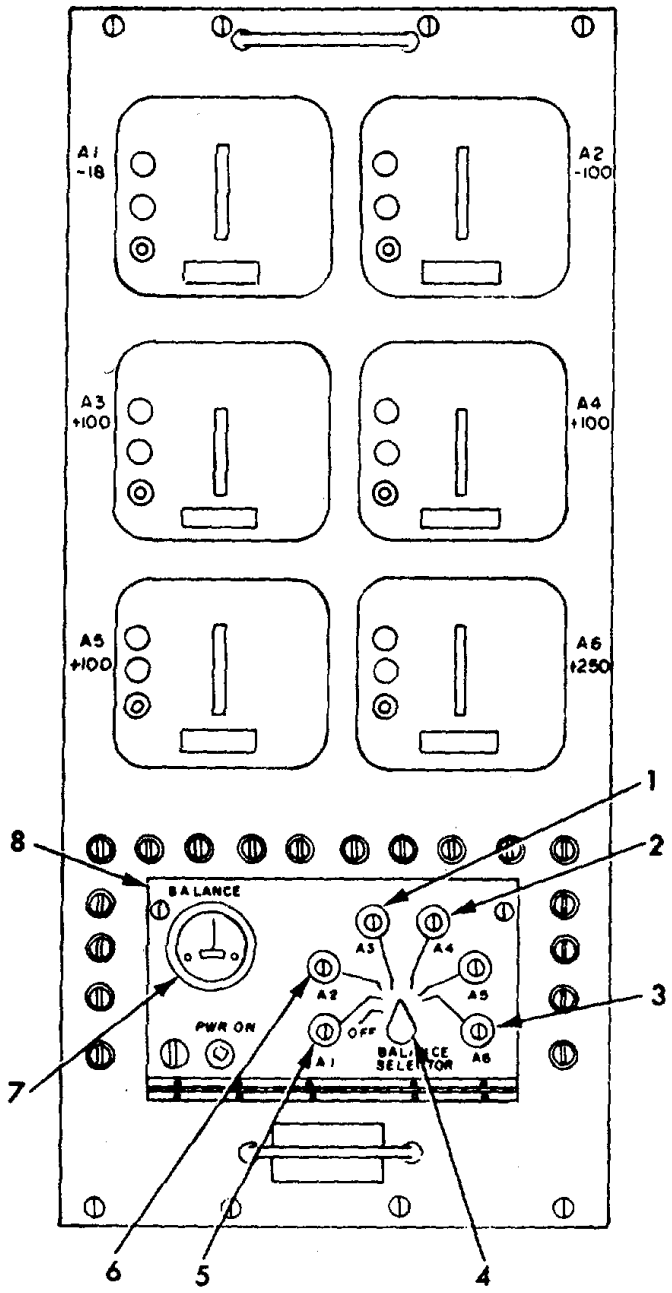
1 — ANTENNA-CT ZERO INDICATOR meter
2 — 115V LINE meter
3 — 240V LINE meter
4 — VOLTAGE S9 switch
5 — VOLTAGE S10 switch

Figure 4-1. Power control panel.



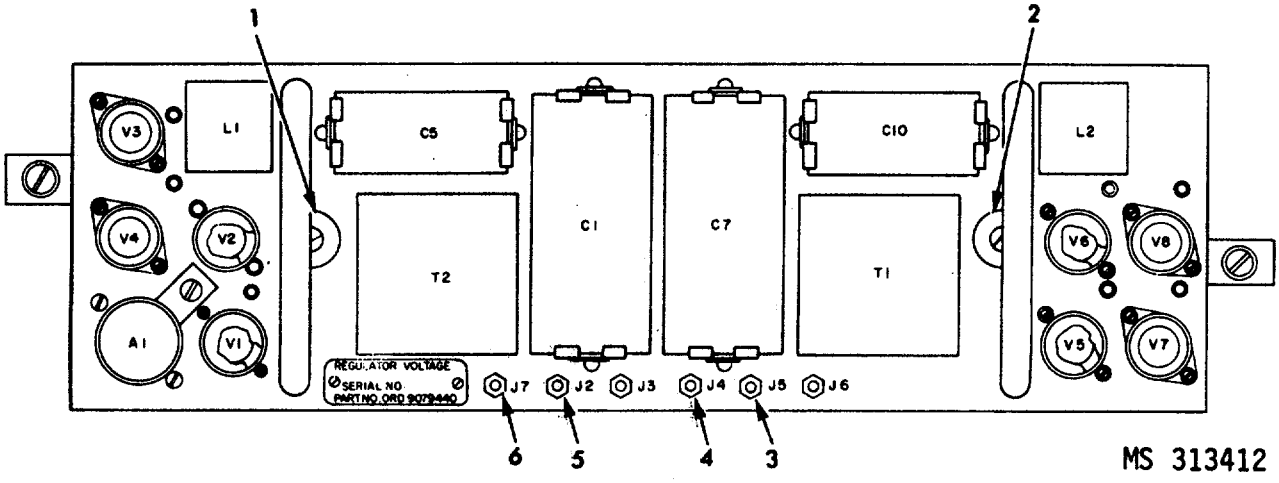
1 — R1 (right side)
2 — Junction CR15, CR14

Figure 4-2. Power control panel (rear view).



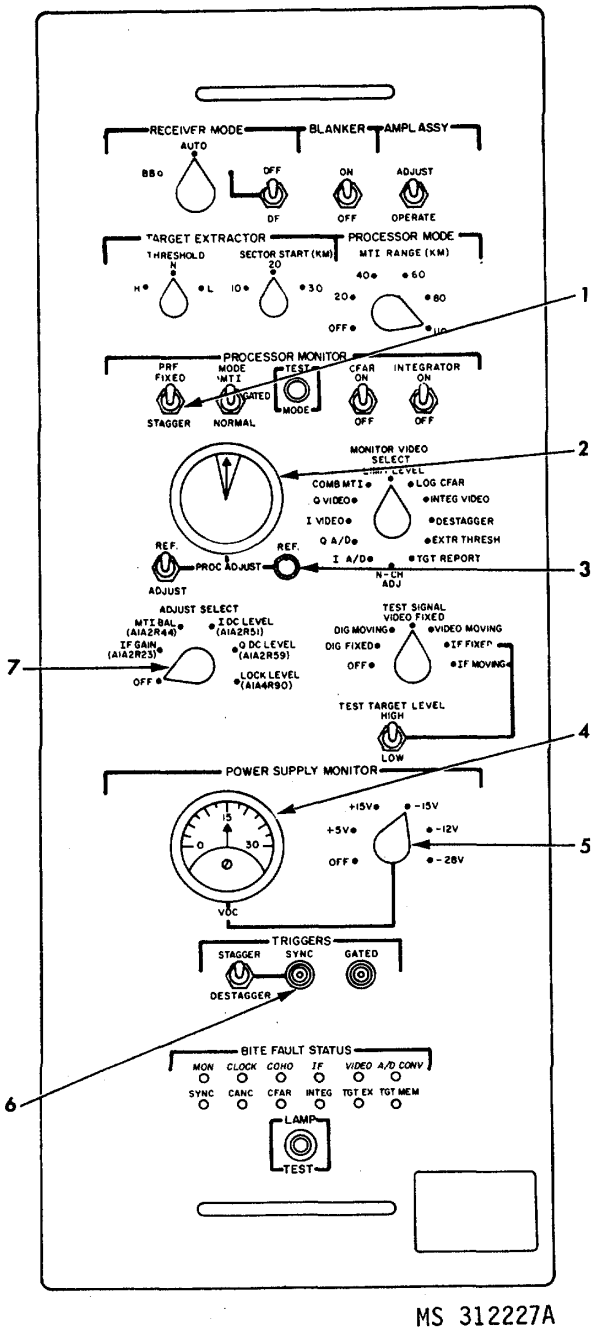
1—A3 control
2—A4 control
3—A6 control
4—BALANCE SELECTOR switch
5—A1 control
6—A2 control
7—BALANCE meter
8—Balance selector and adjustment panel

Figure 4-3. Low-voltage power supply.



1 — —250 ADJUST control
2 —+250 ADJUST control
3 — J5
4 — J4
5 — J2
6 — J7

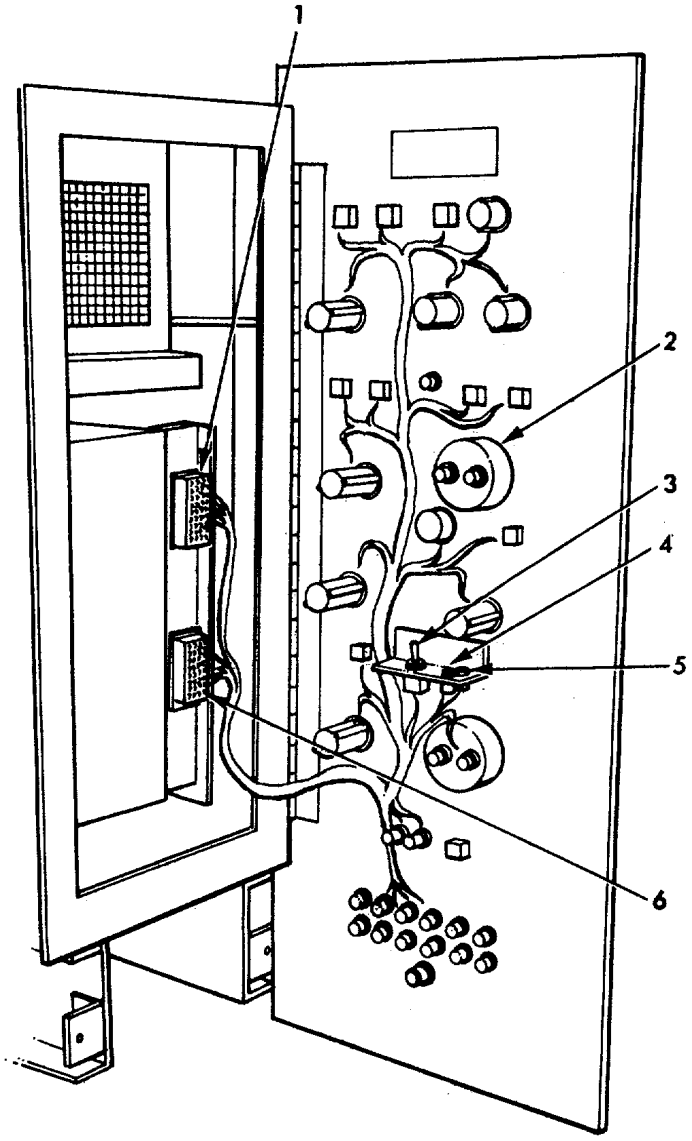
Figure 4-4. Reference voltage regulator.



MS 312227A

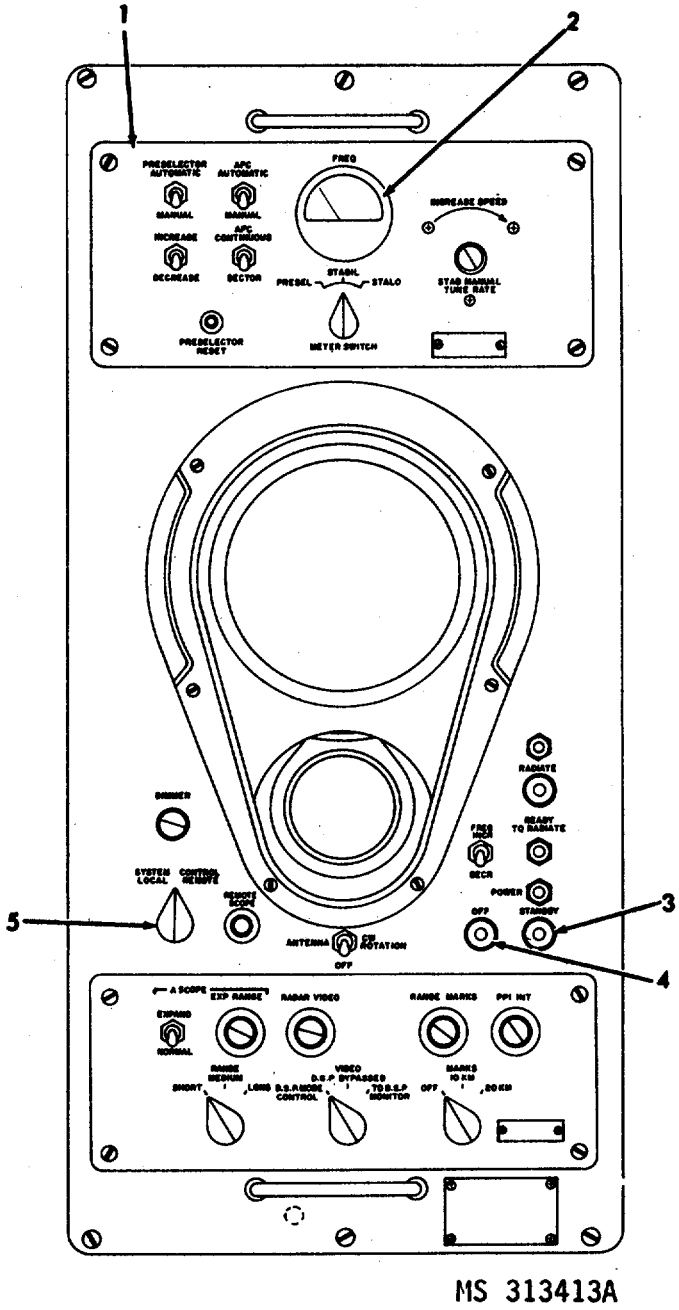
1 — PROCESSOR MONITOR PRF switch
2 — *PROC ADJUST meter M1*
3 — PROC ADJUST REF control
4 — POWER SUPPLY MONITOR VDC meter M2
5 — POWER SUPPLY MONITOR VDC switch
6 — TRIGGERS SYNC jack
7 — ADJUST SELECT switch

Figure 4-5. Digital signal processor.



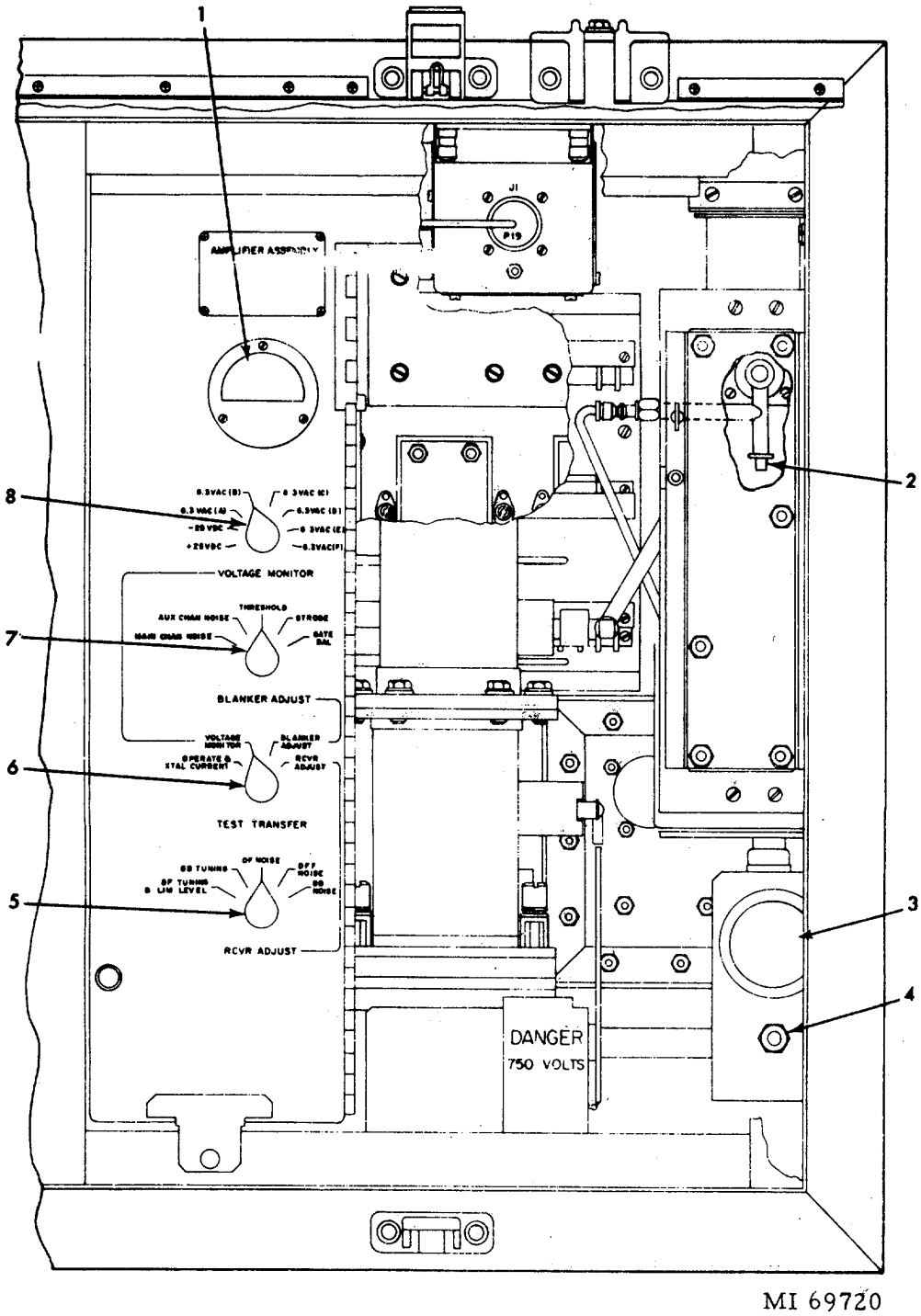
1 — P23/J23 connectors
2 — PROC ADJUST meter M1
3 — Voltage monitor/meter cal switch S20
4 — (+) J21 jack
5 — (−) J22 jack
6 — P24/J24 connector

Figure 4-6. Digital signal processor - test points.



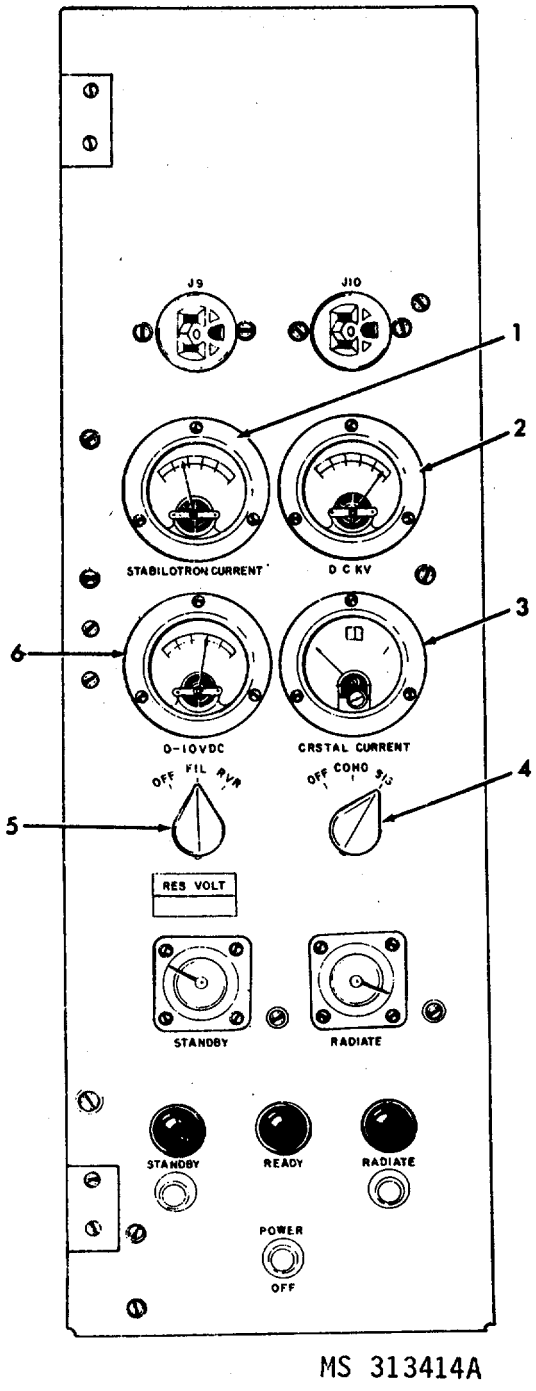
1 — Control monitor panel
2 — FREQ meter
3 — POWER-STANDBY pushbutton
4 — POWER-OFF pushbutton
5 — SYSTEM CONTROL LOCAL-REMOTE switch

Figure 4-7. Azimuth and range indicator.



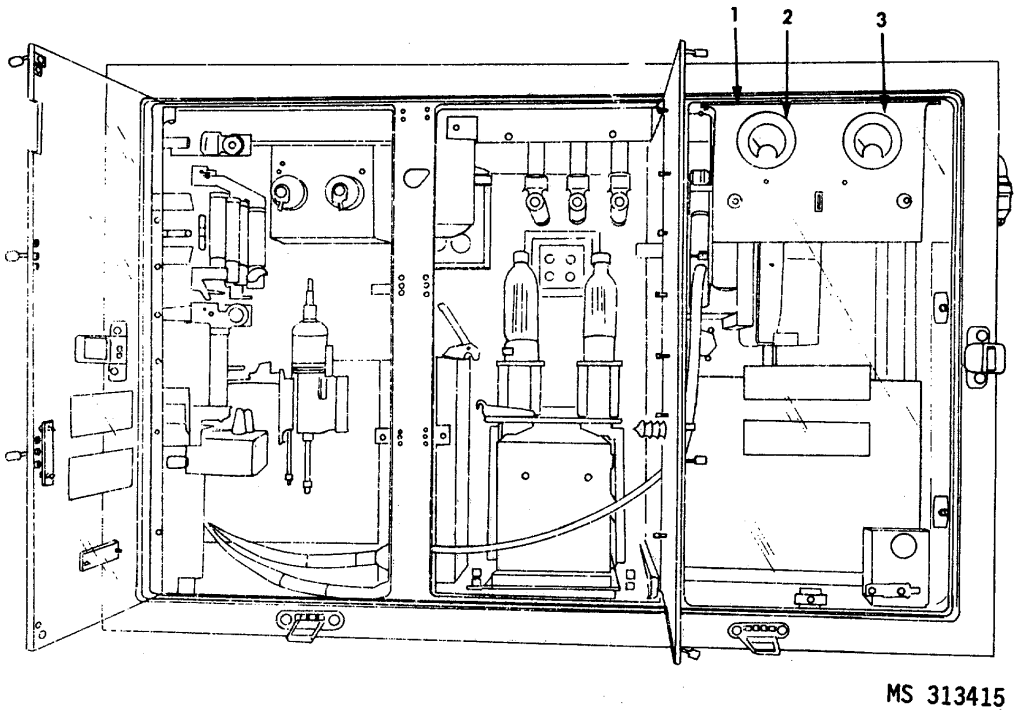
1 — Test meter
2 — Mixer coupling
3 — PRESELECTOR FREQUENCY INDICATION meter
4 — PRESELECTOR FREQUENCY INDICATION adjust
5 — RCVR ADJUST switch
6 — TEST TRANSFER switch
7 — BLANKER ADJUST switch
8 — VOLTAGE MONITOR switch

Figure 4-8. Amplifier-cooler group.



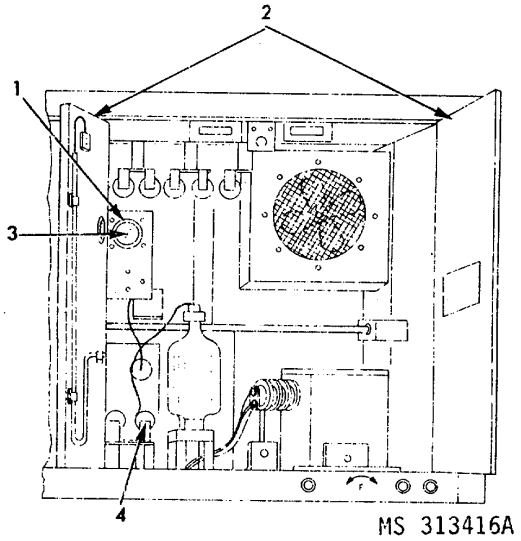
1 — STABILOTRON CURRENT meter
2 — D.C. KV meter
3 — CRYSTAL CURRENT meter
4 — OFF-COHO-SIG switch
5 — OFF-FIL-RVR switch
6 — 0-10V D.C. meter

Figure 4-9. Receiver-transmitter control panel.



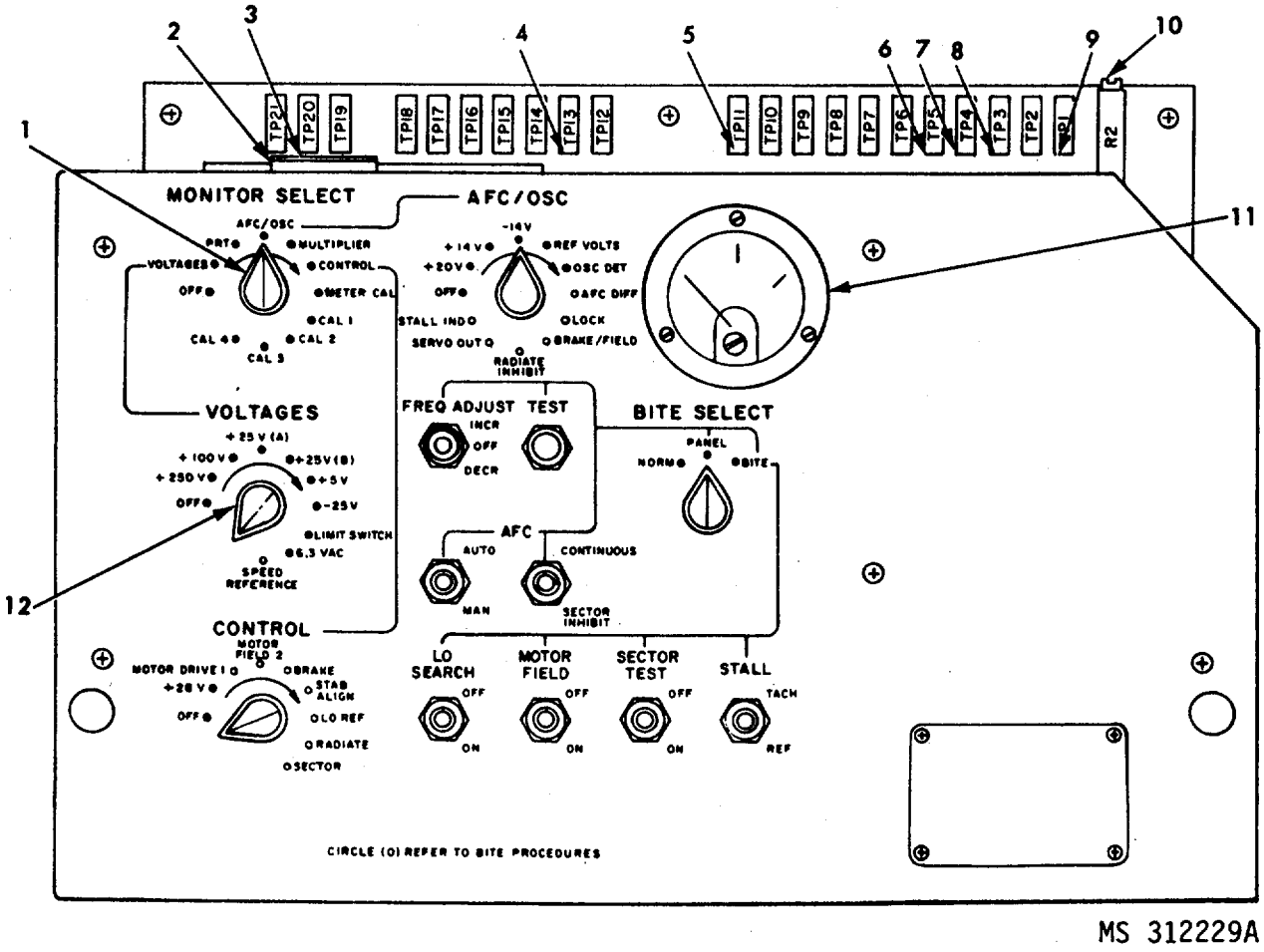
1—Control and timer panel
2—D.C. VOLTS meter
3—STABILOTRON CURRENT meter

Figure 4-10. High voltage power supply.



1—K2 shunt current meter
2—Screen doors
3—Preset needle
4—Junction of R7 and R8

Figure 4-11. Receiver-transmitter (upper right side)-cabinet.



1—MONITOR SELECT switch
2—A1-TP21
3—A1-TP20
4—A1-TP13
5—A1-TP11
6—A1-TP5
7—A1-TP4
8—A1-TP3
9—A1-TP1
10—A1-R2
11—Control-oscillator meter
12—VOLTAGES switch

Figure 4-12. Control-oscillator - control, indicators, and test points.

CHAPTER 4.1

CONTINUOUS WAVE ACQUISITION RADAR AN/MPQ-62
PERIODIC TEST PROCEDURES

Table 4-1.1. Control-Indicator Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**SERVO FIELD CURRENT Meters (1, Fig. 4.1-1).**
	NOTE **Step 1a is performed on both the left and right hand meters.**
a.	Set the fuse and control panel MAIN POWER, FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (7, 6, 5, and 4, fig. 4.1-2) to OFF.
	Loosen the fasteners that secure the front panel of the control-indicator panel and lower it to a horizontal position.
	Loosen the screws, then disconnect the wiring harness connectors from jacks J1 and J2 (15 and 16, fig. 4.1-1) located on the rear of the control-indicator panel cover.
	Carefully close the control indicator panel.
	Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON.
	Connect and energize the cal std.
	Set the control-indicator panel LOCAL/REMOTE switch (8, fig. 4.1-1) to LOCAL.
	Set the FUNCTION switch to VDC.
	Set the RANGE switch to 1.
	Adjust the VERNIER control full ccw.
	Insert the DC VOLTS test lead into the meter under test A (+) jack.
	Insert the COMMON test lead into the meter under test A (-) jack.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a 5.00 indication on the cal std.
	SERVO FIELD CURRENT meter indicates zero center scale (red line).
	Adjust meter zero adjustment (14.1, fig. 4.1-1) for red line.
	SERVO FIELD CURRENT meter.
b.	Adjust the VERNIER control for a 9.00 indication on the cal std.
	SERVO FIELD CURRENT meter indicates 28 to 32.
	SERVO FIELD CURRENT meter.
c.	Adjust the VERNIER control for a 1.00 indication on the cal std.
	SERVO FIELD CURRENT meter indicates -28 to -32.
	SERVO FIELD CURRENT meter.

Table 4-1.1. Control-Indicator Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1d.	Release the TEST switch. Transfer the test leads from the meter under test A to meter under test B. Repeat steps la through Id for meter under test B. Remove the test leads from the meter under test B. Deenergize and store the cal std. Set the MAIN POWER circuit breaker to OFF. Reconnect and secure the previously removed wiring harness connectors to jack J1 and J2 located on the rear of the control-indicator panel cover. Close and secure the control-indicator panel.
2.	**LINE VOLTAGE Meter (2, Fig, 4.1-1).**
a.	Set the fuse and control panel MAIN POWER,. FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (7, 6, 5, and 4, fig. 4.1-2) to OFF. Loosen the fasteners that secure the front panel of the control-indicator panel and lower it to a horizontal position. Loosen the screws, then disconnect the wiring harness connectors from jacks J1 and J2 (15 and 16, fig. 4.1-1) located on the rear of the control-indicator panel cover. Carefully close the control-indicator panel. Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON. Connect and energize the cal std. Set the control-indicator panel LOCAL/REMOTE switch (8, fig. 4.1-1) to LOCAL. Set the FUNCTION switch to VAC. Set the RANGE switch to 3. Adjust the VERNIER control full ccw. Insert the AC VOLTS test lead into the meter under test 2 jack. Insert the COMMON test lead into the meter under test 1 jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red line indication on the meter under test. **The cal std indicates 234 to 246.0.** LINE VOLTAGE meter.

Table 4-1.1. Control-Indicator Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
2b.	Adjust the VERNIER control for an indication on the upper edge of the green area on the meter under test.
	The Cal std indicates 246 to 258.0.
	LINE VOLTAGE meter.
c.	Adjust the VERNIER control for an indication on the lower edge of the green area on the meter under test.
	The cal std indicates 222 to 234.0.
	LINE VOLTAGE meter.
d.	Release the TEST switch.
	Remove the test leads from the meter under test.
	Deenergize and store the cal std.
	Set MAIN POWER circuit breaker to OFF.
	Reconnect and secure the previously removed wiring harness connector to jacks J1 and J2 located on the rear of the control-indicator panel cover.
	Close and secure the control-indicator panel.
3.	**SERVO BITE Meter (4, Fig. 4.1-1).**
a.	Set the fuse and control panel MAIN POWER, FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (7, 6, 5, and 4, fig. 4.1-2) to OFF.
	Loosen the fasteners that secure the front panel of the control-indicator panel and lower it to a horizontal position.
	Loosen the screws, then disconnect the wiring harness connectors from jacks J1 and J2 (15 and 16, fig. 4.1-1) located on the rear of the control-indicator panel cover.
	Carefully close the control-indicator panel.
	Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON.
	Connect and energize the cal std.
	Set the control-indicator panel LOCAL/REMOTE switch (8, fig. 4.1-1) to LOCAL.
	Set the FUNCTION switch to DCMA.
	Set the RANGE switch to 1.
	Adjust the VERNIER control full ccw.
	Insert the CURRENT/K OHMS test lead into the meter under test (+) jack.
	Insert the COMMON test lead into the meter under test (-) jack.
	Set the control-indicator panel SERVO BITE MONITOR switch (5, fig. 4.1-1) to MTR CAL.
	Set and hold the TEST switch to NORMAL.

Table 4-1.1. Control-Indicator Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
3a. Cont.	Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** SERVO BITE meter, A3, S1.
b.	Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 0.0235 to** 0.0265. SERVO BITE meter.
c.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the CURRENT/K OHMS test lead from the meter under test (+) jack. Insert the DC VOLTS test lead into the meter under test (+) jack. Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Set the SERVO BITE MONITOR switch to MASTER ROT-Y. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 33.5 indication on the cal std. **The meter under test indicates 23 to 27.** A3.
d.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 3. Set the SERVO BITE MONITOR switch to AZ DRIVE MOT > 25 Aa. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 160 indication on the cal std. **The meter under test indicates 23 to 27.** A3.
e.	Release the TEST switch. Remove the test leads from the meter under test. Deenergize and store the cal std. Set MAIN POWER circuit breaker to OFF. Reconnect and secure the previously removed wiring harness connector to jacks J1 and J2 located on the rear of the control-indicator panel cover. Close and secure the control-indicator panel.

Table 4-1.1. Control-Indicator Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
4.	**LV PWR SUPS Meter (3, Fig. 4.1-1).**
a.	Set the fuse and control panel MAIN POWER, FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (7, 6, 5, and 4, fig. 4.1-2) to OFF. Loosen the fasteners that secure the front panel of the control-indicator panel and lower it to a horizontal position. Loosen the screws, then disconnect the wiring harness connectors from jacks J1 and J2 (15 and 16, fig. 4.1-1) located on the rear of the control-indicator panel cover. Carefully close the control-indicator panel. Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON. Connect and energize the cal std. Set the control-indicator panel LOCAL/REMOTE switch (8, fig. 4.1-1) to LOCAL. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into the meter under test (+) jack. Insert the COMMON test lead into the meter under test (-) jack. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Set the control-indicator panel POWER SUPPLY MONITOR switch (6, fig. 4-1.1) to MTR CAL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** LV PWR SUPS meter, S8.
b.	Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 0.0235 to 0.0265.** LV PWR SUPS meter.
c.	Release the TEST switch. Remove the CURRENT/K OHMS test lead from the meter under test (+) jack. Insert the DC VOLTS test lead into the meter under test (+) jack. Set the POWER SUPPLY MONITOR switch to +300V SUPPLY +300-Y. Adjust the VERNIER control full ccw. Set the FUNCTION switch to VDC. Set the RANGE switch to 4. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 300 indication on the cal std. **The meter under test indicates 19 to 31.** A2, S8.

Table 4-1.1. Control-Indicator Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
4d.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 2. Set the POWER SIUPPLY MONITOR Switch to +50V-G. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50.0 indication on the cal std. **The meter under test indicates 22 to 28.** A2, S8.
e.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the POWER SUPPLY MONITOR switch to +300V SUPPLY +28-Y. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 28.0 indication on the cal std. **The meter under test indicates 19 to 31.** A2, S8.
f.	Set the POWER SUPPLY MONITOR switch to +300V SUPPLY +90-Y. Adjust the VERNIER control for a 90.0 indication on the cal std. **The meter under test indicates 19 to 31.** A2, S8.
g.	Release the TEST switch. Set the MAIN POWER circuit breaker to OFF. Reconnect and secure the previously removed wiring harness connector to jack J1 located on the rear of the control-indicator panel cover. Adjust the VERNIER control full ccw. Set the POWER SUPPLY MONITOR switch to +12.6V-G. Connect a jumper lead between jack J2-U and chassis ground. Set the MAIN POWER circuit breaker to ON. **NOTE** It may be necessary to set the RANGE switch to 1 to obtain the following cal std indication. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 12.6 indication on the cal std. **The meter under test indicates 22 to 28.** A2, S8.

Table 4-1.1. Control-Indicator Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
4h.	Release the TEST switch. Set the POWER SUPPLY MONITOR switch to -12.6V-G. Interchange the DC VOLTS and COMMON test leads at the meter under test jacks. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 12.6 indication on the cal std. **The meter under test indicates 22 to 28.** A2, S8.
i	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 1. Set the POWER SUPPLY MONITOR switch to +5.4V-G. Interchange the DC VOLTS and COMMON test leads at the meter under test jacks. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 5.4 indication on the cal std. **The meter under test indicates 22 to 28.** A2, S8.
j.	Release the TEST switch. Interchange the DC VOLTS and COMMON test leads. Set POWER SUPPLY MONITOR switch to -50V-G. Set the RANGE switch to 2. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50.0 indication on the cal std. **The meter under test indicates 22 to 28.** A2, S8.
k	Release the TEST switch. Set the MAIN POWER circuit breaker to OFF. Remove the test leads from the meter under test. Remove the jumper from J2-U and chassis ground. Reconnect and secure the' previously removed connector to J2. Close and secure the control-indicator panel. Deenergize and store the cal std.

Table 4-1.2. Fuse and Control Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	ANTENNA SERVOMETER Meter (1, Fig. 4.1-2).
a.	Set the fuse and control panel FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (6, 5, and 4, fig. 4.1-2) to OFF. Connect and energize the cal std.
	Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON. Set the SERVOMETER SELECT switch (2, fig. 4.1-2) to METER CAL. Set the FUNCTION switch to VAC. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the AC VOLTS test lead into ANTENNA SERVOMETER test point TP2. Insert the COMMON test lead into ANTENNA SERVOMETER test point TP1. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 6 indication on the lower scale on the meter under test. **The cal std indicates 5.7 to 6.300.** ANTENNA SERVOMETER A2.
b.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 2. Set the SERVOMETER SELECT switch to ROTATE RATE FEEDBACK. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 60 indication on the meter under test. **The cal std indicates 86 to 99.40.** ANTENNA SERVOMETER A2.
c.	Adjust the VERNIER control full ccw. Remove the fuse and control panel SYNCHRO BUS fuse (3, fig. 4.1-2). Set the SERVOMETER SELECT switch to SYNCHRO REF. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 60.55 to 66.95.** ANTENNA SERVOMETER, A2. Release the TEST switch. Remove the test leads from the meter under test. Replace the SYNCHRO BUS fuse.
	Set MAIN POWER circuit breaker to OFF. Deenergize and store the cal std.

Table 4-1.3. ASI BITE Assembly-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	ASI BITE Monitor Meter (2, Fig. 4.1-3).
a.	Set the fuse and control panel FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (6, 5, and 4, fig. 4.1-2) to OFF. Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON. Connect and energize the cal std. Loosen the fasteners and withdraw the azimuth and speed indicator. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into the meter under test (+) jack. Insert the COMMON test lead into the meter under test (-) jack. Set the A.SI BITE selector switch (3, fig. 4.1-3) to MTR CAL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** ASI BITE monitor meter, S1.
b.	Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 0.0285 to 0.0315**. ASI BITE monitor meter.
c.	Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0085 to 9.0115.** ASI BITE monitor meter.
d.	Release the TEST switch. Remove the CURRENT/K OHMS test lead from the meter under test. Insert the DC VOLTS test lead into ASI BITE assembly test point TP1. Set the ASI BITE selector switch to 4-300V-G. Set the FUNCTION switch to VDC. Set the RANGE switch to 4. Adjust the VERNIER control full ccw. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 300 indication on the cal std. **The meter under test indicates 23 to 27.** AI, S1.

Table 4-1.3. ASI BITE Assembly-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
e.	Adjust the VERNIER control full ccw. Set the RANGE switch to 3. Transfer the DC VOLTS test lead to ASI BITE assembly test point TP2. Set the ASI BITE selector switch to +200V-G. Adjust the VERNIER control for a 200 indication on the cal std. **The meter under test indicates 23 to 27.** A1, S1.
f	Adjust the VERNIER control full ccw. Transfer the DC VOLTS test lead to ASI BITE assembly test point TP3. Set the ASI BITE selector switch to +150V-G. Adjust the VERNIER control for a 150 indication on the cal std. **The meter under test indicates 23 to 27.** A1, S1.
g.	Adjust the VERNIER control full ccw. Set the RANGE switch to 1. Transfer the DC VOLTS test lead to ASI BITE assembly test point TP5. Set the ASI BITE selector switch to SWEEP R. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 7.158 to 7.600.** A1, S1.
h.	Adjust the VERNIER control full ccw. Transfer the DC VOLTS test lead to ASI BITE assembly test point TP6. Set the ASI BITE selector switch to SWEEP L. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 7.158 to 7.600.** A1, S1.
i.	Release the TEST switch. Transfer the DC VOLTS test lead to ASI BITE assembly test point TP1. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Set the ASI BITE selector switch to HVPS-Y. Set the azimuth and speed indicator drawer interlock switch (1, fig. 4.1-3).

Table 4-1.3. ASI BITE Assembly-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
i Cont.	Set FILAMENT circuit breaker (6, fig. 4.1-2) to ON. Press and hold the control-indicator panel STANDBY pushbutton (10, fig. 4.1-1) for 3 to 5 seconds, then release. Wait approximately 3 to 5 minutes until RADIATE READY lamp (13, fig. 4.1-1), lights, then press the RADIATE pushbutton (9, fig. 4.1-1) and observe that the RADIATE lamp (12, fig. 4.1-1) lights. Record the cal std indication as E. Press the STANDBY pushbutton. Remove the DC VOLTS test lead from TP1. Insert the CURRENT/K OHMS test lead into ASI BITE assembly test point TP1. Transfer the COMMON test lead to the metal disc on ASI BITE assembly jack J1, located on the rear of the ASI BITE assembly. Momentarily set the DCMA switch to the down position. Press the RADIATE pushbutton. Record the cal std indication as I. Divide the E indication by the I indication. **Calculate 18.87 to 25.13 megohms.** AI, R1.
j.	Press the STANDBY pushbutton. Press the OFF pushbutton (11, fig. 4.1-1). Remove the test leads from the ASI BITE assembly. Slide the azimuth and speed indicator into the main chassis and secure. Set the MAIN POWER circuit breaker to OFF. Deenergize and store the cal std.

Table 4-1.4. MOD-OSC Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**BITE Meter (1, Fig. 4.1-4).**
a.	Set the fuse and control panel FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (6, 5, and 4, fig. 4.1-2) to OFF. Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON. Connect and energize the cal std. Set the FUNCTION switch to MULTR. Open the MO/PA compartment door. Remove the RF cable W3P2 connected to mod-osc RF OUT jack (5, fig. 4.1-4). Loosen the fasteners that secure the MOD-OSC and pull out past STOP LOCK to completely open cover, then push into normal LOCK position. Loosen the fasteners that secure the mod-osc assembly cover and open the cover. Disconnect P60 from A12J2 (2, fig. 4.1-5). Remove P61 (3, fig. 4.1-5) from the dummy connector and connect P61 to A1212. Set the BITE/CAL-SELECT switch (3, fig. 4.1-4) to 11. Momentarily set the VDC switch to the down position. Insert the DC VOLTS test lead into the mod-osc CALIBRATION (+) jack (7, fig. 4.1-4). Insert the COMMON test lead into the mod-osc CALIBRATION (-) jack (6, fig. 4.1-4). Set the LOCAL/REMOTE switch to LOCAL (8, fig. 4.1-1). Press and hold the STANDBY pushbutton (10, fig. 4.1-1) for 3 to 5 seconds, then release. **The cal std indicates 5.97 to 6.030.** Adjust A12R22 (4, fig. 4.1-5). A12, S1.
b.	Set the BITE/CAL-SELECT switch to 12. **The cal std indicates -5.97 to -6.030.** Adjust A12R19 (5, fig. 4.1-5). A12, S1.
c.	Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Remove test leads from mod-osc CALIBRATION (+) and (-) jacks. Insert the CURRENT/K OHMS test lead into METER TEST (+) jack (9, fig. 4.1-4). Insert the COMMON test lead into the METER TEST (-) jack (8, fig. 4.1-4). Set the BITE SELECT switch (2, fig. 4-1.4) to METER CAL.

Table 4-1.4. MOD-OSC-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1c. Cont.	Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a cal std indication of 0.0249 to 0.0251. **The BITE meter indicates center-line (red-line).** Adjust BITE meter zero adjust (10, fig. 4.1-4). BITE meter M1. Release the TEST switch.
d.	Set the BITE/CAL-SELECT switch (3, fig. 4.1-4) to 1. Adjust the VERNIER control full ccw. Set the BITE SELECT switch (2, fig. 4.1-4) to +43V. Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Disconnect the test leads from the mod-osc METER (+) and (-) jacks. Insert the DC VOLTS test lead into the mod-osc CALIBRATION (+) jack. Insert the COMMON test lead into the mod-osc CALIBRATION (-) jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the BITE meter. **The cal std indicates 42 to 44.00.** A12, S1, S3.
e.	Release the TEST switch. Adjust the VERNIER control full ccw. Interchange the test leads at the mod-osc CALIBRATION (+) and (-) jacks. Set the BITE/CAL-SELECT switch (3, fig. 4.1-4) to 2. Set the mod-osc BITE SELECT switch to -20V. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the BITE meter. **The cal std indicates - 19.2 to - 20.80 .** A12, S1, S3.
f	Release the TEST switch. Adjust the VERNIER control full ccw. Interchange the test leads at the mod-osc CALIBRATION (+) and (-) jacks.

Table 4-1.4. MOD-OSC-Periodic Test Procedures-Continued

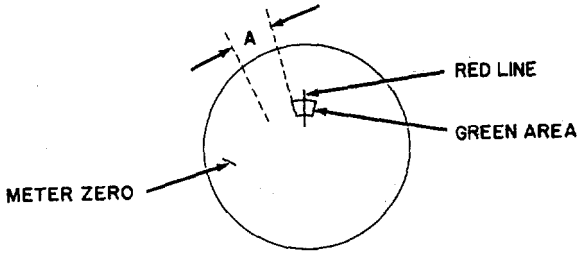
Step	Operation Normal indication Corrective procedure
1f. Cont.	Set the BITE/CAL-SELECT switch to 3. Set the mod-osc BITE SELECT switch to +20V. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the BITE meter. **The cal std indicates 19.2 to 20.80.** A12, S1, S3.
g.	Release the TEST switch. Adjust the VERNIER control full ccw. Set mod-osc BITE SELECT switch to RF LEVELS.  **The BITE meter indicates within the area shown as "A."** A12, S1, S3.
k.	Set mod-osc BITE SELECT switch to CAVITY BIAS. Set the BITE/CAL-SELECT switch to 5. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the BITE meter. **Cal std indicates 16 to 18.00.** A12, S1, S3.
i	Release the TEST switch. Adjust the VERNIER control full ccw. Set mod osc BITE SELECT switch to LOOP NULL. Set the BITE/CAL-SELECT switch to 7. Set the RANGE switch to 1. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a lower limit of the green area on the BITE meter. **Cal std indicates 0.056 to 0.0680.** A12, S1, S3.

Table 4-1.4. MOD-OSC-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1j.	Release the TEST switch. Set the BITE/CAL-SELECT switch to 10. Set the mod-osc BITE SELECT switch to MOD DEV. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the BITE meter. **Cal std indicates 2.8 to 3.000.** A12, S1, S3.
k.	Release the TEST switch. Press the OFF pushbutton (11, fig. 4.1-1). Disconnect P61 from A12J2 and connect it to the dummy connector . Connect P60 to A12J2.
	Deenergize and store the cal std. Set the fuse and control panel MAIN POWER circuit breaker to OFF. Close and secure the mod-osc cover. Close and secure the mod-osc drawer. Connect cable W3 to the mod-osc RF OUT jack. Close and secure the MO-PA compartment door.
2.	**DEVIATION CALIBRATION**.
a.	Set the fuse and control panel FILAMENT, BEAM POWER, and AZIMUTH AMPLI- DYNE circuit breakers (6, 5, and 4, fig. 4.1-2) to OFF. Connect and energize the cal std.
	Connect and energize calibration test set TF8-1020 13233663. Set the calibration test set switches as follows: SIGNAL to 650. SINE-LEVEL to HI. COUNTER-SELECT to SINE. Set the cal std FUNCTION switch to MULTR. Momentarily set the VAC switch to the down position. Insert the AC VOLTS test lead into the calibration test set SINE HI jack. Insert the COMMON test lead into the calibration test set SINE LO jack. Set the mod-osc BITE SELECT switch (2, fig. 4.1-4) to MOD DEV.
	Open the MO-PA compartment door. Disconnect rf cable W3P2 connected to the mod-osc RF OUT jack (5, fig. 4.1-4).

Table 4-1.4. MOD-OSC-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2a. Cont.	Loosen the fasteners that secure the mod-osc. Pull the mod-osc out past the STOP LOCK to completely open the cover, then push the mod-osc into the normal LOCK position. Loosen the fasteners that secure the mod-osc transmitter assembly cover, and open the cover.
	Disconnect the mod-osc cable plug P40 from jack A8SJ3 (1, fig. 4.1-5). Connect TF8-1020 cable 13233690 between the calibration test set DEV jack and the A8J3 jack. Press and hold the STANDBY pushbutton (10, fig. 4.1-1) for 3 to 5 seconds, then release. Adjust the calibration test set SINE-FREQ control for 299 to 301 on the calibration test set DISPLAY counter. Adjust the calibration test set SINE-LEVEL control for a center-line indication on the mod-osc BITE meter (1, fig. 4.1-4). **The cal std indicates 1.66 to 1.875. Record as El.** A8.
b.	Adjust the SINE-FREQ control for 630 to 660 on the DISPLAY counter. Adjust the SINE-LEVEL control for an El indication on the cal std. Set the SINE-LEVEL switch to 3DB. Adjust the SINE-FREQ control for a center-line indication on the BITE meter. **The DISPLAY counter indicates 500 to 750.** A8.
c.	Set the SIGNAL switch to 140. Adjust the SINE-FREQ control for 138 to 142 on the DISPLAY counter. Set the SINE-LEVEL switch to HI. Adjust the SINE-LEVEL control for an El indication. Set the SINE-LEVEL switch to 3DB. Adjust the SINE-FREQ control for a center-line indication on the BITE meter. **The DISPLAY counter indicates 90 to 190.** A8.
d.	Press the OFF pushbutton (11, fig. 4.1-1). Disconnect cable 13233690 from the DEV jack and the A8J3 jack. Connect plug P40 to the A8J3 jack. Close and secure the mod-osc cover, then close and secure the mod-osc. Connect cable W3P2 to the RF OUT jack. Close and secure the MO-PA compartment door.
	Deenergize and store the calibration test set. Deenergize and store the cal std.

Table 4-1.5. Microwave BITE Assembly-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	Microwave BITE MONITOR (1, Fig. 4.1-6).
a.	Set the fuse and control panel FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (6, 5, and 4, fig. 4.1-2) to OFF. Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into the METER CAL (+) jack (5, fig. 4.1-6). Insert the COMMON test lead into the METER CAL (-) jack (3, fig. 4.1-6). Set the BITE/TUNE FUNCTIONS selector switch (2, fig. 4.1-6) to MTR CAL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** Microwave BITE MONITOR meter, S1.
b.	Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 0.024 to 0.0260.** Microwave BITE MONITOR meter.
c.	Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0085 to 0.0115.** Microwave BITE MONITOR meter.
d.	Release the TEST switch. Adjust the VERNIER control full ccw. Loosen the fasteners and open MICROWAVE BITE door. Disconnect connector WIP10 from J1 (4, fig. 4.1-6). Set the RANGE switch to 2. Transfer the COMMON test lead to the BITE FUNCTIONS switch S1-C wiper arm. Set the BITE FUNCTIONS selector switch to BITE FUNCTIONS PA DR-G. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 0.0443 to 0.0531.** R1-R3.

Table 4-1.5. Microwave BITE Assembly-Periodic Test Procedure-Continued

Step	Operation Normal indication Corrective procedure
e.	Release the TEST switch. Remove the test leads from the microwave BITE assembly. Reconnect WiP10 to J1. Close and secure MICROWAVE BITE door. Set the MAIN POWER circuit breaker to OFF. Deenergize and store the cal std.

Table 4-1.6. High Voltage Power Supply-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	HVPS BITE (1, Fig. 4.1-7).
a.	Set the fuse and control panel FILAMENT, BEAM POWER, and AZIMUTH AMPLI-DYNE circuit breakers (6, 5, and 4, fig. 4.1-2) to OFF. Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON. Connect and energize the cal std. Set the function switch to DCMA. Set the high voltage power supply FUNCTION SELECT I switch (3, fig. 4.1-7) to OFF. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into MTR CAL (+)jack (12, fig. 4.1-7). Insert the COMMON test lead into MTR CAL (-) jack (13, fig. 4.1-7). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a right-hand +25 indication on the meter under test (1, fig. 4.1-7). **The cal std indicates 0.024 to 00.0260.** M1, S8.
b.	Adjust the VERNIER control for a right-hand +20 indication on the meter under test. **The cal std indicates 0.019 to 0.0210.** M1.

Table 4-1.6. High Volt Power Supply-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
c.	Adjust the VERNIER control full ccw. Interchange the test leads at the MTR CAL (+) and (-) jacks. Adjust the VERNIER control for a left-hand -25 indication on the meter under test. **The cal std indicates 0.024 to 0.0260.** M1.
d.	Adjust the VERNIER control for a left-hand -20 indication on the meter under test. **The cal std indicates 0.019 to 0.0210.** M1.
e.	Release the TEST switch. Remove the test leads from the MTR CAL (+) and (-)jacks. Loosen the fasteners that secure the high voltage power supply and withdraw the unit. Loosen the fasteners that secure the cover on the high voltage power supply and remove the cover. **WARNING** High voltage may be present. Use the shorting bar to short terminals of capacitors C1, C2, C6, C7, and C8 to chassis. Set the HVPS FUNCTION SELECT I switch to 1. Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Insert the COMMON test lead into the MTR CAL (-) jack. Remove circuit cards A9 and A10 (11 and 27, fig. 4.1-8). Insert TA8-1029 into HVPS XA9 connector as follows: pin 60 of TA8-1029 into connector XA9-1. Insert the DC VOLTS test lead into TP19 of TA8-1029. Set and hold the TEST switch to NORMAL. Press and hold the HVPS FUNCTION EXTEND switch (2, fig. 4.1-7). Adjust the VERNIER control for a right-hand +15 indication on BITE L1. **The cal std indicates 17.29 to 21.84.** M1, R33, S1, S6.
f.	Release the TEST and FUNCTION EXTEND switches. Adjust the VERNIER control full ccw. Transfer the COMMON test lead to TP12 on TA8-1029.

Table 4-1.6. High Voltage Power Supply-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
f. Cont.	Transfer DC VOLTS test lead to HVPS MTR CAL (-) jack (13, fig. 4.1-7). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a left-hand -10 indication on BITE meter M1. **The cal std indicates 53.01 to 71.6.** M1, R24, S1, S6.
g.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the HVPS FUNCTION SELECT I switch to 2. Set the RANGE switch to 1. Remove the COMMON test lead from TA8-1029. Remove TA8-1029 from XA9 connector. Replace circuit cards A9 and A10 into HVPS chassis. Remove circuit card All (12, fig. 4.1-8). Insert TA8-1029 into HVPS XA11 connector as follows: pin 60 of TA8-1029 into connector XA11-1. Insert circuit card All into top connector of TA8-1029 as follows: pin 1 of All into pin 60 of TA8-1029. Insert the COMMON test lead into TP11 of TA8-1029. Set and hold the TEST switch to NORMAL. Press and hold the HVPS FUNCTION EXTEND switch. Adjust the VERNIER control for a left-hand -10 indication on BITE meter M1. **The cal std indicates 0.89 to 1.113.** M1, R32, S1.
h.	Release the TEST and FUNCTION EXTEND switches. Adjust the VERNIER control full ccw. Remove the DC VOLTS test lead from HVPS MTR CAL (-) jack. Transfer the COMMON test lead to HVPS MTR CAL (-) jack. Insert the DC VOLTS test lead into TP15 of TA8-1029. Set and hold the TEST; switch to NORMAL. Adjust the VERNIER control for a right-hand +10 indication on BITE meter M1. **The cal std indicates 0.89 to 1.113.** M1, R23, S1.

Table 4-1.6. High Voltage Power Supply-Periodic Test Procedure-Continued

Step	Operation Normal indication Corrective procedure
i.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the DC VOLTS test lead from TP15 of TA8-1029. Remove circuit card All from TA8-1029. Remove TA8-1029 from HVPS chassis. Replace circuit card All into HVPS chassis. Set the HVPS FUNCTION SELECT I switch to 3. Remove .circuit card Al (1, fig. 4.1-8). Insert TA8-1029 into HVPS XA1 connector as follows: Pin 31 of TA8-1029 into connector XA1-31. Insert the DC VOLTS test lead into TP11 of TA8-1029. Press and hold the HVPS FUNCTION EXTEND switch. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a right-hand +15 indication on BITE meter M1. **The cal std indicates 10.9 to 13.78.** R27, S1. Release the TEST and FUNCTION EXTEND switches. Remove TA8-1029 with DC VOLTS test lead attached. Replace circuit card Al (1, fig. 4.1-8) into HVPS chassis.
j.	Repeat step i for HVPS FUNCTION SELECT I switch positions 4, 5, 6, and 7 removing circuit cards A2, A3, A4, and A5, and using TA8-1029 TP11 for HVPS connectors XA2, XA3, XA4, and XA5, respectively. Release the TEST and FUNCTION EXTEND switches. Adjust the VERNIER control full ccw. Remove the DC VOLTS test lead from TP11 on TA8-1029. Remove TA8-1029. Replace circuit card A5 into HVPS chassis.
k.	Set the HVPS FUNCTION SELECT I switch to 3. Remove brown wire from TB1-16 (23, fig. 4.1-8). Transfer and hold the COMMON test lead to TB1-16. Insert the DC VOLTS test lead into HVPS MTR CAL (-) jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a left-hand -10 indication on BITE meter M1. **The cal std indicates 3.86 to 4.54.** A11, S1.

Table 4-1.6. High Voltage Power Supply-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
k. Cont.	Release the TEST switch. Adjust the VERNIER control full ccw. Replace brown wire on TB1-16.
l.	Repeat step k for FUNCTION SELECT I switch positions 4, 5, 6, and 7, using terminal board TBI-10, -8, -5, and -1, respectively (23, fig. 4.1-8). Remove the COMMON test lead from TBI-1. Replace brown wire on TBI-1. Remove the DC VOLTS test lead from HVPS MTR CAL (-) jack.
m.	Set the HVPS FUNCTION SELECT I switch to 9. Energize the DMM 10177187. Connect the DMM INPUT HI test lead to the junction of R36 and R37 (14, fig. 4.1-8), and INPUT LO test lead to chassis ground. Press the DMM VDC switch. Press the DMM RANGE 1 switch. Set the cal std RANGE switch to 5. Set the FUNCTION switch to VDC. Connect the DC VOLTS test lead to TB2-1 (13, fig. 4.1-8). Insert the COMMON test lead into HVPS MTR CAL (-) jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for 400 indication on the cal std. **DMM indicates 0.388 to 0.412.** R26, R36, R37, S1.
n.	Adjust the VERNIER control full ccw. Release the TEST switch. Set the IIVPS FUNCTION SELECT I switch to 11. Transfer the DMM INPUT HI test lead to the junction of R53 and R54 (15, fig. 4.1-8). Transfer the cal std DC VOLTS test lead from TB2-1 to junction C7 and L4-2 (18, fig. 4.1-8). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for 400 indication on the cal std. **DMM indicates 0.073 to 0.0780.** R25, R46-R49, R53, R54, S1, S6.

Table 4-1.6. High Voltage Power Spy-Periodic Test Procedure-Continued

Step	Operation Normal indication Corrective procedure
o.	Adjust the VERNIER control full ccw. Release the TEST switch. Disconnect the DC VOLTS test lead from C7 and I4. Disconnect the DMM test leads. Set the cal std RANGE switch tol1. Set the FUNCTION switch to VAC. Connect the AC VOLTS test lead to junction of C4 and R43 (at the bottom of R43 (19, fig. 4.1-8). Set and hold the TEST switch to NORMAL. Press and hold the HVPS FUNCTION EXTEND switch. Adjust the VERNIER control for 6.5 indication on BITE meter M1 (leading edge of green band). **The cal std indicates 2.74 to 3.35.** C4, C9, CR35, R42, R43, VR1.
p.	Release the FUNCTION EXTEND and TEST switches. Remove the AC VOLTS test lead from the junction of C4, R43. Loosen the screws and open the calibration cover (4, fig. 4.1-7). Set the FUNCTION switch to MULTR. Momentarily press the VDC switch to the down position. Insert the DC VOLTS test lead into TP1 (11, fig. 4.1-7). Insert the COMMON test lead into TP3 (9, fig. 4.1-7). Replace and secure HVPS cover. Close and secure HVPS drawer. Set FILAMENT circuit breaker (6, fig. 4.1-2) to ON. Press and hold STANDBY pushbutton (10, fig. 4.1-1) for 5 seconds, then release. **The cal std indicates 3.578 to 3.584.** Adjust R64 (6, fig. 4.1-7).
q.	Disconnect the test leads from HVPS. Press the DMM VDC switch. Press the DMM RANGE 1 switch. Insert the DMM INPUT LO test lead into TP5 (7, fig. 4.1-7). Insert the DMM INPUT HI test lead into TP2 (10, fig. 4.1-7). **The DMM indicates -0.97 to - 1.200 vdc.** VR3, R66, R67.

Table 4-1.6. High Voltage Power supply-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
r.	Press the OFF pushbutton (11, fig. 4.1-1). Loosen the fasteners that secure the HVPS and withdraw the unit. Loosen the fasteners and remove the cover. **WARNING** High voltage may be present. Use shorting bar to short terminals of capacitors C1, C2, C6, C7, and C8 to chassis. Connect the cal std DC VOLTS test lead to the junction of R52 and R56 at top of R56 (17, fig. 4.1-8). Set the cal std FUNCTION switch to VDC. Set the RANGE switch to 5. Insert the cal std COMMON test lead into MTR CAL (-) jack. Transfer the DMM INPUT HI test lead to TP4 (8, fig. 4.1-7). Press and hold the cal std TEST switch to NORMAL. Adjust the VERNIER control for a 435.0 indication on the cal std. **The DMM indicates 0.097 to 0.1200.** Adjust R60 (5, fig. 4.1-7). R56-R61.
s.	Release the TEST switch. Adjust VERNIER control full ccw. Remove the test leads from the HVPS. Install the high voltage power supply cover. Close and secure the high voltage power supply. Set the FILAMENT circuit breaker to OFF. Deenergize and store the DMM. Deenergize and store the cal std.

Table 4-1.7. Video Receiver Assembly-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	RECEIVER NOISE FIGURE Meter (1, Fig. 4.1-9).
a.	Set the fuse and control panel FILAMENT, BEAM POWER, and AZIMUTH AMPLI-DYNE circuit breakers (6, 5, and 4, fig. 4.1-2) to OFF. Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON. Connect and energize the cal std.
	Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into the RCVR NOISE FIGURE TP2 jack (4, fig. 4.1-9). Insert the COMMON test lead into the RCVR NOISE FIGURE TP1 jack (6, fig. 4.1-9). Set the MAIN OFF SIDE switch (2, fig. 4.1-9) to OFF. Adjust the CALIBRATE control (5, fig. 4.1-9) full ccw. Set and hold the TEST switch to NORMAL. Adjust the VERN'JER control for a 50 indication on the meter under test (1, fig. 4.1-9). **The cal std indicates 0.057 to 0.068.** RCVR NOISE FIGURE meter, R1, S1.
b.	Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 0.029 to 0.034.** RCVR NOISE FIGURE meter.
c.	Release the TEST switch. Remove the test leads from the video receiver assembly.
	Set the MAIN POWER circuit breaker to OFF. Deenergize and store the cal std.

Table 4-1.8. Receiver-Transmitter BITE Assembly-Periodic Test Procedure

Step	Operation Normal indication Corrective procedure
1.	**BITE Monitor Meter (2, Fig. 4.1-10).**
a.	Set the fuse and control panel FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (6, 5, and 4, fig. 4.1-2) to OFF. Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Loosen the fasteners and remove the receiver-transmitter BITE assembly (4, fig. 4.1-10) (radar test set group), from the main chassis. Set the BITE/UPPER RCVR switch (3, fig. 4.1-10) to MTR CAL. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into the meter under test (+) jack. Insert the COMMON test lead into the meter under test (-) jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** BITE monitor meter, A10.
b.	Adjust the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to SEARCH SB FILTER. Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 0.0285 to 0.0315.** BITE monitor meter, A10.
c.	Adjust the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to BIAS-Y SB FILTER. Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0085 to 0.0115.** BITE monitor meter, A10.
d.	Adjust the VERNIER control full ccw. Release the TEST switch. Set the BITE/UPPER RCVR switch to OFF. Remove the CURRENT/K OHMS test lead from the meter under test. Insert the DC VOLTS test lead into the meter under test (+) jack. Set the FUNCTION switch to VDC.

Table 4-1.8. Receiver-Transmitter BITE Assembly-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1d. Cont.	Set the XMTR switch (1, fig. 4.1-10) to NO FAIL-W. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 4.5 to 4.850.** A9.
e.	Adjust the VERNIER control full ccw. Set the XMTR switch to POWER-W. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.263 to 0.3060.** A9.
f	Adjust the VERNIER control full ccw. Set the XMTR switch to G-REF PWR. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.88 to 0.9800.** A9.
g.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the XMTR switch to XTAL I. Loosen the fasteners and remove the cover from the top of the receiver-transmitter BITE assembly. Loosen fasteners and remove the inner cover. Remove circuit card A8 (6, fig. 4.1-10). Transfer the DC VOLTS test lead to the receiver-transmitter BITE assembly test point E12 (7, fig. 4.1-10). Transfer the COMMON test lead to meter under test (+) jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 10.6 to 11.50.** A9.
h.	Release the TEST switch. Adjust the VERNIER control full ccw. Transfer the COMMON test lead to the meter under test (-) jack. Transfer the DC VOLTS test lead to the meter under test (+) jack. Replace circuit card A8 and install and secure inner cover.

Table 4-1.8. Receiver-Transmitter BITE Assembly-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1h. Cont.	Replace the top cover on the receiver-transmitter BITE assembly and secure. Set the XMTR switch to XTAL V. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 4.8 to 5.200.** A9.
i	Adjust the VERNIER control full ccw. Set the XMTR switch to DISC TUNE. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.051 to 0.0840.** A9.
j.	Set the XMTR switch to NOISE CAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 11.4 to 12.40.** A9.
k.	Adjust the VERNIER control full ccw. Set the XMTR switch to < 14-NOISE. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.6 to 0.6700.** A9.
l.	Adjust the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to A RO QUAD-<8. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.437 to 0.5910.** A10.
m.	Adjust the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to B RO QUAD-<8. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.437 -to 0.5910.** A10.
n.	Set the BITE/UPPER RCVR switch to RO-Y. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 1.675 to 1.840.** A10.

Table 4-1.8. Receiver-Transmitter BITE Assembly--Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1o.	Adjust the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to SSB PWR->5. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.56 to 0.6290.** A10.
p.	Set the BITE/UPPER RCVR switch to NOISE CUR-B(Y). Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 3.43 to 3.710.** A10.
q.	Set the BITE/UPPER RCVR switch to NO FAIL-W. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 2.26 to 2.500.** A10.
r.	Release the TEST switch. Remove the test leads from the receiver-transmitter BITE assembly. Replace the receiver-transmitter BITE assembly into the main chassis and secure. Set MAIN POWER circuit breaker (7, fig. 4.1-2) to OFF. Deenergize and store the cal std.
2.	**NOISE CALIBRATION** **NOTE** A TA8-1010 (coupling capacitor) and a BNC tee are required to perform the following test procedures and are stored in shop 3.
a.	Set the fuse and control panel FILAMENT, BEAM POWER, and AZIMUTH AMPLI-DYNE circuit breakers (6, 5, and 4, fig. 4.1-2) to OFF. Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON. Connect and energize the cal std. Connect and energize the calibration test set TF8-1020. Press and hold the STANDBY pushbutton (10, fig. 4.1-1) for 3 to 5 seconds, then release. Open the MO-PA compartment door. Set the calibration test set switches as follows: SIGNAL to 6480. SINE-LEVEL to LO. COUNTER-SELECT to SINE.

Table 4-1.8. Receiver-Transmitter BITE Assembly-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2a. Cont.	Set the cal std FUNCTION switch to MULTR. Momentarily press the VAC switch to the down position. **WARNING** When the antenna is not rotating, the antenna and azimuth indicator dial must be positioned at the specified safe azimuth. WARNING signs must be located on each side of the safe zone. When the radar is energized to full radiate, personnel must not be within 74 meters (243 feet) of the antenna along the designated safe azimuth. Set the fuse and control panel BEAM POWER and FILAMENT circuit breakers (5 and 6, fig. 4.1-2) to ON. Set the on-trailer cable entry panel SAFETY switch to SAFE. When the RADIATE READY lamp (13, fig. 4.1-1) lights, press the RADIATE pushbutton (9, fig. 4.1-1), then press the OVERRIDE pushbutton (7, fig. 4.1-1). Set the mod-osc BITE SELECT switch (2, fig. 4.1-4) to MOD DEV. **The mod-osc BITE meter (1, fig. 4.1-4) indicates the green area.** Perform the transmitter BITE functions fault procedure contained in TM 9-1430-2528-12-2-2.
b.	Connect a TNC adapter (in TF8-1020 cover) to the mod-osc MW CAL jack (4, fig. 4.1-4). Connect a BNC tee to the calibration test set FT-B jack. Connect a W-030 cable between the BNC tee on the FT-B jack and the TNC adapter on the MW CAL jack. Insert the COMMON test lead into the mod-osc CALIBRATION (-) jack (6, fig. 4.1-4). Insert the AC VOLTS test lead into the calibration test set FT-A jack. Record the cal std indication as El. Calculate: El X 0.082 = E2. Press and hold the video receiver CW DESIGNATE switch (3, fig. 4.1-9). **The BITE meter deflects to the right.** Perform the transmitter BITE functions fault procedure contained in TM 9-1430-2528-12-2-2.

Table 4-1.8 .Receiver-Transmitter BITE Assembly--Periodic Test Procedures-Continued

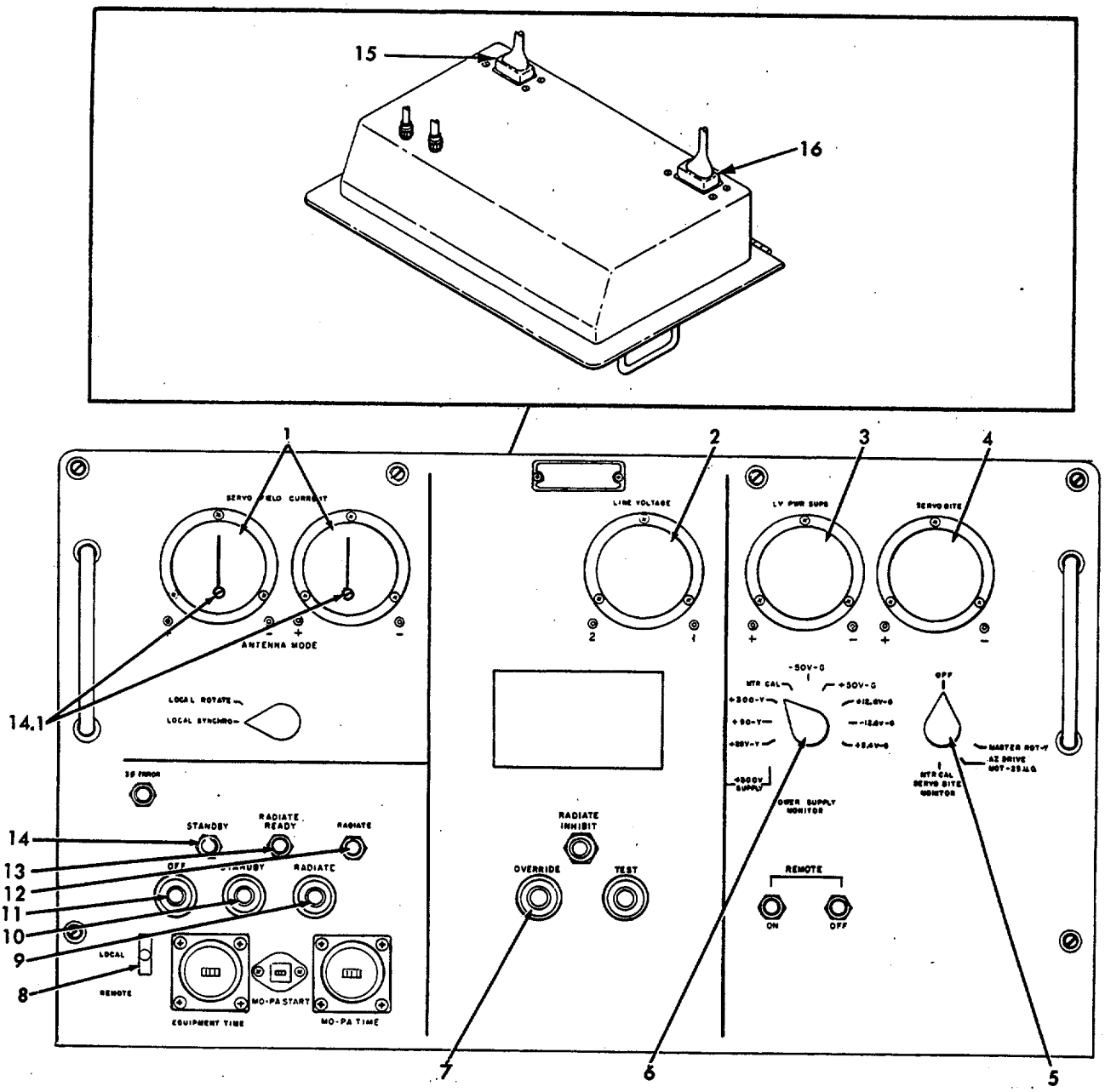
Step	Operation Normal indication Corrective procedure
2c.	Release the CW DESIGNATE switch. Connect a second W-030 cable between the calibration test set SINE-OUT jack and the BNC tee on the FT-B jack. Adjust the calibration test set SINE-FREQ control for 6470 to 6490 on the calibration test set DISPLAY counter. Disconnect W-030 cable from the TNC adapter on the MW CAL jack. Connect a TA8-1010 between cable W-030 and the TNC adapter on the MW CAL jack. Press and hold the CW DESIGNATE switch (3, fig. 4.1-9). Adjust the SINE-LEVEL control for an E2 indication on the cal std. Set the receiver-transmitter BITE assembly BITE UPPER RCVR switch (3, fig. 4.1-10) to OFF. Perform the discriminator tuning procedure contained in the transmitter weekly check procedure in TM 9-1430-2528-12-1. Set the XMTR switch (1, fig. 4.1-10) to NOISE CAL. Adjust the receiver-transmitter BITE assembly FM NOISE CALIBRATE control R1 (5, fig. 4.1-10) for a 20 ,a indication on the BITE monitor meter (2, fig. 4.1-10). Remove the TA8-1010 with cable W-030 attached from the TNC adapter on the MW CAL jack. Set the XMTR switch to < 14-NOISE. **The BITE monitor meter indicates 14 11a maximum.** Perform the transmitter BITE functions fault procedure contained in TM 9-1430-2528-12-2-2.
d.	Release the CW DESIGNATE switch. Press the STANDBY pushbutton. Press the OFF pushbutton (11, fig. 4.1-1). Set the FILAMENT, and BEAM POWER circuit breakers to OFF. Deenergize and store the cal std. I Disconnect and store the calibration test set cables and adapters. Deenergize and store the calibration test set. Close and secure the MO-PA compartment door.

Table 4-1.9. Antenna Pedestal-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	BITE Meter Ml (1, Fig. 4.1-11).
a.	Set the fuse and control panel FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (6, 5, and 4, fig. 4.1-2) to OFF. Set the MAIN POWER circuit breaker (7, fig. 4.1-2) to ON. Connect and energize the cal std. Open the access cover on the rear of the antenna pedestal. Remove the fuse and control panel SYNCHRO BUS fuse (3, fig. 4.1-2). Set the FUNCTION switch to VAC. Adjust the VERNIER control full ccw. Insert the COMMON test lead into METER CAL jack TP1 (4, fig. 4.1-11). Insert the AC VOLTS test lead into METER CAL jack TP2 (3, fig. 4.1-11). Set the RANGE switch to 1. Set BITE switch S2 (2, fig. 4.1-11) to MTR CAL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 6 indication on the meter under test. **The cal std indicates 5.700 to 6.300.** BITE meter M1, S2.
b.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 2. Set the BITE switch S2 to A AZ COM. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 41.65 to 46.75.** BITE meter M1, R6, S2.
c.	Adjust the VERNIER control full ccw. Set the BITE switch S2 to B AZ COM. Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 41.65 to 46.75.** R7, S2.
d.	Adjust the VERNIER control full ccw. Set BITE switch S2 to ALIGN COARSE. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 16.9 to 23.0.** BITE meter M1, R10, S2.

Table 4-1.9. Antenna Pedestal-Periodic Test Procedures-Continued

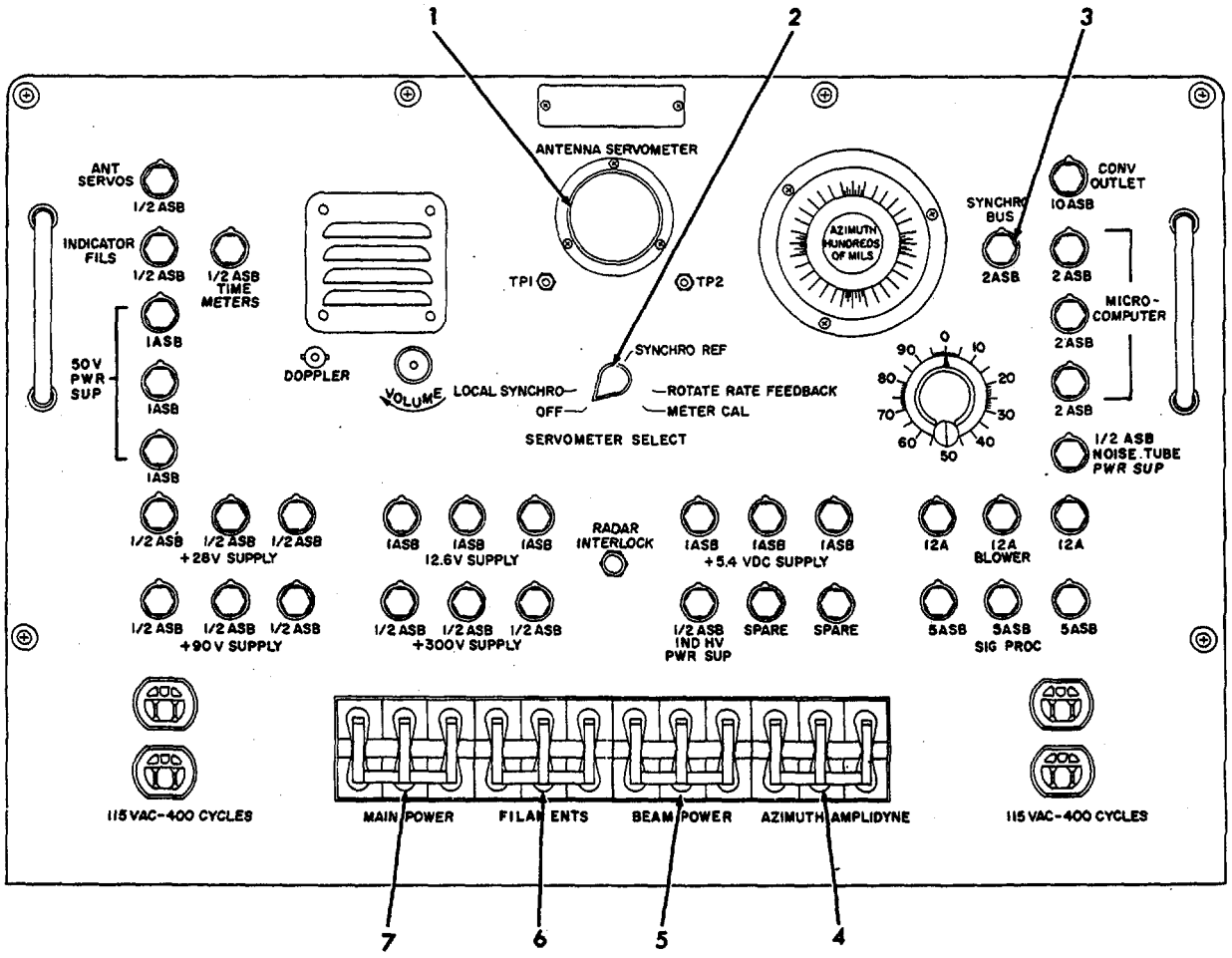
Step	Operation Normal indication Corrective procedure
e.	Adjust the VERNIER control full ccw. Set the RANGE switch to 1. Set BITE switch S2 to ALIGN FINE. Adjust the VERNIER control for a 6 indication on the meter under test (lower scale). **The cal std indicates 5.7 to 6.300.** BITE meter M1, S2 .
f	Adjust the VERNIER control full ccw. Set the RANGE switch to 2 . Set BITE switch S2 to A AZ REF. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 24.9 to 34.10.** R13, S2.
g.	Adjust the VERNIER control full ccw. Set BITE switch S2 to B AZ REF. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 24.9 to 34.10.** R14, S2 .
i·	Release the TEST switch. Remove the test leads from the meter under test. Set BITE switch S2 to OPERATE. Close and secure the antenna pedestal access cover. Set the MAIN POWER circuit breaker to OFF. Reinstall the previously removed SYNCHRO BUS fuse into the fuse and control panel. Deenergize and store the cal std.



MS 602601A

1—SERVO FIELD CURRENT meters
2—LINE VOLTAGE meter
3—LV PWR SUPS meter
4—SERVO BITE meter
5—SERVO BITE MONITOR switch
6—POWER SUPPLY MONITOR switch
7—OVERRIDE pushbutton
8—LOCAL/REMOTE switch
9—RADIATE pushbutton
10—STANDBY pushbutton
11—OFF pushbutton
12—RADIATE lamp
13—RADIATE READY lamp
14—STANDBY lamp
14.1—Meter zero adjustment
15—J1
16—J2

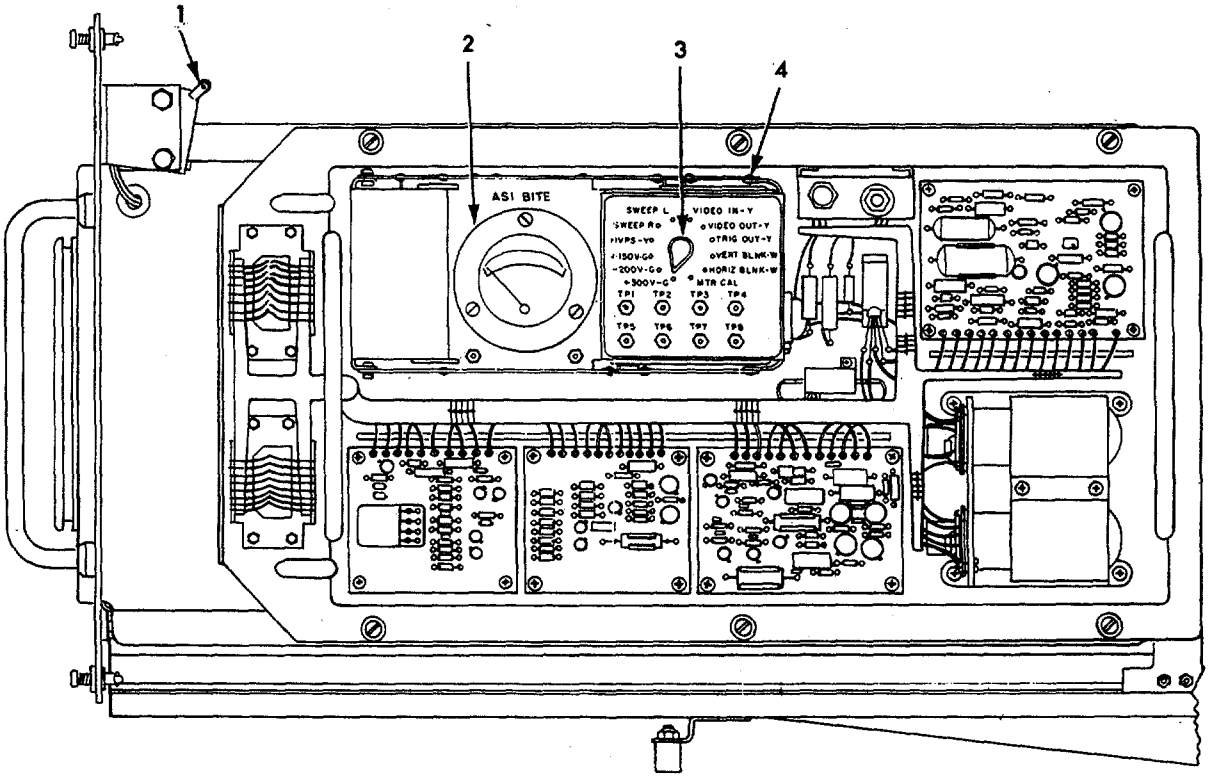
Figure 4.1-1. Control-indicator panel.



MS 602602A

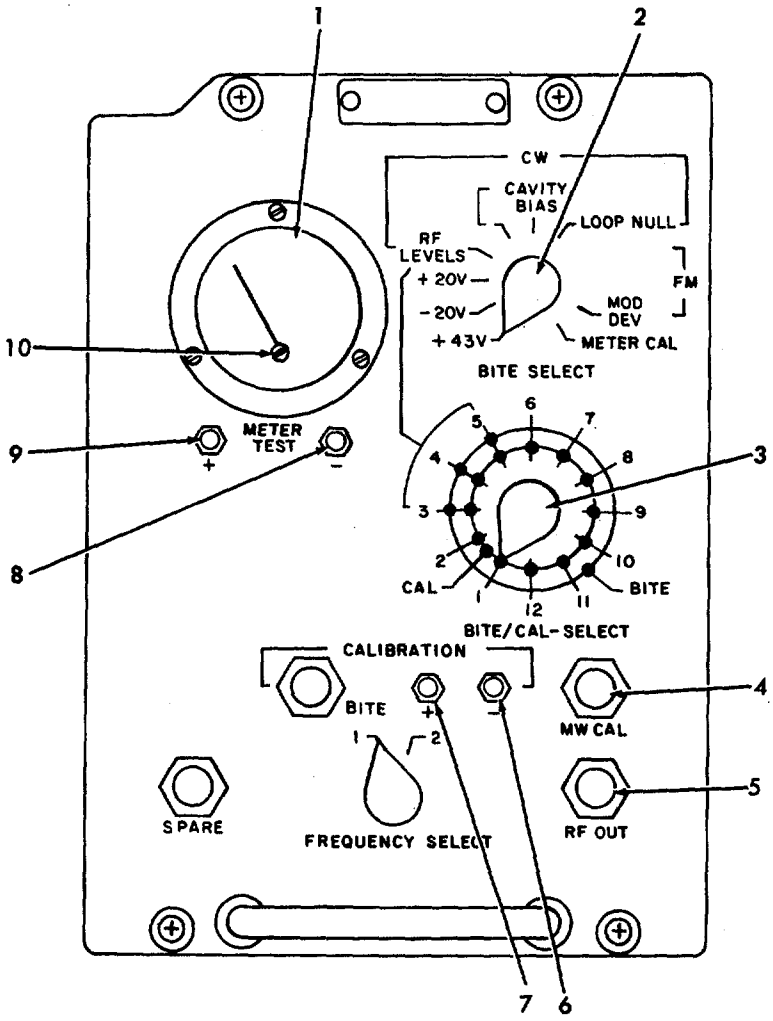
1—ANTENNA SERVOMETER
2—SERVOMETER SELECT switch
3—SYNCHRO BUS fuse
4—AZIMUTH AMPLIDYNE circuit breaker
5—BEAM POWER circuit breaker
6—FILAMENT circuit breaker
7—MAIN POWER circuit breaker

Figure 4.1-2. Fuse and control panel.



1—Interlock switch
2—ASI BITE monitor meter
3—ASI BITE selector switch
4—ASI BITE assembly

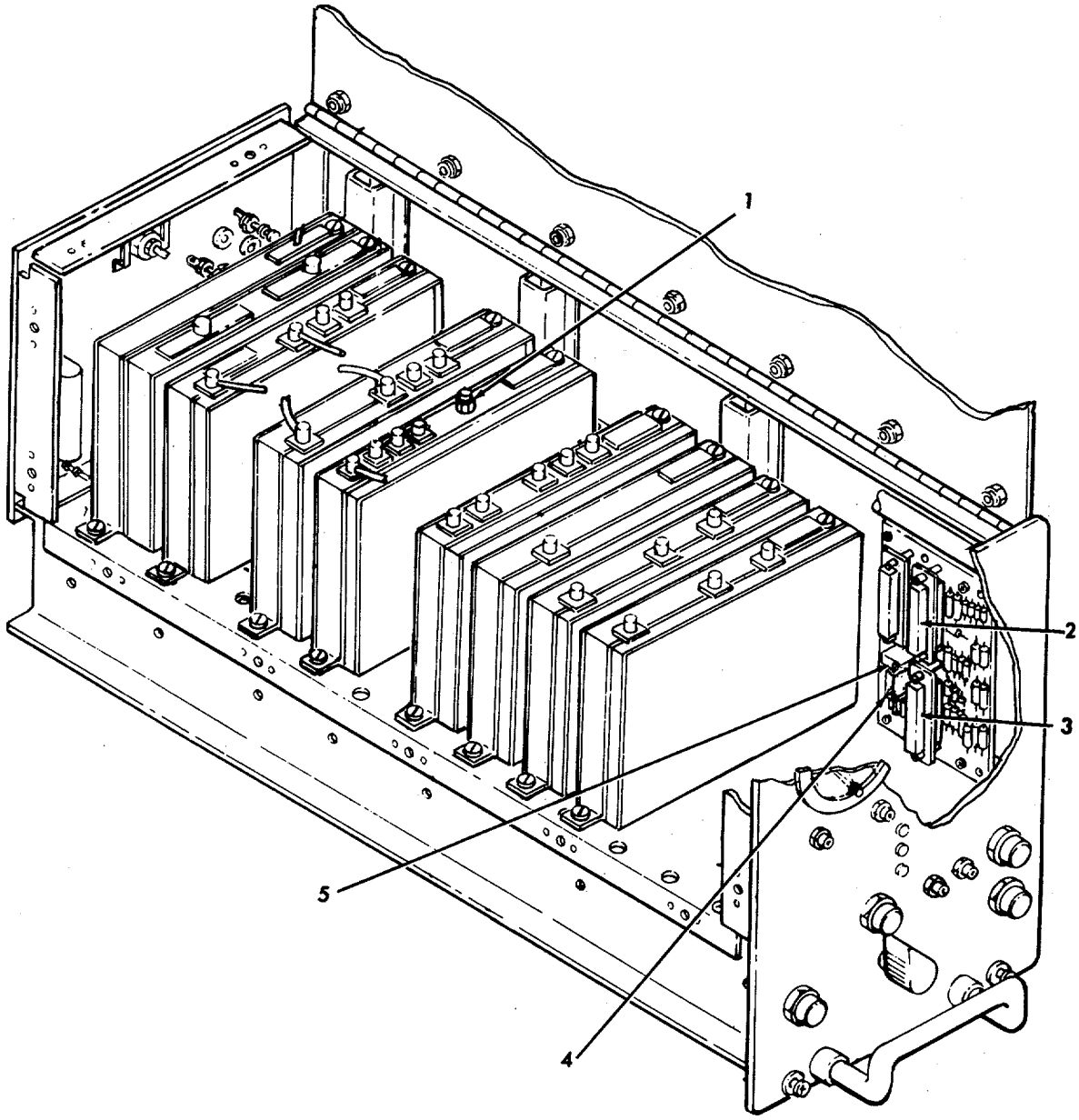
Figure 4.1-3. Vertical amplifier and threshold control.



MS 602603A

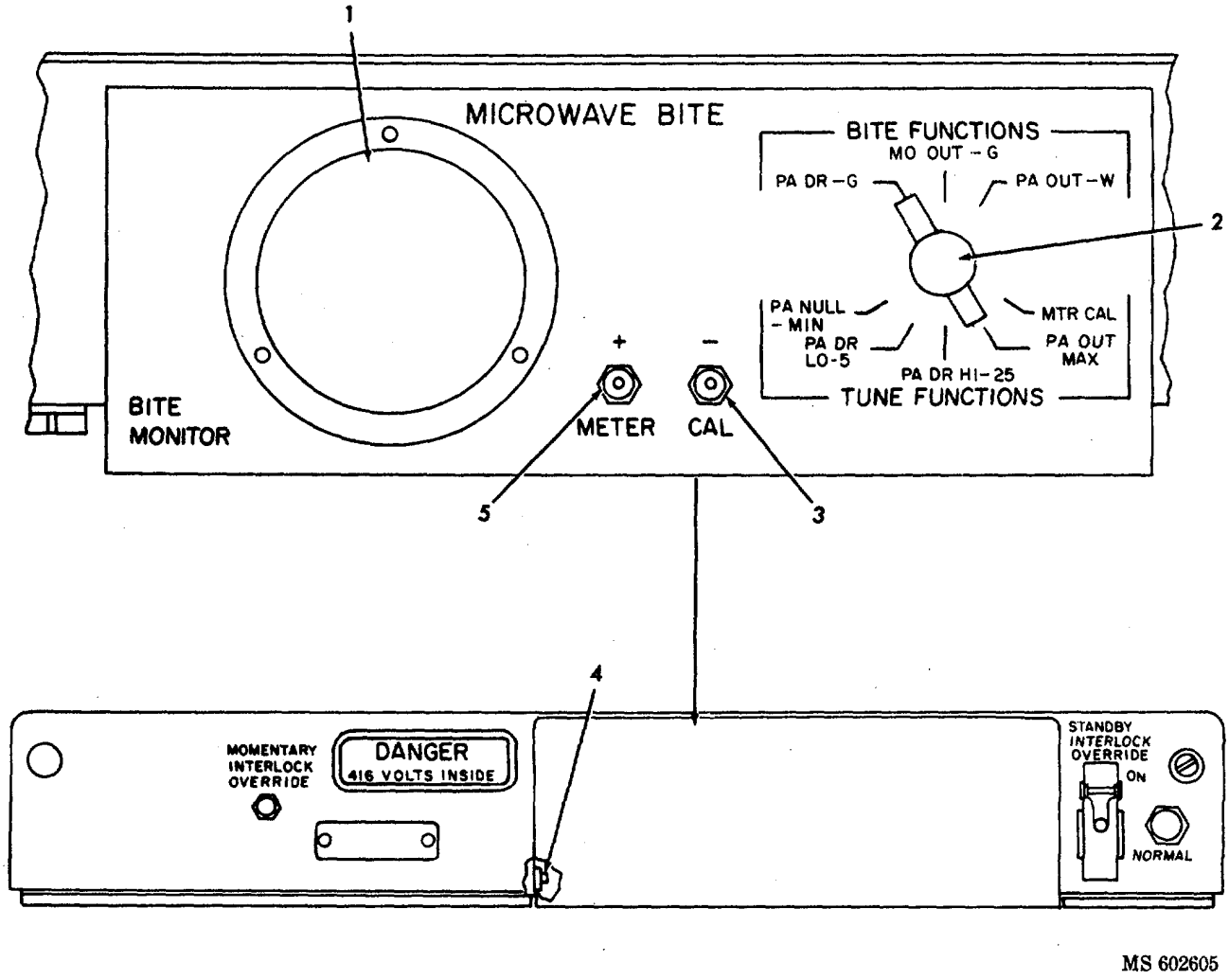
1—BITE meter M1
2—BITE SELECT switch
3—BITE/CAL-SELECT switch
4—MW CAL jack
5—RF OUT jack
6—CALIBRATION − jack
7—CALIBRATION + jack
8—METER TEST − jack
9—METER TEST + jack
10—BITE meter zero adjustment

Figure 4.1-4. Modulator-oscillator (OGO)-front panel.



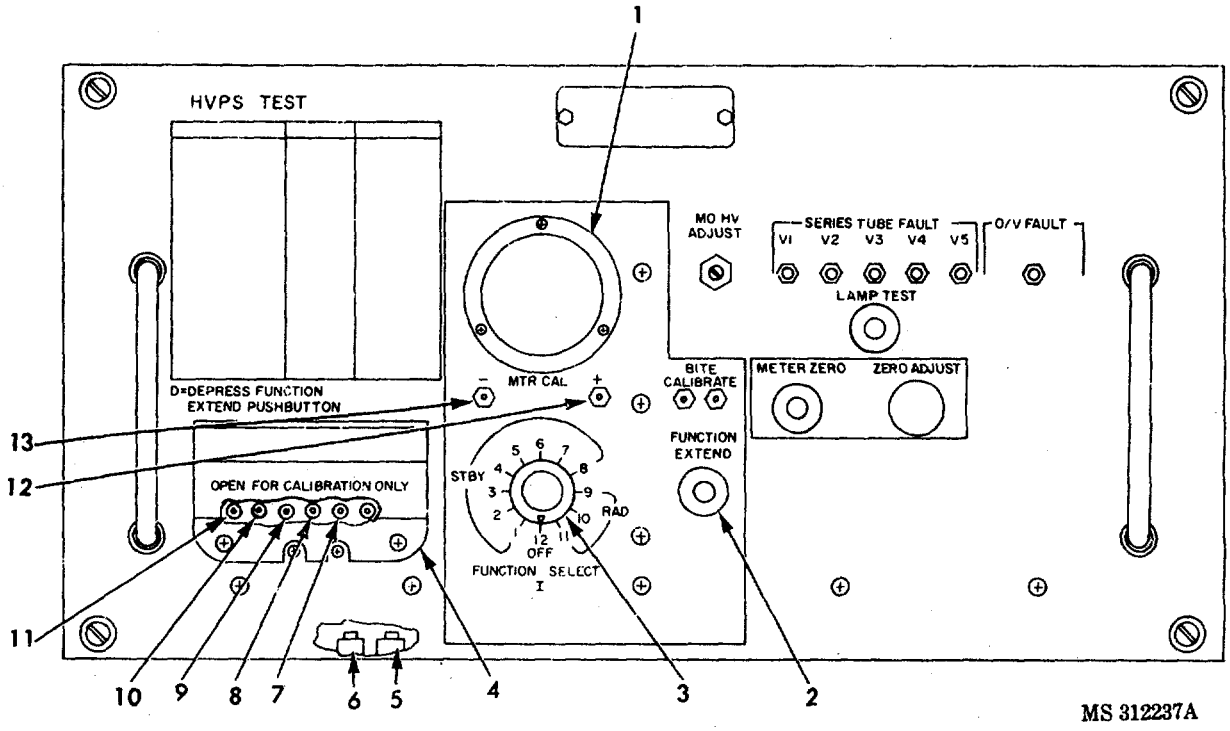
1—P40 (A8J3)
2—P60 (A12J2)
3—P61
4—A12R22
5—A12R19

Figure 4.1-5. Modulator-oscillator (OGO)-left side.



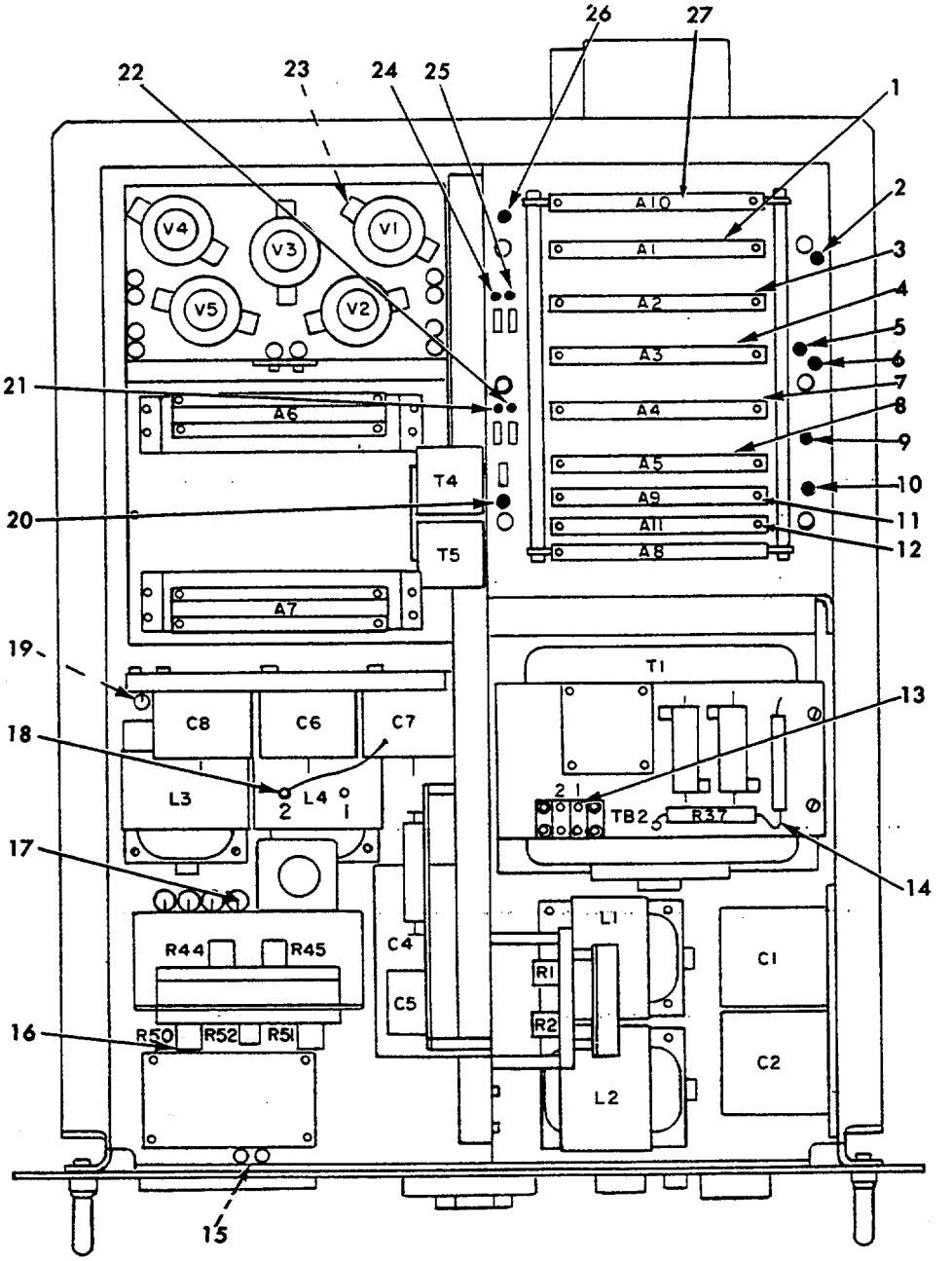
1—BITE MONITOR meter
2—BITE/TUNE FUNCTIONS switch
3—METER CAL – jack
4—W1P10/J1
5—METER CAL + jack

Figure 4.1-6. Microwave BITE assembly.



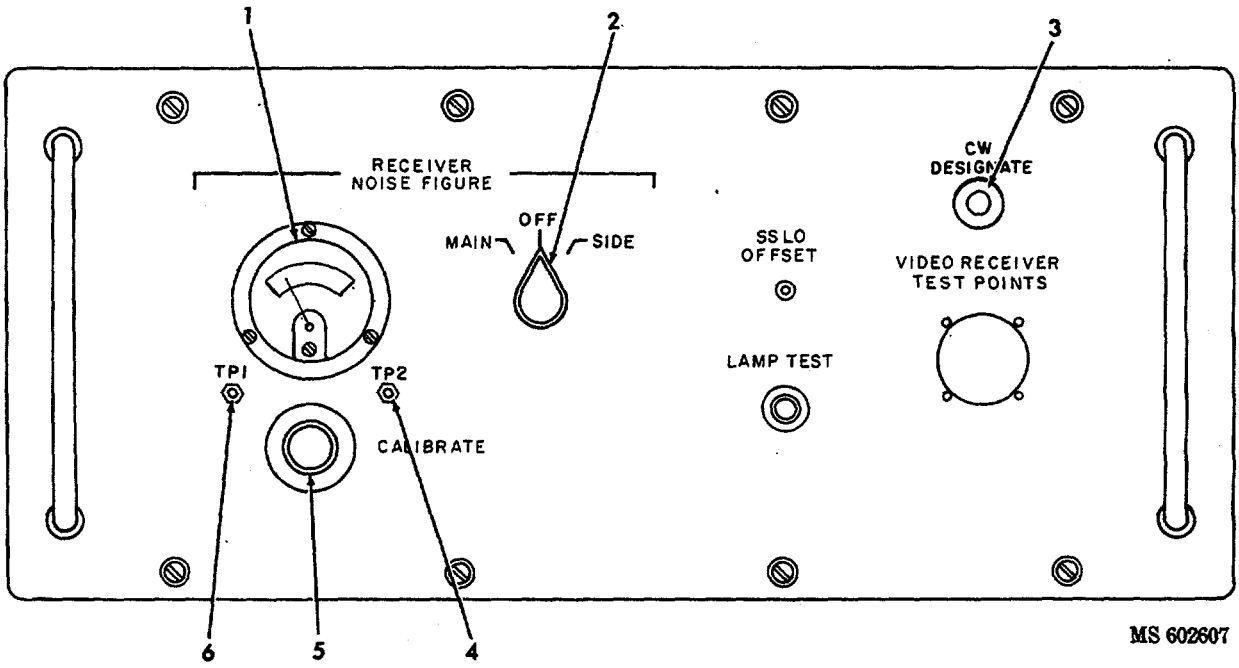
1—HVPS BITE meter M1
2—FUNCTION EXTEND switch
3—FUNCTION SELECT I switch
4—Calibration cover
5—R60
6—R64
7—TP5
8—TP4
9—TP3
10—TP2
11—TP1
12—MTR CAL + jack
13—MTR CAL − jack

Figure 4.1-7. High voltage power supply-front view.



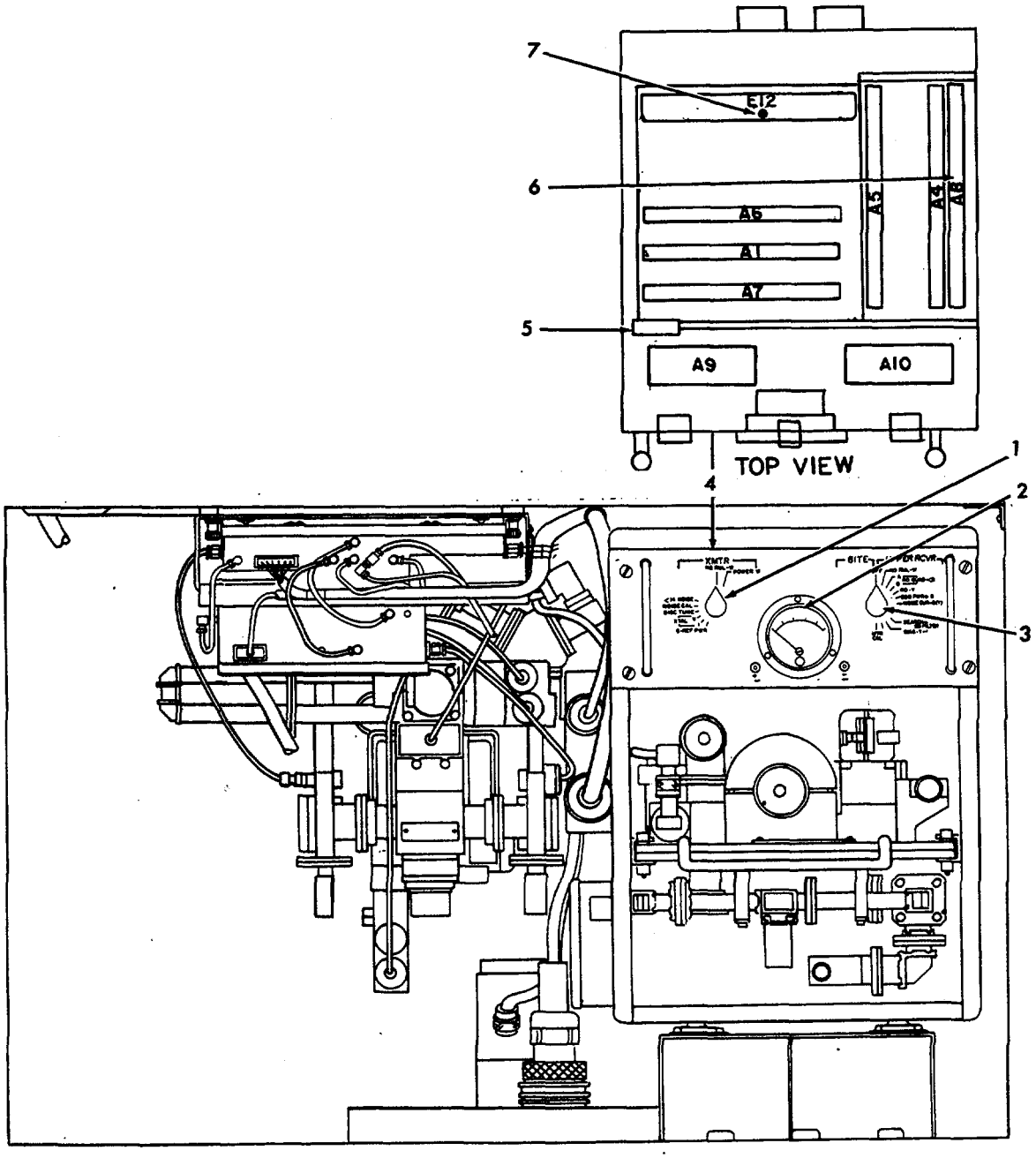
1—A1	10—E104	19—Jct of C4 and R43
2—E85	11—A9	20—E50
3—A2	12—A11	21—E15
4—A3	13—TB2-1	22—E42
5—E66	14—Jct of R36 and R37	23—TB1
6—E93	15—Jct of R53 and R54	24—E9
7—A4	16—Jct of R50 and R49	25—E36
8—A5	17—Jct of R56 and R52	26—E31
9—E73	18—Jct of C7 and L4-2	27—A10

Figure 4.1-8. High voltage power supply-top view.



1—RECEIVER NOISE FIGURE meter
2—MAIN/OFF/SIDE switch
3—CW DESIGNATE switch
4—RCVR NOISE FIGURE TP2
5—CALIBRATE control
6—RCVR NOISE FIGURE TP1

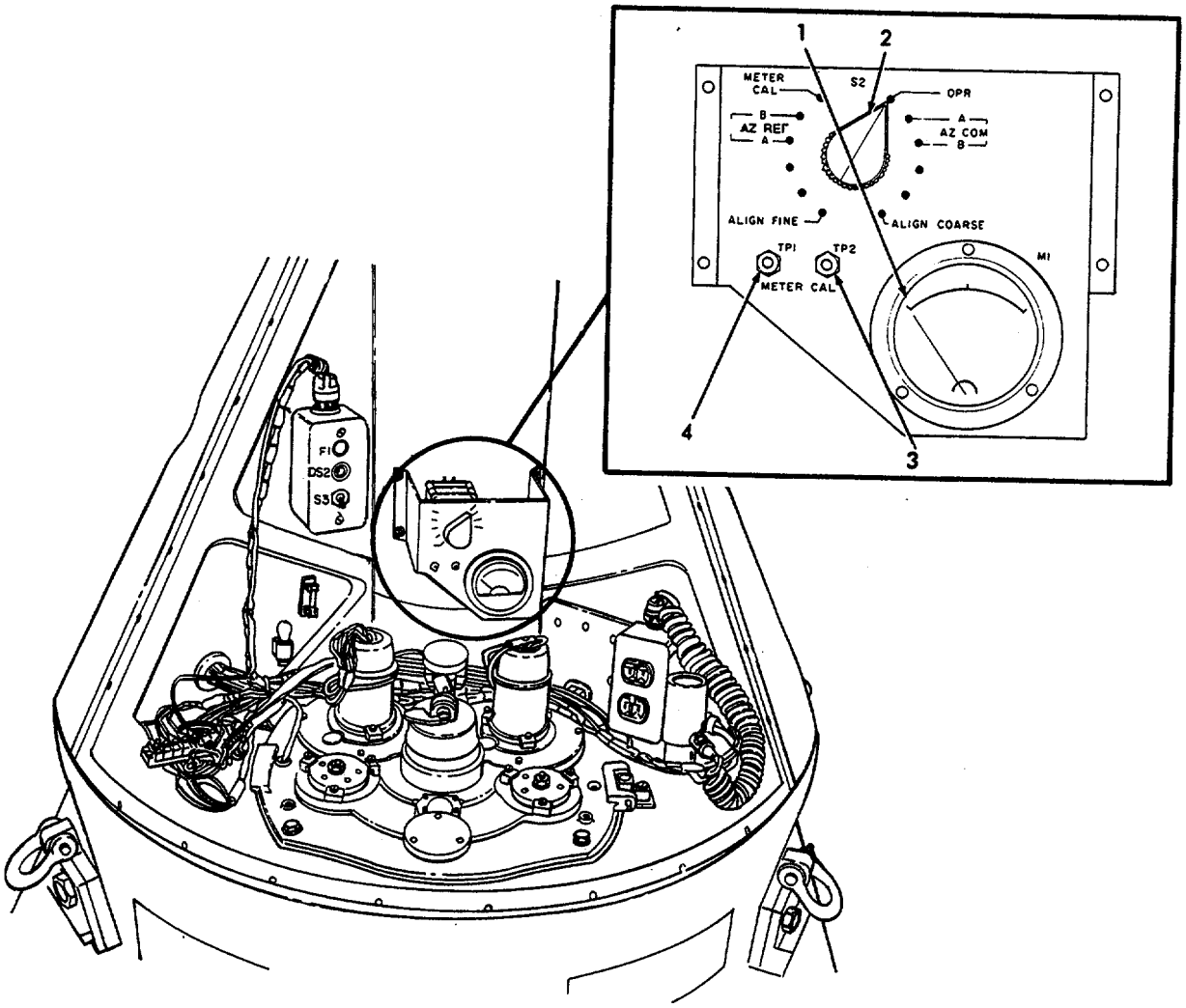
Figure 4.1-9. Video receiver.



MS 602608

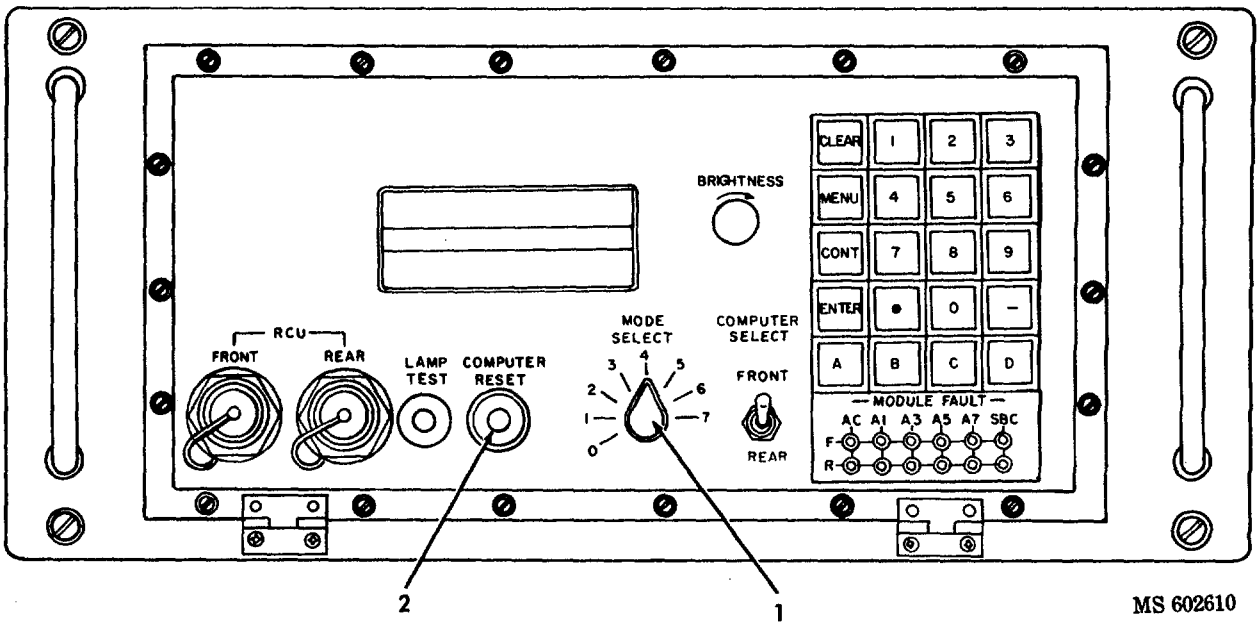
1—XMTR switch
2—BITE monitor meter M1
3—BITE UPPER RCVR switch
4—Receiver-transmitter BITE assembly
5—FM NOISE CALIBRATE control R1
6—A8
7—E12

Figure 4.1-10. Receiver/BITE compartment.



1—BITE meter M1
2—BITE switch S2
3—METER CAL TP2
4—METER CAL TP1

Figure 4.1-11. Antenna pedestal compartment.



1—MODE SELECT switch
2—COMPUTER RESET pushbutton

Figure 4.1-12. Microcomputer/digital signal processor.

CHAPTER 5

CONTINUOUS WAVE ACQUISITION RADAR (CWAR) AN/MPQ-55 - PERIODIC TEST PROCEDURES

Table 5-I. Control-Indicator Panel--Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	SERVO FIELD CURRENT Meter (1, Fig. 5-1).
	NOTE **The following test is performed on both the left and right hand meters.**
a.	Set the fuse and control panel MAIN POWER, FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (8, 7, 6, and 5, fig. 5-2) to OFF. Loosen the fasteners that secure the front panel of the control-indicator panel, and lower it to a horizontal position. Loosen the screws, then disconnect the wiring harness connectors from jacks J 1 and J2 (14 and 15, fig. 5-1) located on the rear of the control-indicator panel cover. Carefully close the control-indicator panel. Set the MAIN POWER circuit breaker (8, fig. 5-2) to ON. Connect and energize the cal std. Set the control-indicator panel LOCAL/REMOTE switch (7, fig. 5-1) to LOCAL. Set the FUNCTION switch to VDC. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the DC VOLTS test lead into the meter under test A (+) jack. Insert the COMMON test lead into the meter under test A (-) jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 30 indication on the meter under test. The cal std indicates 0.8000 to 1.200. SERVO FIELD CURRENT meter.
b.	Adjust the VERNIER control for a 10 indication on the meter under test. The cal std indicates : .400 to 3.800. SERVO FIELD CTURRENT meter.

Table 5-1. Control-Indicator Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1*c.*	Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 6.130 to 6.530.** SERVO FIELD CURRENT meter.
d.	Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 8.800 to 9.200.** SERVO FIELD CURRENT meter.
e.	Release the TES'T switch. **Transfer the test leads from the meter under test A jacks to the meter under test B jacks.** **Repeat steps 1*a* through 1*e*.** **Remove the test leads from the meter under test B jacks.** Disconnect and deenergize cal std. Set the MAIN POWER circuit breaker to OFF. Reconnect and secure the previously removed wiring harness connector to jacks J 1 and J2 located on the control-indicator panel cover. Close and secure the control-indicator panel.
2.	**LINE VOLTAGE Meter (2, Fig. 5-1).**
a.	Set the fuse and control panel MAIN POWER, FILAMENT, BEAM POWER, and AZIMUTH AMPLIDYNE circuit breakers (8, 7, 6, and 5, fig. 5-2) to OFF. Loosen the fasteners that secure the front panel of the control-indicator panel, and lower it to a horizontal position. Loosen the screws, then disconnect the wiring harness connectors from jacks J1 and J2 (14 and 15, fig. 5-1) located on the rear of the control-indicator panel cover. Set the MAIN PCWER circuit breaker (8, fig. 5-2) to ON. Connect and energize the cal std. Set the control-indicator panel LOCAL,/REMOTE switch (7,fig. 5-1) to LOCAL. Set the FUNCTION switch to VAC. Set the RANGE switch to 3. Adjust the VERNIER control full ccw. Insert the AC VOLTS test lead into the meter under test (2) jack. Insert the COMMON test lead into the meter under test (1) jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the meter under test. **The cal std indicates 234.0 to 246.0** LINE VOLTAGE meter.

Table 6-1. Control-Indicator Panel--Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2*b*.	Adjust the VERNIER control for an indication on the upper edge of the green area on the meter under test. **The cal std indicates 246.0 to 258.0.** LINE VOLTAGE meter.

Table 5-1. Control-Indicator Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2*c.*	Adjust the VERNIER control for an indication on the lower edge of the green area on the meter under test. **The cal std indicates 222.0 to 234.0.** LINE VOLTAGE meter. Release the TEST switch. Remove the test leads from the meter under test. Disconnect and deenergize cal std. Set MAIN POWER circuit breaker to OFF. Reconnect and secure the previously removed wiring harness connector to jacks J1 and J2 located on the control-indicator panel cover. Close and secure the control-indicator panel.
3.	**SERVO BITE Meter (4, Fig. 5-1).**
a.	Set the fuse and control panel MAIN POWER, FILAMENT, BEAM POWER, AND AZIMUTH AMPLIDYNE circuit breakers (8, 7, 6, and 5, fig. 5-2) to OFF. Loosen the fasteners that secure the front panel of the control-indicator panel and lower it to a horizontal position. Loosen the screws, then disconnect the wiring harness connectors from jacks J1 and J2 (14 and 15, fig. 5-1) located on the rear of the control-indicator panel cover. Set the MAIN POWER circuit breaker (8, fig 5-2) to ON. Connect and energize the cal std. Set the control-indicator panel LOCAL/REMOTE switch (7, fig 5-1) to LOCAL. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into the meter under test (+) jack. Insert the COMMON test lead into the meter under test (-) jack. Set the control-indicator panel SERVO BITE MONITOR switch (5, fig. 5-1) to MTR CAL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. The cal std indicates 0.0485 to 0.0515. SERVO BITE meter, A3, S1.
b.	Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 0.0235 to 0.0265.** SERVO BITE meter.

Table 5-1. Control-Indicator Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
3*c.*	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the CURRENT/K OHMS test lead from the meter under test (+) jack. Insert the DC VOLTS test lead into the meter under test (+) jack. Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Set the SERVO BITE MONITOR switch to REMOTE ROT-Y. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 33.5 indication on the cal std. **The meter under test indicates 23 to 27.** A3.
d.	Set the SERVO BITE MONITOR switch to SYNCHRO REF-Y. Adjust the VERNIER control for 33.5 indication on the cal std. **The meter under test indicates 23 to 27.** A3.
e.	Set the SERVO BITE MONITOR switch to FNC RELAY-Y. Adjust the VERNIER control for a 33.5 indication on the cal std. **The meter under test indicates 23 to 27.** A3.
f.	Set the SERVO BITE MONITOR switch to MASTER ROT-Y. Adjust the VERNIER control for a 33.5 indication on the cal std. **The meter under test indicates 23 to 27.** A3.
g.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 3. Set the SERVO BITE MONITOR switch to AZ DRIVE MOT > 25 /a. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 160 indication on the cal std. **The meter under test indicates 23 to 27.** A3. Release the TEST switch. Remove the test leads from the meter under test. Disconnect and deenergize the cal std.

Table 5-1. Control-Indicator Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
3g. Cont.	Set MAIN POWER circuit breaker to OFF. Reconnect and secure the previously removed wiring harness connector to jacks J1 and J2 located on the control-indicator panel cover. Close and secure the control-indicator panel.
4.	LV PWR SUPS Meter (3, Fig. 5-1).
a.	Set the fuse and control panel MAIN POWER, FILAMENT, BEAM POWER, AND AZIMUTH AMPLIDYNE circuit breakers (8, 7, 6, and 5, Fig. 5-2) to OFF. Loosen the fasteners that secure the front panel of the control-indicator panel, and lower it to a horizontal position. Loosen the screws, then disconnect the wiring harness connectors from jacks J1 and J2 (14 and 15, fig 5-1) located on the rear of the control-indicator panel. Set the MAIN POWER circuit breaker (8, fig 5-2) to ON. Connect and energize the cal std. Set the control-indicator panel LOCAL/REMOTE switch (7, fig 5-1) to LOCAL. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into the meter under test (+) jack. Insert the COMMON test lead into the meter under test (-) jack. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Set the control-indicator panel POWER SUPPLY MONITOR switch (6, fig. 5-1) to MTR CAL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** LV PWR SUPS meter, S8.
b.	Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 0.0235 to 0.0265.** LV PWR SUPS meter.
c.	Release the TEST switch. Remove the CURRENT/K OHMS test lead from the meter under test (+) jack. Insert the DC VOLTS test lead into the meter under test (+) jack. Set the POWER SUPPLY MONITOR switch to + 300V SUPPLY + 300-Y. Adjust the VERNIER control full ccw. Set the FUNCTION switch to VDC. Set the RANGE switch to 4.

Table 5-1. Control-Indicator Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
4c. Cont.	Set the hold the TEST switch to NORMAL. Adjust the VERNIER control for a 300 indication on the cal std. **The meter under test indicates 19 to 31.** A2, S8.
d.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 2. Set the POWER SUPPLY MONITOR switch to +300V SUPPLY +50V-G. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50.0 indication on the cal std. **The meter under test indicates 22 to 28.** A2, S8.
e.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the POWER SUPPLY MONITOR switch to +300V SUPPLY +28-Y. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 28.0 indication on the cal std. **The meter under test indicates 19 to 31.** A2, S8.
f.	Set the POWER SUPPLY MONITOR switch to +300V SUPPLY +90-Y. Adjust the VERNIER control for a 90.0 indication on the cal std. **The meter under test indicates 19 to 31.** A2, S8.
g.	Release the TEST switch. Set the MAIN POWER circuit breaker to OFF. Reconnect and secure the previously removed wiring harness connector to jack J1 located on the control-indicator panel cover. Adjust the VERNIER control full ccw. Set the POWER SUPPLY MONITOR switch to MEMORY + 12.6V-G. Connect a jumper lead between jack J2-U and chassis ground. Set the MAIN POWER circuit breaker to ON. **NOTE** **It may be necessary to set the RANGE switch to 1 to obtain the following cal std indication.**

Table 5-1. Control-Indicator Panel-Periodic Test Procedure-Continued

Step	Operation Normal indication Corrective procedure
4*g*. Cont.	Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 12.6 indication on the cal std. **The meter under test indicates 22 to 28.** A2, S8.
h.	Release the TEST switch. Set the POWER SUPPLY MONITOR switch to MEMORY - 12.6V-G. Interchange the DC VOLTS and COMMON test leads at the meter under test jacks. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 12.6 indication on the cal std. **The meter under test indicates 22 to 28.** A2, S8.
i.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to.1. Set the POWER SUPPLY MONITOR switch to MEMORY + 5.4V-G. Interchange the DC VOLTS and COMMON test leads at the meter under test jacks. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 5.4 indication on the cal std. **The meter under test indicates 22 to 28.** A2, S8.
J	Adjust the VERNIER control full ccw. Set the RANGE switch to 2. Set the POWER SUPPLY MONITOR switch to MEMORY + 28V-Y. Adjust the VERNIER control for a 28.0 indication on the cal std. **The meter under test indicates 20 to 25.** A2, S8.
k	Adjust the VERNIER control full ccw. Set the POWER SUPPLY MONITOR switch to MEMORY +23V-Y. Adjust the VERNIER control for a 23.0 indication on the cal std. **The meter under test indicates 19 to 31.** A2, S8.
l.	Release the TEST switch. Interchange the DC VOLTS and COMMON test leads.

Table 5-1. Control-Indicator Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
4*l*. Cont.	Set POWER SUPPLY MONITOR switch to +300V SUPPLY -50V-G. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50.0 indication on the cal std. **The meter under test indicates 22 to 28.** A2, S8. Release the TEST switch. Disconnect and deenergize the cal std. Set the MAIN POWER circuit breaker to OFF. Remove the test leads from the meter under test. Remove the jumper from J2-U and chassis ground. Connect and secure the previously removed connector to J2. Close and secure the control-indicator panel.

Table 5-2. Fuse and Control Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
ANTENNA SERVOMETER (1, Fig. 5-2).	
a.	Set the SERVOMETER SELECT switch (2, fig. 5-2) to METER CAL. Connect and energize the cal std. Disconnect the data cable from J2 located on the off-trailer connector panel. Set the FUNCTION switch to VAC. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the AC VOLTS test lead into the ANTENNA SERVOMETER Jest point TP2. Insert the COMMON test lead into the ANTENNA SERVOMETER test point TP1. Set the MAIN POWER circuit breaker (8, fig. 5-2) to ON. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 6 indication on the lower scale on the meter under test. **The cal std indicates 5.700 to 6.300.** ANTENNA SERVOMETER, A2.
b.	Release the TEST switch.

Table 5-2. Fuse and Control Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
b. Cont.	Adjust the VERNIER control full ccw. Set the RANGE switch to-2. Set the SERVOMETER SELECT switch to REMOTE SYNCHRO. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 40 indication on the meter under test. **The cal std indicates 78.60 to 91.40.** ANTENNA SERVOMETER, A2.
C.	Adjust the VERNIER control full ccw. Set the SERVOMETER SELECT switch to REMOTE AZ I. Adjust the VERNIER control for 20 indication on the meter under test. **The cal std indicates 23.80 to 36.60.** ANTENNA SERVOMETER, A2.
d.	Adjust the VERNIER control full ccw. Set the SERVOMETER SELECT switch to REMOTE AZII. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 23.80 to 36.60.** ANTENNA SERVOMETER, A2.
e.	Adjust the VERNIER control full ccw. Set the RANGE switch to 1. Set the SERVOMETER SELECT switch to REMOTE ROT RATE I. Adjust the VERNIER control for a 6 indication on the lower scale of the meter under test. **The cal std indicates 6.000 to 6.600.** ANTENNA SERVOMETER, A2.
f.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 2. Set the SERVOMETER SELECT switch to SYNCHRO REF. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 60.55 to 66.95.** ANTENNA SERVOMETER, A2.

Table 5-2. Fuse and Control Panel-Periodic Test Procedure-Continued

Step	Operation Normal indication Corrective procedure
g.	Adjust the VERNIER control full ccw. Set the RANGE switch to 1. Set the SERVOMETER SELECT switch to REMOTE ROT RATE II. Adjust the VERNIER control for a 6 indication on the lower scale of the meter under test. **The cal std indicates 6.000 to 6.600.** ANTENNA SERVOMETER, A2.
h.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 2. Set the SERVOMETER SELECT switch to ROTATE RATE FEEDBACK. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 60 indication on the meter under test. **The cal std indicates 86.00 to 99.40.** ANTENNA SERVOMETER, A2. Release the TEST switch. Remove the test leads from the meter under test. Set MAIN POWER circuit breaker to OFF. Disconnect and deenergize the cal std.

Table 5-3. Signal Processor-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**METER TEST Meter (2, Fig. 5-3).**
a.	Set the MAIN POWER circuit breaker (8, fig. 5-2) to ON. Connect and energize the cal std. Set the LOWER RCVR/BITE TEST switch (1, fig. 5-3) to MTR CAL 12. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into METER TEST jack J4. Insert the COMMON test lead into METER TEST jack J5. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** METER TEST meter, S8.
b.	Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 0.0285 to 0.0315.** METER TEST meter.
c.	Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0085 to 0.0115.** METER TEST meter.
d.	Release the TEST switch. Remove the test leads from the meter under test. Set the LOWER RCVR/BITE TEST switch to OPERATE. Set MAIN POWER circuit breaker to OFF. Disconnect and deenergize the cal std.
	NOTE **Step 2 is performed using the cal std only.**
2.	**Circuit Card A35 (8, Fig. 5-3).**
a.	Loosen the fasteners that secure the signal processor to the main chassis and withdraw the unit. Loosen the fasteners that secure the cover to the signal processor and raise the cover. Remove circuit card assembly (meter) A35 from the signal processor. Set MAIN POWER circuit breaker (8, fig 5-2) to ON. Connect and energize the cal std. Set the FUNCTION switch to MULTR. Momentarily set the K OHMS switch to the down position.

Table 5-3. Signal Processor-Periodic Test Procedure-Continued

Step	Operation Normal indication Corrective procedure
2*a.* Cont.	Connect the CURRENT/K OHMS test lead to pin 31 of removed card A35. Connect the COMMON test lead to pin J1-32 of A35. **The cal std indicates 163.1 to 166.8.** A35.
b.	Transfer the CURRENT/K OHMS test lead to pin 33 of removed card A35. Transfer the COMMON test lead to pin 34 of A35. **The cal std indicates 128.5 to 131.4.** A35.
c.	Transfer the CURRENT/K OHMS test lead to pin 35 of A35. Transfer the COMMON test lead to pin 36 of A35. **The cal std indicates 145.3 to 148.6.** A35.
d.	Transfer the CURRENT/K OHMS test lead to pin 37 of A35. Transfer the COMMON test lead to pin 38 of A35. **The cal std indicates 94.25 to 96.35.** A35.
e.	Transfer the CURRENT/K OHMS test lead to pin 39 of A35. Transfer the COMMON test lead to pin 40 of A35. **The cal std indicates 55.58 to 56.81.** A35.
f.	Transfer the CURRENT/K OHMS test lead to pin 41 of A35. Transfer the COMMON test lead to pin 42 of A35. **The cal std indicates 55.58 to 56.81.** A35.
g.	Transfer the CURRENT/K OHMS test lead to pin 43 of A35. Transfer the COMMON test lead to pin 44 of A35. **The cal std indicates 25.22 to 25.78.** A35.
h.	Transfer the CURRENT/K OHMS test lead to pin 45 of A35. Transfer the COMMON test lead to pin 46 of A35. **The cal std indicates 50.53 to 51.66.** A35.

Table 5-3. Signal Processor Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2 *i.*	Transfer the CURRENT/K OHMS test lead to pin 47 of A35. Transfer the COMMON test lead to pin 48 of A35. **The cal std indicates 148.3 to 151.7.** A35.
,j.	Connect the CURRENT/K OHMS and COMMON test leads together. Observe and record the cal std indication as S. Connect the CURRENT/K OHMS test lead to pin 49 of A35. Connect the COMMON test lead to pin 50 of A35. **The cal std indicates S plus 0.0020 maximum.** A35.
k.	Transfer the CURRENT/K OHMS test lead to pin 51 of A35. Transfer the COMMON test lead to pin 52 of A35. **The cal std indicates 18.00 to 18.40.** A35.
l.	Transfer the CURRENT/K OHMS test lead to pin 53 of A35. Transfer the COMMON test lead to pin 54 of A35. **The cal std indicates S plus 0.0020 maximum.** A35. Remove the test leads from A35. Replace circuit card assembly A35 into the signal processor. Close and secure the cover on the signal processor. Slide the signal processor into the main chassis and secure. Set MAIN POWER circuit breaker to OFF. Disconnect and deenergize the cal std.
	NOTE **Step 3 is performed using the DMM 10177187 only when the cal std is not available.**
3.	**Circuit Card A35 (8, Fig. 5-3).**
a.	Loosen the fasteners that secure the signal processor to the main chassis and withdraw the unit. Loosen the fasteners that secure the cover to the signal processor and raise the cover. Remove circuit card assembly (meter) A35 from the signal processor. Set the MAIN POWER circuit breaker to ON.

Table 5-3. Signal Processor-Periodic Test Procedures Continued

Step	Operation Normal indication Corrective procedure
3a. Cont.	Connect and energize the DMM. Press the K Ω function switch. Press the RANGE 1000 switch. Connect the INPUT HI test lead to pin 31 of removed card A35. Connect the INPUT LO test lead to pin J1-32 of A35. **The DMM indicates 163.1 to 166.8.** A35.
b.	Transfer the INPUT HI test lead to pin 33 of A35. Transfer the INPUT LO test lead to pin 34 of A35. **The DMM indicates 128.5 to 131.4.** A35.
c.	Transfer the INPUT HI test lead to pin 35 of A35. Transfer the INPUT LO test lead to pin 36 of A35. **The DMM indicates 145.3 to 148.6.** A35.
d.	Transfer the INPUT HI test lead to pin 37 of A35. Transfer the INPUT LO test lead to pin 38 of A35. Press the RANGE 100 switch. **The DMM indicates 94.25 to 96.35.** A35.
e.	Transfer the INPUT HI test lead to pin 39 of A35. Transfer the INPUT LO test lead to pin 40 of A35. **The DMM indicates 55.58 to 56.81.** A35.
f.	Transfer the INPUT HI test lead to pin 41 of A35. Transfer the INPUT LO test lead to pin 42 of A35. **The DMM indicates 55.58 to 56.81.** A35.
g.	Transfer the INPUT HI test lead to pin 43 of A35. Transfer the INPUT LO test lead to pin 44 of A35. **The DMM indicates 25.22 to 25.78.** A35.

Table 5-3. Signal Processor-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
3*h.*	Transfer the INPUT HI test lead to pin 45 of A35. Transfer the INPUT LO test lead to pin 46 of A35. **The DMM indicates 50.53 to 51.66.** A35.
i.	Transfer the INPUT HI test lead to pin 51 of A35. Transfer the INPUT LO test lead to pin 52 of A35. **The DMM indicates 18.00 to 18.50.** A35.
j.	Transfer the INPUT HI test lead to pin 47 of A35. Transfer the INPUT LO test lead to pin 38 of A35. Press the RANGE 1000 switch. **The DMM indicates 148.3 to 151.7.** A35.
k.	Transfer the INPUT HI test lead to pin 49 of A35. Transfer the INPUT LO test lead to pin 50 of A35. Press the RANGE1 switch. **The DMM indicates 0.0020 maximum.** A35.
l.	Transfer the INPUT HI test lead to pin 53 of A35. Transfer the INPUT LO test lead to pin 54 of A35. **The DMM indicates 0.0020 maximum.** A35.
	Remove the test leads from A35. Replace circuit card assembly A35 into the signal processor. Close and secure the cover on the signal processor. Slide the signal processor into the main chassis and secure. Set the MAIN POWER circuit breaker to OFF. Disconnect and deenergize the DMM.

Table 5-3. Signal Processor - Periodic Test Procedures- Continued

Step	Operation Normal indication Corrective procedure
4.	**Digital Clock Pulse Generator A63 (3, Fig. 5-3).**
	Set the MAIN POWER circuit breaker to ON.
	Connect and energize calibration test set TF8-1020. Press and hold the control-indicator STANDBY pushbutton (9, fig. 5-1) for approximately 10 seconds. Set the calibration test set COUNTER switch to EXT and the FUNCTION switch to FREQ.
	Open the signal processor drawer.
	Locate A90J50 (4, fig. 5-3) on the underside of the parent plate. Connect a 10178170-1 probe to pin 59 of A90J50 (6, fig. 5-3). Connect a second 10178170-1 probe to pin 57 of A90J50 (5, fig. 5-3). Connect the black clip of a W8-1032 to the open end of the 10178170-1 probe on pin 57 of A90J50. Connect the red clip of the W8-1032 to the open end of the 10178170-1 probe on pin 59 of A90J50. Connect the BNC end of the W8-1032 to the calibration test set COUNTER IN jack. **The calibration test set counter indicates 5499400 to 5500600.** Digital clock pulse generator (A63). Remove the test leads from the signal processor drawer. Slide the signal processor drawer into its normal operating position and secure. Press the control-indicator OFF pushbutton.
	Deenergize and store the calibration test set. Set the MAIN POWER circuit breaker to OFF.

Table 5-4. ASI BITE Assembly-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	ASI BITE Monitor Meter (2, Fig. 5-4).
a.	Loosen the fasteners and withdraw the azimuth and speed indicator. Set the MAIN POWER circuit breaker (8, fig 5-2) to ON. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the CURRENT/KOHMS test lead into the meter under test (+) jack. Insert the COMMON test lead into the meter under test (-) jack. Set the ASI BITE selector switch (3, fig. 5-4) to MTR CAL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** ASI BITE monitor meter, S1.
b.	Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 0.0285 to 0.0315.** ASI BITE monitor meter.
c.	Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0085 to 0.0i 15.** ASI BITE monitor meter.
d.	Release the TEST switch. Remove the CURRENT/KOHMS test lead from the meter under test. Insert the DC VOLTS test lead into ASI BITE assembly (4, fig. 5-4) test point TP1. Set the ASI BITE selector switch to + 300V-G. Set the FUNCTION switch to VDC. Set the RANGE switch to 4. Adjust the VERNIER control full ccw. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 300 indication on the cal std. **The meter under test indicates 2:3 to 27.** A1, S1.

Table 5-4. ASI BITE Assembly-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
e.	Adjust the VERNIER control full ccw. Set the RANGE switch to 3. Transfer the DC VOLTS test lead to ASI BITE assembly TP2. Set the ASI BITE selector switch to + 200V-G. Adjust the VERNIER control for a 200 indication on the cal std. **The meter under test indicates 2:3 to 27.** A1, S1.
f.	Adjust the VERNIER control full ccw. Transfer the DC VOLTS test lead to ASI BITE assembly TP3. Set the ASI BITE selector switch to + 15OV-G. Adjust the VERNIER control for a 150 indication on the cal std. **The meter under test indicates 23 to 27.** A1, S1.
g.	Adjust the VERNIER control full ccw. Set the RANGE switch to 1. Transfer the DC VOLTS test lead to ASI BITE assembly TP5. Set the ASI BITE selector switch to SWEEP R. Adjust the VERNIER control for a 25 indication on the meter, under test. **The cal std indicates 7.158 to 7.600.** A1, S1.
h.	Transfer the DC VOLTS test lead to ASI BITE assembly TP6. Set the ASI BITE selector switch to SWEEP L. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 7.158 to 7.600.** A1, S1.
i .	Release the TEST switch. Transfer the DC VOLTS test lead to ASI BITE assembly TPI. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Set the ASI BITE selector switch to HVPS-Y. Press and lock the azimuth and speed indicator drawer interlock switch (1, fig. 5-4). Set FILAMENT circuit breaker (7. fig. ;5-2) to ON.

Table 5-4. ASI BITE Assembly-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
i. Cont.	Set BEAM POWER circuit breaker (6,. fig. 5-2) to OFF. Press the control-indicator panel STANDBY pushbutton (9, fig. 5-1). Wait approximately 3 to 5 minutes until RADIATE READY lamp (12, fig. 5-1) illuminates, then press the control-indicator panel RADIATE pushbutton (8, fig. 5-1) and observe that the RADIATE lamp (11, fig. 5-1) illuminates. Record the cal std indication as E. Press the STANDBY pushbutton. Remove the DC VOLTS test lead from TP1. Insert the CURRENT/KOHMS test lead into ASI BITE assembly TP1. Transfer the COMMON test lead to the metal disc on ASI BITE assembly jack J1, located on the rear of the ASI BITE assembly. Momentarily set the DCMA switch to the down position. Press the RADIATE pushbutton. Record the cal std indication as I. Divide the E indication by the I indication. **Calculate 18.87 to 25.13 megohms.** A1, R1. Press the STANDBY pushbutton. Press the OFF pushbutton (10, fig. 5-1). Set the MAIN POWER circuit breaker to OFF. Remove the test leads from the ASI BITE assembly. Slide the azimuth and speed indicator into the main chassis and secure. Deenergize and store the cal std.

Table 5-5. Modulator-Oscillator (OGO)-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**BITE Meter M1 (1, Fig. 5-5).**
a.	Perform procedures prior to application of power and position of controls prior to application of power as contained in TM 9-1430-1528-12-1. Set the fuse and control panel MAIN POWER circuit breaker (8, fig. 5-2) to ON. **The control-indicator panel LINE VOLTAGE meter (2, fig. 5.1) indicates in the green area.** Have the power generator output adjusted.
b.	Open the MO-PA compartment door. Remove rf cable W3P2 (7, fig. 5-6) from the OGO RF OUT jack (5, fig. 5-5). Loosen the fasteners that secure the OGO. Pull the OGO out past the STOP LOCK to completely open the cover, then push the OGO into the normal LOCK position. Loosen the fasteners that secure the OGO transmitter assembly cover, and open the cover. Remove the two screws that secure Al module (1, fig. 5-6) and without removing any cables, carefully remove Al. Disconnect P60 from A12J2 (2 and 3, fig. 5-6). Transfer P61 (4, fig. 5-6) from the dummy connector to A12J2. Set the BITE/CAL-SELECT switch (3, fig. 5-5) to 11. **Connect and energize the cal std.** Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Insert the cal std DC VOLTS test lead into the OGO CALIBRATION + jack (7, fig. 5-5). Insert the cal std COMMON test lead into the OGO CALIBRATION - jack (6, fig. 5-5). Set the LOCAL/REMOTE switch (7, fig. 5-1) to LOCAL. Press and hold the STANDBY pushbutton for 2 seconds. **The cal std indicates 5.94 to 6.06.** Adjust A12R22 (6, fig. 5-6). A12, S1.
c.	Set the BITE/CAL-SELECT switch to 12. **The cal std indicates -5.94 to -6.06.** Adjust A12R19 (5, fig. 5-6). A12, S1.
d.	Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Remove the test leads from the OGO CALIBRATION + and - jacks. Insert the cal std CURRENT/K OHMS test lead into the OGO METER TEST + jack (12, fig. 5-5).

Table 5-5. Modulator-Oscillator (OGO)-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1 *d*. Cont.	Insert the cal std COMMON test lead into the OGO METER TEST - jack (11, fig. 5-5). Set the BITE SELECT switch (2, fig. 5-5) to METER CAL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for the upper limit of the green area on the meter under test. **The cal std indicates 0.0265 to 0.0295.** BITE meter Ml1.
e.	Adjust the VERNIER control for the lower limit of the green area on the meter under test. **The cal std indicates 0.0205 to 0.0235.** BITE meter M1.
f.	Release the TEST switch. Set the BITE/CAL-SELECT switch to 1. Adjust the VERNIER control full ccw. Set the BITE SELECT switch to +43V. Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Disconnect the test leads from the OGO METER TEST + and - jacks. Insert the DC volts test lead into the OGO CALIBRATION + jack. Insert the COMMON test lead into the OGO CALIBRATION - jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a cal std indication of 43.0. **BITE meter M 1 indicates within the green area.** A12, S1, S3.
g.	Release the TEST switch. Adjust the VERNIER control full ccw. Interchange the cal std test leads at the OGO CALIBRATION + and - jacks. Set the BITE/CAL-SELECT switch to 2. Set and hold the TEST switch to NORMAL. Set the BITE SELECT switch to -20V. Adjust the VERNIER control for a cal std indication of 20.0. **BITE meter M1 indicates within the green area.** A12, S1, S3.
h.	Release the TEST switch. Adjust the VERNIER control full ccw. Interchange the cal std test leads at the OGO CALIBRATION + and - jacks. Set the BITE/CAL-SELECT switch to 3.

Table 5-5. Modulator-Oscillator (OGO)-Periodic Test Procedures-Continued

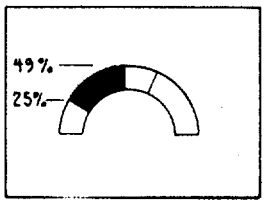
Step	Operation Normal indication Corrective procedure
1*h*.. Cont.	Set the BITE SELECT switch to +20V. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a cal std indication of 20.0. **BITE meter M1 indicates the green area.** A12, S1, S3.
i.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the BITE SELECT switch to CW RF LEVELS. **BITE meter M1 indicates within the shaded area of the meter scale shown below.**  A12, S1, S3.
j.	Set the BITE SELECT switch to CW FREQ. Set the BITE/CAL-SELECT switch to 5. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a BITE meter indication of zero. **The cal std indicates 60.0 to 68.0.** A12, S1, S3.
k.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the BITE SELECT switch to CW CAVITY BIAS. Set the BITE/CAL-SELECT switch to 6. Set the RANGE switch to 4. Set and hold the TEST switch to LO. Adjust the VERNIER control for a BITE meter center-scale indication. **The cal std indicates 260 to 300.0.** A12, S1, S3.
l.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the BITE SELECT switch to CW LOOP NULL. Set the BITE/CAL-SELECT switch to 7. Set the RANGE switch to 2. Set and hold the TEST switch to NORMAL.

Table 5-5. Modulator-Oscillator (OGO)-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1*l*. Cont	Adjust the VERNIER control for a BITE meter indication of zero. **The cal std indicates 60 to 68.00.** A12, S1, S3.
m.	Release the TEST switch. Set the BITE/CAL-SELECT switch to 10. Set the BITE SELECT switch to FM SLOPE LIN. Set the RANGE switch to 1. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a BITE meter indication of zero. **The cal std indicates 9.4 to 10.40.** A12, S1, S3.
n.	Press the OFF pushbutton (10, fig. 5-1). Release the TEST switch. Adjust the VERNIER control full ccw. Remove the DC VOLTS test lead, and connect the CURRENT/K OHMS test lead to the OGO CALIBRATION + jack. Set the BITE SELECT switch to FM LOOP SLOPE. Set the FUNCTION switch to DCMA. Set the BITE/CAL-SELECT switch to 9. Set the RANGE switch to 2. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the BITE meter. **The cal std indicates 0.131 to 0.161.** A1, A12, S1.
o	Release the TEST switch. Adjust the VERNIER control full ccw. Interchange the test leads at the OGO CALIBRATION + and - jacks. Set the BITE SELECT switch to FM GEN SLOPE. Set the BITE/CAL-SELECT switch to 8. Set A1-OPR/TEST switch S1 (8, fig. 5-6) to TEST. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the BITE meter. **The cal std indicates 0.131 to 0.161.** A1, A12, S1. Release the TEST switch. Transfer P61 from A12J2 to the dummy connector. Connect P60 to A12J2.

Table 5-5 Modulator-Oscillator (OGO)-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1*o*. Cont.	Set the A1-OPR/TEST switch S1 to OPR. stall module A1into its normal operating position. Deenergize the cal std. Set the fuse and control panel MAINPOWER circuit breaker to OFF. Close and secure the OGO cover. Close and secure the OGO drawer. Connect cable W3 P2 to the OGO RF OUT jack. Close and secure the MO-PA compartment door.
2.	Ramp Calibration.
a.	Set the MAIN POWER circuit breaker (8, fig. 5-2) to ON. Press and hold the STANDBY pushbutton for 2 seconds. Connect and energize the cal std. Connect and energize calibration test set TF8-1020. Set the calibration test set controls as follows: POWER ..... ON. SIGNAL. ..... 40. SINE..... LO-B. COUNTER..... SINE. FUNCTION..... TIME. Connect cable W-030 from FT-B to SINE-OUT on the calibration test set. Connect the AC VOLTS test lead to the calibration test set FT-A tip jack. Connect the COMMON test lead to the calibration test set DC AMPL METER LO tip jack. Set the FUNCTION switch to MULTR. Momentarily press the VAC switch. Adjust the calibration test set SINE-FREQ control for 24753 to 25252 on the DISPLAY counter. Adjust the calibration test set SINE-LEVEL control for a 0.068 to 0.072 indication on the cal std. Open the MO-PA compartment door. Connect the TNC plug to BNC jack adapters to the OGO SCOPE and CALIBRATION BITE jacks (9 and 8, fig. 5-5). Remove RF cable W3P2 from the OG RF OUT jack. Loosen the fasteners that secure the OGO. Pull the OGO out past the STOP LOCK to completely open the cover, then push the OGO onto the normal LOCK position. Set OGO A1-OPR/TEST switch S1 (8, fig. 5-6) to OPR. Disconnect P17 from AlJ5 (9, fig. 5-6).

Table 5-5. Modulator-Oscillator (OGO)-Periodic Test Procedures--Continued

Step	Operation Normal indication Corrective procedure
2*a*. Cont.	Transfer cable W-030 from the calibration test set FT-B to the OGO CALIBRATION BITE jack. Connect a second cable W-030 between the OGO SCOPE jack and the calibration test set FT-B jack. Transfer the COMMON test lead to the OGO CALIBRATION - jack. Set the SLOPE LINEARITY switch (10, fig. 5-5) to SLOPE. **The cal std indicates 0.338 to 0.403.** A1.
b.	Set the SLOPE LINEARITY switch to LINEARITY. **The cal std indicates 4.421 to 5.873.** A1. Remove cables and adapters. Deenergize and store the cal std. Connect P17 to A1J5. Deenergize and store the calibration test set. Close and secure the OGO cover, then close and secure the OGO. Connect cable W3P2 to OGO RF OUT jack. Close and secure the MO-PA compartment door. Press the OFF pushbutton.

Table 5-6. Microwave BITE Assembly--Periodic Test Procedure

Step	Operation Normal indication Corrective procedure
	BITE MONITOR Meter (1, Fig. 5-7).
a.	Set the MAIN POWER CIRCUIT breaker (8, fig. 5-2) to ON. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into the METER CAL + jack (6, fig. 5-7). Insert the COMMON test lead into the METER CAL - jack (4, fig. 5-7). Set the BITE FUNCTIONS-TUNE FUNCTIONS selector switch (2, fig. 57) to MTR CAL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** BITE MONITOR meter, S1.
b.	Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 0.0240 to 0.0260.** BITE MONITOR meter.
c.	Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0085 to 0.0115.** BITE MONITOR meter.
d.	Release the TEST switch. Adjust the VERNIER control full ccw. Loosen the fasteners, and open the MICROWAVE BITE door (3, fig. 5-7). Remove connector W1 P10 from J1 (5, fig. 5-7). Set the RANGE switch to 2. Transfer the COMMON test lead to the BITE FUNCTIONS-TUNE FUNCTIONS switch S1-C wiper arm. Set the selector switch to BITE FUNCTIONS PA DR-G. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 0.044:3 to 0.05:131.** R1-R3 Release the TEST switch. Remove the test leads from the microwave BITE assembly.

Table 5-6. Microwave BITE Assembly - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
d. Cont.	Connect W1 P10 to J1. Close and secure the MICROWAVE BITE door. Set the MAIN POWER circuit breaker to OFF. Deenergize and store the cal std.

Table 5-7. High- Voltage Power Supply -- Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	HVPS BITE.
a.	Set the MAIN POWER circuit breaker (8, fig. 5-2) to ON. Connect and energize the cal std. Set the high-voltage power supply FUNCTION SELECT I switch (3, fig. 5-8) to OFF. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Connect the cal std CURRENT/K OHMS test lead to the MTR CAL + jack (12, fig. 5-8). CONNECT the common test lead to the MTR CAL - jack (13, fig. 5-8). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a full-scale positive indication on the meter under test (1, fig. 5-8). **The cal std indicates 0.024 to 0.0260.** M1, S8.
b.	Adjust the VERNIER control for a +20 indication on the meter under test. **The cal std indicates 0.019 to 0.0210.** M1.
c.	Adjust the VERNIER control full ccw. Interchange the cal std test leads at the MTR CAL + and - jacks. Adjust the VERNIER control for a full-scale negative indication on the meter under test. **The cal std indicates 0.024 to 0.0260.** M1.
d.	Adjust the VERNIER control for a -20 indication on the meter under test. **The cal std indicates 0.019 to 0.0210.** M1.

Table 5-7. High Voltage Power Supply - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE **If MWO 9-4900-1525-50/06 has been applied, perform steps e through j. If MWO 9-4900-1525-50/06 has not been applied, proceed to step *k*.**
e.	Release the TEST switch. Remove the test leads from the MTR CAL + and - jacks. Loosen the fasteners that secure the high-voltage power supply, and withdraw the unit. Loosen the fasteners that secure the cover on the high-voltage power supply, and remove the cover. **WARNING j** **High voltage may be present. Use the shorting bar to short the terminals of uut capacitors C1, C2, C6, C7, and C8 to the Hilt chassis.** Set the FUNCTION SELECT I switch to 1. Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Insert the cal std COMMON test lead into the MTR CAL - jack. Remove circuit cards A9 and A10 from the uut. Insert pin 60 of TA8-1029 into uut connector A9-1. Insert the cal std DC VOLTS test lead into TP-19 of TA8-1029. Set and hold the cal std TEST switch to NORMAL. Press and hold the FUNCTION EXTEND switch (2, fig. 5-8). Adjust the cal std VERNIER control for a 15 indication on the meter under test. **The cal std indicates 17.29 to 21.84.** M1, R33, S1, S6.
f.	Release the TEST and FUNCTION EXTEND switches. Adjust the VERNIER control full ccw. Transfer the COMMON test lead to TP-12 on TA8-1029. Transfer the DC VOLTS test lead to the MTR CAL - jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a -10 indication on the meter under test. **The cal std indicates 53.01 to 71.6.** M1, R24, S1, S6.

Table 5-7. High-Voltage Power Supply - Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
g.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the FUNCTION SELECT I switch to 2. Set the RANGE switch to 1. Remove the COMMON test lead from TP-12 of TA8-1029. Remove TA8-1029 from the uut. Replace circuit cards A9 and AO1 into the uut. Remove circuit card All from the uut. Insert TA8-1029 into the uut with pin 60 of TA8-1029 inserted into uut connector All-1. Insert circuit card All into the top connector of TA8-1029 with pin 1 of All inserted into pin 60 of TA8-1029. Insert the COMMON test lead into TP-11 of TA8-1029. Set and hold the TEST switch to NORMAL. Press and hold the FUNCTION EXTEND switch. Adjust the VERNIER control for a - 10 indication on the meter under test. **[1]The cal std indicates 0.89 to 1.113.** **[2]The cal std indicates 0.66 to 0.84.** M1, R32, S1.
h.	Release the TEST and FUNCTION EXTEND switches. Adjust the VERNIER control full ccw. Remove the DC VOLTS test lead from the MTR CAL - jack. Insert the COMMON test lead into the MTR CAL - jack. Insert the DC VOLTS test lead into TP-15 of TA8-1029. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.89 to 1.113.** M1, R23, S1.
i	Release the TEST switch. Remove the DC VOLTS test lead from TP-15 of TAS-1029. Remove TA8-1029 from the uut. Replace circuit card All into the uut. Adjust the VERNIER control full ccw. Set the FUNCTION SELECT I switch to 3. Remove circuit card Al from the uut. Insert TA8-1029 pin 31 into uut connector A1-31. Insert the DC VOLTS test lead into TP-11 of TA8-1029.

[1]Applies to HVPS 11510628 only.
[2]Applies to HVPS 13038900 only.

Table 5-7. High-Voltage Power Supply- Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
i. Cont.	Press and hold the FUNCTION EXTEND switch. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 15 indication on the meter under test. **The cal std indicates 10.90 to 13.78.** R27, S1. Remove the TEST and FUNCTION EXTEND switches. Remove TA8-1029 from the uut. Replace circuit card Al into the uut.
j.	Repeat step *i* for FUNCTION SELECT I switch positions 4,5,6, and 7, removing A2, A3, A4, and A5, respectively. Remove the DC VOLTS test lead from TP-11 on TA8-1029. Remove the COMMON test lead from the MTR CAL - jack. Proceed to step *q*.
k.	Release the TEST switch. Remove the test leads from the MTR CAL + and - jacks. Loosen the fasteners that secure the high-voltage power supply, and withdraw the unit. Loosen the fasteners that secure the cover on the high-voltage power supply, and remove the cover. **WARNING I** **High voltage may still be present. Use the shorting bar to short the terminals of uut capacitors C1, C2, C6, C7, and C8 to the uut chassis.** Set the FUNCTION SELECT I switch to 1. Set the FUNCTION switch to VDC. Set the RANGE switch to 2. **NOTE** **Test probe adapter 11569840 must be acquired from test set TFS1019 to be used with cal std test leads until this adapter is installed in calibration test set TF8-1020.** Insert the COMMON test lead into the MTR CAL - jack. Place the DC VOLTS test lead, using probe adapter 11569840, on tie point E85 (2, fig. 5-9). Set and hold the TEST switch to NORMAL. Press and hold the FUNCTION EXTEND switch.

Table 5-7 High Voltage Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
k. Cont.	Adjust the VERNIER control for a 15 indication on the meter under test. **The cal std indicates 17.29 to 21.84**. M1, R33, S1, S6.
l.	Release the TEST and FUNCTION EXTEND switches. Adjust the VERNIER control full ccw. Remove the COMMON test lead from the MTR CAL - jack. Transfer probe adapter 11569840 to the COMMON test lead. Insert the DC VOLTS test lead into the MTR CAL - jack. Place and hold the COMMON test lead on tie point E104 (10, fig. 5-9), using the probe adapter. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a -10 indication on the meter under test. **The cal std indicates 53.01 to 71.6.** M1, R24, S1, S6.
m.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the FUNCTION SELECT I switch to 2. Set the RANGE switch to 1. Transfer the COMMON test lead, with the probe adapter attached, to tie point E73 (9, fig. 5-9). Set and hold the TEST switch to NORMAL. Press and hold the FUNCTION EXTEND switch. Adjust the VERNIER control for a -10 indication on the meter under test. **The cal std indicates 0.89 to 1.113.** M1, R32, S1.
n.	Release the TEST and FUNCTION EXTEND switches. Adjust the VERNIER control full ccw. Remove the DC VOLTS test lead from the MTR CAL - jack. Transfer probe adapter 11569840 to the DC VOLTS test lead. Insert the COMMON test lead into the MTR CAL - jack. Place and hold the DC VOLTS test lead on tie point E50 (15, fig. 5-9), using the probe adapter. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.89 to 1.113.** M1, R23, S1. Release the TEST switch.

Table 5-7 High Voltage Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
o.	Adjust the VERNIER control full ccw. Set the FUNCTION SELECT I switch to 3. Remove circuit Al from the uut. Transfer the DC VOLTS test lead, with the probe adapter attached, to tie point E31 (21, fig. 5-9). Set and hold the TEST switch to NORMAL. Press and hold the FUNCTION EXTEND switch. Adjust the VERNIER control for a 15 indication on the meter under test. **The cal std indicates 10.90 to 13.78** R27, S1. Release the TEST and FUNCTION EXTEND switches. Replace circuit card Al into the uut.
p.	Repeat step o for FUNCTION SELECT I switch positions 4, 5, 6, and 7, removing circuit cards A2, A3, A4, and A5, and using tie points E36, E9, E15, and E42 (20,19,16, and 17, fig. 5-9), respectively. Remove probe adapter 11569840 from the DC VOLTS test lead. Remove the COMMON test lead from the MTR CAL - jack.
q.	Adjust the VERNIER control full ccw. Set the FUNCTION SELECT I switch to 3. Disconnect the brown wire from TB1-16 (18, fig. 5-9). Connect the COMMON test lead to TB1-16. Insert the DC VOLTS test lead into the MTR CAL - jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a -10 indication on the meter under test. **The cal std indicates 3.86 to 4.54.** A11, S1. Release the TEST switch. Remove the COMMON test lead from TB1-16. Connect the brown wire on TBl-16.
r.	Repeat step q for FUNCTION SELECT I switch positions 4, 5, 6, and 7, using terminal board TBl-10, -8, -5, and -1, respectively. Adjust the VERNIER control full ccw. Remove the DC VOLTS test lead from the MTR CAL - jack. Insert the COMMON test lead into the MTR CAL - jack. Set the FUNCTION SELECT I switch to 9. Connect and energize DMM 10177187.

Table 5-7 High Voltage Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
r. Cont	Connect the DMM INPUT HI test lead to the junction of R36 and R37 (11.1, fig. 5-9) and the INPUT LO test lead to chassis ground. Press the DMM VDC switch. Press the DMM RANGE 1 switch. Set the cal std RANGE switch to 5. Set the cal std FUNCTION switch to VDC. Transfer the cal std DC VOLTS test lead to TB2-1 (11, fig. 5-9). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 400 indication on the cal std. **The DMM indicates 0.388 to 0.412.** R26, R36, R37, S1.
s.	Adjust the VERNIER control full ccw. Release the TEST switch. Set the FUNCTION SELECT I switch to 11. Transfer the INPUT HI test lead to the junction of R53 and R54 (11.2, fig. 5-9). Transfer the DC VOLTS test lead from TB2-1 to the junction of C7 and L4-2 (13.1, fig. 5-9). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 400 indication on the cal std. **The DMM indicates 0.0730 to 0.0780.** R25, R46-R49, R53, R54, S1, S6.
t.	Adjust the VERNIER control full ccw. Release the TEST switch. Disconnect the DC VOLTS test lead from the junction of C7 and L4-2. Disconnect the DMM test leads. Set the cal std RANGE switch to 1. Set the cal std FUNCTION switch to VAC. Connect the cal std AC VOLTS test lead to the junction of C4 and R43 (14, fig. 5-9). Set and hold the TEST switch to NORMAL. Press and hold the FUNCTION EXTEND switch. Adjust the VERNIER control for a 6.5 indication on the meter under test (leading edge of green band). **The cal std indicates 2.74 to 3.35.** C4, C9, CR35, R42, R43, VR1.

Table 5-7 High Voltage Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
u.	Release the TEST and FUNCTION EXTEND switches. Remove the AC VOLTS test lead from the junction of C4 and R43. Loosen the screws, and open the calibration cover (4, fig. 5-8). Set the cal std FUNCTION switch to MULTR. Momentarily set the cal std VDC switch to the down position. Insert the DC VOLTS test lead into TP1 (11, fig. 5-8). Insert the COMMON test lead into TP3 (9, fig. 5-8). Replace and secure the high-voltage power supply cover. Close and secure the high-voltage power supply drawer. Set the FILAMENT circuit breaker (7, fig. 5-2) to ON. Press and hold the STANDBY pushbutton (9, fig. 5-1) for 5 seconds. **The cal std indicates 3.578 to 3.584.** Adjust R64 (6, fig. 5-8).
v.	Remove the DC VOLTS test lead from TP1. Remove the COMMON test lead from TP3. Press the DMM VDC switch. Press the DMM RANGE 1 switch. Connect the INPUT LO test lead to TP5 (7, fig. 5-8). Connect the INPUT HI test lead to TP2 (10, fig. 5-8). **The DMM indicates -0.97 to - 1.200.** VR3, R66, R67.
w.	Press the OFF pushbutton (10, fig. 5-1). Loosen the fasteners that secure the high-voltage power supply, and withdraw the unit. Loosen the fasteners that secure the cover on the high-voltage power supply, and remove the cover. **WARNING** **High voltage may still be present. Use the shorting bar to short the terminals of uut capacitors C1, C2, C6, C7, and C8 to the uut chassis.** Connect the DC VOLTS test leads to the junction of R52 and R56 at the top of R56 (13, fig. 5-9). Set the cal std FUNCTION switch to VDC. Set the cal std RANGE switch to 5. Transfer the COMMON test lead to the MTR CAL - jack. Transfer the INPUT HI test to TP4 (8, fig. 5-8). Press and hold the TEST switch to NORMAL.

Table 5-7 High Voltage Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
w. Cont.	Adjust the VERNIER control for a 435.0 indication on the cal std. **The DMM indicates 0.097 to 0.1200.** Adjust R60 (5, fig. 5-8). R56-R61. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the high-voltage power supply. Deenergize and store DMM. Deenergize and store the cal std. Set the MAIN POWER and FILAMENT circuit breakers to OFF. Close and secure the calibration cover. Replace and secure the high-voltage power supply cover. Close and secure the high-voltage power supply.

Table 5-8. Receiver-Transmitter BITE Assembly - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**BITE Monitor Meter MI (2, fig. 5-10).**
a.	Connect and energize the cal std. Set the MAIN POWER circuit breaker (8, fig. 5-2) to ON. Loosen the fasteners and remove the receiver-transmitter BITE assembly (radar test set group), from the main chassis. Set the BITE/UPPER RCVR switch (3, fig. 5-10) to MTR CAL. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into the meter under test (+) jack. Insert the COMMON test lead into the meter under test (-) jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** M1, A10.

Table 5-8. Receiver-Transmitter BITE Assembly-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1*b.*	Adjust the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to SEARCH SB FILTER. Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 0.0285 to 0.0315.** M1, A10.
c.	Adjust the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to BIAS-Y SB FILTER. Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0085 to 0.0115.** M1, A10.
d.	Set the BITE/UPPER RCVR switch to OFF. Set the XMTR switch (1, fig. 5-10) to GATING-B (W). Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 0.0085 to 0.0115.** M1, A9.
e.	Release the TEST switch. Remove the CURRENT/K OHMS test lead from the meter under test. Insert the DC VOLTS test lead into the meter under test (+) jack. Set the FUNCTION switch to VDC. Set the XMTR switch to NO FAIL-W. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 4.500 to 4.850.** A9.
f.	Adjust the VERNIER control full ccw. Set the XMTR switch to POWER-W. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.2630 to 0.3060.** A9.
g.	Adjust the VERNIER control full ccw. Set the XMTR switch to CW (FM) - W (B). Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 1.490 to 1.640.** A9.

Table 5-8. Receiver-Transmitter BITE Assembly-Periodic Test Procedures--Continued

Step	Operation Normal indication Corrective procedure
1*h*.	Adjust the VERNIER control full ccw. Set the XMTR switch to G-REF PWR. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.8800 to 0,9800.** A9.
i.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the XMTR switch to XTAL I. Loosen the fasteners and remove the cover from the top of the receiver-transmitter BITE assembly (4, fig. 5-10). Loosen the fasteners and remove the inner cover. Remove the A8 circuit card (5, fig. 5-10). Connect a 10178444-1 electrical clip to test point E20 (4.1, fig. 5-10). Transfer the DC VOLTS test lead to the open end of the electrical clip on test point E20. Transfer the COMMON test lead to meter under test (+) jack. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 10.60 to 11.50.** A9.
j.	Release the TEST switch. Adjust the VERNIER control full ccw. Transfer the COMMON test lead to the meter under test (-) jack. Transfer the DC VOLTS test lead to the meter under test (+) jack. Replace the A8 card and cover: Replace the top cover on the receiver-transmitter BITE assembly and secure. Set the XMTR switch to XTAL V. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 4.80 to 5.200.** A9.
k.	Adjust the VERNIER control full ccw. Set the XMTR switch to DISC TUNE. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.0510 to 0.0840 .** A9.

Table 5-8. Receiver-Transmitter BITE Assembly-Periodic Test Procedure Continued

Step	Operation Normal indication Corrective procedure
1*l*.	Set the XMTR switch to NOISE CAL. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 11.40 to 12.40.** A9.
m.	Adjust the VERNIER control full ccw. Set the XMTR switch to < 14-NOISE. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.6000 to 0.6700.** A9.
n.	Adjust the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to A RO QUAD-<8. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.4370 to 0.5910.** A10.
o.	Adjust the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to B RO QUAD-<8. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.4370 to 0.5910.** A10.
p.	Set the BITE/UPPER RCVR switch to RO-Y. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 1.675 to 1.840.** A10.
q.	Adjust the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to SSB PWR-> 5. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.5600 to 0.6290.** A10.
r.	Set the BITE/UPPER RCVR switch to NOISE CUR-B (Y). Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 3.430 to 3.710.** A10.
s.	Adjust the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to RCVR BLNK 1-B (W).

Table 5-8. Receiver-Transmitter BITE Assembly-Periodic Test Procedure Continued

Step	Operation Normal indication Corrective procedure
1s. Cont.	Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 0.5140 to 0.5800.** A10.
t.	Set the BITE/UPPER RCVR switch to RCVR BLNK 2-Y. Adjust the VERNIER control for a 50 indication on the meter under test. **The cal std indicates 3.860 to 4.200.** A10.
u.	Set the VERNIER control full ccw. Set the BITE/UPPER RCVR switch to SP BLK B. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 2.286 to 2.427.** A10.
v.	Set the BITE/UPPER RCVR switch to SP BLK A. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 2.260 to 2.500.** A10.
w.	Set the BITE/UPPER RCVR switch to SP OSC COM 3. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 2.260 to 2.500.** A10.
x.	Set the BITE/UPPER RCVR switch to SP OSC COM 2. Adjust the VERNIER control for a 25 indication on meter under test. **The cal std indicates 2.260 to 2.500.** A10.
y.	Set the BITE/UPPER RCVR switch to SP OSC COM 1. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 2.260 to 2.500.** A10.
z.	Set the BITE/UPPER RCVR switch to. SP OSC OUT. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 2.260 to 2.500.** A10.

Table 5-8. Receiver-Transmitter BITE Assembly-Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1*aa*.	Set the BITE/UPPER RCVR switch to W-NO FAIL. Adjust the VERNIER control for a 25 indication on the meter under test. **The cal std indicates 2.260 to 2.500.** A10. Release the TEST switch. Remove the test leads from the receiver-transmitter BITE assembly. Replace the receiver-transmitter BITE assembly into the main chassis and secure. **Set MAIN POWER circuit breaker (8, fig. 5-2) to OFF.** **Disconnect and deenergize cal std.**
2.	**Noise Calibration.**
***a*.**	**Set the MAIN POWER circuit breaker (8, fig. 5-2 to ON.** **Press and hold the STANDBY pushbutton (9, fig. 5-1) for 2 seconds.** **Open the MO-PA compartment door.** **Connect and energize the cal std.** **Connect and energize calibration test set TF8-1020.** Set the calibration test set controls as follows: POWER. ..... ON. SIGNAL ..... 6480. SINE ..... LO-B. COUNTER ..... SINE. FUNCTION ..... FREQ. Connect a TNC adapter to the OGO MW CAL jack (4, fig. 5-5). Connect cable W-030 between the calibration test set SINE OUT jack and adapter on the OGO MW CAL jack. Connect a second TNC adapter to the OGO SCOPE jack (9, fig. 5-5). Connect a second W-030 between the OGO SCOPE jack and the calibration test set FT B jack. Adjust the calibration test set FREQ control for a DISPLAY indication of 6470 to 6490. Set the OGO SLOPE/LINEARITY switch (10, fig. 5-5) to SLOPE. Set the FUNCTION switch to MULTR. Momentarily press the VAC switch to the down position. Connect the COMMON test lead to the OGO CALIBRATION - jack (6, fig. 5-5). Connect the AC VOLTS test lead to the calibration test set FT A jack. Adjust the calibration test set SINE LEVEL control for a 0.043 to 0.045 indication on the cal std.

Table 5-8. Receiver-Transmitter BITE Assembly-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2*a*, Cont.	Set the FILAMENT and BEAM POWER circuit breakers (7 and 6, fig. 52) to ON and the AZIMUTH AMPLIDYNE circuit breaker (5, fig. 5-2) to OFF. When the RADIATE READY lamp (12, fig. 5-1) illuminates, press the RADIATE pushbutton (8, fig. 5-1) for 2 seconds. Set the XMTR switch (1, fig. 5-10) to DISC TUNE. Perform the discriminator tuning procedure contained in TM 9-1430-1528-12-1. Set the XMTR switch to NOISE CAL. Adjust the FM NOISE CALIBRATE control R1 (6, fig. 5-10) for a 19- to 21-ua indication on the BITE monitor meter (2, fig. 5-10). Remove cable W-030 from the OGO MW CAL jack. Set the XMTR switch to < 14-NOISE. **The BITE monitor meter indicates 14 pa maximum.** Perform the fault isolation procedures in TM 9-1430-1528-12-2. Press the control-indicator panel STANDBY pushbutton. Press the control-indicator panel OFF switch. **Set the fuse and control panel MAIN POWER, FILAMENT, and BEAM POWER circuit breakers to OFF.** Deenergize and store the cal std. Remove the calibration test set cables and adapters from the CWAR. **Close and secure the receiver-transmitter compartment door.** **Close the MO-PA compartment door.** Secure and store the calibration test set.

Table 5-9. Antenna Pedestal-Periodic Test Procedures

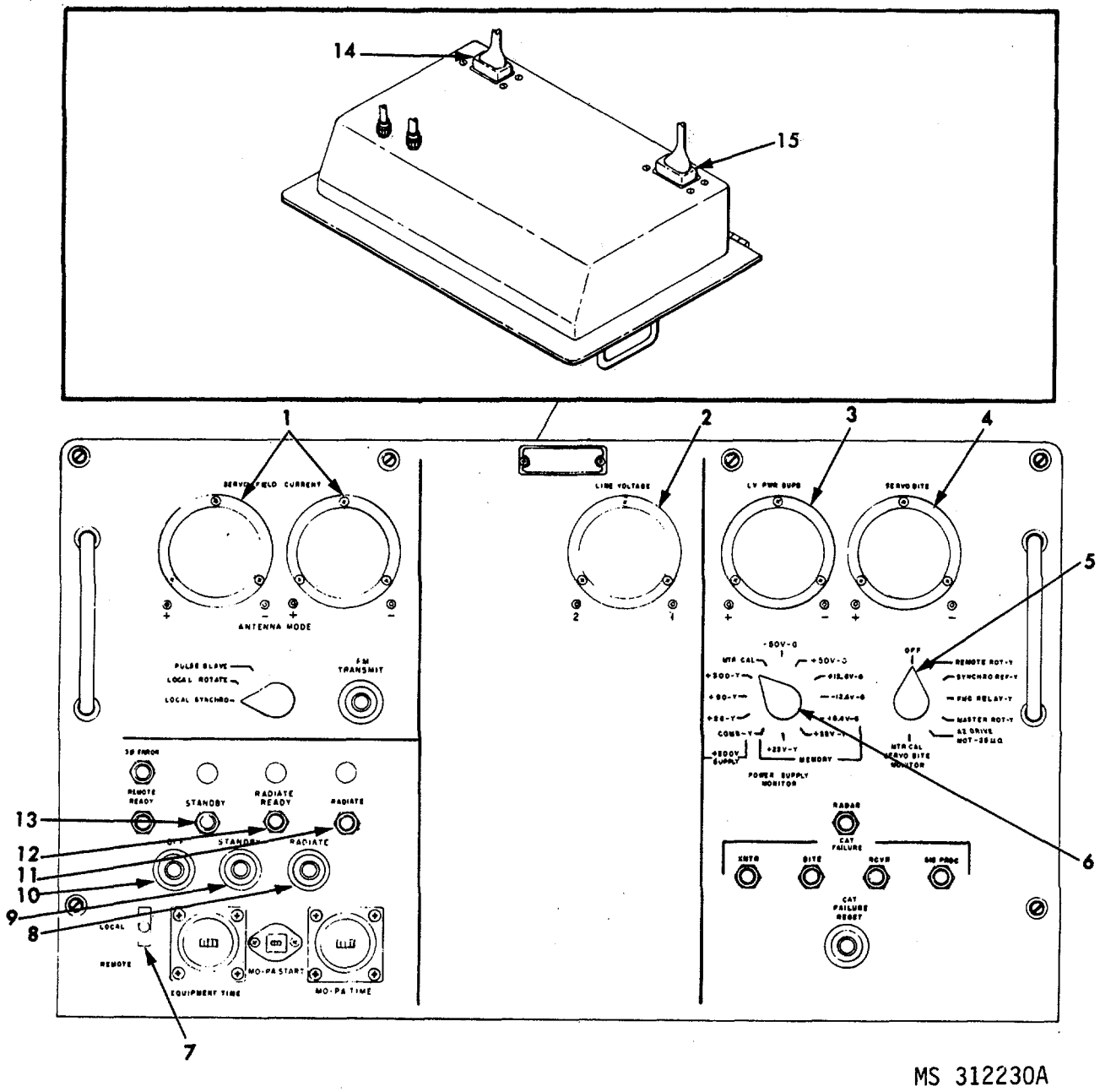
Step	Operation Normal indication Corrective procedure
a.	**Set the MAIN POWER circuit breaker (8, fig. 5-2) to ON.** **Connect and energize the cal std.**
	Open the access cover on the rear of the antenna pedestal. Remove the SYNCHRO BUS fuse (4, fig. 5-2). Set the FUNCTION switch to VAC. Set the RANGE switch to l. Adjust the VERNIER full ccw. Insert the COMMON test lead into METER CAL jack TP1 (4, fig. 5-11). Insert the AC VOLTS test lead into METER CAL jack TP2 (3, fig. 5-11). Set BITE switch S2 (2, fig. 5-11) to MTR CAL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control-for a 6 indication on the meter under test (lower scale). **The cal std indicates 5.700 to 6.300.** M1, S2.
b.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 2. Set BITE switch S2 to A AZ COM. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 30 indication on the meter under test. The cal std indicates 41.65 to 46.75. M1, R6, S2.
c.	Set BITE switch S2 to B AZ COM. Adjust the VERNIER control for a 30 indication on the meter under test. The cal std indicates 37.35 to 51.15. M1, R7, S12
d.	Adjust the VERNIER control full ccw. Set BITE switch S2 to A AZ ERR. Adjust the VERNIER Control for a 20 indication on the meter under test. The cal std indicates 24.90 to 34.10. M1, R8, S2.

Table 5-9. Antenna Pedestal-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
e.	Set BITE switch S2 to B AZ ERR. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 24.90 to 34.10.** R9, S2.
f.	Adjust the VERNIER control full ccw. Set BITE switch S2 to ALIGN COARSE. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 16.90 to 23.00.** R10, S2.
g.	Adjust the VERNIER control full ccw. Set the RANGE switch to 1. Set BITE switch S2 to ALIGN FINE. Adjust the VERNIER control for a 6 indication on the meter under test (lower scale). **The cal std indicates 5.700 to 6.300.** S2.
h.	Adjust the VERNIER control full ccw. Release the TEST switch. Set the RANGE switch to 2. Set BITE switch S2 to A AZ REF #1. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 24.90 to 34.10.** R11, S2.
i.	Set BITE switch S2 to B AZ REF #1. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 24.90 to 34.10.** R12, S2.
j.	Set BITE switch S2 to A AZ REF #2. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 24.90 to 34.10.** R13, S2.

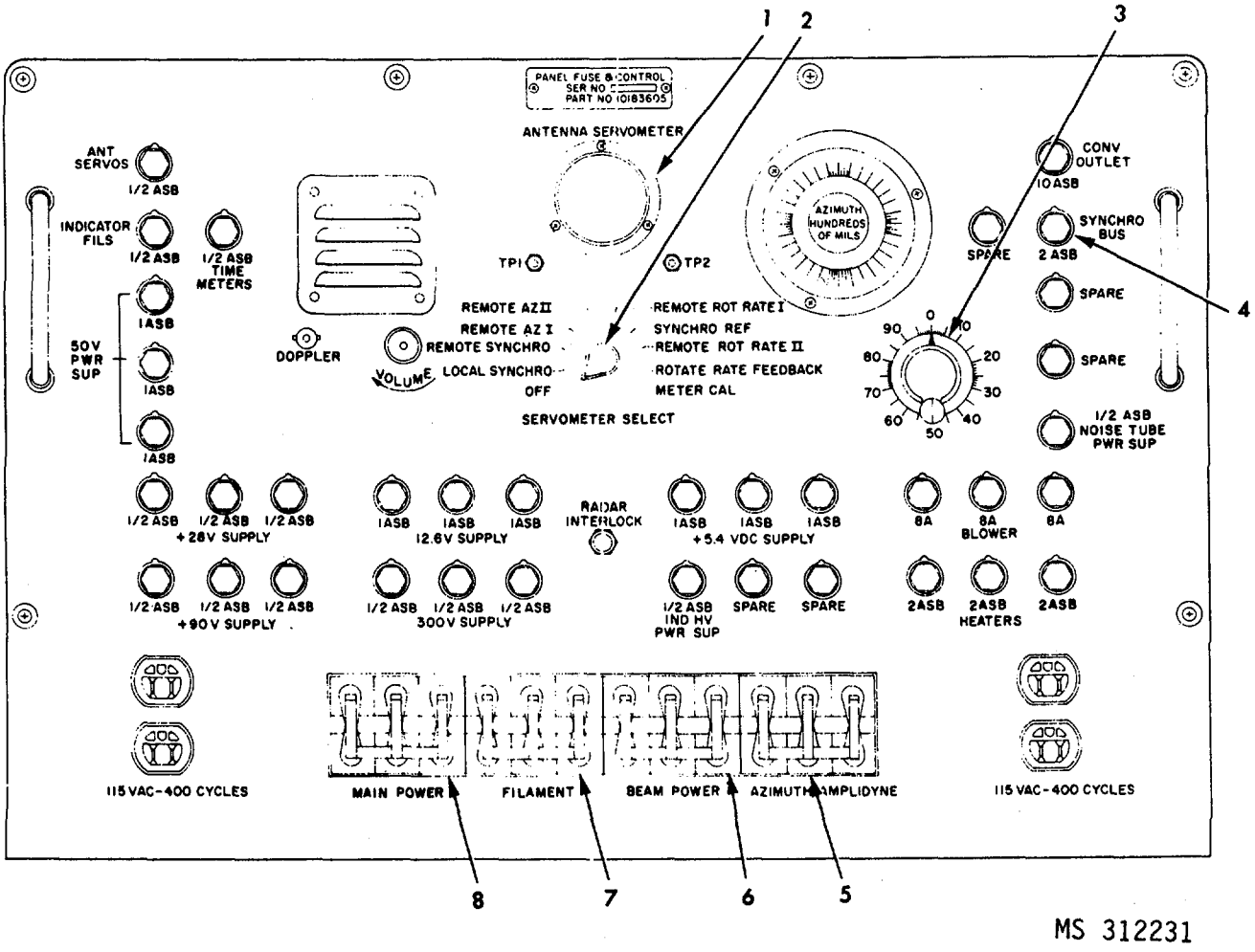
Table 5-9. Antenna Pedestal-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
k.	Set BITE switch S2 to B AZ REF #2. Adjust the VERNIER control for a 20 indication on the meter under test. **The cal std indicates 24.90 to 34.10.** R14, S2. Release the TEST switch. Remove the test leads from the meter under test. Set BITE switch S2 to OPERATE. Close and secure the antenna pedestal access cover. Set the MAIN POWER circuit breaker to OFF. Replace the previously removed SYNCHRO BUS fuse into the fuse and control panel. Deenergize and store the cal std.



1 — SERVO FIELD CURRENT meters
2 — LINE VOLTAGE meter
3 — LV PWR SUPS meter
4 — SERVO BITE meter
5 — SERVO BITE MONITOR switch
6 — POWER SUPPLY MONITOR switch
7 — LOCAL/REMOTE switch
8 — RADIATE pushbutton
9 — STANDBY pushbutton
10 — OFF pushbutton
11 — RADIATE lamp
12 — RADIATE READY lamp
13 — STANDBY lamp
14 — J1
15 — J2

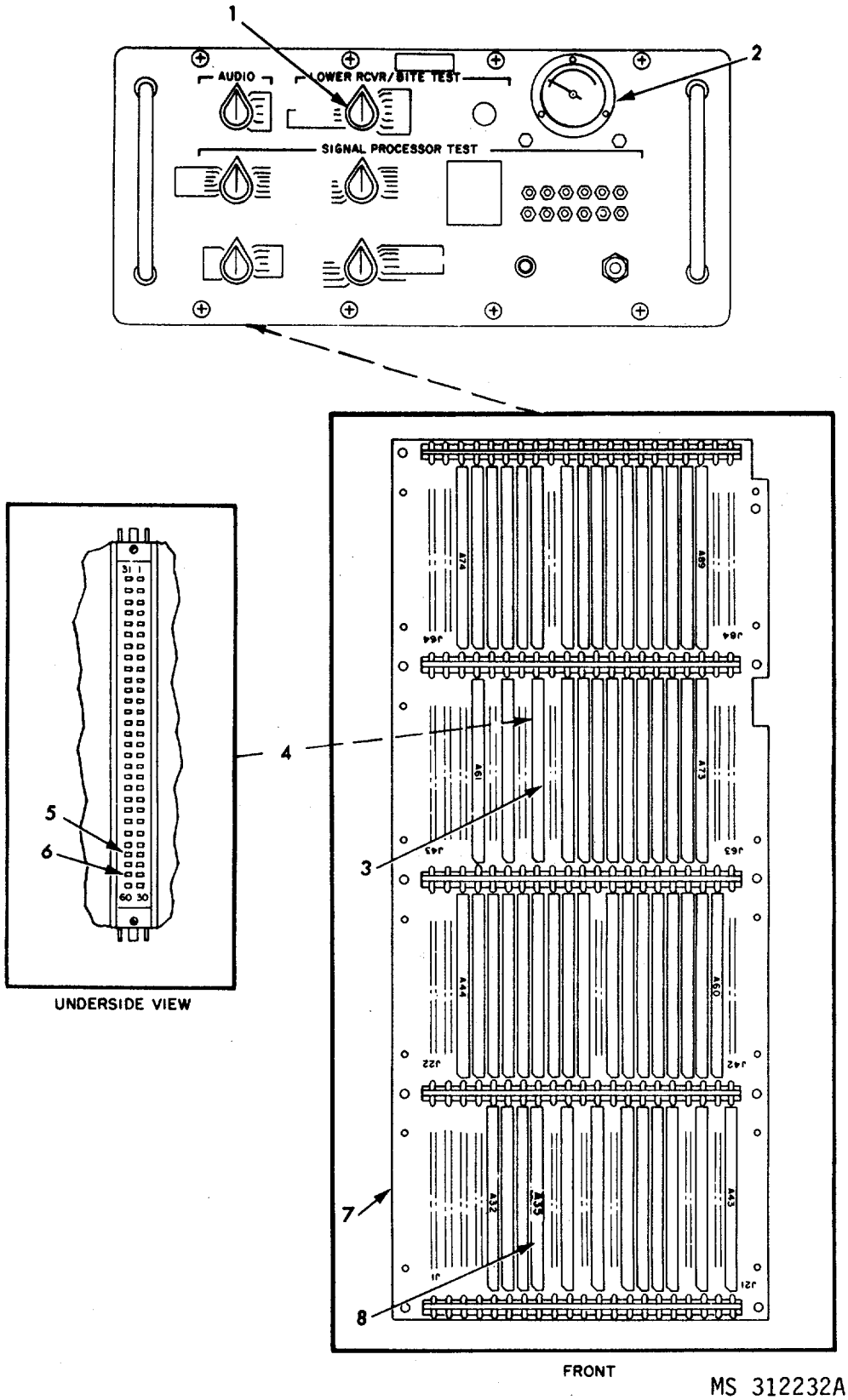
Figure 5-1. Control-indicator panel.



MS 312231

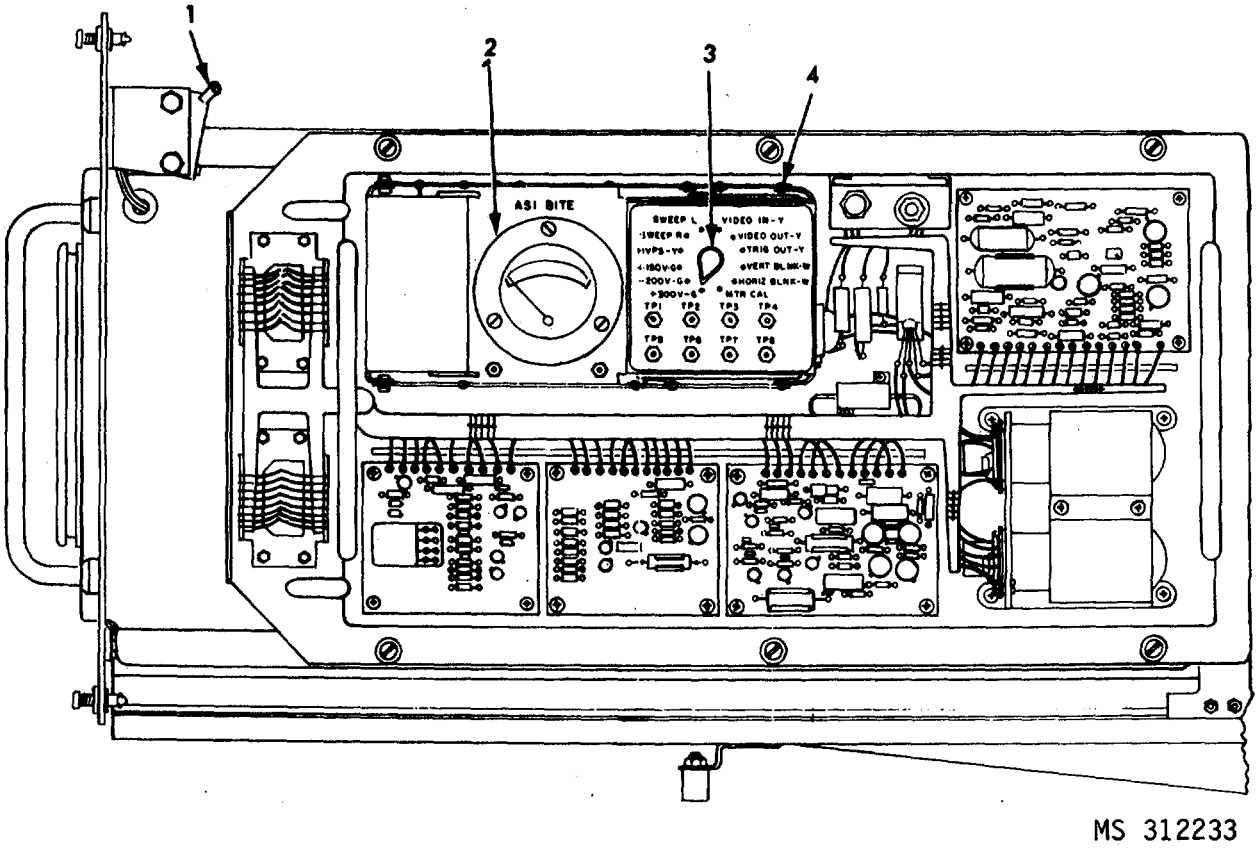
1 — ANTENNA SERVOMETER
2 — SERVOMETER SELECT switch
3 — Azimuth handwheel
4 — SYNCHRO BUS fuse
5 — AZIMUTH AMPLIDYNE circuit breaker
6 — BEAM POWER circuit breaker
7 — FILAMENT circuit breaker
8 — MAIN POWER circuit breaker

Figure 5-2. Fuse and control panel.



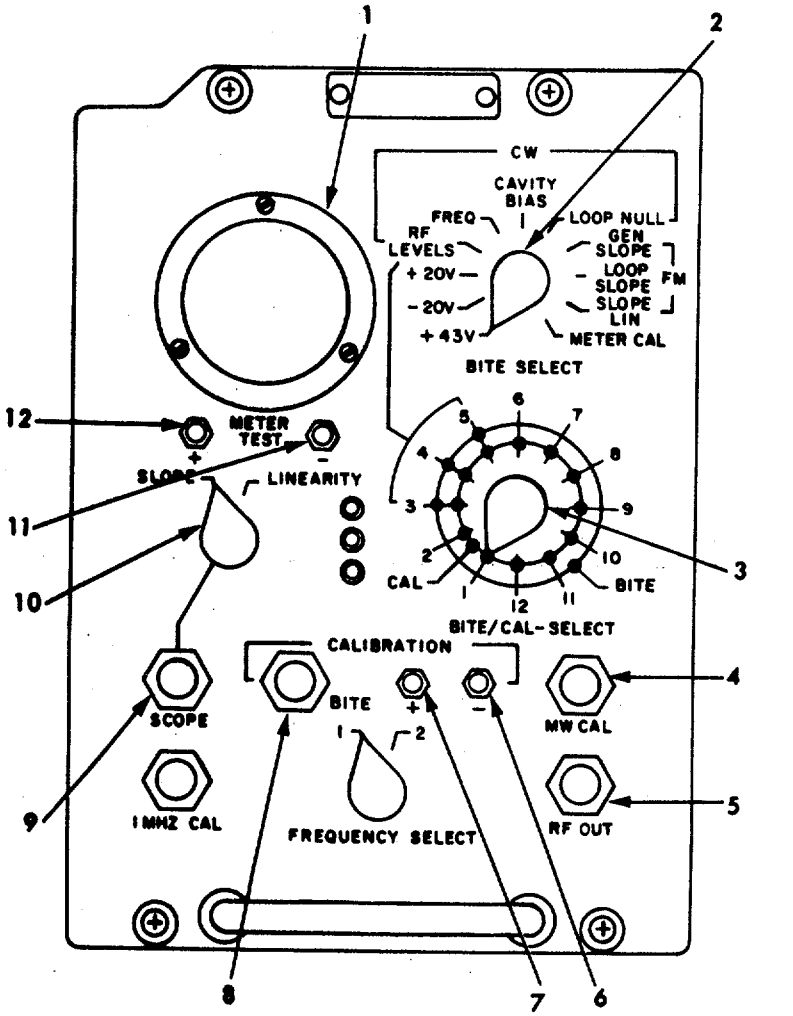
1 — LOWER RCVR/BITE TEST switch
2 — METER TEST meter
3 — Digital clock pulse generator A63
4 — A90J50
5 — A90J50-57
6 — A90J50-59
7—A90 board
8—Circuit card A35

Figure 5-3. Signal processor



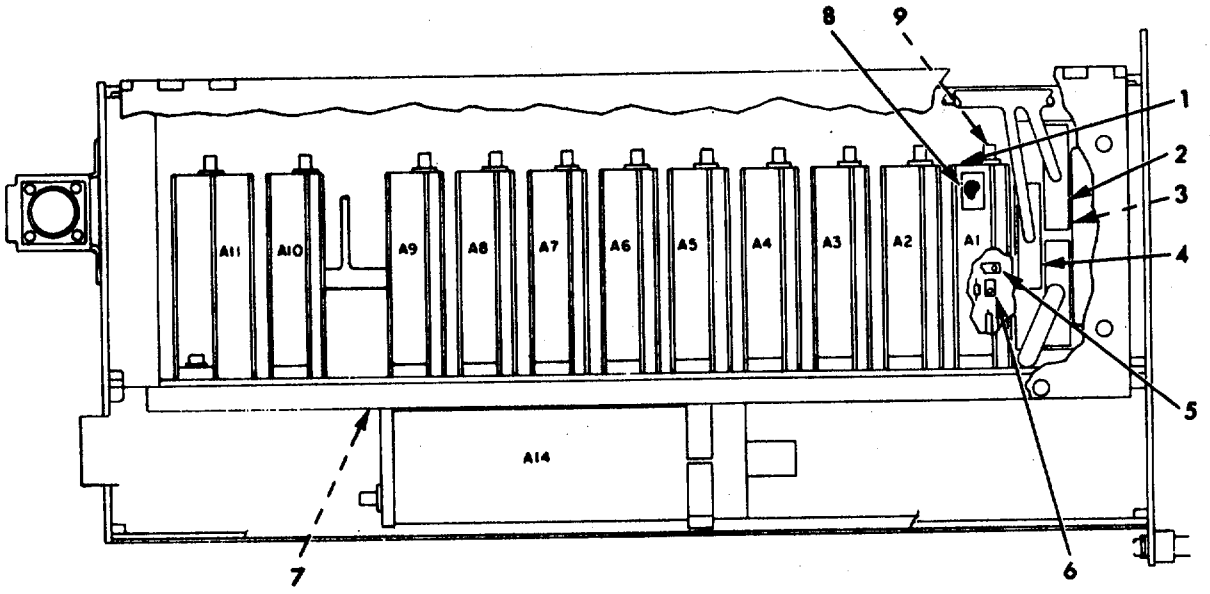
1 — Interlock switch
2 — ASI BITE monitor meter
3 — ASI BITE selector switch
4 — ASI BITE assembly

Figure 5-4. Vertical amplifier and threshold control.



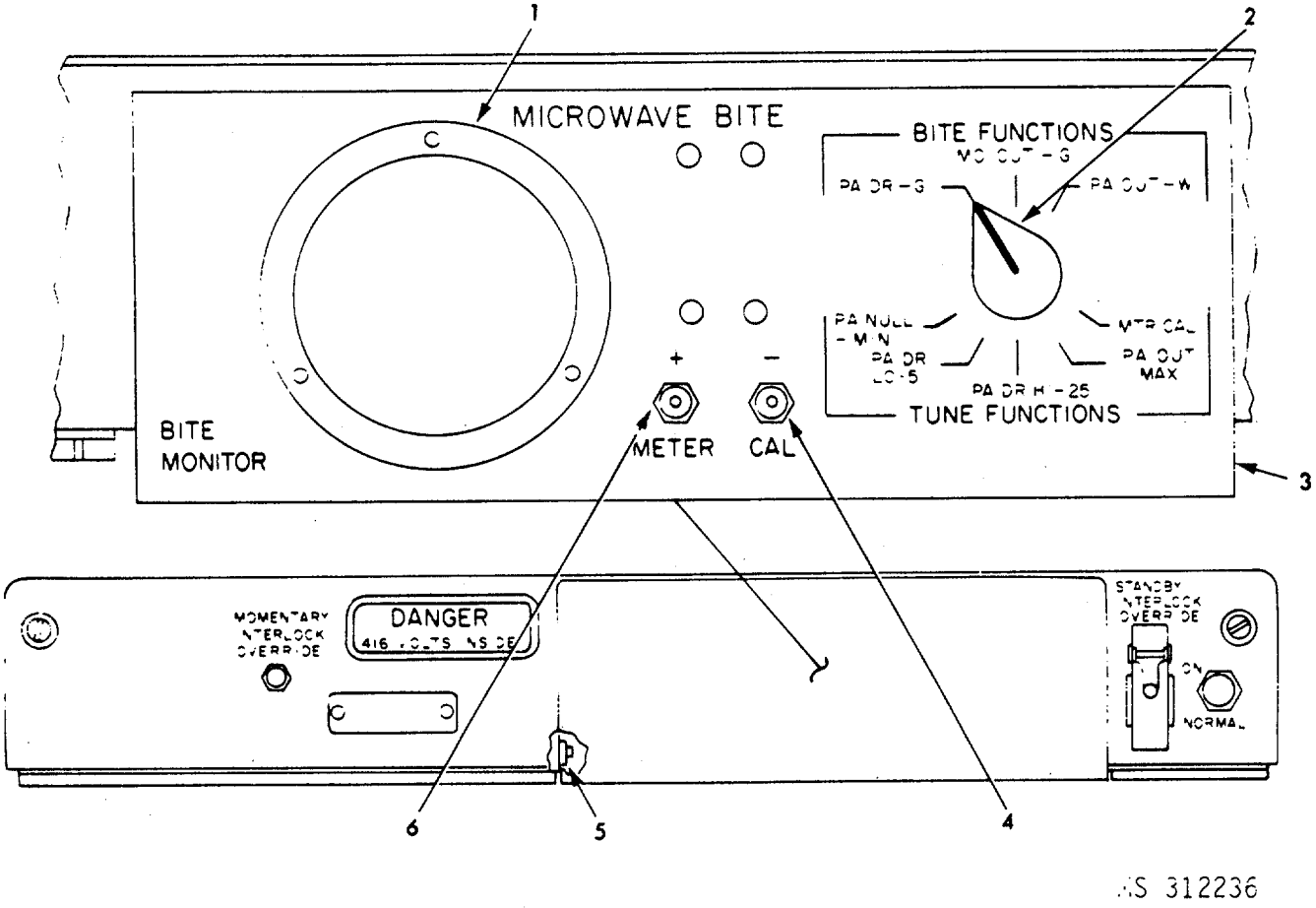
1 — BITE meter M1
2 — BITE SELECT switch
3 — BITE/CAL-SELECT switch
4 — MW CAL jack
5 — RF OUT jack
6 — CALIBRATION — jack
7 — CALIBRATION + jack
8 — CALIBRATION BITE jack
9 — SCOPE jack
10 — SLOPE LINEARITY switch
11 — METER TEST — jack
12 — METER TEST + jack

Figure 5-5-. Modulator-oscillator (OGO)-front panel.



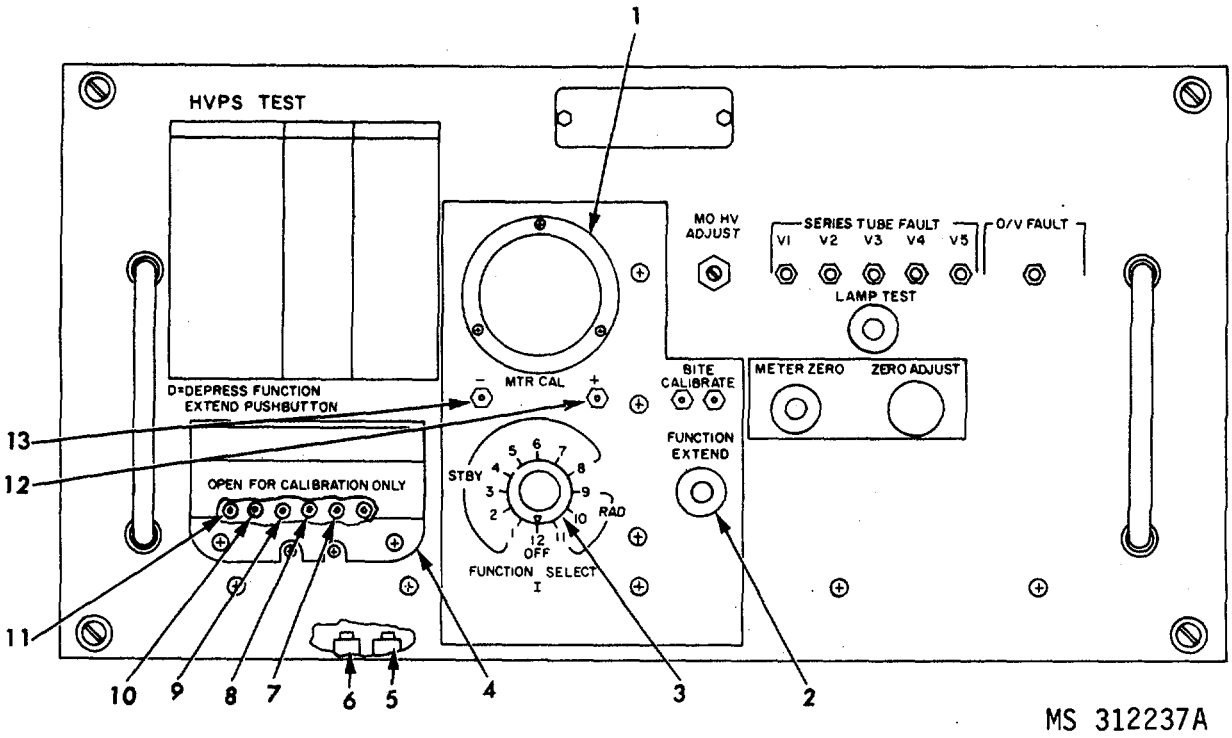
1 — A1
2 — P60
3 — A12J2
4 — P61
5 — A12R19
6 — A12R22
7 — W3P2
8 — A1-OPR/TEST switch S1.
9 — P17/A1J5

Figure 5-6. Modulator-oscillator, assembly (OGO).



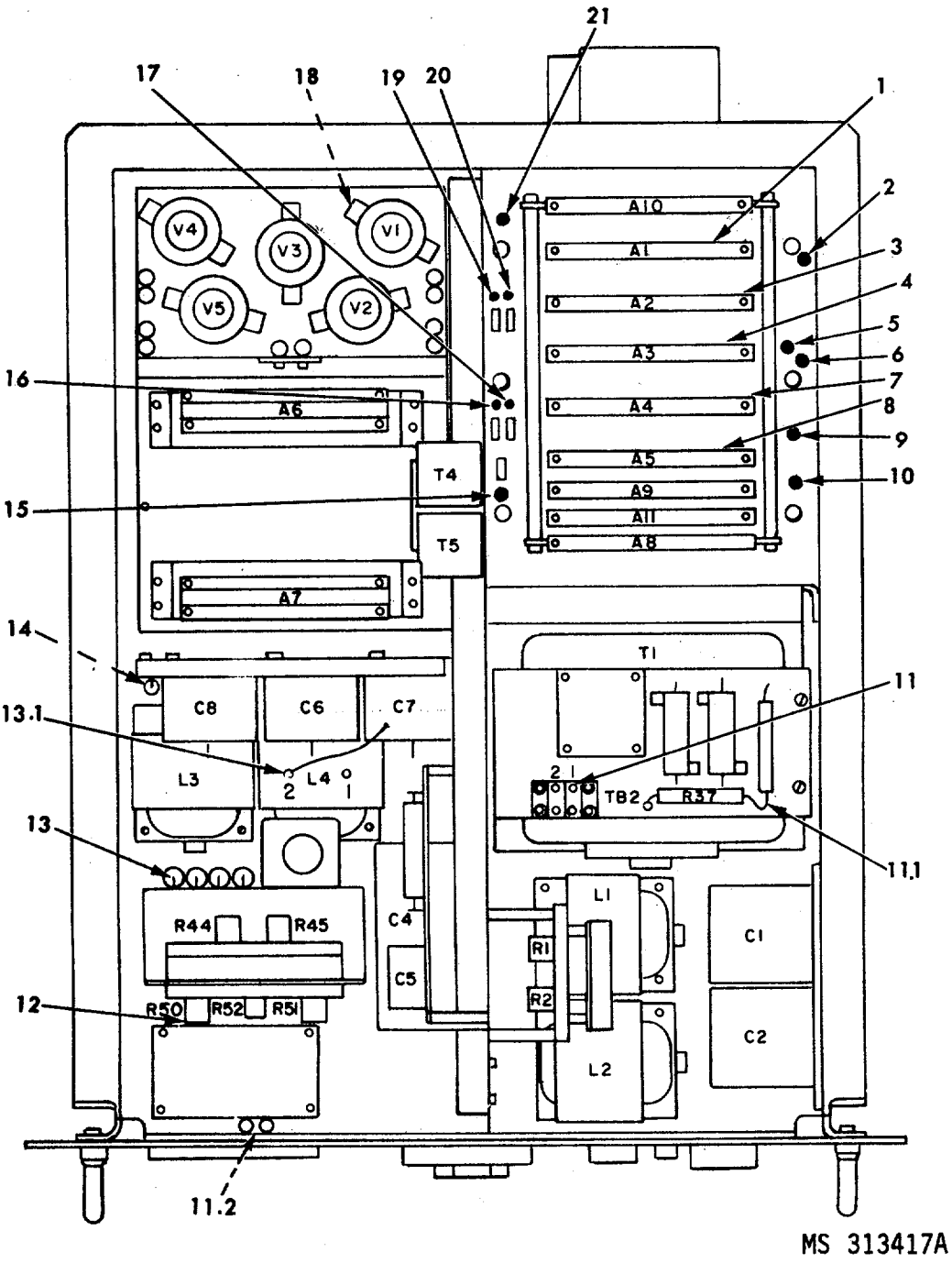
1 — BITE MONITOR meter
2 — BITE FUNCTIONS - TUNE FUNCTIONS switch
3 — MICROWAVE BITE door
4 — METER CAL — jack
5 — W1P10 J1
6 — METER CAL + jack

Figure 5-7. Microwave BITE assembly.



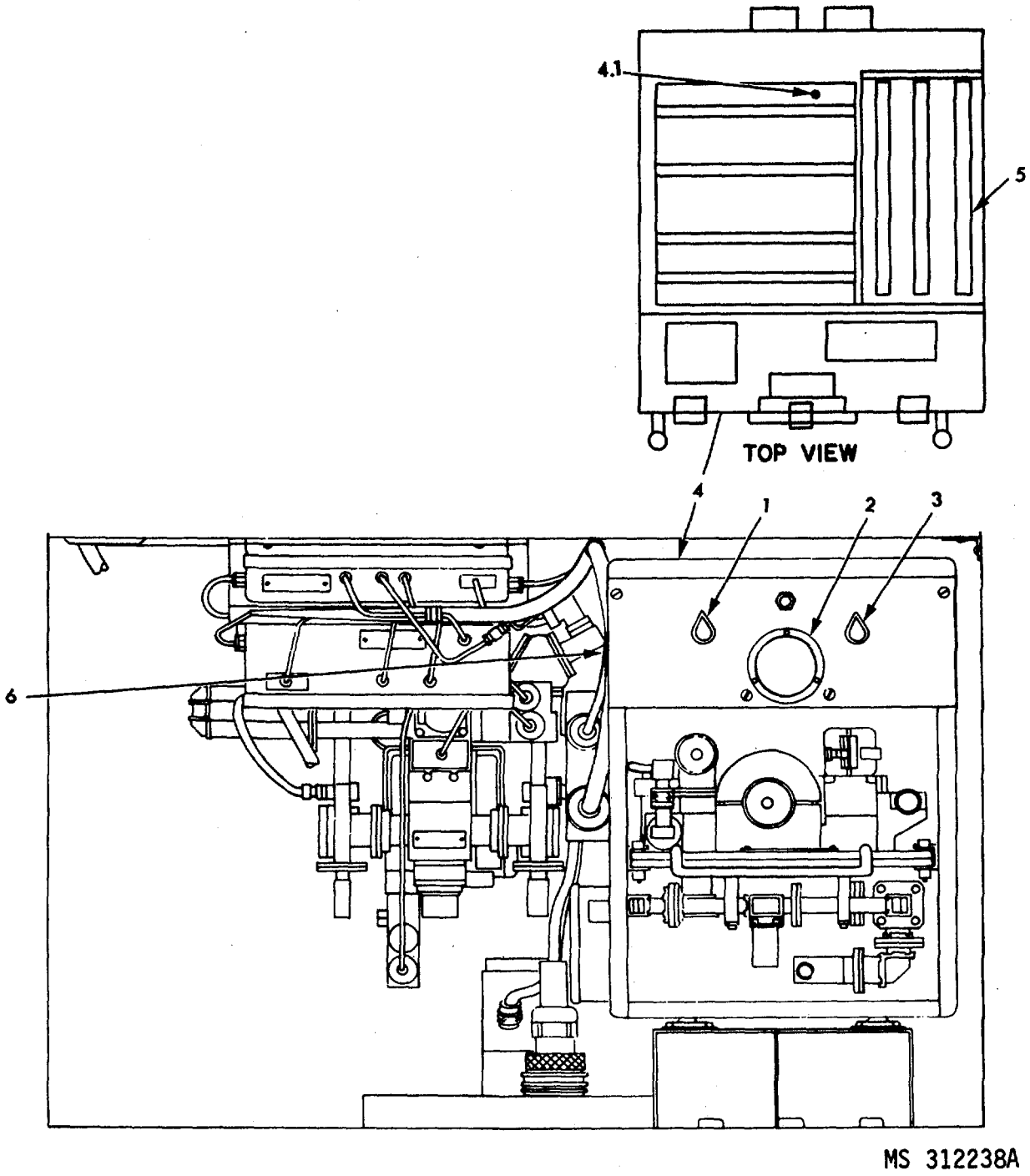
1 — HVPS BITE meter M1
2 — FUNCTION EXTEND switch
3 — FUNCTION SELECT I switch
4 — Calibration cover
5 — R60
6 — R64
7 — TP5
8 — TP4
9 — TP3
10 — TP2
11 — TP1
12 — MTR CAL + jack
13 — MTR CAL — jack

Figure 5-8. High voltage power supply-front view.



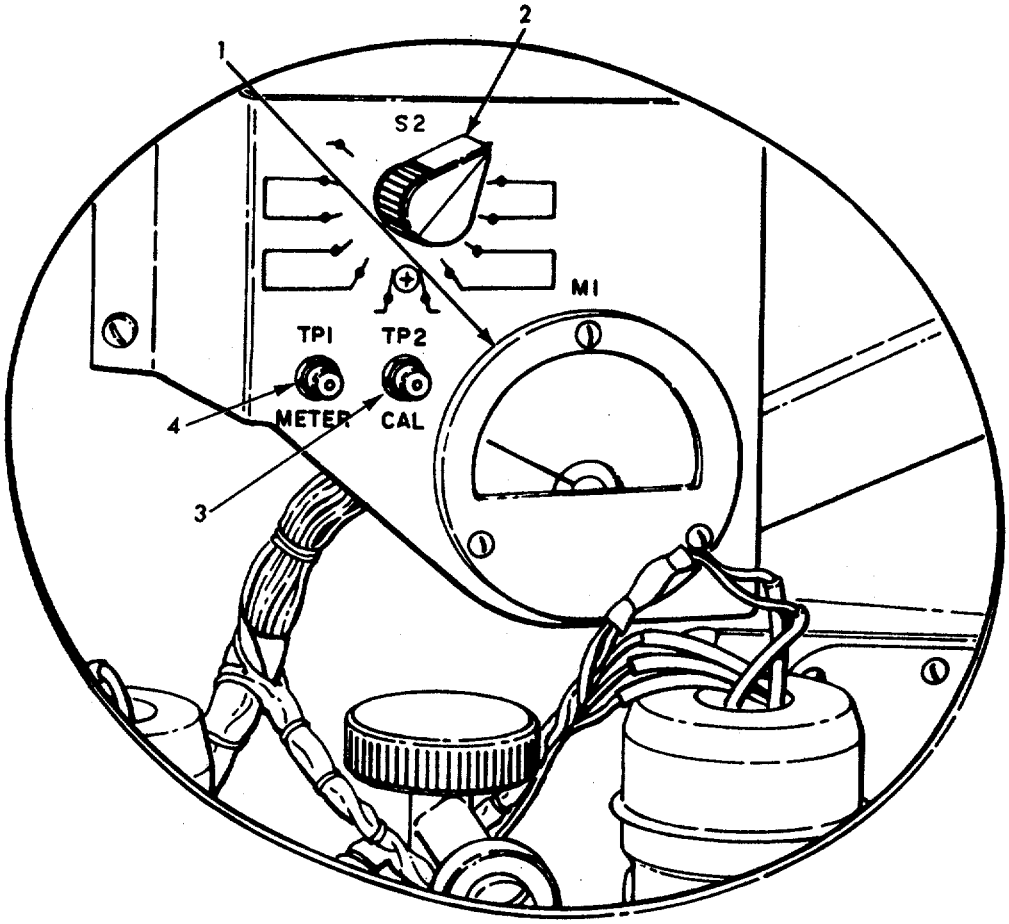
1—A1	9—E73	14—Jct of C4 and R43
2—E85	10—E104	15—E50
3—A2	11—TB2-1	16—E15
4—A3	11.1—Jct of R36 and R37	17—E42
5—E66	11.2—Jct of R53 and R54	18—TB1
6—E93	12—Jct of R50 and R49	19—E9
7—A4	13—Jct of R56 and R52	20—E36
8—A5	13.1—Jct of C7 and L4-2	21—E31

Figure 5-9. High voltage power supply-top view.



1—XMTR switch
2—BITE monitor meter M1
3—BITE UPPER RCVR switch
4—Receiver-transmitter BITE assembly
4.1—E20
5—A8
6—FM NOISE CALIBRATE control R1

Figure 5-10. Receiver/BITE compartment.



1 — BITE meter M1
2 — BITE switch S2
3 — METER CAL TP2
4 — METER CAL TP1

Figure 5-11. Antenna pedestal compartment.

CHAPTER 6
INFORMATION AND COORDINATION CENTRAL (ICC) PERIODIC TEST PROCEDURES

Table 6-1. Auxiliary Control Indicator-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	POWER SUPPLY MONITOR Meter (1, Fig. 6-1).
a.	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON. Connect and energize the cal std. Set the power supply monitor selector switch (4, fig. 6-1) to METER. Set the FUNCTION switch to l)CMA. Set the RANGE switch to 3. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into test jack TP1 (2, fig. 6-1). Insert the COMMON test lead into test jack TP2 (3, fig. 6-1). Connect the SH (;UA RDI) test lead to chassis ground. Set and hold the TEST switch to NORMAL. Slowly adjust the VERNIER control for a full-scale indication on the meter under test. **The cal std indicates 4.8 to 5.200.** M1. S1.
b.	Adjust the VERNIER control full ccw. Release the TEST switch. Set the FUNCTION switch to VI:)(‘. Set the RANGE switch to 2. Remove the CUIRREN'IT/K ()TIMS test lead from TP1. Open and pull out the auxiliary control indicator. Remove the top cover. Connect the DC VOLTS test lea(l to the junction of R1 and E42 (6, fig. 6-1). Set and hold the TEST switch to NOMIMAL. Adjust the VERNIER control for 24.25 to 25.75 vdc on the cal std. **The POWER SUPPLY MONITOR meter indicates 24 to 26 vdc.** Adjust R2NU (5, fig. 6-1). (Nominal range for R2NU 4320 to 6040 ohms.)

Table 6-1. Auxiliary Control Indicator-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
b. Cont.	Release the TEST switch. Remove the test leads from the test points. Replace the top cover. Adjust the VERNIER control full ccw. Close the auxiliary control indicator. **Secure and store the cal std.**

Table 6-2. Power Distribution Cabinet-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE Step 1 is performed using the cal std only.
1.	**MONITOR 416 VOLTS Meter (8, Fig. 6-2).** Set the 28V PS circuit breaker (2, fig. 6-2) to OFF. Loosen the fasteners that secure the end panel to the ADP main chassis (located above the power distribution cabinet) and raise the panel. Set the FUNCTION switch to MULTR. Momentarily set the VAC switch to the down position. Connect the COMMON test lead to TB25-4 (4, fig. 6-3). Connect the AC VOLTS test lead to TB25-3 (3, fig. 6-3). Set the 28V PS circuit breaker to ON. Record the cal std indication as El. Set the 28V PS circuit breaker to OFF. Transfer the AC VOLTS test lead to TB25-2 (2, fig. 6-3). Set the 28V PS circuit breaker to ON. Record the cal std indication as E2. Set the 28V PS circuit breaker to OFF. Transfer the AC VOLTS test lead to TB25-1 (1, fig. 6-3). Set the 28V PS circuit breaker to ON. Record the cal std indication as E3. Remove the test leads from the ADP end panel. Calculate the average indication as follows: $\frac{E1+E2+E3}{3} = Eav$ **The meter under test indicates Eav X 0.95 to Eav X 1.05.** MONITOR 416 VOLTS meter.

Table 6-2. Power Distribution Cabinet-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1. Cont.	**NOTE** Interpolate the meter scale as follows: The left-hand red area is 223 to 227 vac, the left-hand green area is 227 to 240 vac, the red center line is 240 vac, the right-hand green area is 240 to 253 vac, and the right-hand red area is 253 to 257 vac. Set the 28V PS circuit breaker to OFF. Close and secure the end panel to the ADP main chassis. **NOTE** **Step 2 is performed using DMM 10177187 when the cal std is not available.**
2.	**MONITOR 416 VOLTS Meter (8, Fig. 6-2).** **Set the 28V PS circuit breaker (2, fig. 6-2) to OFF.** **Loosen the fasteners that secure the end panel to the ADP main chassis (located above the power distribution cabinet) and raise the panel.** **Set the FUNCTION switch to MULTR.** **Momentarily set the VAC switch to the down position.** **Connect the COMMON test lead to TB25-4 (4, fig. 6-3).** **Connect the AC VOLTS test lead to TB25-3 (3, fig. 6-3).** **Set the 28V PS circuit breaker to ON.** **Record the cal std indication as El.** **Set the 28V PS circuit breaker to OFF.** **Transfer the AC VOLTS test lead to TB25-2 (2, fig. 6-3).** **Set the 28V PS circuit breaker to ON.** **Record the cal std indication as E2.** **Set the 28V PS circuit breaker to OFF.** **Transfer the AC VOLTS test lead to TB25-1 (1, fig. 6-3).** **Set the 28V PS circuit breaker to ON.** **Record the cal std indication as E3.** **Remove the test leads from the ADP end panel.** **Calculate the average indication as follows:** $\frac{E1+E2+E3}{3} = Eav$ **The meter under test indicates Eav X 0.95 to Eav X 1.05.** **MONITOR 416 VOLTS meter.**

Table 6-2. Power Distribution Cabinet-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2. Cont.	**NOTE** Interpolate the meter scale as follows: The left-hand red area is 223 to 227 vac, the left-hand green area is 227 to 240 vac, the red center line is 240 vac, the right-hand green area is 240 to 253 vac, and the right-hand red area is 253 to 257 vac. Set the 28V PS circuit breaker to OFF. Close and secure the end panel to the ADP main chassis. Secure and store the DMM.
3.	**ADP/HPI DIFF Meter (6, Fig. 6-2)** Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into test jack TP2 (5, fig. 6-2). Insert the COMMON test lead into test jack TP1 (7, fig. 6-2). Connect the SH GUARD test lead to the COMMON test lead. Set and hold the TEST switch to NORMAL. Slowly adjust the VERNIER control for a full-scale indication on the meter under test. **The cal std indicates 0.09970 to 0. 1030.** ADP/HPI DIFF meter. Release the TEST switch. Remove the test leads from the meter under test. **Secure and store the cal std.**

Table 6-8. DTO - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE Step 1 is performed using the cal std only. **NOTE** The following procedures are applicable for DTO DWR # 1, # 2, or #3.
1.	**DTO Power Supply (Fig. 6-4).**
a.	Open the DTO DWR of the power supply under test. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Connect the COMMON test lead to the applicable DTO DWR jack J10 (13, fig. 6-4). Connect the DC VOLTS test lead to the applicable DTO DWR jack J11 (14, fig. 6-4). Set the applicable ADP ac power distribution drawer circuit breaker (1, 2, or 3, fig. 6-7) to ON. Set the voltage selector switch (15, fig. 6-4) to +25. Adjust the +25 VDC REG AND SENSING - OUTPUT ADJ control (10, fig. 6-4) for a +25.00 indication on the cal std. The meter under test (12, fig. 6-4) indicates 0. Adjust +25 VDC REG AND SENSING - SENSE ADJ (11, fig. 6-4). A1, Ml, DTO power supply.
b.	Set the voltage selector switch to -25. Adjust the -25 VDC REG AND SENSING - OUTPUT ADJ control (16, fig. 6-4) for a -25.00 indication on the cal std. **The meter under test indicates 0.** Adjust -25 VDC REG AND SENSING - SENSE ADJ (9, fig. 6-4). A2, DTO power supply.
c.	Set the voltage selector switch to +50. Adjust the +50 VDC REG AND SENSING A3 - OUTPUT ADJ control (17, fig. 6-4) for a 50.00 indication on the cal std. **The meter under test indicates 0.** Adjust +50 VDC REG AND SENSING A3 - SENSE ADJ (8, fig. 6-4). A3, DTO power supply.

Table 6-8. DTO - Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1*d.*	Set the voltage selector switch to -50. Adjust the -50 VDC REG AND SENSING - OUTPUT ADJ control (6, fig. 6-4) for a -50.00 indication on the cal std. **The meter under test indicates 0.** Adjust -50 VDC REG AND SENSING - SENSE ADJ (7, fig. 6-4). A4, DTO power supply.
e.	Set the voltage selector switch to -12. Adjust the -12 VDC REG AND SENSING - OUTPUT ADJ control (4, fig. 6-4) for a -12.00 indication on the cal std. **The meter under test indicates 0.** Adjust -12 VDC REG AND SENSING - SENSE ADJ (3, fig. 6-4). A5, DTO power supply.
f.	Set the voltage selector switch to +6.8. Adjust the +6.8 VDC REG AND SENSING - OUTPUT ADJ control (1, fig. 6-4) for a 6.800 indication on the cal std. **The meter under test indicates 0.** Adjust +6.8 VDC REG AND SENSING - SENSE ADJ (2, fig. 6-4). A6, DTO power supply.
g.	Set the voltage selector switch to + 20. **The cal std indicates 15.00 to 18.50.** A7, DTO power supply. **The meter under test indicates 0.** Adjust +20 VDC & +5 VDC REG & SENSING - 20V SENSE ADJ (18, fig. 6-4). A7.
h.	Set the voltage selector switch to +5. **The cal std indicates 5.1 to 6.100.** A7, DTO power supply. **The meter under test indicates 0.** Adjust +20 VDC & +5 VDC REG & SENSING - 5V SENSE ADJ (5, fig. 6-4). A7.
	Remove the test leads from the DTO DWR under test. Set the voltage selector switch to OFF. Slide the DTO DWR into its normal operating position, and secure it. Set the applicable meter under test DTO DWR circuit breaker to OFF.

Table 6-3. DTO - Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
	NOTE Step 2 is performed using DMM 10177187 when the cal std is not available. **NOTE** The following procedures are applicable for DTO DWR # 1, # 2, or #3.
2.	**DTO Power Supply (Fig. 6-4).**
a.	Open the DTO DWR of the power supply under test. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Connect the COMMON test lead to the applicable DTO DWR jack J10 (13, fig. 6-4). Connect the DC VOLTS test lead to the applicable DTO DWR jack J11 (14, fig. 6-4). Set the applicable ADP ac power distribution drawer circuit breaker (1, 2, or 3, fig. 6-7) to ON. Set the voltage selector switch (15, fig. 6-4) to +25. Adjust the +25 VDC REG AND SENSING - OUTPUT ADJ control (10, fig. 6-4) for a +25.00 indication on the cal std. The meter under test (12, fig. 6-4) indicates 0. Adjust +25 VDC REG AND SENSING - SENSE ADJ (11, fig. 6-4). A1, Ml, DTO power supply.
b.	Set the voltage selector switch to -25. Adjust the -25 VDC REG AND SENSING - OUTPUT ADJ control (16, fig. 6-4) for a -25.00 indication on the cal std. **The meter under test indicates 0.** Adjust -25 VDC REG AND SENSING - SENSE ADJ (9, fig. 6-4). A2, DTO power supply.
c.	Set the voltage selector switch to +50. Adjust the +50 VDC REG AND SENSING A3 - OUTPUT ADJ control (17, fig. 6-4) for a 50.00 indication on the cal std. **The meter under test indicates 0.** Adjust +50 VDC REG AND SENSING A3 - SENSE ADJ (8, fig. 6-4). A3, DTO power supply.

Table 6-3. DTO- Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2*d.*	Set the voltage selector switch to -50. Adjust the -50 VDC REG AND SENSING - OUTPUT ADJ control (6, fig. 6-4) for a -50.00 indication on the cal std. **The meter under test indicates 0.** Adjust -50 VDC REG AND SENSING - SENSE ADJ (7, fig. 6-4). A4, DTO power supply.
e.	Set the voltage selector switch to -12. Adjust the -12 VDC REG AND SENSING - OUTPUT ADJ control (4, fig. 6-4) for a -12.00 indication on the cal std. **The meter under test indicates 0.** Adjust -12 VDC REG AND SENSING - SENSE ADJ (3, fig. 6-4). A5, DTO power supply.
f.	Set the voltage selector switch to +6.8. Adjust the +6.8 VDC REG AND SENSING - OUTPUT ADJ control (1, fig. 6-4) for a 6.800 indication on the cal std. **The meter under test indicates 0.** Adjust +6.8 VDC REG AND SENSING - SENSE ADJ (2, fig. 6-4). A6, DTO power supply.
g.	Set the voltage selector switch to + 20. **The cal std indicates 15.00 to 18.50.** A7, DTO power supply. **The meter under test indicates 0.** Adjust +20 VDC & +5 VDC REG & SENSING - 20V SENSE ADJ (18, fig. 6-4). A7.
h.	Set the voltage selector switch to +5. **The cal std indicates 5.1 to 6.100.** A7, DTO power supply. **The meter under test indicates 0.** Adjust +20 VDC & +5 VDC REG & SENSING - 5V SENSE ADJ (5, fig. 6-4). A7.

Table 6-3. DTO ¾ Periodic Test Procedures ¾ Continued

Step	Operation Normal indication Corrective procedure
2*h.* Cont.	Remove the test leads from the DRO DWR under test. Set the voltage selector switch to OFF. Slide the DTO DWR into its normal operating position, and secure it. Set the applicable meter under test DTO DWR circuit breaker to OFF. Secure and store the DMM.
3.	**DTO Digital Clock Pulse Generator A48 (2, Fig. 6-6).** **Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON.** **Set the 28V PS circuit breaker (2, fig. 6-2) to ON** Connect and energize calibration test set TF8-1020. Set the calibration test set COUNTER switch to EXT. Set the calibration test set FUNCTION switch to FREQ. Open DTO DWR #1. Loosen the four screws, and swing open the panel covering digital backplane A2 in the upper section of DTO DWR #1. Connect a 10178170-1 probe to pin 17 of J48 (3, fig. 6-6). **NOTE** Do not attempt to use an extension cable on W8-1032. Connect the red clip of the W8-1032 to the 10178710-1 probe on pin 17 of J48. Connect the W8-1032 BNC to the calibration test set COUNTER IN jack. **The calibration test set counter indicates 4914910 to 4915910** A48 Remove the test leads from DTO DWR #1. Close and secure the panel on the digital backplane. Slide DTO DWR #1 into its normal operating position, and secure it. **Secure and store the calibration test set.**

Table 6-4. CPU - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**CPU Power Supply Meter (1. Fig. 6-8)**
a.	**Loosen the fasteners, and withdraw the CPU power supply drawer.** **Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON.** **Connect and energize the cal std.**

Table 6-4. CPU - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1*a*. Cont.	Set the FUNCTION switch to VDC. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Set the CPU circuit breaker (4, fig. 6-7) to OFF. Remove the five leads from the terminals of C1 (4, fig. 6-8). Input the COMMON test lead into test jack TP3 (3, fig. 6-8). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 5 indication on the meter under test. **Test cal std indicates 4.650 to 5.350.** CPU power supply meter.
b.	Adjust the VERNIER control for a 10 indication on the meter under test. **The cal std indicates 9.600 to 10.40.** CPU power supply meter. Release the TEST switch. Remove the test leads from the meter under test. Reconnect the three white leads to the left-hand terminal (+) of C1. Reconnect the blue and the black leads to the right-hand terminal of C1. Slide the CPU power supply drawer into its normal operating position, and secure it. **Secure and store the cal std.**
2.	**CPU Digital Clock Pulse Generator A59 (4, Fig. 6-6).** **Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON.** **Set the 28V circuit breaker (2, fig. 6-2) to ON.** Connect and energize calibration test set TF8-1020. Set the calibration test set COUNTER switch to EXT. Set the calibration test set FUNCTION switch to FREQ. **Open the CPU drawer.** Connect a 10178170-1 probe to pin 23 of J59 (5, fig. 6-6). **NOTE** Do not attempt to use an extension cable on test lead 10064045. Set the CPU circuit breaker (4, fig. 6-7) to ON. Connect the red clip of test lead 10064045 to the 10178170-1 probe on pin 23 of J59.

Table 6-4. CPU - Periodic Test Procedures - Continued

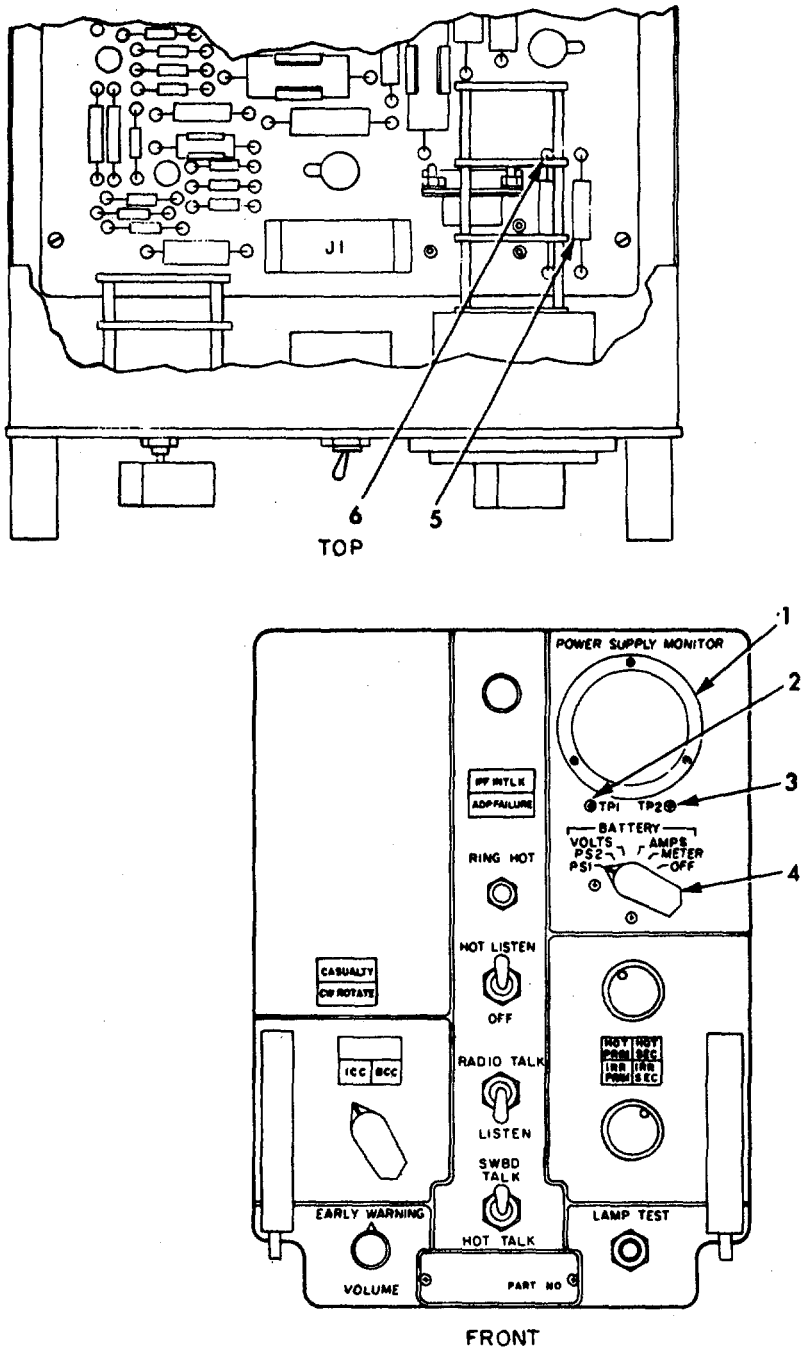
Step	Operation Normal indication Corrective procedure
2. Cont.	Connect test lead 10064045 BNC to the calibration test set COUNTER IN jack. **The calibration test set counter indicates 4914910 to 4915910.** A59. Remove the test leads and probe from the CPU drawer. **Slide the CPU drawer into its normal operating position, and secure it.** **Deenergize and store the calibration test set.**

Table 6-5. Memory Unit - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE Step 1 is performed using the cal std only.
1.	**Monitor Meter M1 (2, Fig. 6-9).** Loosen the fasteners, and withdraw the memory unit power supply drawer. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Connect the COMMON test lead to the uut S-plate chassis ground (1, fig. 6-6). Set the MEMORY NO. 1 circuit breaker (5, fig 6-7) to ON. Set the VOLTAGE MONITOR switch (1, fig. 6-9) to _5.4V. **NOTE** Maintain a -10 to +10-ua indication on monitor meter M1 using _5.4 VDC REGULATOR AND SENSING - SENSING ADJ control (4, fig. 6-9) when adjusting the +5.4 VDC REGULATOR AND SENSING - OUTPUT ADJ control (3, fig. 6-9) below. Adjust the +5.4 VDC REGULATOR AND SENSING - OUTPUT ADJ control (3, fig. 6-9) for a 5.000 indication on the cal std. **The meter under test indicates 0.** Adjust +5.4 VDC REGULATOR AND SENSING - SENSING ADJ control (4, fig. 6-9). A1, M1, memory power supply. Set the MEMORY NO. 1 circuit breaker to OFF. Remove the test leads from the memory unit power supply drawer. Slide the memory unit power supply drawer into its normal operating position, and secure it. Secure and store the cal std.

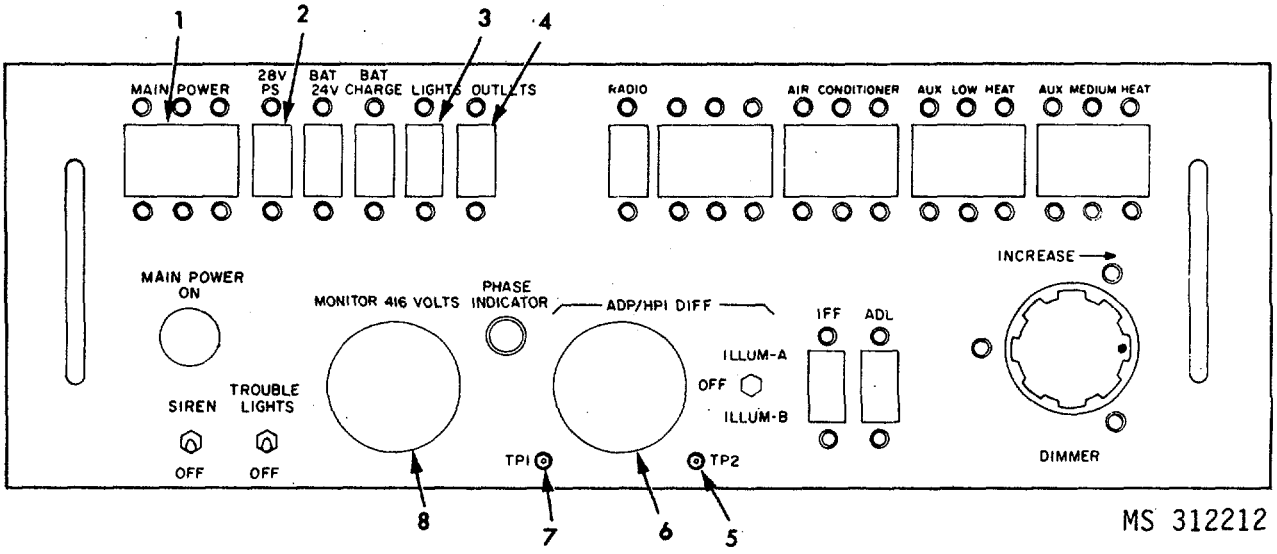
Table 6-5. Memory Unit - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
	NOTE Step 1 is performed using the cal std only.
2.	**Monitor Meter M1 (2, Fig. 6-9).** Loosen the fasteners, and withdraw the memory unit power supply drawer. Set the MAIN POWER, LIGHTS, and OUTLETS circuit breaker (1,3, and 4, fig. 6-2) to ON. Connect and energize the DMM. Set the 28V PS circuit breaker (2, fig. 6-2) to ON. Press the RANGE 10 switch. Press the VDC switch. Connect the INPUT LO test lead to the µµt S-plate chassis ground (1, fig. 6-6). Connect the INPUT HI test lead to µµt +5.4V (Vccl) bus bar (6, fig. 6-6). Set the MEMORY NO. 1 circuit breaker (5, fig 6-7) to ON. Set the VOLTAGE MONITOR switch (1, fig. 6-9) to _5.4V. **NOTE** Maintain a -10 to +10-ua indication on monitor meter M1 using _5.4 VDC REGULATOR AND SENSING - SENSING ADJ control (4, fig. 6-9) when adjusting the +5.4 VDC REGULATOR AND SENSING - OUTPUT ADJ control (3, fig. 6-9) below. Adjust the +5.4 VDC REGULATOR AND SENSING - OUTPUT ADJ control (3, fig. 6-9) for a 5.000 indication on the cal std. **The meter under test indicates 0.** Adjust +5.4 VDC REGULATOR AND SENSING - SENSING ADJ control (4, fig. 6-9). A1, M1, memory power supply. Set the MEMORY NO. 1 circuit breaker to OFF. Remove the test leads from the memory unit power supply drawer. Slide the memory unit power supply drawer into its normal operating position, and secure it. Set the MAIN Power, 28V PS, LIGHTS, and OUTLETS circuit breakers to OFF. Secure and store the DMM.



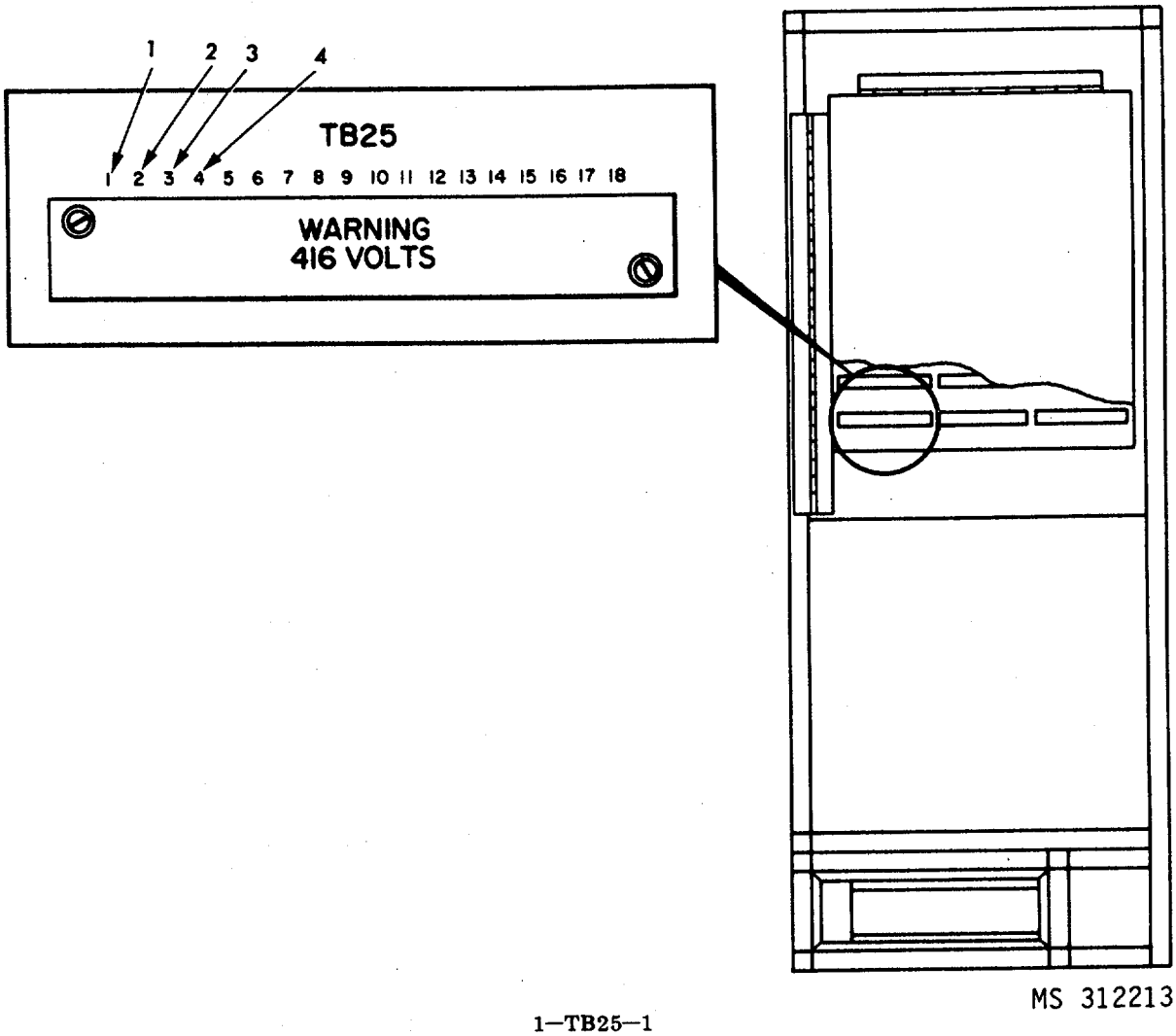
1—POWER SUPPLY MONITOR meter
2—TP1
3—TP2
4—Power supply monitor selector switch
5—R2NU
6—Jct of R1 and E42

Figure 6-1. Auxiliary control indicator-controls, indicators and test points.



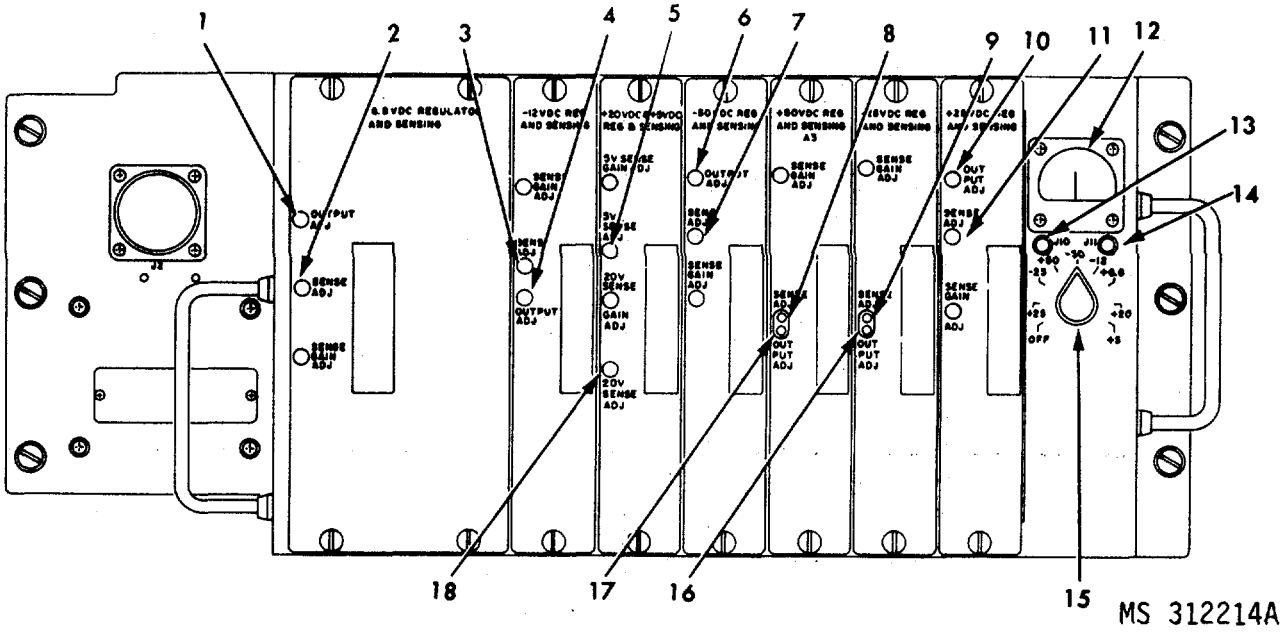
1—MAIN POWER circuit breaker
2—28V PS circuit breaker
3—LIGHTS circuit breaker
4—OUTLETS circuit breaker
5—Test jack TP2
6—ADP/HPI DIFF meter
7—Test jack TP1
8—MONITOR 416 VOLTS meter

Figure 6-2. Power distribution panel-controls and indicators.



1—TB25—1
2—TB25—2
3—TB25—3
4—TB25—4

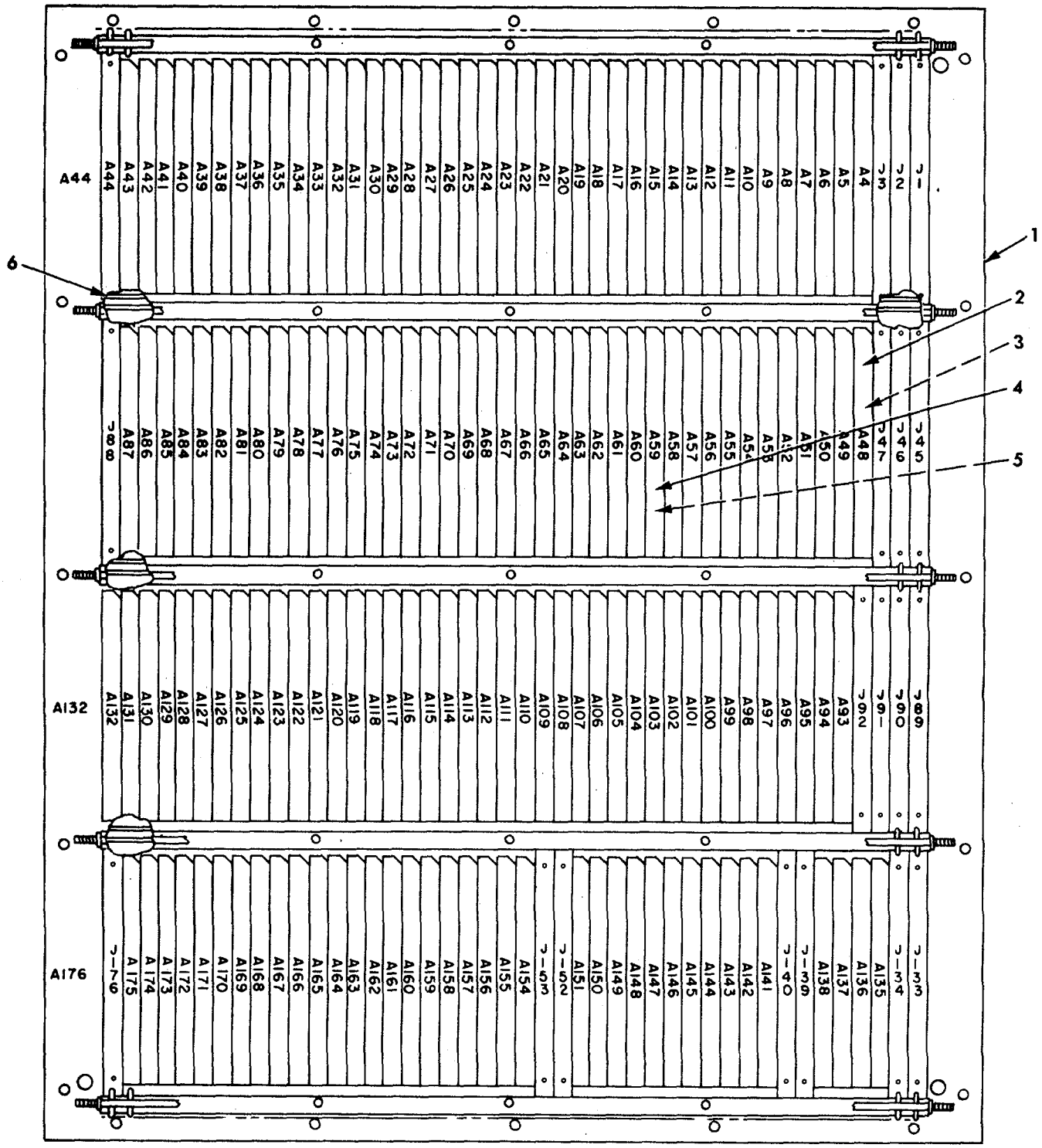
Figure 603. ADP end panel-rear.



1— +6.8 VDC REGULATOR AND SENSING—OUTPUT ADJ
2— +6.8 VDC REGULATOR AND SENSING—SENSE ADJ
3— —12 VDC REG AND SENSING—SENSE ADJ
4— —12 VDC REG AND SENSING—OUTPUT ADJ
5— +20 VDC & +5 VDC REG & SENSING—5V SENSE ADJ
6— —50 VDC REG AND SENSING—OUTPUT ADJ
7— —50 VDC REG AND SENSING—SENSE ADJ
8— +50 VDC REG AND SENSING A3—SENSE ADJ
9— —25 VDC REG AND SENSING—SENSE ADJ
10— +25 VDC REG AND SENSING—OUTPUT ADJ
11— +25 VDC REG AND SENSING—SENSE ADJ
12—Voltage meter M1
13—J10
14—J11
15—Voltage selector switch
16— —25 VDC REG AND SENSING—OUTPUT ADJ
17— +50 VDC REG AND SENSING A3—OUTPUT ADJ
18— +20 VDC & +5 VDC REG & SENSING—20V SENSE ADJ

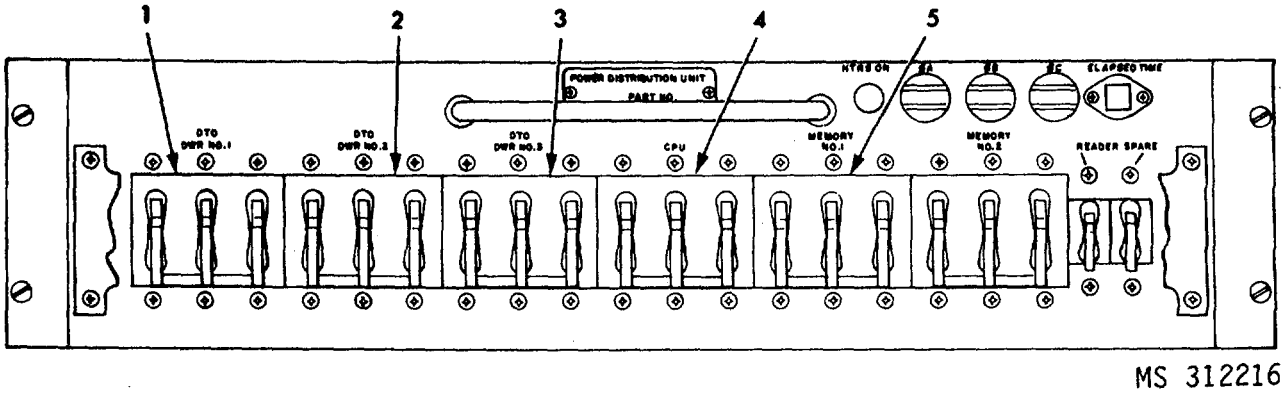
Figure 6-4. DTO power supply-controls and indicators.

Figure 6-5. (Deleted).



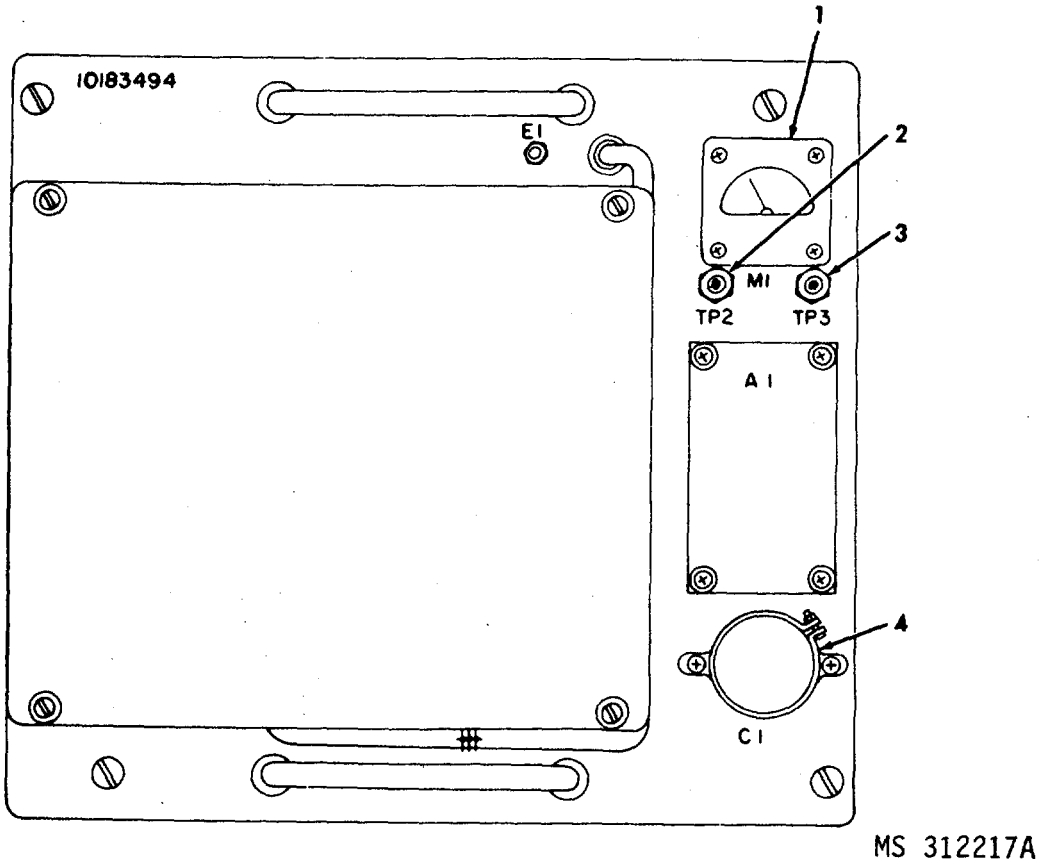
1—S-plate chassis ground
2—A48
3—J48, pin 17
4—A59
5—J59, pin 23
6—+5.4V (Vcc1) bus bar

Figure 6-6. Typical digital modules and test points for CPU and memory unit power supplies (upper section of drawer).



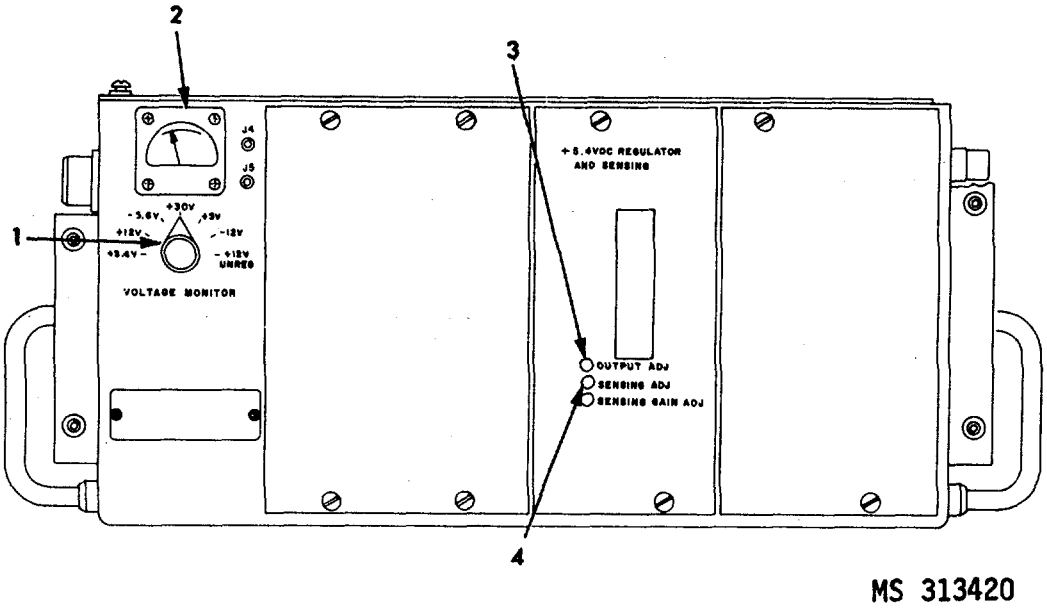
1—DTO DWR No. 1 circuit breaker
2—DTO DWR No. 2 circuit breaker
3—DTO DWR No. 3 circuit breaker
4—CPU circuit breaker
5—MEMORY No. 1 circuit breaker

Figure 6-7. ADP ac power distribution drawer-controls and indicators.



1—CPU power supply meter
2—Test jack TP2
3—Test jack TP3
4—C1

Figure 6-8. CPU power supply - indicators and test points.



1—VOLTAGE MONITOR switch
2—Monitor meter M1
3—+5.4 VDC REGULATOR AND SENSING—OUTPUT ADJ control
4—+5.4 VDC REGULATOR AND SENSING—SENSING ADJ control

Figure 6-9. Memory unit power supply-controls and indicators.

CHAPTER 7
IMPROVED RANGE-ONLY RADAR (IROR)
PERIODIC TEST PROCEDURES

Table 7-1. Power Distribution Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1	LINE VOLTAGE Meter (1, Fig. 7-1).
a.	Connect and energize the cal std Set the AZ-AMPLIDYNE, EL-AMPLIDYNE, MOD PLATE, and MAIN LINE-MAIN POWER circuit breakers (7, 4, 6 and 5, fig. 7-1) to OFF. Set the remaining circuit breakers on the power distribution panel to ON. Set the LOCAL-REMOTE switch (3, fig. 7-2) on the radar set control panel (1, fig. 7-2) to LOCAI,. Set the ON-OFF switch (5, fig. 7-2) to OFF. Set the LINE VOLTAGE switch (2, fig. 7-1) to OFF, Loosen the fasteners that secure the power distribution panel, and withdraw the panel. Connect the AC VOLTS test lead to one terminal on the meter under test. Connect the COMMON test lead to the other terminal on the meter under test. Set the MAIN LINE-MAIN POWER circuit breaker to ON. Set the FUNCTION switch to VAC. Set the RANGE switch to 2. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 100-volt indication on the meter under test. **The cal std indicates 94.00 to 106.0.** LINE VOLTAGE meter.
b.	Set the RANGE switch to 3. Adjust the VERNIER control for a 200-volt indication on the meter under test. **The cal std indicates 194.0 to 206.0.** LINE VOLTAGE meter.
c.	Set the RANGE switch to 4. Adjust the VERNIER control for a 300-volt indication on the meter under test.

Table 7-1. Power Distribution Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1c. Cont.	The cal std indicates 294.0 to 306.0. LINE VOLTAGE meter, Release the TEST switch. Adjust the VERNIER control full ccw. Set the MAIN LINE-MAIN POWER circuit breaker to OFF. Remove the test leads from the meter under test.
2.	**TEST Meter (9, Fig. 7-1).**
a.	Set the MAIN LINE-MAIN POWER circuit breaker to ON. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Connect -the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set the TEST switch (3, fig. 7-1) to AFC ICR1. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 14-db indication on the meter under test. **The cal std indicates 0.0053 to 0.0067.** TEST meter.
b.	Adjust the VERNIER control for a 10-di) indication on the meter under test. **The cal std indicates 0.0114 to 0.0128.** TEST meter.
c.	Adjust the VERNIER control for a full-scale indication on the meter under test. **The cal std indicates 0.0193 to 0.0207.** TEST meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test.
3.	**RF POWER Meter (8, Fig. 7-1).**
a.	Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test.

Table 7-1. Power Distribution Panel - Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
3*a.* Cont.	Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 50-watt indication on the meter under test. **The cal std indicates 0.0128 to 0.0158.** RF POWER meter.
b.	Adjust the VERNIER control for a 125-watt indication on the meter under test. **The cal std indicates 0.0342 to 0.0372.** RF POWER meter.
c.	Adjust the VERNIER control for a 175-watt indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** RF POWER meter. Release the TEST switch. Adjust the VERNIER control full ccw. Disconnect the test leads from the meter under test. Close and secure the power distribution panel.

Table 7-2. Low- Voltage Power Supply - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	BALANCE Meter (1, Fig. 7-3).
a.	Loosen the captive screws that secure the low-voltage power supply panel, and withdraw the panel. **NOTE** **Make certain the interlock located beneath the low-voltage power panel is closed.** Set the BALANCE SELECTOR switch (8, fig. 7-3) to OFF. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Connect the DC VOLTS test lead to jack J7 (6, fig. 3-3) on the reference voltage regulator chassis. Connect the COMMON test lead to jack J2 (5, fig. 3-3) on the reference voltage regulator chassis. **NOTE** **Make certain the MAIN LINE-MAIN POWER circuit breaker on the power distribution panel is set to ON.**

Table 7-2. Low Voltage Power Supply - Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
a. Cont.	Set the RADIATE-STANDBY switch (4, fig. 7-2) to STANDBY. Set the ON-OFF switch (5, fig. 7-2) to ON and wait 2 minutes. Adjust the -250 VDC ADJUST control (1, fig. 3-3) for a 250.0 indication on the cal std. Transfer the DC VOLTS test lead to jack J5 (3, fig. 3-3). Transfer the COMMON test lead to jack J4 (4, fig. 3-3). Adjust the +250 VDC ADJUST control (2, fig. 3-3) for a 250.0 indication on the cal std. Remove the test leads from jacks J4 and J5. Set the BALANCE SELECTOR switch to A1. Adjust the Al control (9, fig. 7-3) full cw and then full ccw, while observing the meter under test. **The meter under test deflects to each side of center.** Power supply A1, BALANCE meter, CR1, CR2, R1, R5, R6, R9, R14-R17, S1. **The meter under test limits between half and full scale in each direction.** CR1, CR2, R15, R16.
b.	Loosen the captive screws that secure panel no. 1 (6, fig. 7-3) to the low-voltage power supply chassis, and lower the panel. Connect the DC VOLTS test lead to the (-) terminal on the meter under test. Connect the COMMON test lead to chassis ground. Adjust the Al control for a center line indication on the meter under test. **The cal std indicates -99.00 to - 101.0.** BALANCE meter, R5, R6, R9, S1.
c.	Set the BALANCE SELECTOR switch to A2. Adjust the A2 control (10, fig. 7-3) for a center line indication on the meter under test. **The cal std indicates 99.00 to 101.0.** Power supply A2, R2, R3, R8, S1.
d.	Set the BALANCE SELECTOR switch to A3. Adjust the A3 control (2, fig. 7-3) for a center line indication on the meter under test. **The cal std indicates 99.00 to 101.0.** Power supply A3, R10, S1.

Table 7-2. Low-Voltage Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
e.	Set the BALANCE SELECTOR switch to A4. Adjust the A4 control (3, fig. 7-3) for a center line indication on the meter under test. **The cal std indicates 247.5 to 252.5.** Power supply A4, R11, S1.
f.	Set the BALANCE SELECTOR switch to A5. Adjust the A5 control (4, fig. 7-3) for a center line indication on the meter under test. **The cal std indicates 247.5 to 252.5.** Power supply A5, R12, S1.
g.	Set the BALANCE SELECTOR switch to A6. Transfer the DC VOLTS test lead to the top of R4 (7, fig. 7-3). Adjust the A6 control (5, fig. 7-3) for a center line indication on the meter under test. **The cal std indicates 297.0 to 303.0.** Power supply A6, R4, R13, R18, S1. Set the ON-OFF switch on the radar set control panel to OFF. Set the MAIN LINE-MAIN POWER circuit breaker to OFF. Remove the test leads from the meter under test. Replace and secure panel no. 1 to the low-voltage power supply chassis. Close and secure the low-voltage power supply panel.

Table 7-3. Control-Indicator Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
a.	**MAGNETRON CURRENT Meter (2, Fig. 7-2).** Loosen the screws securing the control-indicator panel to the radar set group chassis, and withdraw the panel. Disconnect the four connectors at the rear of the radar set control panel. Loosen the captive screws that secure the radar set control panel (1, fig. 7-2) to the control-indicator panel. After releasing the locking bar at the rear of the radar set control panel withdraw the panel.

Table 7-3. Control-Indicator Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
a. Cont.	Set the MAIN LINE-MAIN POWER circuit breaker to ON. Set the FUNCTION switch to DCMA. Set the RANGE switch to 4. Adjust the VERNIER control full ccw. Connect the CURRENT/KOHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 15-ma indication on the meter under test. **The cal std indicates 13.50 to 16.50.** C1, MAGNETRON CURRENT meter.
b.	Adjust the VERNIER control for a 35-ma indication on the meter under test. **The cal std indicates 33.50 to 36.50.** C1, MAGNETRON CURRENT meter.
c.	Adjust the VERNIER control for a 50-ma indication on the meter under test. **The cal std indicates 48.50 to 51.50.** C1, MAGNETRON CURRENT meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the terminals on the meter under test. Slide the radar set control panel into the control-indicator panel. Reconnect the previously disconnected four plugs to the rear of the radar set control panel, and secure the panel. Return the control-indicator panel to its normal position into the radar set group chassis, and secure.

Table 7-4. Amplifier-C.Cmpu4ter Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**ERROR Meter (1, Fig. 7-4).**
a.	Loosen the captive screws that secure panel no. 1 (3, fig. 7-4) and remove the panel. Set the RANGE switch to 1. Disconnect one lead from the meter under test. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication on the upper edge of the blue area of the meter under test. **The cal std indicates 0.0110 to 0.0140.** ERROR meter.
b.	Adjust the VERNIER control for an indication on the upper edge of the yellow area of the meter under test. **The cal std indicates 0.0235 to 0.0265.** ERROR meter.
c.	Adjust the VERNIER control for an indication on the blue marker of the meter under test. **The cal std indicates 0.0485 to 0.0515.** ERROR meter.
d.	Release the TEST switch. Adjust the VERNIER control full ccw. Reverse the test leads connected to the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication on the lower edge of the blue area of the meter under test. **The cal std indicates 0.0110 to 0.0140.** ERROR meter.
e.	Adjust the VERNIER control for an indication on the lower edge of the yellow area of the meter under test.

Table 74. Amplifier-Computer Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1*e*. Cont.	**The cal std indicates 0.0235 to 0.0265.** ERROR meter.
f.	Adjust the VERNIER control for an indication on the lower blue marker of the meter under test. **The cal std indicates 0.0485 to 0.0515.** ERROR meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Reconnect the previously removed lead to the meter under test.
2.	**AMPLIDYNE FIELD CURRENT Meters (2, Fig. 7-4).**
a.	Set the FUNCTION switch to VDC. Connect the DC VOLTS test lead to the (+) terminal on the left-hand meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 20 (left) indication on the meter under test. **The cal std indicates 2.030 to 2.630.** AMPLIDYNE FIELD CURRENT meter.
b.	Adjust the VERNIER control for a red-line indication on the meter under test. **The cal std indicates 4.700 to 5.300.** AMPLIDYNE FIELD CURRENT meter.
c.	Adjust the VERNIER control for a 20 (right) indication on the meter under test. **The cal std indicates 7.360 to 7.960.** AMPLIDYNE FIELD CURRENT meter.
d.	Adjust the VERNIER control for a full-scale indication on the meter under test. **The cal std indicates 9.700 to 10.30.** AMPLIDYNE FIELD CURRENT meter. Release the TEST switch.

Table 7-4. Amplifier-Computer Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
2*d*. Cont.	Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Perform steps a through d, above for the right-hand meter under test. Secure panel no. 1 into its normal position in the amplifier computer panel.

Table 7-5. Modulator-Power Supply - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**RECT CURRENT Meter (2, Fig. 7-5).**
a.	Open and secure the door of the modulator-power supply (5, fig. 7-7). Disconnect P4 from J7 (6, fig. 7-5), P5 from J2 (7, fig. 7-5), and P6 from J3 (8, fig. 7-5). Remove the screws securing the meter panel assembly (1, fig. 7-5),and lower the panel. Set the FUNCTION switch to DCMA. Connect the COMMON test lead to terminal C on the meter under test. Connect the CURRENT/K OHMS test lead to terminal B on the meter under test. Adjust the preset needle on the meter under test full cw. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 0.0285 to 0.0345.** C6, C7, RECT CURRENT meter.
b.	Adjust the VERNIER control for a 70 indication on the meter under test. **The cal std indicates 0.0665 to 0.0805.** C6, C7., RECT CURRENT meter.
c.	Adjust the VERNIER control for a 100 indication on the meter under test. **The cal std indicates 0.0950 to 0.1150.** C6, C7, RECT CURRENT meter. Release the TEST switch.

Table 7-5. Modulator-Power Supply - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1*c.* Cont.	Adjust the VERNIER control full ccw. Adjust the preset needle on the meter under test to 91). Remove the test leads from the meter under test.
2.	**SHUNT CURRENT Meter (3, Fig. 7-5).**
a.	Connect the COMMON test lead to terminal C on the meter under test. Connect the CURRENT/K OHMS test lead to terminal B on the meter under test. Adjust the preset needle on the meter under test full cw. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 0.0285 to 0.0345.** C8, SHUNT CURRENT meter.
b.	Adjust the VERNIER control for a 70 indication on the meter under test. **The cal std indicates 0.0665 to 0.0805.** C8, SHUNT CURRENT meter.
c.	Adjust the VERNIER control for a 100 indication on the meter under test. **The cal std indicates 0.0950 to 0.1150.** C8, SHUNT CURRENT meter. Release the TEST switch. Adjust the VERNIER control full ccw. Adjust the preset needle on the meter under test to 60. Remove the test leads from the meter under test.
3.	**MAG CURRENT Meter (4, Fig. 7-5).**
a.	Set the RANGE switch to 4. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 15-ma indication on the meter under test.

Table 7-5. Modulator-Power Supply - Periodic Test Procedures -Continued

Step	Operation Normal indication Corrective procedure
3*a*. Cont.	**The cal std indicates 13.50 to 16.50.** C10, MAG CURRENT meter.
b.	Adjust the VERNIER control for a :r5-ma indication on the meter under test. **The cal std indicates 33.50 to 36.50.** C10, MAG CURRENT meter.
c.	Adjust the VERNIER control for a 50-ma indication on the meter under test. **The cal std indicates 48.50 to 51.50.** C10, MAG CURRENT meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test.
4.	**KILOVOLTS Meter (5, Fig. 7-5).**
a.	Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set the RANGE switch to 2. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a :3-kv indication on the meter under test. **The cal std indicates 0.2700 to 0.3300.** C5, KILOVOLTS meter.
b.	Adjust the VERNIER control for a 7-kv indication on the meter under test. **The cal std indicates 0.6700 to 0.7300.** C5, KILOVOLTS meter.
c.	Adjust the VERNIER control for a 9-kv indication on the meter under test. **The cal std indicates 0.8700 to 0.9300.** C6, KILOVOLTS meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test.

Table 7-5. Modulator-Power Supply-Periodic Test Procedures-Continued

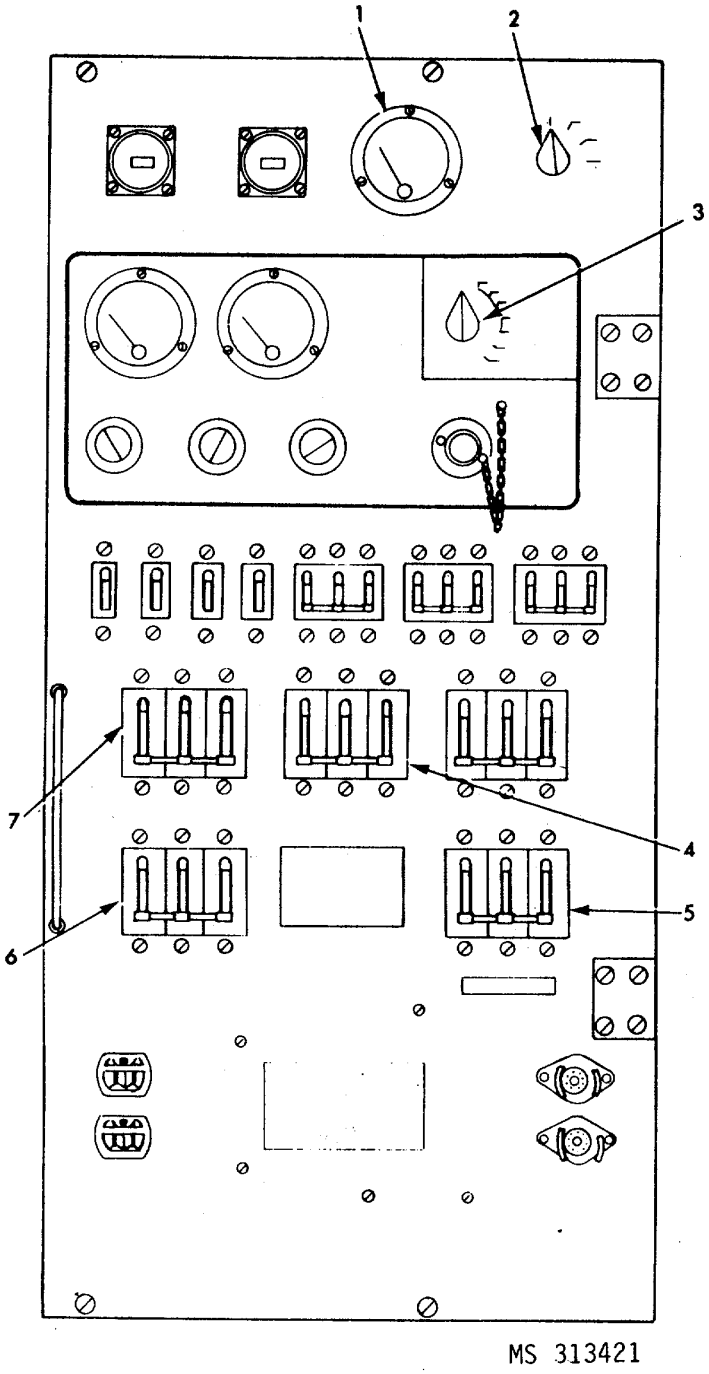
Step	Operation Normal indication Corrective procedure
4*c*. Cont.	Position the meter panel assembly onto the modulator-power supply chassis and secure. Reconnect P4 to J7, P5 to J2, and P6 to J3. Close and secure the modulator-power supply door.

Table 7-6. Receiver-Transmitter - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	WAVEMETER INDICATOR Meter (1, Fig. 7-6).
a.	Open and secure the door of the receiver-transmitter (4, fig. 7-7). Set the RANGE switch to 1. Connect the COMMON and SH GUARD test leads to chassis ground. Connect the CURRENT/K OHMS test lead to the center conductor of jack J1 (2, fig. 7-6). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 15-pa indication on the meter under test. **The cal std indicates 0.0135 to 0.0165.** C1, WAVEMETER INDICATOR meter.
b.	Adjust the VERNIER control for a 35-pa indication on the meter under test. **The cal std indicates 0.0335 to 0.0365.** C1, WAVEMETER INDICATOR meter.
c.	Adjust the VERNIER control for a 50-pa indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** C1, WAVEMETER INDICATOR meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Close and secure the door on the receiver-transmitter.

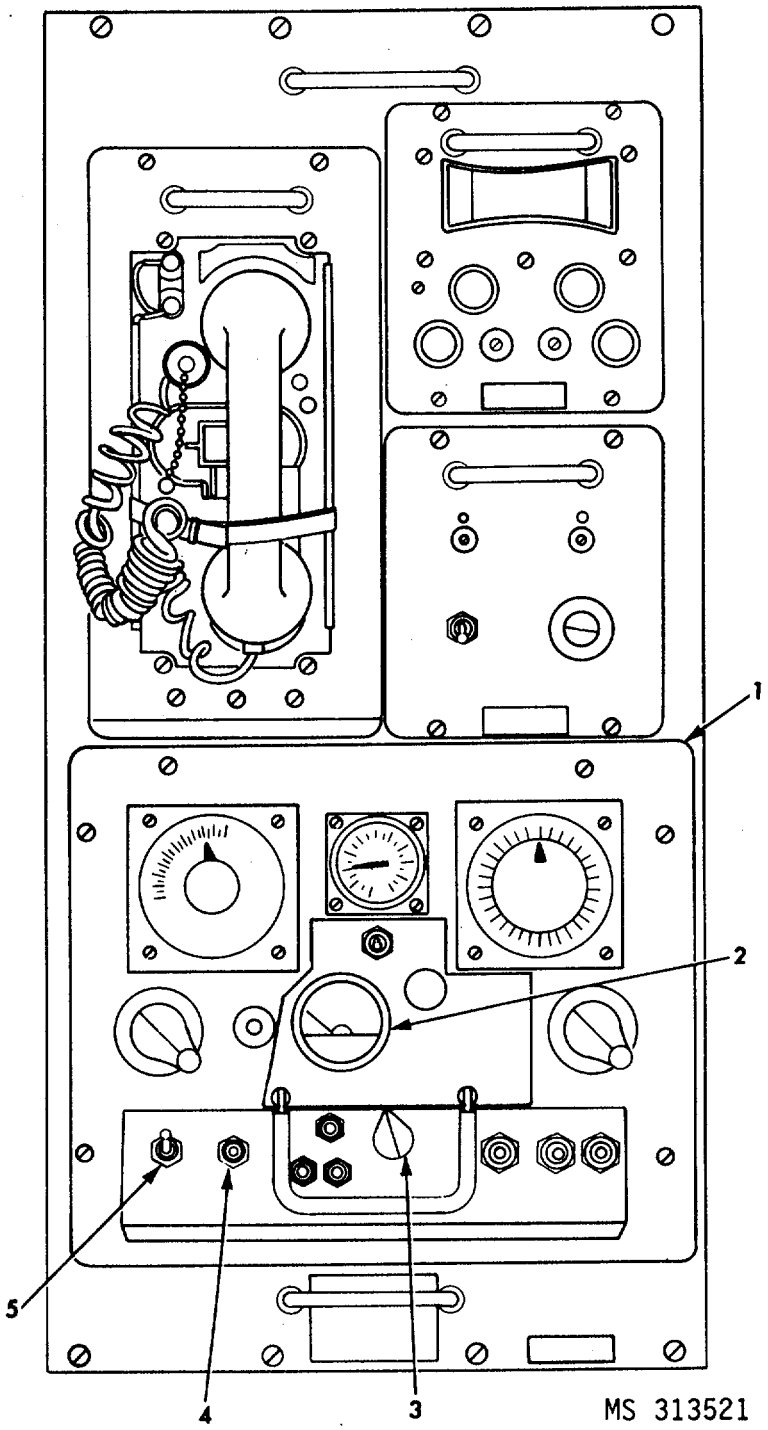
Table 7-7. Antenna Pedestal - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	Alinement Meter (3, Fig. 7-7).
a.	Open and secure the antenna pedestal door (6, fig. 7-7). Set the RANGE switch to 2. Set the FUNCTION switch to VAC. Remove the protective cover from synchro B1 (1, fig. 7-7). Connect the AC VOLTS test lead to terminal R1 of synchro B1. Connect the COMMON test lead to terminal R2 of synchro B1. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 27.00 to 33.00.** Alinement meter, R1, S2.
b.	Adjust the VERNIER control for a 60 indication on the meter under test. **The cal std indicates 57.00 to 63.00.** Alinement meter, R1.
c.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 1. Set and hold the TEST switch to NORMAL. Set and hold the meter switch (2, fig. 7-7) to ON. Adjust the VERNIER control for a 3 indication on the meter under test. **The cal std indicates 2.700 to 3.300.** Alinement meter, S2.
d.	Adjust the VERNIER control for a 6 indication on the meter under test. **The cal std indicates 5.700 to 6.300.** Alinement meter, S2. Release the switches. Adjust the VERNIER control full ccw. Set the MAIN LINE-MAIN POWER circuit breaker to OFF. Disconnect the test leads from synchro B1. Replace the protective cover on synchro B1. Close and secure the antenna pedestal door. Deenergize and store the cal std.



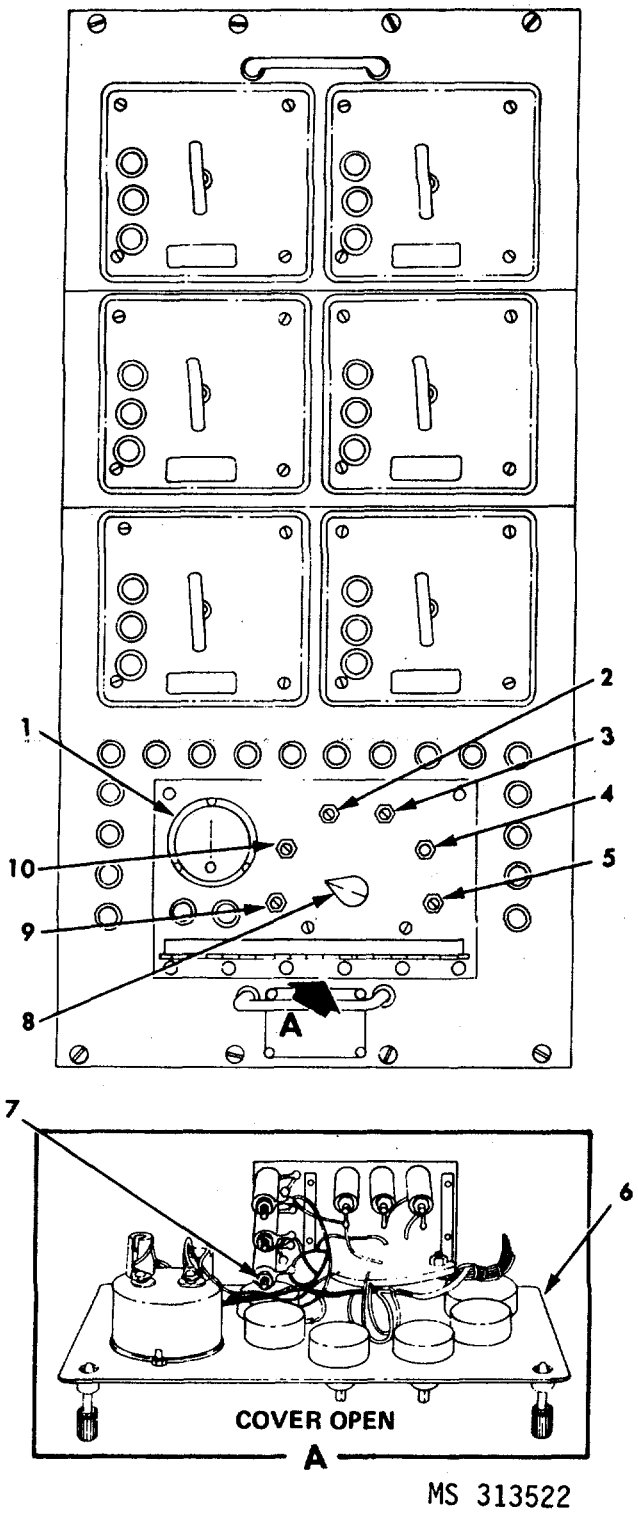
1 — LINE VOLTAGE meter
2 — LINE VOLTAGE switch
3 — TEST switch
4 — EL-AMPLIDYNE circuit breaker
5 — MAIN LINE-MAIN POWER circuit breaker
6 — MOD PLATE circuit breaker
7 — AZ-AMPLIDYNE circuit breaker
8 — RF POWER meter
9 — TEST meter

Figure 7-1. Power distribution panel.



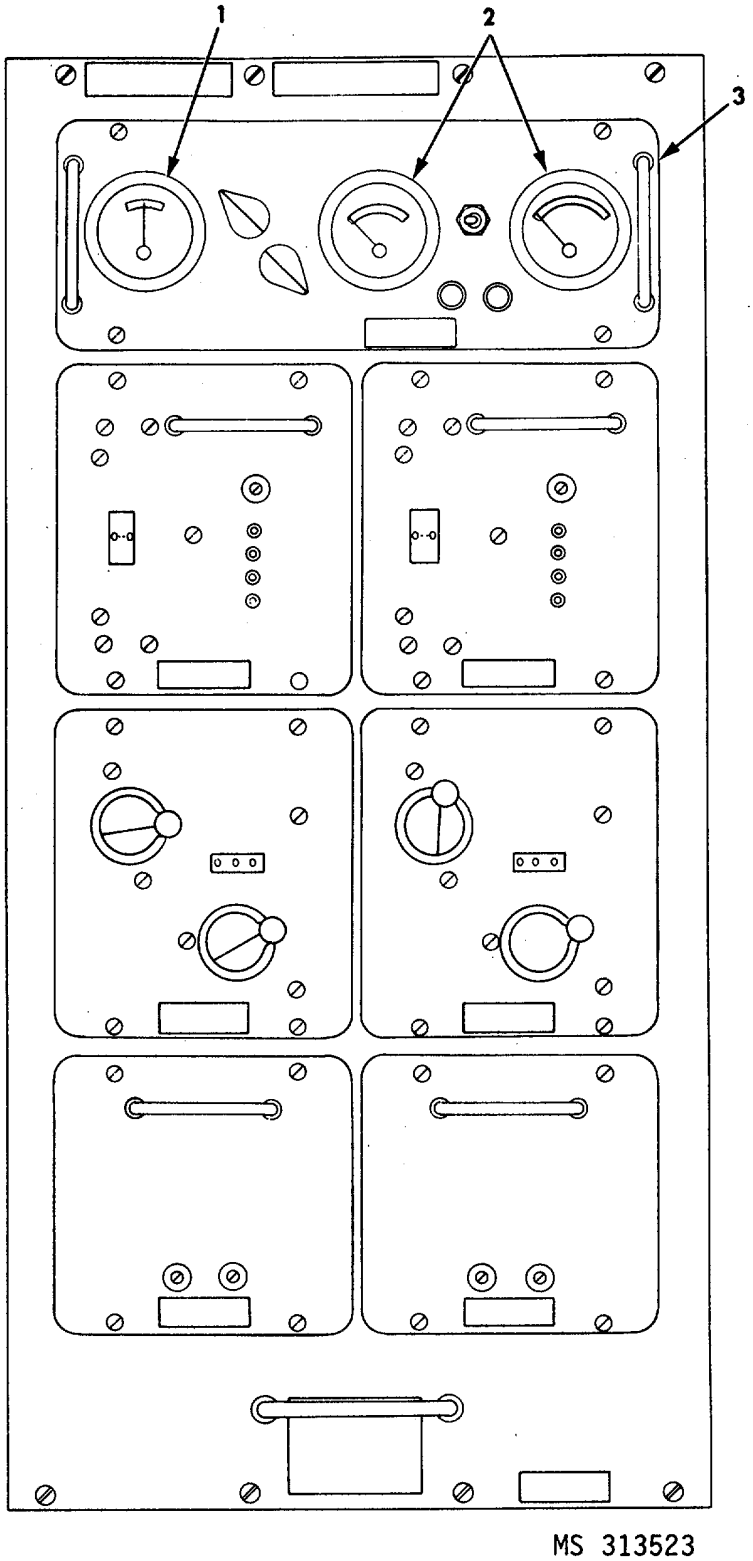
1 — Radar set control panel
2 — MAGNETRON CURRENT meter
3 — LOCAL-REMOTE switch
4 — RADIATE-STANDBY switch
5 — ON-OFF switch

Figure 7-2. Control-indicator subassembly.



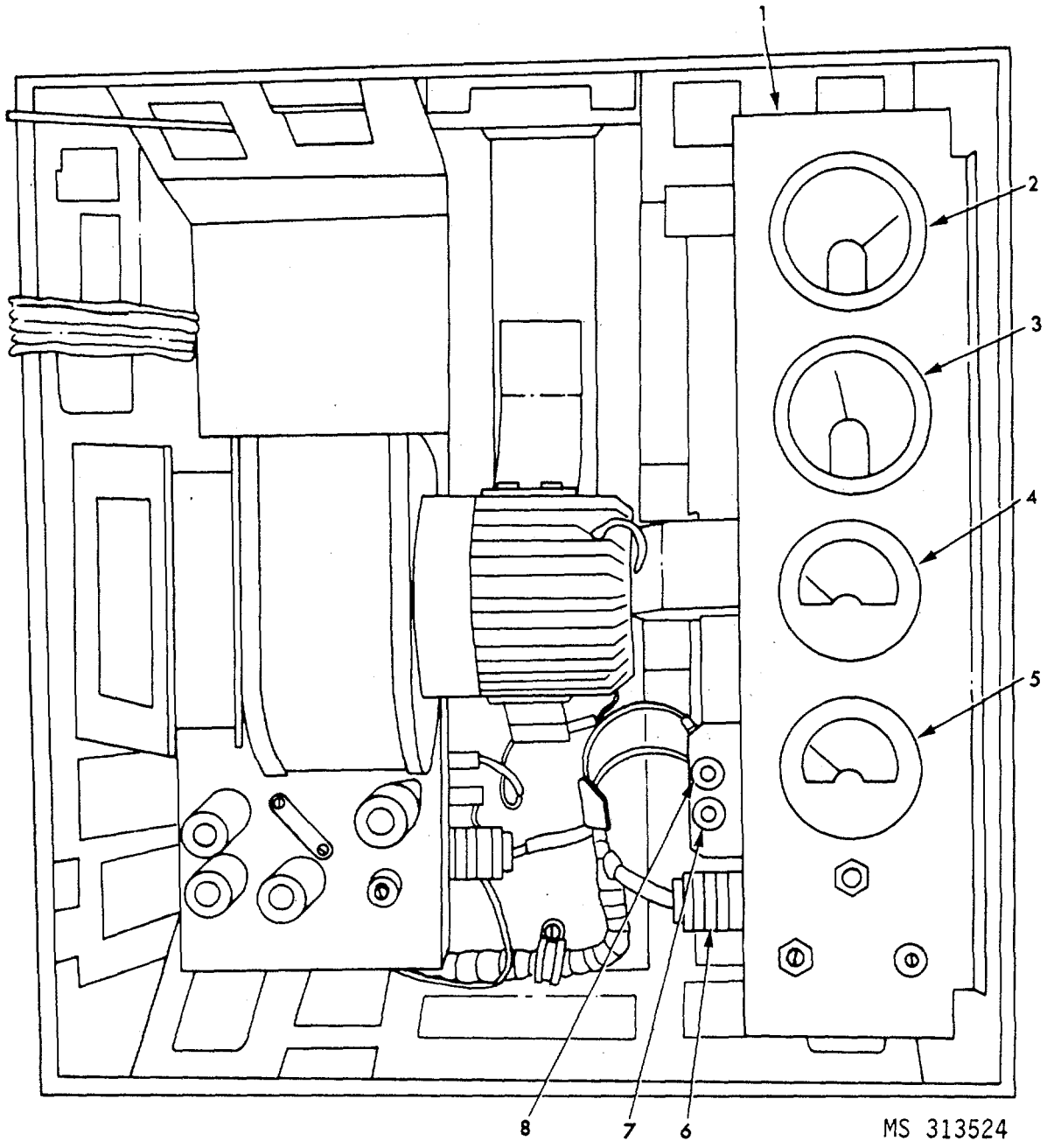
1 — BALANCE meter
2 — A3 control
3 — A4 control
4 — A5 control
5 — A6 control
6 — Panel no. 1
7 — Resistor R4, (top)
8 — BALANCE SELECTOR switch
9 — A1 control
10 — A2 control

Figure 7-3. Low-voltage power supply.



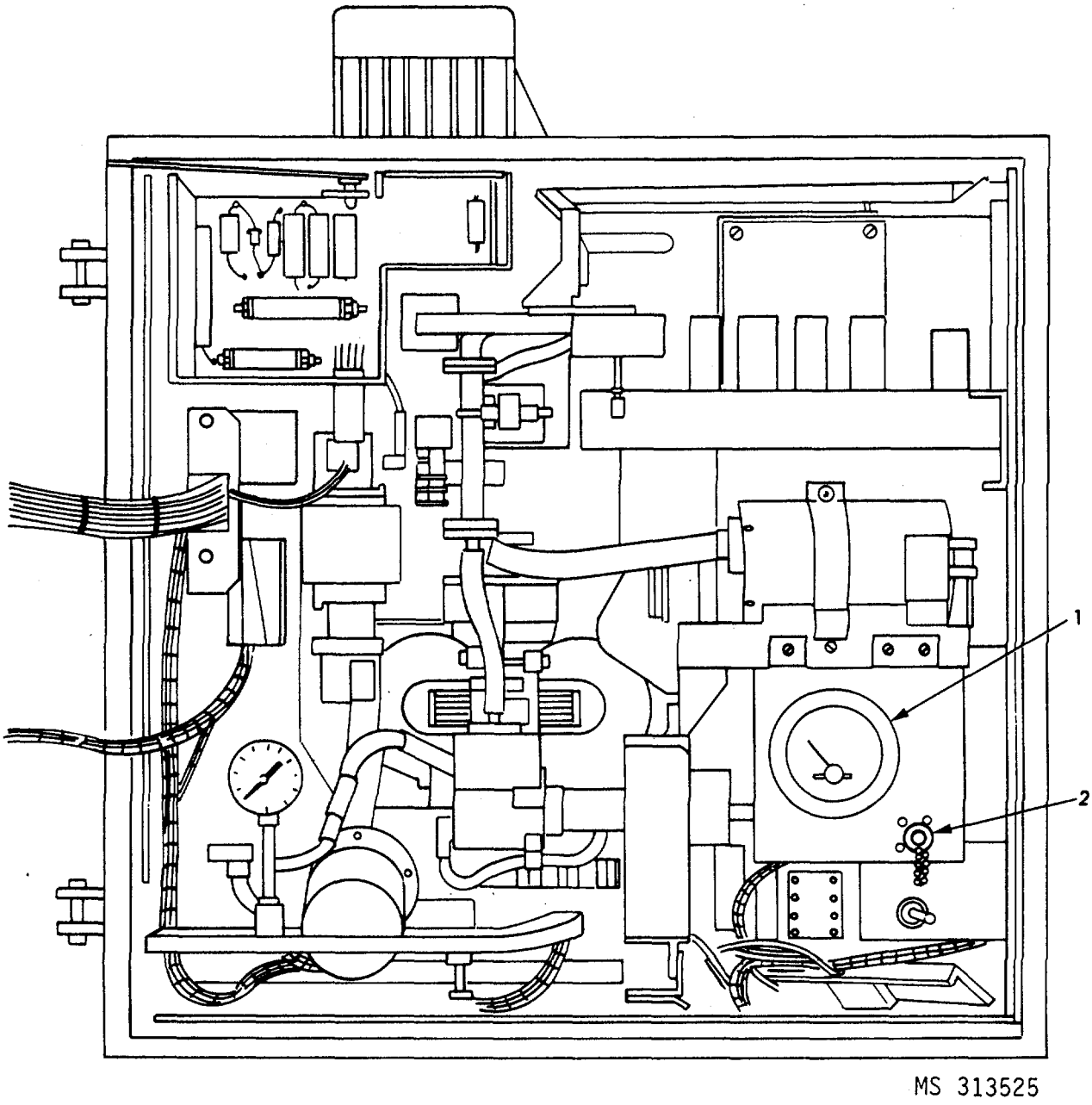
1 — ERROR meter
2 — AMPLIDYNE FIELD CURRENT meters
3 — Panel No. 1

Figure 7-4. Amplifier-computer subassembly.



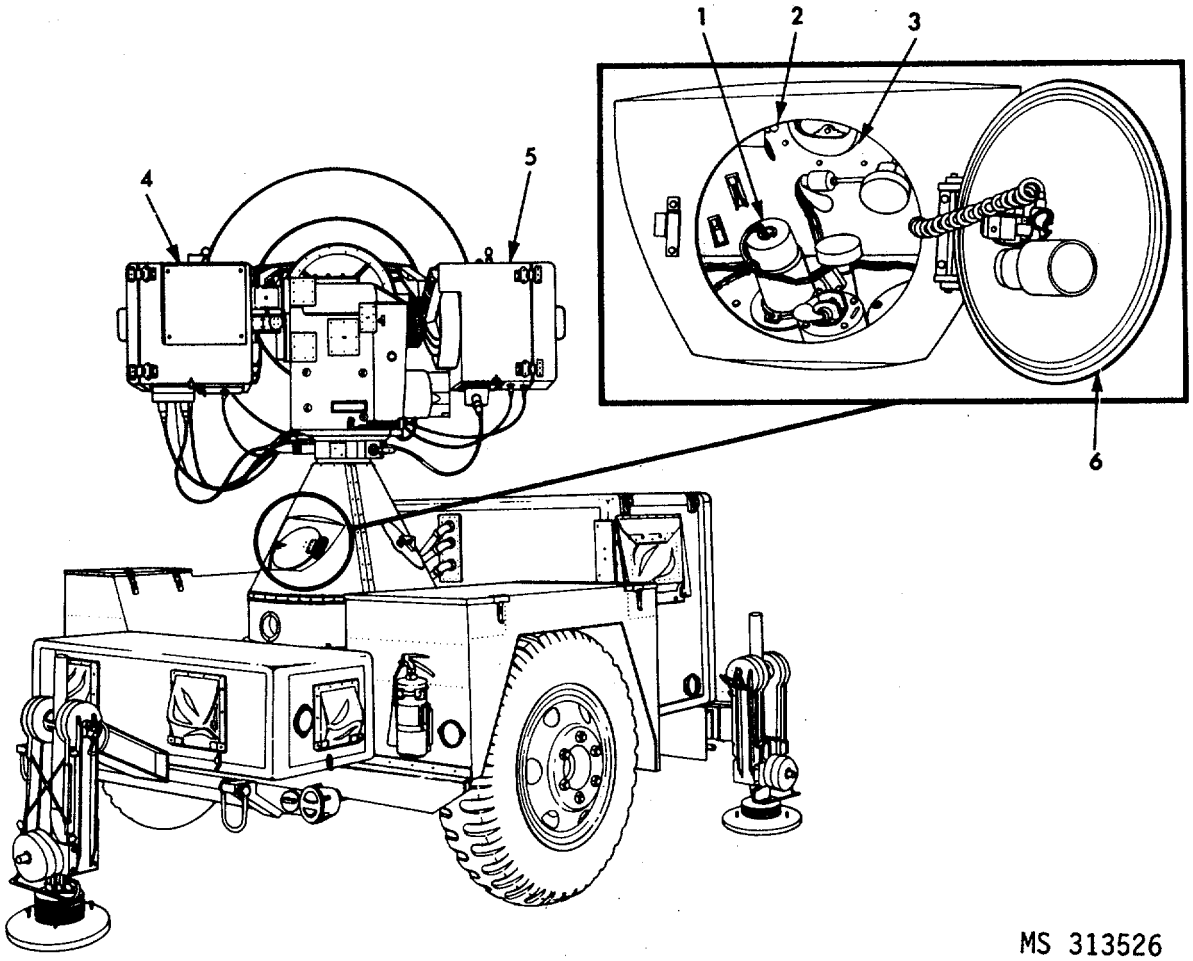
1 — Meter panel assembly
2 — RECT CURRENT meter
3 — SHUNT CURRENT meter
4 — MAG CURRENT meter
5 — KILOVOLTS meter
6 — P4/J7
7 — P5/J2
8 — P6/J3

Figure 7-5. Modulator-power supply.



1 — WAVEMETER INDICATOR
2 — J1

Figure 7-6. Receiver-transmitter.



1 — Synchro B1
2 — Meter switch
3 — Alinement meter
4 — Receiver-transmitter
5 — Modulator-power supply
6 — Antenna pedestal door

Figure 7-7. IROR access door.

CHAPTER 8
HIGH-POWERED ILLUMINATOR RADAR (HIPIR) AN/MPQ-61, -57
PERIODIC TEST PROCEDURES

Table 8-1. Radar Set Group Control-Indicator Panel (orAN/MPQ-61) -Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE **For users with AN/MPQ-57 perform table 8-1.1. For users with AN/MPQ-61 perform this table.**
1.	**SIGNAL STRENGTH Meter (1, Fig. 8-1).**
a.	Set the MAIN POWER circuit breaker (2, fig. 8-2) to OFF. Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Loosen the fasteners that secure the control-indicator panel, and lower the panel. Set the MAIN POWER circuit breaker to ON. Connect and energize the cal std. Set the FUNCTION switch to VDC. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Insert the DC VOLTS test lead into the GND jack (7, fig. 8-3). Insert the COMMON test lead into the SIG STR jack (2, fig. 8-3). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication on the upper edge of the red area of the meter under test. **The cal std indicates 3.271 to 4.271.** SIGNAL STRENGTH meter, R1.
b.	Adjust the VERNIER control for an indication on the lower edge of the green area of the meter under test. **The cal std indicates 7.064 to 8.064.** SIGNAL STRENGTH meter.
c.	Adjust the VERNIER control for an indication on the upper edge of the green area of the meter under test. **The cal std indicates 10.85 to 11.85.** SIGNAL STRENGTH meter.

Table 8-1. Radar Set Group Control-Indicator Panel (for AN/MPQ-61) -Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1d.	Release the TEST switch. Remove the test leads from the meter under test. Adjust the VERNIER control full ccw. Set the MAIN POWER circuit breaker to OFF. Close and secure the control-indicator panel. Deenergize and store the cal std.
2.	**TARGET SPEED Meter (2, Fig. 8-1).**
a.	Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON. Connect and energize the cal std. Loosen the fasteners that secure the control-indicator panel, and lower the panel. Set the FUNCTION switch to VDC. Set the RANGE switch to 1. Insert the DC VOLTS test lead into the GND jack (7, fig. 8-3). Insert the COMMON test lead into the TGT SPEED jack (1, fig. 8-3). Set and hold the TARGET SPEED switch (3, fig. 8-1) to X1. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 0.5 indication on the meter under test. **The cal std indicates 2.25 to 2.78.** TARGET SPEED meter, R2, S20.
b.	Adjust the VERNIER control for a 1.0 indication on the meter under test. **The cal std indicates 4.72 to 5.34.** TARGET SPEED meter.
c.	Adjust the VERNIER control for a 1.5 indication on the meter under test. **The cal std indicates 7.18 to 7.91.** TARGET SPEED meter.
d.	Adjust the VERNIER control for a 2.0 indication on the meter under test. **The cal std indicates 9.65 to 10.45.** TARGET SPEED meter.
e.	Release the TARGET SPEED switch. Adjust the VERNIER control for a 1.0 indication on the meter under test. **The cal std indicates 9.3 to 10.7.** R51, S20.

Table 8-1. Radar Set Group Control-Indicator Panel (for AN/MPQ-61) - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
2f.	Release the TEST switch. Remove the test leads from the meter under test. Adjust the VERNIER control full ccw. Set the MAIN POWER circuit breaker to OFF. Close and secure the control-indicator panel. Deenergize and store the cal std.
	NOTE **Step 3 is performed using the cal std only.**
3.	**LV PWR SUPPLIES Meter (10, Fig. 8-1).**
a.	Loosen the fasteners that secure the control-indicator panel and lower the panel. Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON. Connect and energize the cal std. Manually set the interlock switch located behind the control-indicator panel. Set the FUNCTION switch to MULTR. Set the BLOWER HEAT EXCHANGER circuit breaker (1, fig. 8-12) to OFF. Set all other transmitter panel No. 1 circuit breakers to ON. Set the BEAM circuit breakers (6 and 8, fig. 8-9) to OFF. Set all other transmitter panel No. 2 circuit breakers to ON. **The LINE VOLT meter (11, fig. 8-1) indicates in the green area.** Adjust line regulator transformer assembly INPUT VOLTAGE ADJUST (30A1A18).
b.	Press the STANDBY switch (7, fig. 8-12). Withdraw the microcomputer drawer. Set the PWR SUP FUNCTION SELECTOR switch (7, fig. 8-1) to - 100V. Loosen the fasteners that secure the low level electronics cover (6, fig. 8-16), raise and secure the cover. Insert the DC VOLTS test lead into - 100V - jack (4, fig. 8-16). Insert the COMMON test lead into - 100V + jack (5, fig. 8-16). Adjust the microcomputer - 100V adjustment (1, fig. 8-16) for a center-line indication on the meter under test. **The cal std indicates -9.90 to -10.10.** LV PWR SUPPLIES meter.

Table 8-1. Radar Set Group Control-Indicator Panel (for AN/MPQ-61)-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
3*c.*	Remove test leads. Set the PWR SUP FUNCTION SELECTOR switch to + 150V. Insert the COMMON test lead into the 155V - jack (2; fig. 8-16). Insert the DC VOLTS test lead into the 155V + jack (3, fig. 8-16). **The cal std indicates 14.79 to 16.13.** Microcomputer A4. **The meter under test indicates green area.** LV PWR SUPPLIES meter, A1, R63. Remove the test leads. Secure the low level electronics cover. Close and secure the microcomputer drawer.
d.	Insert the COMMON test lead into the GRD jack (8, fig. 8-5). Insert the DC VOLTS test lead into the + 100V jack (5, fig. 8-5). Set the PWR SUP FUNCTIONS selector switch to + 100V. Adjust the power supply + 100V ADJ control (4, fig. 8-5) for a center-line indication on the meter under test. **The cal std indicates 99.5 to 100.5.** LV PWR SUPPLIES meter.
e.	Remove the test leads from the test jacks. Insert the DC VOLTS test lead into the 5.4V jack (13, fig. 8-3). Insert the COMMON test lead into the 5.4V RTN jack (12, fig. 8-3). Set the PWR SUP FUNCTIONS selector switch to + 5.4V. **NOTE** **The 5.4-volt power supply referenced below is located in the top area of the radar set group control-indicator compartment.** Withdraw the 5.4-volt power supply (1, fig. 8-6). Adjust control A1R12 (2, fig. 8-6) for a center-line indication on the meter under test. **The cal std indicates 5.28 to 5.56.** LV PWR SUPPLIES meter, R44.
f.	Transfer the DC VOLTS test lead to the 90V CAL jack (10, fig. 8-3). Transfer the COMMON test lead to the 90V RTN jack (11, fig. 8-3). Set the MOTOR GENERATOR circuit breaker (1, fig. 8-2) to ON. Set the SAFE/OPERATE switch to OPERATE.

Table 8-1. Radar Set Group Control-Indicator Panel (for AN/MPQ-61) - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
3*f.* Cont.	Set the PWR SUP FUNCTIONS selector switch to + 90V. The meter under test indicates in the green area. **The cal std indicates 78.8 to 1 10.3.** LV PWR SUPPLIES meter, R56, R57.
g.	Set the MOTOR GENERATOR circuit breaker to OFF. Set the SAFE/OPERATE switch to SAFE. Transfer the DC VOLTS test lead to the 28V MON jack (8, fig. 8-3). Transfer the COMMON test lead to the 28V RTN jack (9, fig. 8-3). Set the PWR SUP FUNCTIONS selector switch to +28V. The meter under test indicates in the green area. **The cal std indicates 27 to 40**. LV PWR SUPPLIES meter, R38.
h.	Remove the test leads from the test jacks Adjust the VERNIER control full ccw. Set the MAIN POWER circuit breaker to OFF. Deenergize and store the cal std. Close and secure the control-indicator panel.
	NOTE **Step 4 is performed using DMM 10177187 only when the cal std is not available.**
4.	LV PWR SUPPLIES meter (10, Fig. 8-1).
a.	Loosen the fasteners that secure the control-indicator panel, and lower the panel. Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Set the MAIN POWER circuit breaker (2, fig. 8-1) to ON. Connect and energize the DMM. Manually set the interlock switch located behind the control-indicator panel. Set the BLOWER HEAT EXCHANGER circuit breaker (1, fig. 8-12) to OFF. Set all other transmitter panel No. 1 circuit breakers to ON. Set the BEAM circuit breakers (6 and 8, fig. 8-9) to OFF. Set all other transmitter panel No. 2 circuit breakers to ON. **The LINE VOLT meter (11, fig. 8-1) indicates in the green area.** Adjust line regulator transformer assembly INPUT VOLTAGE ADJUST (30A1A18).

Table 8-1. Radar Set Group Control-Indicator Panel (for AN/MPQ-61) -Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
4*b.*	Press the RANGE 100 switch. Set the PWR SUP FUNCTIONS selector switch (8, fig. 8-1) to - 100V. Withdraw the microcomputer drawer. Loosen the fasteners that secure the low level electronics cover (7, fig. 8-16) to the microcomputer and raise and secure the cover. Insert the INPUT LO test lead into the - 100V (+) jack (5, fig. 816). Insert the INPUT HI test lead into the - 100V (-) jack (4, fig. 8-16). Adjust the microcomputer - 100V adjustment (1, fig. 8-16) for a center-line indication on the meter under test. **The DMM indicates -9.90 to -10.10**. LV PWR SUPPLIES meter.
c.	Remove the test leads. Press the RANGE 1000 switch Transfer the INPUT LO test lead to the 155V (-) jack (2, fig. 8-16). Transfer the INPUT HI test lead to the 155V (+) jack (3, fig. 8-16). Set the PWR SUP FUNCTIONS selector switch to + 150V. **The DMM indicates 14.79 to 16.13.** Microcomputer A4. **The meter under test indicates green area.** LV PWR SUPPLIES meter, Al, R63. Remove the test leads. Secure the low level electronics cover. Close and secure the microcomputer drawer.
d.	Press the RANGE 100 switch. Insert the INPUT LO test lead into the GRD jack (8, fig. 8-5). Insert the INPUT HI test lead into the + 100V jack (5, fig. 8-5). Set the PWR SUP FUNCTIONS selector switch to + 100V. Adjust the power supply + 100V ADJ control (4, fig. 8-5) for a centerline indication on the meter under test. **The DMM indicates 99.5 to 100.5.** LV PWR SUPPLIES meter.
e.	Remove the test leads from the test jacks. Press the RANGE 10 switch. Insert the INPUT HI test lead into the 5.4V jack (13, fig. 8-3).

Table 8-1. Radar Set Croup Control-Indicator Panel (for AN/MPQ.61) - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
4*e*. Cont.	Insert the INPUT LO test lead into the 5.4V RTN jack (12, fig. 8-3). Set the PWR SUP FUNCTIONS selector switch to + 5.4V. **NOTE** **The 5.4-volt power supply referenced below is located in the top area of the radar set group control-indicator compartment**. Withdraw the 5.4-volt power supply (1, fig. 8-6). Adjust A1R12 control (2, fig. 8-6) for center-line indication on the meter under test. **The DMM indicates 5.28 to 5.560.** LV PWR SUPPLIES meter, R44.
f:	Press the RANGE 100 switch. Transfer the INPUT HI test lead to the 90V CAL jack (10, fig. 8-3). Transfer the INPUT LO test lead to the 90V RTN jack (11, fig. 8-3). Set the PWR SUP FUNCTIONS selector switch to + 90V. The meter under test indicates in the green area. **The DMM indicates 78.8 to 110.3.** LV PWR SUPPLIES meter, R56, R57.
g.	Transfer the INPUT HI test lead to the 28V MON jack (8, fig. 8-3). Transfer the INPUT LO test lead to the 28V RTN jack (9, fig. 8-3). Set the PWR SUP FUNCTIONS selector switch to + 28V. The meter under test indicates in the green area. **The DMM indicates 27 to 40.** LV PWR SUPPLIES meter, R38.
h.	Remove the test leads from the test jacks. Set the MAIN POWER circuit breaker to OFF. Deenergize and store the DMM. Close and secure the control-indicator panel.
5.	**Ripple Test.**
a.	Press and hold the MOMENTARY INTERLOCK OVERRIDE switch located on the left-hand subordinate distribution box. Loosen the fasteners that secure the control-indicator panel, and lower the panel. Set the control-indicator panel interlock switch 30A1A4S4. Release the MOMENTARY INTERLOCK OVERRIDE switch.

Table 8-1. Radar Set Group Control-Indicator Panel (for AN/MPQ-6) -Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
5*a.* Cont.	Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Set the BLOWER HEAT EXCHANGER circuit breaker (1, fig. 8-12) to OFF. Set all other transmitter panel No. 1 circuit breakers to ON. Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Set the BEAM circuit breakers (6 and 8, fig. 8-9) to OFF. Set all other transmitter panel No. 2 circuit breakers to ON. Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON. Connect and energize the cal std. Adjust the VERNIER control full ccw. Set the PWR SUP FUNCTIONS selector switch (8, fig. 8-1) to OFF. Press the STANDBY switch (7, fig. 8-12). Set the FUNCTION switch to VAC. Set the RANGE switch to 1. Insert the COMMON test lead into GRD jack J4 (7, fig. 8-4). Insert the AC VOLTS test lead into the RIPPLE TEST jack (14, fig. 8-3). Press and hold the RIPPLE TEST switch (9, fig. 8-1). Set and hold the TEST switch to LO. Adjust the VERNIER control for an indication on the lower edge of green area. **The cal std indicates 3 to 6.7.** A2.
b.	Release the RIPPLE TEST and TEST switches. Adjust the VERNIER control full ccw. Remove the test leads from the test jacks. Set the MAIN POWER circuit breaker to OFF. Deenergize and store the cal std. Close and secure the control-indicator panel.
	NOTE **Step 6 is performed using the cal std only.**

Table 8-1. Radar Set Group Control-Indicator Panel (for AN/MPQ-61) - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
6.	**LINE VOLT Meter (11, Fig. 8-1).** **WARNING** **While performing the following test, be extremely careful not to come in contact with various 416-vac potentials inside the control-indicator panel chassis.** Observe that the LINE VOLT meter indicates in the green area. Adjust the INPUT VOLTAGE ADJUST on the line regulator transformer assembly (30A1A18) for the nearest major or minor scale division indication on the LINE VOLT meter. Loosen the fasteners that secure the control-indicator panel, and lower the panel. Loosen the control-indicator panel back cover, and raise and secure the cover. [1]Connect the COMMON test lead to the control-indicator panel T1-2 (12, fig. 8-1). [2]Insert the COMMON test lead into the control-indicator panel NEUTRAL jack (15, fig. 8-3). Set the FUNCTION switch to MULTR. Momentarily set the VAC switch to the down position. Insert the AC VOLTS test lead into the 416 ϕA jack (6, fig. 8-3). Record the cal std indication as E1. Transfer the AC VOLTS test lead to the 416 ϕC jack (4, fig. 8-3). Record the cal std indication as E2. Transfer the AC VOLTS test lead to the 416 ϕB jack (5, fig. 8-3). Record the cal std indication as E3. Add the three recorded indications, and divide the sum by 3. Record as E4.

Meter Ind.	E4 Max.	E4 Min.		Meter Ind.	E4 Max.	E4 Min.
-4.0	228.7	225.1		0	240.0	236.4
-3.5	230.1	226.5		0.5	241.4	237.8
- 3.0	231.5	227.9		1.0	242.8	239.2
-2.5	232.9	229.3		1.5	244.2	240.6
-2.0	234.3	230.7		2.0	245.6	242.0
- 1.5	235.7	232.1		2.5	247.0	243.4
- 1.0	237.1	233.5		3.0	248.4	244.8
-0.5	238.5	234.8		3.5	249.8	246.2
				4.0	251.2	247.6

LINE VOLT meter.

[1]Applies to control-indicator panel 13039072.
[2]Applies to control-indicator panel 13235309.

Table 8-1. Radar Set Group Control-Indicator Panel (for AN/MPQ-61) - Periodic Test Procedures- Continued

Step	Operation Normal indication Corrective procedure
6.	Remove the test leads.
Cont.	Close and secure the control indicator panel.
7.	**NOTE** **Step 7 is performed using DMM 10177187 only when the cal std is not available.** **LINE VOLT Meter (11, Fig. 8-1).** **WARNING** **While performing the following test, be extremely careful not to come in contact with various 416-vac potentials inside the control-indicator panel chassis.** Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON, and observe that the LINE VOLT meter indicates in the green area. Adjust the INPUT VOLTAGE ADJUST on the line regulator transformer assembly (30A1A18) for the nearest major or minor scale division indication on the LINE VOLT meter. Loosen the fasteners that secure the control-indicator panel, and lower the panel. Connect and energize the DMM. [1]Connect the INPUT LO test lead to the control-indicator panel T1-2 (12, fig. 8-1). [2]Insert the INPUT LO test lead into the control-indicator panel NEUTRAL jack (15, fig. 8-3). Press the RANGE 1000 switch. Press the VAC switch. Insert the INPUT HI test lead into the 416 ϕA jack (6, fig. 8-3). Record the DMM indication as E1. Transfer the INPUT HI test lead to the 416 ϕC jack (4, fig. 8-3). Record the DMM indication as E2. Transfer the INPUT HI test lead to the 416 ϕB jack (5, fig. 8-3).' Record the DMM indication as E3. Add the three recorded indications, and divide the sum by 3. Record as E4. [1]Applies to control-indicator panel 13039072. [2]Applies to control-indicator panel 13235309.

Table 8-1. Radar Set Group Control-Indicator Panel (or AN/MPQ-61)-Periodic Test Procedures -Continued

Step	Operation Normal indication Corrective procedure
7. Cont.	

Meter Ind.	E4 Max.	E4 Min.
-4.0	228.7	207.7
-3.5	230.1	209.0
- 3.0	231.5	210.3
- 2.5	232.9	211.6
- 2.0	234.3	212.8
- 1.5	235.7	214.1
- 1.0	237.1	215.4
- 0.5	238.5	216.7

Meter Ind.	E4 Max.	E4 Min.
0	240.0	218.0
0.5	241.4	210.3
1.0	242.8	220.6
1.5	244.2	221.8
2.0	245.6	223.1
2.5	247.0	224.4
3.0	248.4	225.7
3.5	249.8	226.9
4.0	251.2	228.2

LINE VOLT meter.
Remove the test leads.
Close and secure the control-indicator panel.
Set the MAIN POWER circuit breaker to OFF.
Deenergize and store the DMM.
Perform table 8-2 next.

Table 8-1.1. Radar Set Group Control-Indicator Panel (for AN/MPQ.57)- Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE **For users with AN/MPQ-61, perform table 8-1. Table 8-1.1 is for use with AN/MPQ-57.**
1.	**SIGNAL STRENGTH Meter (1, Fig. 8-1).**
a.	Set the MAIN POWER circuit breaker (2, fig. 8-2) to OFF. Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Loosen the fasteners that secure the control-indicator panel, and lower the panel. Set the MAIN POWER circuit breaker to ON. Connect and energize the cal std. Set the FUNCTION switch to VDC. Set the RANGE switch to 1. Adjust the VERNIER control full ccw.

Table 8-1.1. Radar Set Group Control-Indicator Panel (fbrAN/MPQ-57) - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1*a.* Cont.	Insert the DC VOLTS test lead into the GND jack (7, fig. 8-17). Insert the COMMON test lead into the SIG STR jack (2, fig. 8-17). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication on the upper edge of the red area of the meter under test. **The cal std indicates 3.878 to 4.872.** SIGNAL STRENGTH meter, R1.
b.	Adjust the VERNIER control for an indication on the lower edge of the green area of the meter under test. **The cal std indicates 8.178 to 9.222.** SIGNAL STRENGTH meter.
c.	Adjust the VERNIER control for an indication on the upper edge of the green area of the meter under test. **The cal std indicates 12.53 to 13.57.** SIGNAL STRENGTH meter.
d.	Release the TEST switch. Remove the test leads from the meter under test. Adjust the VERNIER control full ccw. Set the MAIN POWER circuit breaker to OFF. Close and secure the control-indicator panel. Deenergize and store the cal std.
2.	**TARGET SPEED Meter (2, Fig. 8-1).**
a.	Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON. Connect and energize the cal std. Loosen the fasteners that secure the control-indicator panel, and lower the panel. Set the FUNCTION switch to VDC. Set the RANGE switch to 1. Insert the DC VOLTS test lead into the GND jack (7, fig. 8-17). Insert the COMMON test lead into the TGT SPEED jack (1, fig. 8-17). Set and hold the TARGET SPEED switch (3, fig. 8-1) to X1. Set and hold the TEST switch to NORMAL.

Table 8-1.1. Radar Set Group Control-Indicator Panel (for AN/MPQ-57) - Periodic Test Procedures- Continued

Step	Operation Normal indication Corrective procedure
2*a.* Cont.	Adjust the VERNIER control for a 0.5 indication on the meter under test. **The cal std indicates 2.25 to 2.78.** TARGET SPEED meter, R2, S20.
b.	Adjust the VERNIER control for a 1.0 indication on the meter under test. **The cal std indicates 4.72 to 5.34.** TARGET SPEED meter.
c.	Adjust the VERNIER control for a 1.5 indication on the meter under test. **The cal std indicates 7.18 to 7.91.** TARGET SPEED meter.
d.	Adjust the VERNIER control for a 2.0 indication on the meter under test. **The cal std indicates 9.65 to 10.45.** TARGET SPEED meter.
e.	Release the TARGET SPEED switch. Adjust the VERNIER control for a 1.0 indication on the meter under test. **The cal std indicates 9.3 to 10.7.** R51, S20.
f.	Release the TEST switch. Remove the test leads from the meter under test. Adjust the VERNIER control full ccw. Set the MAIN POWER circuit breaker to OFF. Close and secure the control-indicator panel. Deenergize and store the cal std.
	NOTE **Step 3 is performed using the cal std only.**
3.	LV PWR SUPPLIES Meter (10, Fig. 8-1).
a.	Loosen the fasteners that secure the control-indicator panel and lower the panel. Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON. Connect and energize the cal std. Manually set the interlock switch located behind the control-indicator panel. Set the FUNCTION switch to MULTR.

Table 8-1.1. Radar Set Group Control-Indicator Panel (for AN/MPQ-57)-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
3*a.* Cont.	Set the BLOWER HEAT EXCHANGER circuit-breaker (1, fig. 8-12) to OFF.
	Set the other transmitter panel. No. 1 circuit breakers to ON.
	Set the BEAM circuit breakers (6 and 8, fig. 8-9) to OFF.
	Set all other transmitter panel No. 2 circuit breakers to ON.
	The LINE VOLT meter (11, fig. 8-1) indicates in the green area.
	Adjust line regulator transformer assembly INPUT VOLTAGE ADJUST (30A1A18).
b.	Press the STANDBY switch (7, fig. 8-12).
	Momentarily set the VDC switch to the down position.
	Insert the COMMON test lead into GRD jack J4 (7, fig. 8-4).
	Insert the DC VOLTS test lead into - 100V jack J5 (5, fig. 8-4).
	Set the PWR SUP FUNCTIONS selector switch (8, fig. 8-1) to - 100V.
	CAUTION **Do not operate the power supply in the extended position for more than 30 seconds or damage to the unit will result. To ensure proper cooling, the power supply drawer must be completely closed.**
	Withdraw the - 100, 150, 250-vdc power supply.
	Adjust - 100V control R57 (1, fig. 8-4) for a center-line indication on the meter under test.
	Close the power supply drawer.
	The cal std indicates - 99.5 to - 100.5.
	LV PWR SUPPLIES meter.
c.	Transfer the DC VOLTS test lead to + 10OV/ + 150V jack J3 (4, fig. 8-4).
	Set the PWR SUP FUNCTIONS selector switch to + 150V.
	Withdraw the power supply drawer.
	Adjust + 150V/+ 100V control R36 (3, fig. 8-4) for a center-line indication on the meter under test.
	Close the power supply drawer.
	The cal std indicates 148.5 to 151.5.
	LV PWR SUPPLIES meter, Al.
d.	Transfer the DC VOLTS test lead to +250V jack J2 (6, fig. 8-4).
	Set the PWR SUP FUNCTIONS selector switch to + 250V.
	Withdraw the power supply drawer.
	Adjust +250V control R24 (2, fig. 84) for a center-line indication on the meter under test.

Table 8-1.1. Radar Set Group Control-Indicator Panel (for AN/MPQ-7) - Periodic Test Procedures -Continued

Step	Operation Normal indication Corrective procedure
3*d*. Cont.	Close the power supply drawer. **The cal std indicates 248 to 252.** LV PWR SUPPLIES meter.
e.	Remove the test leads from the test jacks. Insert the COMMON test lead into the GRD jack (8, fig. 8-5). Insert the DC VOLTS test lead into the + 100V jack (5, fig. 8-5). Set the PWR SUP FUNCTIONS selector switch to + 100V. Adjust the power supply + 100V ADJ control (4, fig. 8-5) for a center-line indication on the meter under test. **The cal std indicates 99.5 to 100.5.** LV PWR SUPPLIES meter.
f.	Remove the test leads from the test jacks. Insert the DC VOLTS test lead into the 5.4V jack (13, fig. 8-17). Insert the COMMON test lead into the 5.4V RTN jack (12, fig. 8-17). Set the PWR SUP FUNCTIONS selector switch to + 5.4V. **NOTE** **The 5.4-volt power supply referenced below is located in the top area of the radar set group control-indicator compartment.** Withdraw the 5.4-volt power supply (1, fig. 8-6). Adjust control AlR12 (2, fig. 8-6) for a center-line indication on the meter under test. **The cal std indicates 5.28 to 5.56.** LV PWR SUPPLIES meter, R44.
g.	Transfer the DC VOLTS test lead to the 90V CAL jack (10, fig. 8-17). Transfer the COMMON test lead to the 90V RTN jack (11, fig. 8-17). Set the MOTOR GENERATOR circuit breaker (1, fig. 8-2) to ON. Set the SAFE/OPERATE switch to OPERATE. Set the PWR SUP FUNCTIONS selector switch to + 90V. The meter under test indicates in the green area. **The cal std indicates 78.8 to 110.3.** LV PWR SUPPLIES meter, R56, R57.
h.	Set the MOTOR GENERATOR circuit breaker to OFF. Set the SAFE/OPERATE switch to SAFE. Transfer the DC VOLTS test lead to the 28V MON jack (8, fig. 8-17).

Table 8-1.1. Radar Set Group Control-Indicator Panel (for AN/MPQ-57) - Periodic Test Procedures- Continued

Step	Operation Normal indication Corrective procedure
3h. Cont.	Transfer the COMMON test lead to the 28V RTN jack (9, fig. 8-17). Set the PWR SUP FUNCTIONS selector switch to + 28V. The meter under test indicates in the green area. **The cal std indicates 27 to 40**. LV PWR SUPPLIES meter, R38.
i.	Remove the test leads from the test jacks. Adjust the VERNIER control full ccw. Set the MAIN POWER circuit breaker to OFF. Deenergize and store the cal std. Close and secure the control-indicator panel.
	NOTE **Step 4 is performed using DMM 10177187 only when the cal std is not available.**
4.	LV PWR SUPPLIES meter (10, Fig. 8-1).
a.	Loosen the fasteners that secure the control-indicator panel, and lower the panel. Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON. Connect and energize the DMM. Manually set the interlock switch located behind the control-indicator panel. Set the BLOWER HEAT EXCHANGER circuit breaker (1, fig. 8-12) to OFF. Set all other transmitter panel No. 1 circuit breakers to ON. Set the BEAM circuit breakers (6 and 8, fig. 8-9) to OFF. Set all other transmitter panel No. 2 circuit breakers to ON. **The LINE VOLT meter (11, fig. 8-1) indicates in the green area.** Adjust line regulator transformer assembly INPUT VOLTAGE ADJUST (30A1A18).
b.	Press the STANDBY switch (7, fig. 8-12). Press the RANGE 100 switch. Press the VDC switch. Insert the INPUT LO test lead into GRD jack J4 (7, fig. 8-4). Insert the INPUT HI test lead into - 100V jack J5 (5, fig. 8-4). Set the PWR SUP FUNCTIONS selector switch (8, fig. 8-1) to -100V;

Table 8-1.1. Radar Set Group Control-Indicator Panel (for AN/MPQ-57)- Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
4b. Cont.	**CAUTION** **Do not operate the power supply in the extended position for more than 30 seconds or damage to the unit will result. To ensure proper cooling, the power supply drawer must be completely closed.** Withdraw the - 100-, 150-, 250-vdc power supply. Adjust - 100V control R57 (1, fig. 8-4) for a center-line indication on the meter under test. Close the power supply drawer. **The DMM indicates - 99.5 to - 100.5.** LV PWR SUPPLIES meter.
c.	Press the RANGE 1000 switch. Transfer the INPUT HI test lead to + 10OV/+ 150V jack J3 (4, fig. 8-4). Set the PWR SUP FUNCTIONS selector switch to + 150V. Withdraw the power supply drawer. Adjust + 150V/+ 100V control R36 (3, fig. 84) for a center-line indication on the meter under test. Close the power supply drawer. **The DMM indicates 148.5 to 151.5**. LV PWR SUPPLIES meter, Al.
d.	Transfer the INPUT HI test lead to + 250V jack J2 (6, fig. 8-4). Set the PWR SUP FUNCTIONS selector switch to + 250V. Withdraw the power supply drawer. Adjust + 250V control R24 (2, fig. 8-4) for a center-line indication on the meter under test. Close the power supply drawer. **The DMM indicates 248 to 252.** LV PWR SUPPLIES meter. Remove the test leads.
e.	Press the RANGE 100 switch. Insert the INPUT LO test lead into the GRD jack (8, fig. 8-5). Insert the INPUT HI test lead into the + 100V jack (5, fig. 8-5). Set the PWR SUP FUNCTIONS selector switch to + 100V. Adjust the power supply + 100V ADJ control (4, fig. 8-5) for a centerline indication on the meter under test. **The DMM indicates 99.5 to 100.5**. LV PWR SUPPLIES meter.

Table 8-1.1. Radar Set Group Control-Indicator Panel (for AN/MPQ-57)- Periodic Test Procedures- Continued

Step	Operation Normal indication Corrective procedure
4f.	Remove the test leads from the test jacks. Press the RANGE 10 switch. Insert the INPUT HI test lead into the 5.4V jack (13, fig. 8-17). Insert the INPUT LO test lead into the 5.4V RTN jack (12, fig. 8-17). Set the PWR SUP FUNCTIONS selector switch to + 5.4V. **NOTE** **The 5.4-volt power supply referenced below is located in the top area of the radar set group control-indicator compartment.** Withdraw the 5.4-volt power supply (1, fig. 8-6). Adjust AlR12 control (2, fig. 8-6) for center-line indication on the meter under test. **The DMM indicates 5.28 to 5.560.** LV PWR SUPPLIES meter, R44.
g.	Press the RANGE 100 switch. Transfer the INPUT HI test lead to the 90V CAL jack (10, fig. 8-17). Transfer the INPUT LO test lead to the 90V RTN jack (11, fig. 8-17). Set the PWR SUP FUNCTIONS selector switch to + 90V. The meter under test indicates in the green area. **The DMM indicates 78.8 to 110.3**. LV PWR SUPPLIES meter, R56, R57.
h.	Transfer the INPUT HI test lead to the 28V MON jack (8, fig. 8-17). Transfer the INPUT LO test lead to the 28V RTN jack (9, fig. 8-17). Set the PWR SUP FUNCTIONS selector switch to +28V. The meter under test indicates in the green area. **The DMM indicates 27 to 40**. LV PWR SUPPLIES meter, R38.
i.	Remove the test leads from the test jacks. Set the MAIN POWER circuit breaker to OFF. Deenergize and store the DMM. Close and secure the control-indicator panel.

Table 8-1.1. Radar Set Group Control-Indicator Panel (for AN/MPQ-57)-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
5.	Ripple Test.
a.	Press and hold the MOMENTARY INTERLOCK OVERRIDE switch located on the left-hand subordinate distribution box. Loosen the fasteners that secure the control-indicator panel, and lower the panel. Set the control-indicator panel interlock switch 30A1A4S4. Release the MOMENTARY INTERLOCK OVERRIDE switch. Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Set the BLOWER HEAT EXCHANGER circuit breaker (1, fig. 8-12) to OFF. Set all other transmitter panel No. 1 circuit breakers to ON. Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Set the BEAM circuit breakers (6 and 8, fig. 8-9) to OFF. Set all other transmitter panel No. 2 circuit breakers to ON. Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON. Connect and energize the cal std. Adjust the VERNIER control full ccw. Set the PWR SUP FUNCTIONS selector switch (8, fig. 8-1) to OFF. Press the STANDBY switch (7, fig. 8-12). Set the FUNCTION switch to VAC. Set the RANGE switch to 1. Insert the COMMON test lead into GRD jack J4 (7, fig. 8-4). Insert the AC VOLTS test lead into the RIPPLE TEST jack (14, fig. 8-17). Press and hold the RIPPLE TEST switch (9, fig. 8-1). Set and hold the TEST switch to LO. Adjust the VERNIER control for an indication on the lower edge of green area. **The cal std indicates 3 to 6.7**. A2.
b.	Release the RIPPLE TEST and TEST switches. Adjust the VERNIER control full ccw. Remove the test leads from the test jacks. Set the MAIN POWER circuit breaker to OFF. Deenergize and store the cal std. Close and secure the control-indicator panel.

Table 8-1.1. Radar Set Group Control-Indicator Panel (for AN/MPQ-57)-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
	NOTE **Step 6 is performed using the cal std only.**
6.	**LINE VOLT Meter (11, Fig. 8-1).** **WARNING** **While performing the following test, be extremely careful not to come in contact with various 416-vac potentials inside the control-indicator panel chassis.** Observe that the LINE VOLT meter indicates in the green area. Adjust the INPUT VOLTAGE ADJUST on the line regulator transformer assembly (30A1A18) for the nearest major or minor scale division indication on the LINE VOLT meter. Loosen the fasteners that secure the control-indicator panel, and lower the panel. Loosen the control-indicator panel back cover, and raise and secure the cover. [1]Connect the COMMON test lead to the control-indicator panel T1-2 (12, fig. 8-1). [2]Insert the COMMON test lead into the control-indicator panel NEUTRAL jack (15, fig. 8-17). Set the FUNCTION switch to MULTR. Momentarily set the VAC switch to the down position. Insert the AC VOLTS test lead into the 416 ϕA jack (6, fig. 8-17). Record the cal std indication as El. Transfer the AC VOLTS test lead to the 416 ϕC jack (4, fig. 8-17). Record the cal std indication as E2. Transfer the AC VOLTS test lead to the 416 ϕB jack (5, fig. 8-17). Record the cal std indication as E3. Add the three recorded indications, and divide the sum by 3. [1]Applies to control-indicator panel 13219166. [2]Applies to control-indicator panel 13235313.

Table 8-1.1. Radar Set Group Control-Indicator Panel (for AN/MPQ-57)-Periodic Test Procedures- Continued

Step	Operation Normal indication Corrective procedure
6. Cont.	Record as E4.

Meter Ind.	E4 Max.	E4 Mill.	Meter Ind.	E4 Max.	E4 Min.
-4.0	228.7	225.1	0	240.0	236.4
- 3.5	230.1	226.5	0.5	241.4	237.8
-3.0	231.5	227.9	1.0	242.8	239.2
-2.5	232.9	229.3	1.5	244.2	240.6
- 2.0	234.3	230.7	2.0	245.6	242.0
- 1.5	235.7	232.1	2.5	247.0	243.4
- 1.0	237.1	233.5	3.0	248.4	244.8
- 0.5	238.5	234.8	3.5	249.8	246.2
			4.0	251.2	247.6

LINE VOLT meter.

Remove the test leads.

Close and secure the control-indicator panel.

NOTE

Step 7 is performed using DMM 10177187 only when the cal std is not available.

7. LINE VOLT Meter (11, Fig. 8-1).

WARNING

While performing the following test, be extremely careful not to come in contact with various 416-vac potentials inside the control-indicator panel chassis.

Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON, and observe that the LINE VOLT meter indicates in the green area.

Adjust the INPUT VOLTAGE ADJUST on the line regulator transformer assembly (30AlA18) for the nearest major or minor scale division indication on the LINE VOLT meter.

Loosen the fasteners that secure the control-indicator panel, and lower the panel.

Connect and energize the DMM.

[1]Connect the INPUT LO test lead to the control-indicator panel T1-2 (12, fig. 8-1).

[2]Insert the INPUT LO test lead into the control-indicator panel NEUTRAL jack (15, fig. 8-17).

[1]Applies to control-indicator panel 13219166.

[2]Applies to control-indicator panel 13235313.

Table 8-1.1. Radar Set Croup Control-Indicator Panel (for AN/MPQ-57)-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
7. Cont.	Press the RANGE 1000 switch. Press the VAC switch. Insert the INPUT HI test lead into the 416 ϕA jack (6, fig. 8-17). Record the DMM indication as El. Transfer the INPUT HI test lead to the 416 ϕC jack (4, fig. 8-17). Record the DMM indication as E2. Transfer the INPUT HI test lead to the 416 ϕB jack (5, fig. 8-17). Record the DMM indication as E3. Add the three recorded indications, and divide the sum by 3. Record as E4.

Meter Ind.	E4 Max.	E4 Min.
-4.0	228.7	207.7
- 3.5	230.1	209.0
-3.0	231.5	210.3
-2.5	232.9	211.6
-2.0	234.3	212.8
- 1.5	235.7	214.1
- 1.0	237.1	215.4
-0.5	238.5	216.7

Meter Ind.	E4 Max.	E4 Min.
0	240.0	218.0
0.5	241.4	210.3
1.0	242.8	220.6
1.5	244.2	221.8
2.0	245.6	223.1
2.5	247.0	224.4
3.0	248.4	225.7
3.5	249.8	226.9
4.0	251.2	228.2

LINE VOLT meter.

Remove the test leads.
Close and secure the control-indicator panel.
Set the MAIN POWER circuit breaker to OFF.
Deenergize and store the DMM.

Perform table 8-2.

Table 8-2. Radar Set Group 100-Vdc, ±50-Vdc Power Supply-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE **Step 1 is performed using the cal std only.** **NOTE** **The key numbers shown below in parentheses refer to fig. 8-5, unless otherwise indicated.**
1.	**VOLTAGE MONITOR Meter (9).**
a.	Set the voltage monitor selector switch (1) to +50V.
	Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON. Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Set the BLOWER HEAT EXCHANGER circuit beaker (1, fig. 8-12) to OFF. Set all other transmitter panel No. 1 circuit breakers to ON. Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Set the BEAM circuit breakers (6 and 8, fig. 8-9) to OFF. Set all other transmitter panel No. 2 circuit breakers to ON. Press the STANDBY switch (7, fig. 8-12). Connect and energize the cal std. Set the FUNCTION switch to MULTR.
	Momentarily set the VDC switch to the down position. Insert the COMMON test lead into the GRD jack (8). Insert the DC VOLTS test lead into the +50V jack (7). Adjust the +50V ADJ control (2) for a 25 indication on the meter under test. **The cal std indicates 49.5 to 50.5.** VOLTAGE MONITOR meter, A6, R1, S2.
b.	Set the voltage monitor selector switch to -50V. Transfer the DC VOLTS test lead to the -50V jack (6). Adjust the -50V ADJ control (3) for a 25 indication on the meter under test. **The cal std indicates -49.5 to -50.5.** VOLTAGE MONITOR meter, A6, R2, S2.
c.	Set the voltage monitor selector switch to OFF. Remove the test leads from the test jacks.
	Set the MAIN POWER circuit breakers to OFF. Deenergize and store the cal std.

Table 8-2. Radar Set Group 100Vdc, ±50-Vdc Power Supply-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
	NOTE **Step 2 is performed using DMM 10177187 when the cal std is not available.** **NOTE** **The key numbers shown below in parentheses refer to fig. 8-5, unless otherwise indicated.**
2.	**VOLTAGE MONITOR Meter (9).**
a.	Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON. Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL. Set the BLOWER HEAT EXCHANGER circuit breaker (1, fig. 8-12) to OFF. Set all other transmitter panel No. 1 circuit breakers to ON. Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Set the BEAM circuit breakers (6 and 8, fig. 8-9) to OFF. Set all other transmitter panel No. 2 circuit breakers to ON. Press the STANDBY switch (7, fig. 8-12). Connect and energize the DMM. Press the VDC switch. Press the RANGE 100 switch. Insert the INPUT LO test lead into the GRD jack (8). Set the voltage monitor selector switch to +50V. Insert the INPUT HI test lead into the +50V jack (7). Adjust the +50V ADJ control (2)'for a 25 indication on the meter under test. **The DMM indicates 49.5 to 50.5.** VOLTAGE MONITOR meter, A6, R1, S2.
b.	Set the voltage monitor selector switch to -50V. Transfer the INPUT HI test lead to the -50V jack (6). Adjust the -50V ADJ control (3) for a 25 indication on the meter under test. **The DMM indicates --49.5 to -50.5.** VOLTAGE MONITOR meter, A6, R2, S2.
c.	Set the voltage monitor selector switch to OFF. Remove the test leads from the test jacks. Set the MAIN POWER circuit breakers to OFF. Deenergize and store the DMM.

Table 8-3. Transmitter Panel No. 3-Periodic Test Procedure

Step	Operation Normal indication Corrective procedure
1.	**DEGENERATION ALIGNMENT MONITOR Meter (3, Fig. 8-7) and DEGENERATION MONITOR Meter (1, Fig. 8-8).**
a.	Set the degeneration alignment SELECTOR switch (4, fig. 8-7) to BRIDGE NULL. Set the MAIN POWER circuit breaker (2, fig. 8-2) to ON. Connect and energize the cal std. Loosen the fasteners that secure transmitter panel No. 3 to the transmitter cabinet. Swing open and secure the panel. Set the MAIN POWER circuit breaker (2, fig. 8-2) to OFF. Disconnect plug P22 (2, fig. 8-8) from jack J1. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Connect the COMMON test lead to J1-L (4, fig. 8-8). Insert the CURRENT/K OHMS test lead into DEGENERATION ALIGNMENT jack J6 (8, fig. 8-7). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a full-scale indication on the DEGENERATION ALIGNMENT MONITOR meter. **The cal std indicates 0.0485 to 0.0515.** DEGENERATION ALIGNMENT MONITOR meter, DEGENERATION MONITOR meter.
b.	Adjust the VERNIER control for a full-scale indication on the DEGENERATION MONITOR meter. **The cal std indicates 0.0485 to 0.0515.** DEGENERATION MONITOR meter.
c.	Release the TEST switch. Press the OFF switch (6, fig. 8-12). Adjust the VERNIER control full ccw. Remove the CURRENT/K OHMS test lead from jack J6. Insert the DC VOLTS test lead into DEGENERATION ALIGNMENT jack J6. Transfer the COMMON test lead to DEGENERATION ALIGNMENT jack J8 (6, fig. 8-7). Set the MAIN POWER circuit breaker to ON. Set the FUNCTION switch to VDC. Set the degeneration alignment SELECTOR switch to CAVITY XTAL. Set and hold the TEST switch to NORMAL.

Table 8-3. Transmitter Panel No. 3-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1*c.* Cont.	Adjust the VERNIER control for an indication on the lower edge of the blue area of the meters under test. **The cal std indicates 0.846 to 0.975.** R4, S5.
d.	Release the TEST switch. Set the degeneration alignment SELECTOR switch to ISO-MOD BIAS. Transfer the COMMON test lead to DEGENERATION ALIGNMENT jack J7 (7, fig. 8-7). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication on the upper edge of the yellow area of the meters under test. **The cal std indicates 1.4 to 1.58.** R3, S5.
e.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the degeneration alignment SELECTOR switch to -15V. Transfer the COMMON test lead to jack J1-X (4, fig. 8-8). Transfer the DC VOLTS test lead to J1-U. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication of 25 ,a on the meters under test. **The cal std indicates 14.19 to 16.13.** R5, S5.
f.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the degeneration alignment SELECTOR switch to +15V. Transfer the COMMON test lead to J1-s. Transfer the DC VOLTS test lead to J1-W. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication of 25 ,a on the meters under test. **The cal std indicates 14.19 to 16.13.** R6, S5.
g.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the degeneration alignment SELECTOR switch to CRYSTAL BALANCE.

Table 8-3. Transmitted Panel No. 3-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1*g.* Cont.	Connect a jumper lead between J1-n and J1-D. Transfer the COMMON test lead to J1-p. Set the RANGE switch to 2. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication on the upper edge of the red area on the meters under test. **The cal std indicates 47.9 to 56.7.** R32, R35, R36,.S5.
h.	Release the TEST switch. Adjust the VERNIER control full ccw. Transfer one end of the jumper lead from J1-n to J1-B. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication on the upper edge of the red area on the meters under test. **The cal std indicates 47.9 to 56.7.** R34.
i.	Release the TEST switch. Adjust the VERNIER control full ccw.
	Remove the test leads from the test jacks. Set the MAIN POWER circuit breaker to OFF. Connect plug P22 to jack J1. Deenergize and store the cal std. Close and secure transmitter panel No. 3.
2.	**REFLECTED RF POWER Meter (1, Fig. 8-7).**
a.	Set the MAIN POWER circuit breaker (8, fig. 8-12) to OFF. Loosen the fasteners that secure transmitter panel No. 3 to the transmitter cabinet. Swing open and secure the panel. Disconnect plug P22 (2, fig. 8-8) from jack J1. Set the MAIN POWER circuit breaker to ON. Connect and energize the cal std. Set the LOCAL/REMOTE switch (5, fig. 8-1) to LOCAL.

Table 8-3. Transmitted Panel No. 3-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2*a.* Cont.	Set the FUNCTION switch to DCMA. Set the RANGE switch to 3. Insert the CURRENT/K OHMS test lead into REFLECTED RF POWER jack J2 (11, fig. 8-7). Insert the COMMON test lead into REFLECTED RF POWER jack J3 (12, fig. 8-7). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication on the lower edge of the red area on the meter under test. **The cal std indicates 0.0790 to 0.1210.** REFLECTED RF POWER meter.
b.	Adjust the VERNIER control for an indication on the upper edge of the red area on the meter under test. **The cal std indicates 0.9700 to 1.030.** REFLECTED RF POWER meter.
c.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the test jacks.
	Set the MAIN POWER circuit breaker to OFF. Connect plug P22 to jack J1. Deenergize and store the cal std. Close and secure transmitter panel No. 3.
3.	**FORWARD RF POWER Meter (2, Fig. 8-7).**
a.	Set the MAIN POWER circuit breaker (8, fig. 8-12) to OFF. Loosen the fasteners that secure transmitter panel No. 3 to the transmitter cabinet. Swing open and secure the panel. Disconnect plug P22 (2, fig. 8-8) from jack J1. Set the MAIN POWER circuit breaker to ON. Connect and energize the cal std. Set the LOCAL/REMOTE switch to LOCAL.
	Set the RANGE switch to 2. Set the FUNCTION switch to VDC.

Table 8-3. Transmitter Panel No. 3-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
3*a.* Cont.	Set the MO/PA switch (5, fig. 8-7) to MO. Insert the DC VOLTS test lead into FORWARD,RF POWER jack J4:(10, fig. 8-7). Insert the COMMON test lead into FORWARD RF POWER jack J5 (9, fig. 8-7). Set and hold the TEST switch to LO. Adjust the VERNIER control for a red-line indication on the meter under test. **The cal std indicates 49 to 61.** Adjust R33NU (3, fig. 8-8). FORWARD.RISE POWER meter, R33. (Nominal range for fixed film resistor R33NU: 1.96 K to 2.49 K ohms, 1% tol, 1/2w.)
b.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove all test leads and jumpers from the test jacks. Set the MAIN POWER circuit breaker to OFF. Connect plug P22 to jack J1. Close and secure transmitter panel No. 3.
	Set the MAIN POWER circuit breaker to OFF. Connect plug P22 of jack J1. Deenergize and store the cal std.

Table 8-4. Transmitter Panel No. 2-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**REGULATOR VOLTS Meter (2, Fig. 8-9).**
a.	Set the REGULATOR SCREEN & FILAMENT circuit breaker (7, fig. 8-9) to OFF. Set the MAIN POWER distribution box switch to OFF.

Table 8-4. Transmitted Panel No. 2-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
	WARNING **While performing the following test, be extremely careful not to come in contact with the 115- and 240-vac potentials inside the transmitter panel No. 2 chassis.**
1*a.* Cont.	Loosen the fasteners that secure transmitter panel No. 2 to the transmitter cabinet. Swing open and secure the panel. Disconnect plugs P1, P10, and P11 from jacks J1, J2, and J3 on the rear of the panel. Remove the back panel. Connect plug P11 to jack J3. Connect the DC VOLTS test lead to S1-5 (11, fig. 8-9). Connect the COMMON test lead to S1-2 (12, fig. 8-9). Set the MAIN POWER distribution box switch to ON. Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON.
	Connect and energize the cal std.
	Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 2.5 indication on the meter under test. **The cal std indicates 24.25 to 25.75.** Adjust R3NU (17, fig. 8-9). REGULATOR VOLTS meter, R3. (Nominal range of fixed film resistor R3NU: 475 K to 536 K ohms, 1% tol, 1/2w.)
b.	Adjust the VERNIER control for a 1.5 indication on the meter under test. **The cal std indicates 14.25 to 15.75.** Adjust R3NU. REGULATOR VOLTS meter, R3. (Nominal range of fixed film resistor R3NU: 475 K to 536 K ohms, 1% tol, 1/2w.)
c.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from S1.

Table 8-4. Transmitter Panel No. 2-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1*c.* Cont.	Set the MAIN POWER circuit breaker to OFF. Set the MAIN POWER distribution box switch to OFF. Deenergize and store the cal std. Disconnect plug P11 from jack J3. Secure the back panel, and connect plugs P1, P10, and Pl.1 to jacks J1, J2, and J3 on the rear of the panel. Close and secure transmitter panel No. 2.
2.	**Power Amplifier BEAM AMPERES Meter (4, Fig. 8-9).**
a.	Set the MAIN POWER distribution box switch to OFF. Loosen the fasteners that secure transmitter panel No. 2 to the transmitter cabinet. Swing open and secure the panel. Disconnect plugs P1, P10, and P11 from jacks J1, J2, and J3 on the rear of the panel. Remove the back panel. Connect plug P11 to jack J3. Set the MAIN POWER distribution box switch to ON. Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Set the REGULATOR SCREEN & FILAMENT circuit breaker (7, fig. 8-9) to OFF. Connect and energize the cal std.
	Set the FUNCTION switch to DCMA. Set the RANGE switch to 5. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 0.25 indication on the meter under test. **The cal std indicates 220 to 280.** Power amplifier BEAM AMPERES meter.
b.	Adjust the VERNIER control for a 0.50 indication on the meter under test. **The cal std indicates 470 to 530.** Power amplifier BEAM AMPERES meter.
c.	Adjust the VERNIER control for a 0.90 indication on the meter under test. **The cal std indicates 870 to 930.** Power amplifier BEAM AMPERES meter.

Table 8-4. Transmitter Panel No. 2-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2*d.*	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Set the MAIN POWER circuit breaker to OFF. Set the MAIN POWER distribution box switch to OFF. Deenergize and store the cal std. Disconnect plug P11 from jack J3. Secure the back panel, and connect plugs P1, P10, and P1 to jacks J1, J2, and J3 on the rear of the panel. Close and secure the transmitter panel No. 2.
3.	**Master Oscillator BEAM AMPERES Meter (10, Fig. 8-9).**
a.	Set the MAIN POWER distribution box switch to OFF. Loosen the fasteners that secure transmitter panel No. 2 to the transmitter cabinet. Swing open and secure the panel. Disconnect plugs P1, P10, and P11 from jacks J1, J2, and J3 on the rear of the panel. Remove the back panel. Connect plug P11 to jack J3. Set the MAIN POWER distribution box switch to ON. Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Set the REGULATOR SCREEN & FILAMENT circuit breaker (7, fig. 8-9) to OFF. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 4. Connect the CURRENT/K OHMS test lead to the (+) terminal of the meter under test. Connect the COMMON test lead to the (-) terminal of the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 30 indication on the meter under test. **The cal std indicates 27 to 33.** Master oscillator BEAM AMPERES meter.
b.	Adjust the VERNIER control for a 70 indication on the meter under test. **The cal std indicates 67 to 73.** Master oscillator BEAM AMPERES meter.

Table 8-4. Transmitted Panel No. 2-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
3*c.*	Adjust the VERNIER control for a 90 indication on the meter under test. **The cal std indicates 87 to 93.** Master oscillator BEAM AMPERES meter.
d.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test.
	Set the MAIN POWER circuit breaker to OFF. Set the MAIN POWER distribution box switch to OFF. Deenergize and store the cal std. Disconnect plug P11 from jack J3. Secure the back panel, and connect plugs P1, P10, and P11 to jacks J1, J2, and J3 on the rear of the panel. Close and secure transmitter panel No. 2.
4.	**Power Amplifier BEAM VOLTAGE Meter (5, Fig. 8-9).**
a.	Set the MAIN POWER distribution box switch to OFF. Loosen the fasteners that secure transmitter panel No. 2 to the transmitter cabinet. Swing open and secure the panel. Disconnect plugs P1, P10, and P11 from jacks J1, J2, and J3 on the rear of the panel. Remove the back panel. Connect plug P11 to jack J3. Set the MAIN POWER distribution box switch to ON. Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Set the REGULATOR SCREEN & FILAMENT circuit breaker (7, fig. 8-9) to OFF. Connect and energize the cal std. Set the FUNCTION switch to DCMA.
	Disconnect plug P2 from jack J8 of the high-voltage regulator (3, fig. 8-13). Set the RANGE switch to 2. Connect the CURRENT/K OHMS test lead to terminal 1 (13, fig. 8-9) of the meter under test. Connect the COMMON test lead to terminal 2 (14, fig. 8-9) of the meter under test. Connect the METER EXCITE test leads to terminals 4 and 5 (15 and 16, fig. 8-9) of the meter under test. Connect the resistor decade, set to 68.1 K ohms, between terminals 1 and 2 of the meter under test, using two 9198116 test leads.

Table 8-4 Transmitter Panel No. 2-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
4*a.* Cont.	Set and hold the METER EXCITATION switch to ON. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the meter under test. **The cal std indicates 0.5470 to 0.5530.** Power amplifier BEAM VOLTAGE meter.
b.	Release the METER EXCITATION and TEST switches. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Set the MAIN POWER circuit breaker to OFF. Set the MAIN POWER distribution box switch to OFF. Deenergize and store the cal std. Disconnect plug P11 from jack J3. Secure the back panel. Connect plugs P1, P10, and P11 to jacks J1, J2, and J3 on the rear of the panel, and connect plug P2 to jack J8 of the high-voltage regulator.
5.	**Master Oscillator BEAM VOLTAGE Meter (9, Fig. 8-9).**
a.	Set the MAIN POWER distribution box switch to OFF. Loosen the fasteners that secure transmitter panel No. 2 to the transmitter cabinet. Swing open and secure the panel. Disconnect plugs P1, P10, and P11 from jacks J1, J2, and J3 on the rear of the panel. Remove the back panel. Connect plug P11 to jack J3. Set the MAIN POWER distribution box switch to ON. Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Set the REGULATOR SCREEN & FILAMENT circuit breaker (7, fig. 8-9) to OFF. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 2. Disconnect plug P2 from jack J8 of the high-voltage regulator behind transmitter panel No. 2. Connect the CURRENT/K OHMS test lead to terminal 1 of the meter under test. Connect the COMMON test lead to terminal 2 of the meter under test.

Table 8-4. Transmitter Panel No. 2-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
5*a.* Cont.	Connect the METER EXCITE test leads to terminals 4 and 5 of the meter under test. Connect the resistor decade, set to 68.1 K ohms, between terminals 1 and 2 of the meter under test, using two 9198116 test leads. Set and hold the METER EXCITATION switch to ON. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the meter under test. **The cal std indicates 0.4970 to 0.5030.** Master oscillator BEAM VOLTAGE meter.
b.	Release the METER EXCITATION and TEST switches. Adjust the VERNIER control full ccw. Set the MAIN POWER distribution box switch to OFF. Remove the test leads from meter under test.
	Deenergize and store the cal std.
	Disconnect plug P11 from jack J3. Secure the back panel. Connect plugs P1, P10, and P11 to jacks J1, J2, and J3 on the rear of the panel, and connect plug P2 to jack J8 of the high-voltage regulator.
	Close and secure transmitter panel No. 2.

Table 8-5. High- Voltage Power Supply Test Set-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**FIL TEST Meter (1, Fig. 8-10).**
a.	Loosen the fasteners that secure transmitter panels No. 1 and No. 2 to the transmitter cabinet. Swing open and secure the panels. Loosen the fasteners that secure transmitter panel No. 1.
	Swing open and secure the panel. Disconnect plugs P1 and P48 from jacks J4 and J1 (1, and2, fig. 8-11). Set the MAIN POWER distribution box switch to ON.
	Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Connect and energize the cal std.

Table 8-5. High-Voltage Power Supply Test Set-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1*a.* Cont.	Set the FUNCTION switch to VAC. Set the RANGE switch to 4. Set and hold the SET switch to ON. **NOTE** **It may be necessary to set the RANGE switch to 3 to obtain the following indications.** Adjust the VERNIER control for a 240 indication on the cal std. Release the SET switch. Insert the AC VOLTS test lead into the 240 VAC jack (16, fig. 8-10). Insert the COMMON test lead into the NEUT jack (13, fig. 8-10). Set the FIL TEST switch (2, fig. 8-10) to PA 01. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the meter under test. **NOTE** **It may be necessary to set the RANGE switch to 3 to obtain the following indications.**
	The cal std indicates 234.7 to 245.3. FIL TEST meter.
b.	Adjust the VERNIER control for an upper blue-red boundary indication on the meter under test. **The cal std indicates 244.6 to 255.4.** FIL TEST meter.
c.	Adjust the VERNIER control for an upper blue-green boundary indication on the meter under test. **The cal std indicates 241.1 to 251.7.** FIL TEST meter.
d.	Adjust the VERNIER control for a lower blue-green boundary indication on the meter under test **The cal std indicates 228.3 to 238.9.** FIL TEST meter.
e.	Adjust the VERNIER control for a lower blue-red boundary indication on the meter under test **The cal std indicates 224.9 to 235.1.** FIL TEST meter.

Table 8-5. High-Voltage Power Supply Test Set-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1*f.*	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the test jacks. Set the RANGE switch to 1. Set the FUNCTION switch to VDC. Set and hold the SET switch to ON. Adjust the VERNIER control for an 8.5 indication on the cal std. Release the SET switch. Set the FIL TEST switch to OFF. Insert the DC VOLTS test lead into the PA FIL jack (15, fig. 8-10). Insert the COMMON test lead into the RET jack (14, fig. 8-10). Set and hold the PA-FIL/MO-FIL switch (9, fig. 8-10) to PA-FIL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the meter under test. **The cal std indicates 8.415 to 8.585.** FIL TEST meter.
g.	Release the TEST and PA-FIL/MO-FIL switches. Transfer the DC VOLTS test lead to the MO FIL jack (12, fig. 8-10). Set and hold the SET switch to ON. Adjust the VERNIER control for a 2.8 indication on the cal std. Release the SET switch. Set and hold the TEST switch to NORMAL. Set and hold the PA-FIL/MO-FIL switch to MO-FIL. Adjust the VERNIER control for a red-line indication on the meter under test. **The cal std indicates 2.744 to 2.856.** FIL TEST meter.
h.	Adjust the VERNIER control for a lower blue-red boundary indication on the meter under test. **The cal std indicates 2.630 to 2.738.** FIL TEST meter.
i.	Adjust the VERNIER control for an upper blue-red boundary indication on the meter under test. **The cal std indicates 2.858 to 2.974.** FIL TEST meter.

Table 8-5. High-Voltage Power Supply Test Set-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
1*j.*	Release the TEST and PA-FIL/MO-FIL switches. Adjust the VERNIER control full ccw. Remove the test leads from the test jacks. Set the FUNCTION switch to MULTR. Momentarily set the K OHMS switch to the down position. Connect the CURRENT/K OHMS test lead to the COMMON test lead. Record the cal std indication as X1. Disconnect the test leads from each other. Insert the CURRENT/K OHMS test lead into the MO FIL jack. Insert the COMMON test lead into the RET jack. Set the FIL TEST switch to MO FIL VOLTS. **The cal std indicates X1 + 0.0003 to X1 + 0.0006.** R1.
k.	Transfer the CURRENT/K OHMS test lead to the PA FIL jack. Set the FIL TEST switch to PA FIL VOLTS. **The cal std indicates X1 + 0.0033 to X1 + 0.0036.** R2.
l.	Remove the test leads from the test jacks.
	Set the MAIN POWER circuit breaker to OFF. Deenergize and store the cal std. Set the MAIN POWER distribution box switch to OFF. Connect plug P48 to jack J1 and P1 to jack J4 on the rear of the high-voltage power supply test set. Close and secure transmitter panels No. 1 and No. 2.
2.	HI VOLT TEST Meter (3, Fig. 8-10).
a.	Loosen the fasteners that secure transmitter panels No. 1 and No. 2 to the transmitter cabinet. Swing open and secure the panels. Set transmitter panel No. 1 and No. 2 interlock switches 30A1AlS3 and 30A1A1S4. Disconnect plugs P1 and P48 from jacks J4 and J1 (1 and 2, fig. 8-11). Set the MAIN POWER distribution box switch to ON.
	Set the FIL TEST switch (2, fig. 8-10) to PA 1 o1.

Table 8-5. High-Voltage Power Supply Test Set-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2a. Cont.	Set the HI VOLT TEST switch (4, fig. 8-10) to PA B+.
	Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Connect and energize the cal std.
	Set the FUNCTION switch to VDC. Set the RANGE switch to 5. Set and hold the SET switch to ON. Adjust the VERNIER control for a 430 indication on the cal std. Release the SET switch. Insert the DC VOLTS test lead into the PA B+ jack (7, fig. 8-10). Insert the COMMON test lead into the COLL RET jack (8, fig. 8-10). Insert one METER EXCITE test lead into the 240 VAC jack (16, fig. 8-10). Insert the other METER EXCITE test lead into the NEUT jack (13, fig. 8-10). Set and hold the METER EXCITATION switch to ON. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the meter under test.
	NOTE **In this step, and in steps b and c below, it may be necessary to alternately set the RANGE switch between 5 and 6 to obtain the normal indication.**
	The cal std indicates 422 to 444. HI VOLT TEST meter, R11, R12.
b.	Adjust the VERNIER control for an upper red-green boundary indication on the meter under test.
	The cal std indicates 446 to 472. HI VOLT TEST meter.
c.	Adjust the VERNIER control for a lower red-green boundary indication on the meter under test.
	The cal std indicates 394 to 420. HI VOLT TEST meter.
d,	Release the TEST and METER EXCITATION switches. Set the HI VOLT TEST switch to MO B+. Transfer the COMMON test lead to the GRD jack (11, fig. 8-10).

Table 8-5. High-Voltage Power Supply Test Set-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2d.	Transfer the DC VOLTS test lead to the MO B+ jack (10, fig. 8-10). Cont. Set the RANGE switch to 4. Set and hold the SET switch to ON. Adjust the VERNIER control for a 320 indication on the cal std. Release the SET switch. Set and hold the METER EXCITATION switch to ON. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the meter under test. **The cal std indicates 310 to 324.** R6, R7.
e.	Release the TEST and METER EXCITATION switches. Set the RANGE switch to 3. Set and hold the SET switch to ON. Adjust the VERNIER control for a 150 indication on the cal std. Release the SET switch. Set the HI VOLT TEST switch to MO SENSE. Transfer the COMMON test lead to the MO SENSE jack (6, fig. 8-10). Transfer the DC VOLTS test lead to the GRD jack (11, fig. 8-10). Set and hold the METER EXCITATION switch to ON. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the meter under test. **The cal std indicates 143.7 to 156.7**. R15, R16.
f.	Release the TEST and METER EXCITATION switches. Set the HI VOLT TEST switch to PA SENSE. Transfer the COMMON test lead to the PA SENSE jack (5, fig. 8-10). Transfer the DC VOLTS test lead to the COLL RET jack (8, fig. 8-10). Set and hold the METER EXCITATION switch to ON. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a red-line indication on the meter under test. **The cal std indicates 160.2 to 170.8.** R15, R16.

Table 8-5. High-Voltage Power Supply Test Set-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
2g.	Release the TEST and METER EXCITATION switches. Remove the test leads from the test jacks. Set the HI VOLT TEST switch to OFF. Set the FUNCTION switch to MULTR. Momentarily set the K OHMS switch to the down position. Insert the CURRENT/K OHMS test lead into the PA B+ jack. Insert the COMMON test lead into the COLL RET jack. **The cal std indicates 615 to 628.** R3 thru R7.
h.	Transfer the CURRENT/K OHMS test lead to MO B+ jack. Transfer the COMMON test lead to GRD jack. **The cal std indicates 530 to 542.** R8 thru R12**.**
i.	Set the FIL TEST switch (2, fig. 8-10) to OFF. Remove the test leads from the test jacks.
	Set the MAIN POWER circuit breaker to OFF. Set the MAIN POWER distribution box switch to OFF. Deenergize and store the cal std.
	Set the MAIN POWER distribution box switch to OFF. Connect plug P48 to jack J1 and P1 to jack J4 on the rear of the high-voltage power supply test set.
	Close and secure transmitter panels No. 1 and No. 2.

Table 8-6. Transmitter Panel No.1-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	MASTER OSCILLATOR FILAMENT AMPERES Meter (2, Fig. 8-12).
	WARNING **Ensure that the BEAM circuit breakers (6 and 8, fig. 8-9) are set of OFF**.
a	, Set the MAIN POWER distribution box switch to OFF.
	Loosen the fasteners that secure transmitter panels No. 1 and No. 2 to the transmitter cabinet. Swing open and secure the panels.
	Set the FIL TEST switch (2, fig. 8-10) to MO FIL VOLTS. Disconnect plug A7P1 from HVPS A6J2 (4, 5, fig. 8-13). Connect high-voltage power supply test set P3 (2, fig. 8-13) to HVPS A6J2. Set the MAIN POWER distribution box switch to ON. Set transmitter panels No. 1 and No. 2 interlock switches 30A1A1S3 and 30A1A1S4. Set the REGULATOR SCREEN & FILAMENT circuit breaker (7, fig. 8-9) to ON. Press the STANDBY switch (7, fig. 8-12). Adjust the MASTER OSCILLATOR filament control (4, fig. 8-12) for a red-line indication on the FIL TEST meter (1, fig. 8-10). **The MASTER OSCILLATOR FILAMENT AMPERES meter indicates 6.3 to 6.7.** MASTER OSCILLATOR FILAMENT AMPERES meter.
b.	Press the OFF switch (6, fig. 8-12). Set the MAIN POWER distribution box switch to OFF. Disconnect high-voltage power supply test set P3 from HVPS A6J2. Connect plug A7P1 to HVPS A6J2. Set the MAIN POWER distribution box switch to ON. Press the STANDBY switch. Adjust the MASTER OSCILLATOR filament control for the value on the decal located beneath the meter.
	Press the OFF switch. Set the MAIN POWER distribution box switch to OFF. Close and secure transmitter panels No. 1 and No. 2.

Table 8-6. Transmitter Panel No. 1-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
	NOTE **Step 2 is performed using the cal std only.**
2.	**POWER AMPLIFIER FILAMENT VOLTAGE Meter (3, Fig. 8-12).**
a.	Press the OFF switch (6, fig. 8-12). Set the MAIN POWER distribution box switch to OFF. Loosen the fasteners that secure transmitter panels No. 1 and No. 2 to the transmitter cabinet. Swing open and secure the panels. Set the FIL TEST switch (2, fig. 8-10) to PA FIL VOLTS. Disconnect plug A7P2 from HVPS A6J3 (6, fig. 8-13). Connect high-voltage power supply test set P4 (1, fig. 8-13) to HVPS A6J3. Set the MAIN POWER distribution box switch to ON. Set transmitter panels No. 1 and No. 2 interlock switches 30A1AIS3 and 30A1A1S4. Set the REGULATOR SCREEN & FILAMENT circuit breaker (7, fig. 8-9) to ON. Press the STANDBY switch (7, fig. 8-12). Adjust the POWER AMPLIFIER filament control (5, fig. 8-12) for a red-line indication on the FIL TEST meter (1, fig. 8-10). **The POWER AMPLIFIER FILAMENT VOLTAGE meter indicates red-line.** Adjust FILAMENT METER CAL control R1 (7, fig. 8-13).
b.	Press the OFF switch. Set the MAIN POWER circuit breaker to OFF. Set the MAIN POWER distribution box switch to OFF. Disconnect high-voltage power supply test set P4 from HVPS A6J3. Connect plug A7P2 to HVPS A6J3. Close and secure transmitter panels No. 1 and No. 2.

Table 8-7. Antenna Pedestal-Periodic Test Procedures-Continued

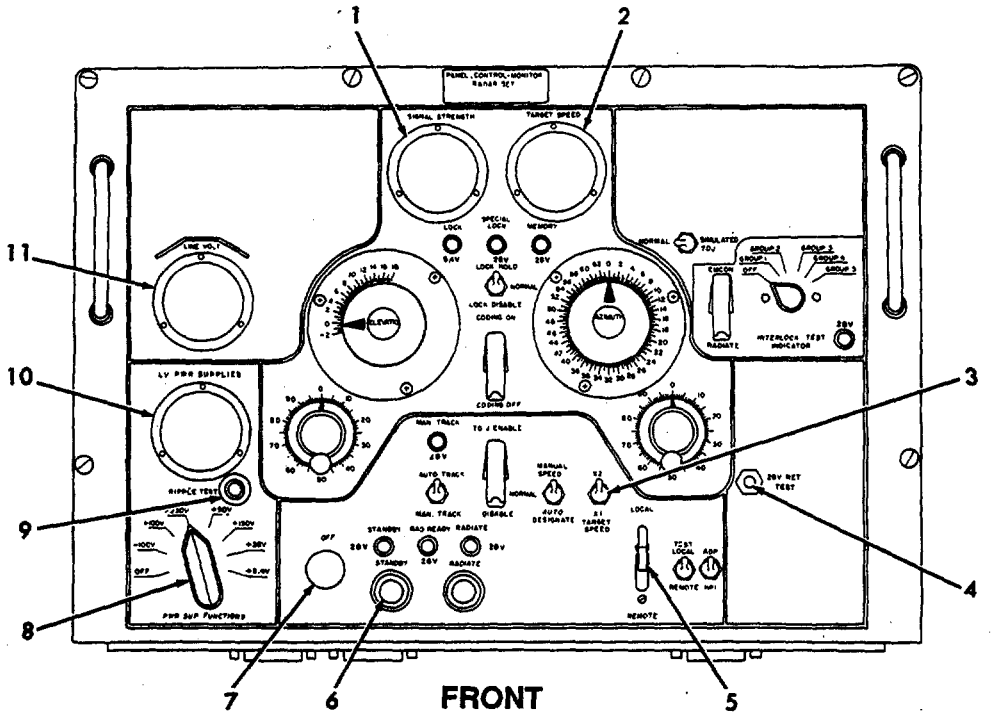
Step	Operation Normal indication Corrective procedure
	Meter MI (1, Fig. 8-14).
a.	Open the antenna pedestal access door. Connect and energize the cal std using the utility outlet located in antenna pedestal. Set the MAIN POWER distribution box switch to ON. Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Set the FUNCTION switch to VAC. Set the RANGE switch to 2. Adjust the VERNIER control full ccw. Remove the protective cap from synchro B3 (2, fig. 8-14). Connect the AC VOLTS test lead to lead R1 of synchro B3. Connect the COMMON test lead to lead R2 of synchro B3. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 30 indication (upper scale) on the meter under test. **The cal std indicates 27 to 33.** M1, R1, S1.
b.	Adjust the VERNIER control for a 60 indication (upper scale) on the meter under test. **The cal std indicates 57 to 63.** M1, R1.
c.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the RANGE switch to 1. Set and hold the TEST switch to NORMAL. Set and hold meter switch S1 (3, fig. 8-14) to the on position (R1). Adjust the VERNIER control for a 3 indication (lower scale) on the meter under test. **The cal std indicates 2.7 to 3.3.** M1, S1.
d	Adjust the VERNIER control for a 6 indication (lower scale) on the meter under test. **The cal std indicates 5.7 to 6.3**. M1.
e.	Release the meter and TEST switches. Adjust the VERNIER control full ccw. Disconnect the test leads from synchro B3.

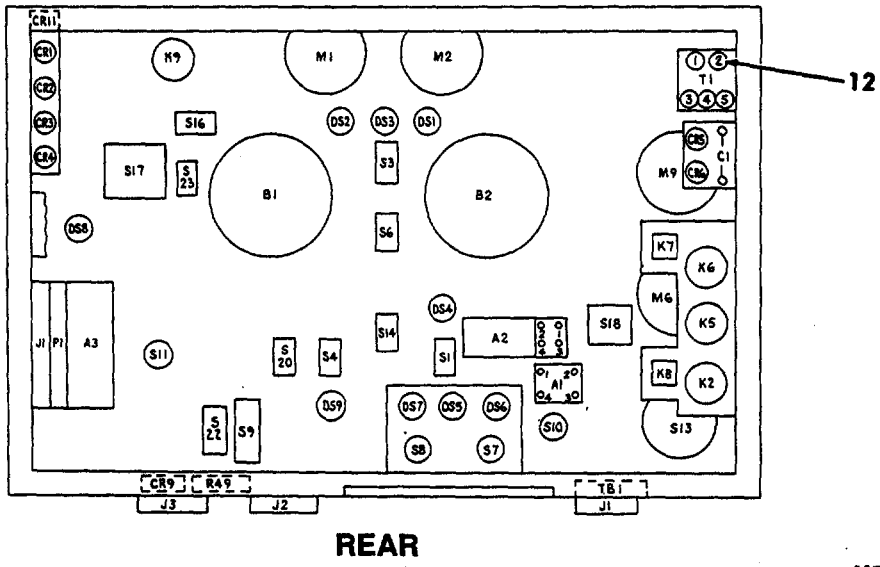
Table 8 7. Antenna Pedestal-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
e. Cont.	Replace the protective cap on synchro B3. Close the antenna pedestal access door. Set the MAIN POWER circuit breaker to OFF. Deenergize and store the cal std.

Table 8-8. Transmitter Housing-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE **The key numbers shown below refer to figure 8-15, unless otherwise indicated.**
a.	POWER SUPPLY MONITOR Meter (1). Open and secure the transmitter housing cover. Set the POWER SUPPLY MONITOR switch (4) to METER CALIBRATE. Set the MAIN POWER circuit breaker (8, fig. 8-12) to ON. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Insert the COMMON test lead into TP2 (2). Insert the CURRENT/K OHMS test lead into TP1 (3). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication of 25 on the meter under test. **The cal std indicates 0.0235 to 0.0265.** POWER SUPPLY MONITOR meter.
b.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the test jacks. Set the MAIN POWER circuit breaker to OFF. Deenergize and store the cal std. Close and secure the transmitter housing cover.

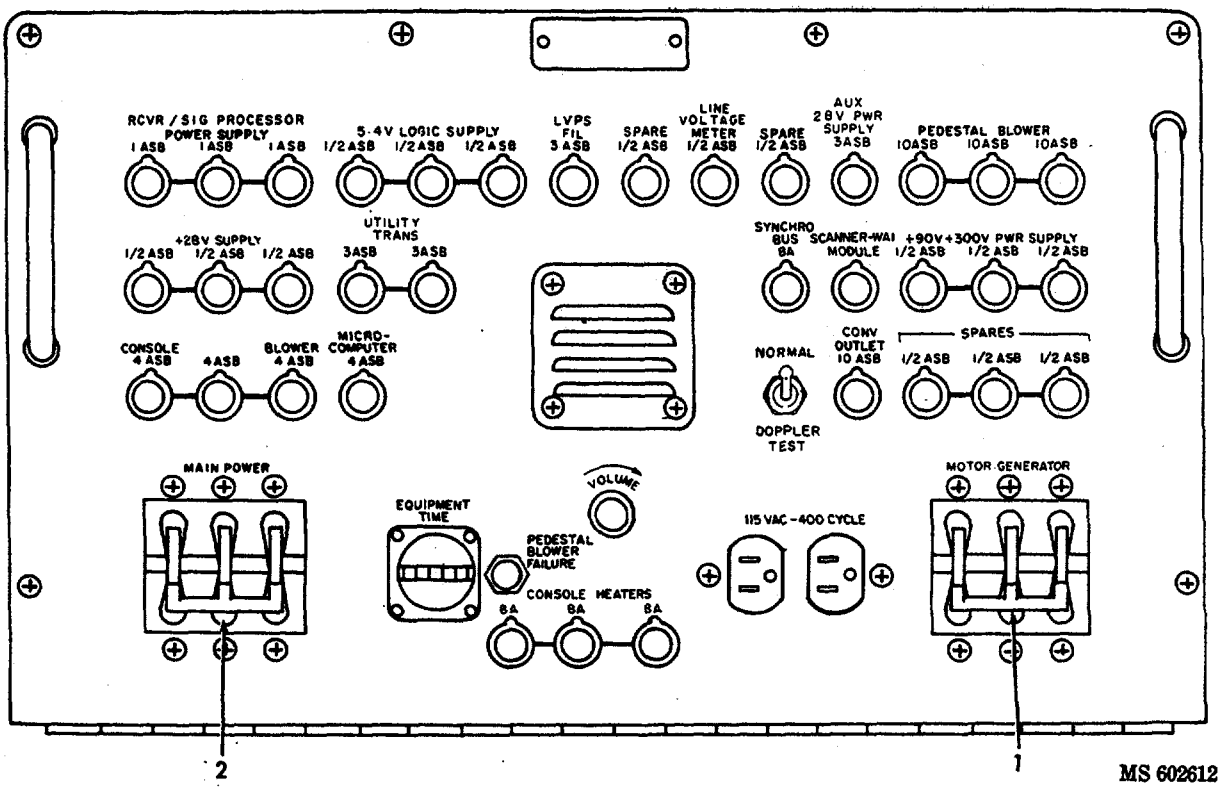




MS 602611A

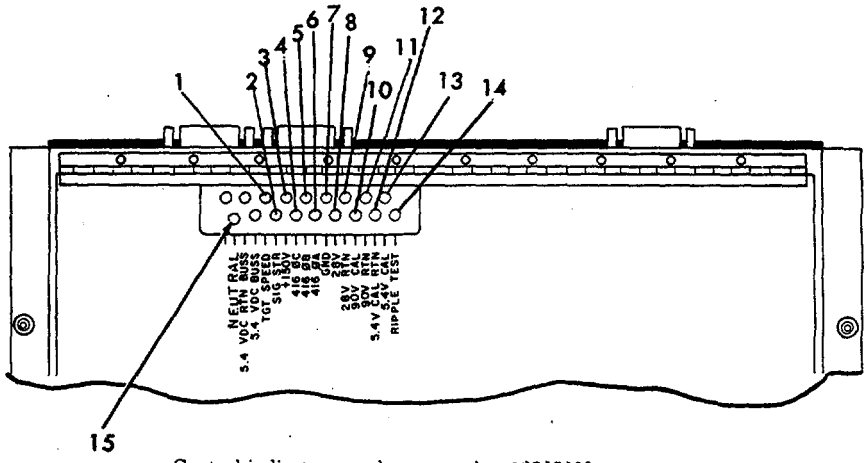
1—SIGNAL STRENGTH meter
2—TARGET SPEED meter
3—TARGET SPEED switch
4—28V RTN TEST switch
5—LOCAL/REMOTE switch
6—STANDBY switch
7—OFF pushbutton
8—PWR SUP FUNCTIONS selector switch
9—RIPPLE TEST switch
10—LV PWR SUPPLIES meter
11—LINE VOLT meter
12—T1-2

Figure 8-1. Control indicator panel.



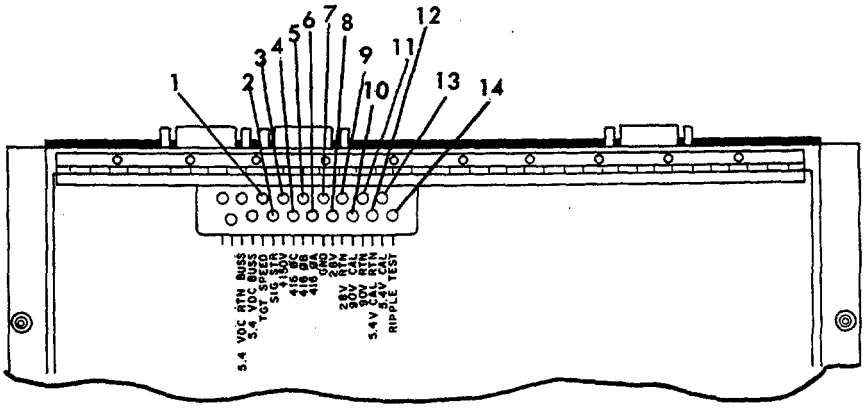
1—MOTOR GENERATOR circuit breaker
2—MAIN POWER circuit breaker

Figure 8-2. Main fuse panel



Control-indicator panel part number 13235309

1 – TGT SPEED jack
2 – SIG STR jack
3 – 150V jack
4 – 416 ϕC jack
5 – 416 ϕB jack
6 – 416 ϕA jack
7 – GND jack
8 – 28V jack
9 – 28V RTN jack
10 – 90V CAL jack
11 – 90V RTN jack
12 – 5.4V CAL RTN jack
13 – 5.4V CAL jack
14 – RIPPLE TEST jack
15 – NEUTRAL jack

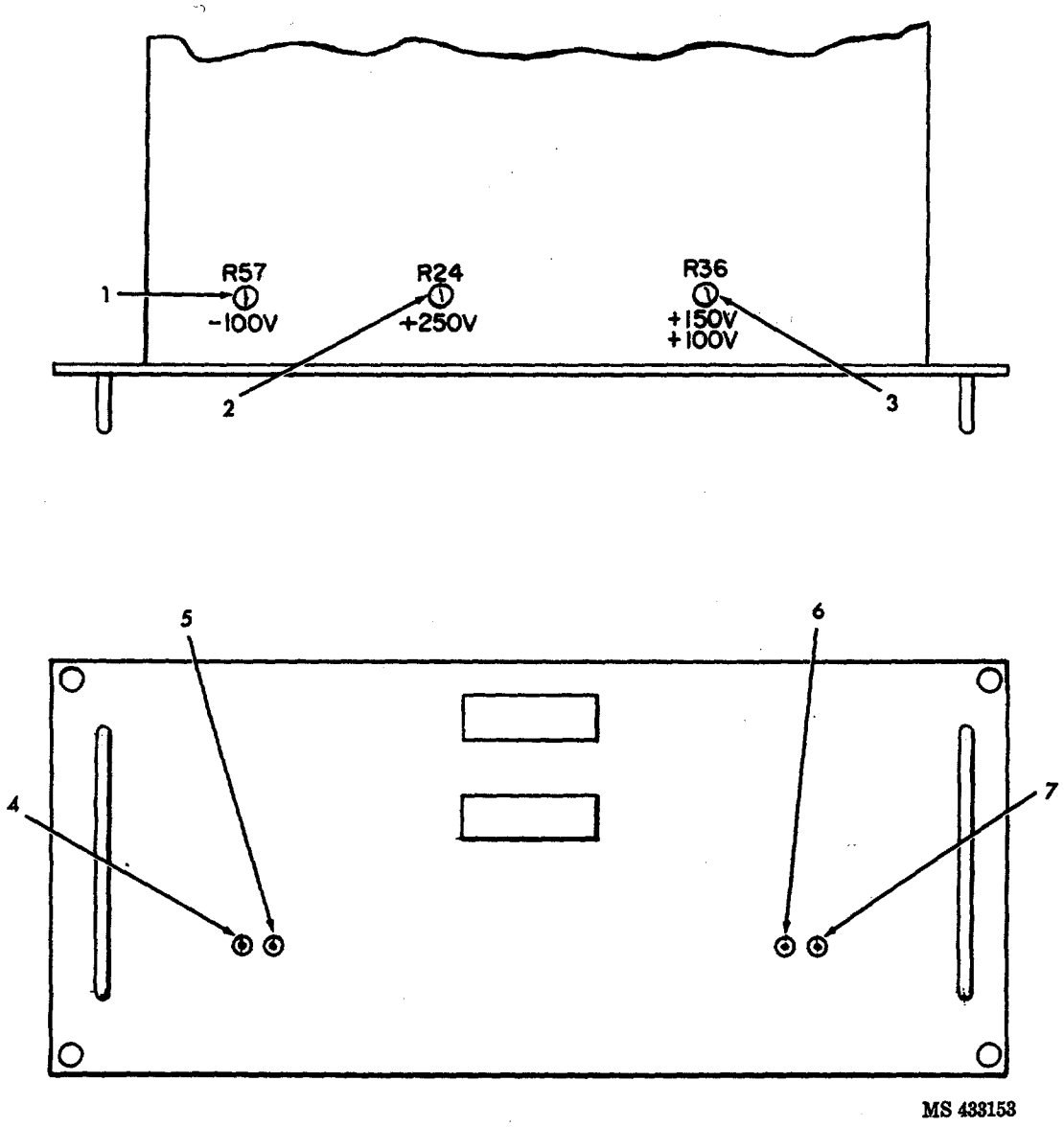


Control-indicator panel part number 13039072

MS 602732A

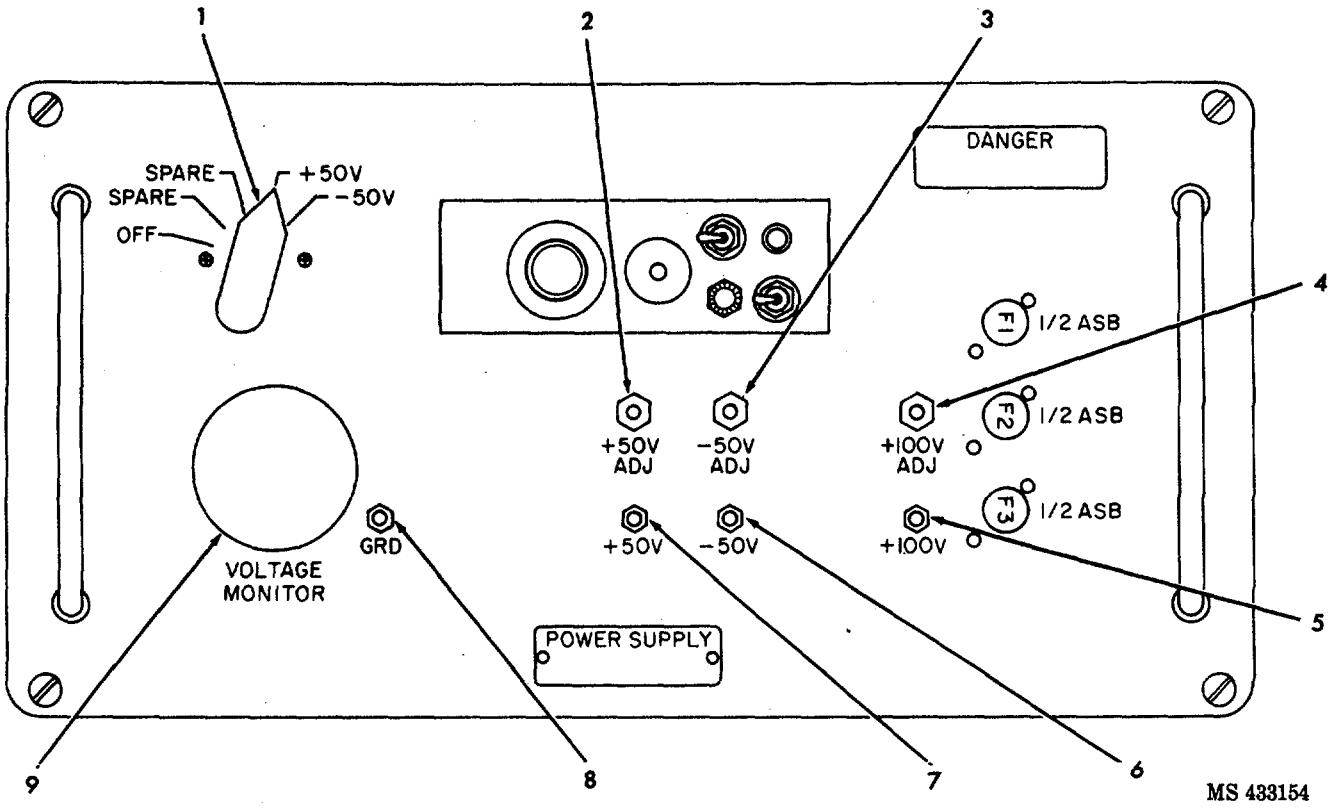
1 – TGT SPEED jack
2 – SIG STR jack
3 – 150V jack
4 – 416 ϕC jack
5 – 416 ϕB jack
6 – 416 ϕA jack
7 – GND jack
8 – 28V jack
9 – 28V RTN jack
10 – 90V CAL jack
11 – 90V RTN jack
12 – 5.4V CAL RTN jack
13 – 5.4V CAL jack
14 – RIPPLE TEST jack

Figure 8-3. AN/MPQ-61 Control-indicator panel,



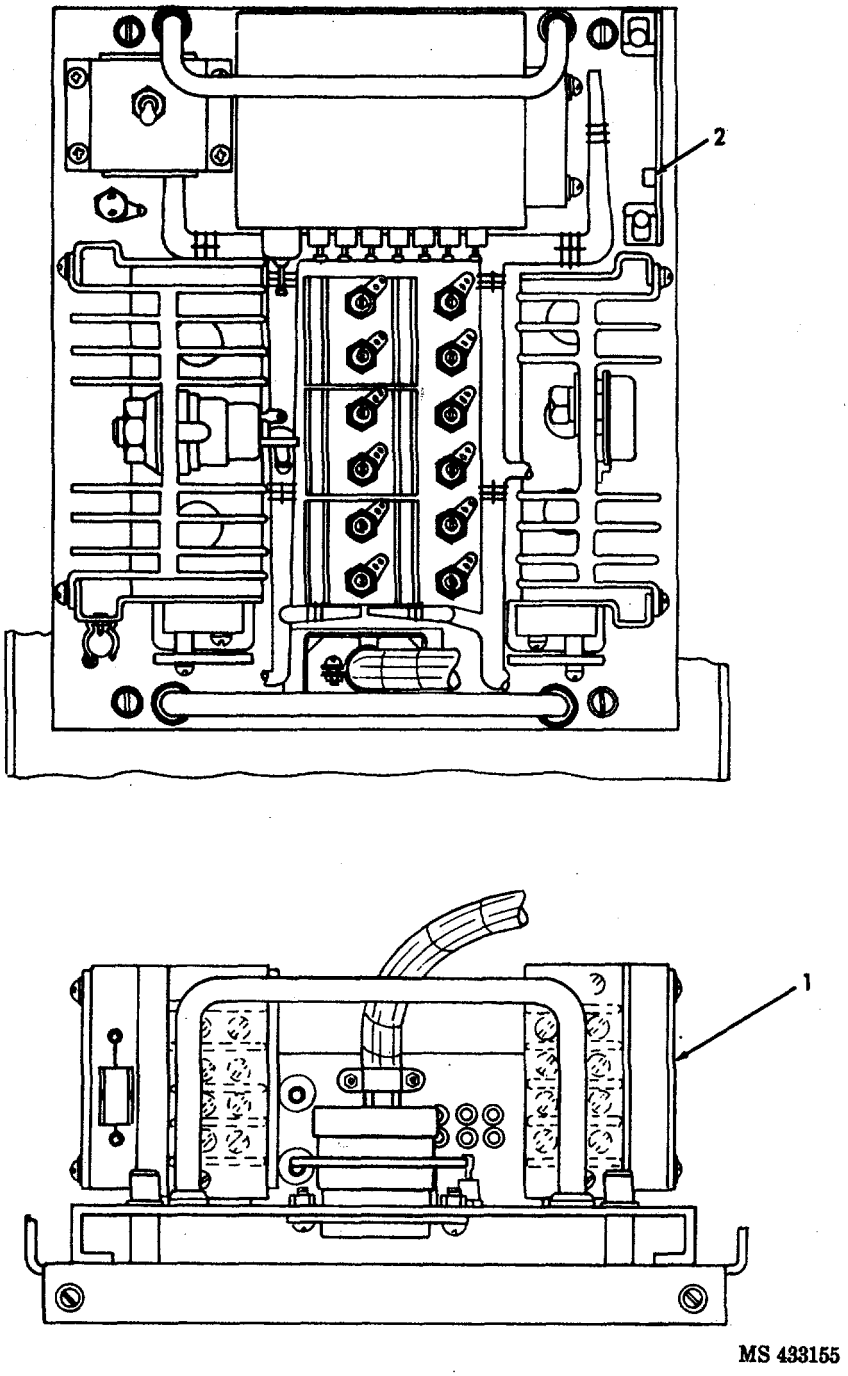
1—−100V control R57
2—+250V control R24
3—+150V/+100V control R36
4—+100V/+150V jack J3
5—−100V jack J5
6—+250V jack J2
7—GRD jack J4

Figure 8-4. -100, 150-, 250-Vdc power supply.



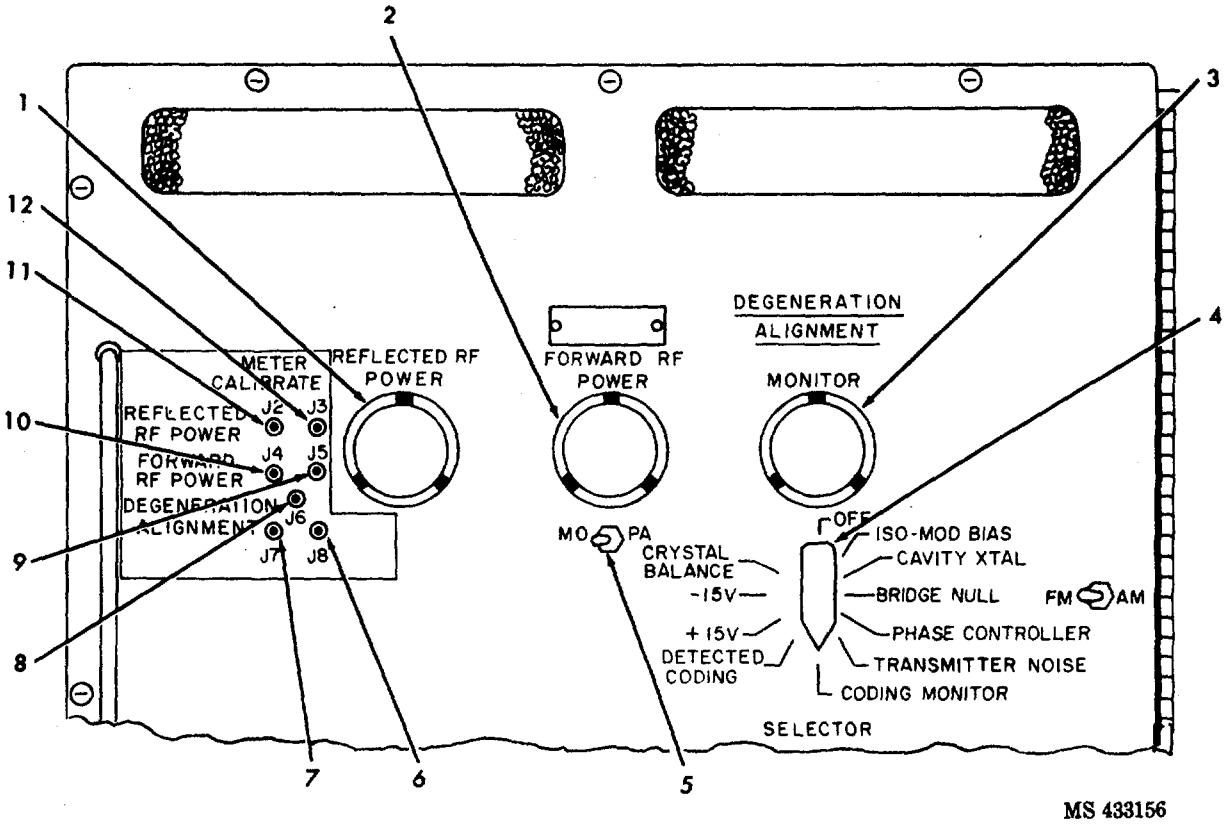
1—Voltage monitor selector switch
2—+50V ADJ control
3—−50V ADJ control
4—+100V ADJ control
5—+100V jack
6—−50V jack
7—+50V jack
8—GRD jack
9—VOLTAGE MONITOR meter

Figure 8-5. 100-Vdc, ±50-Vdc power supply.



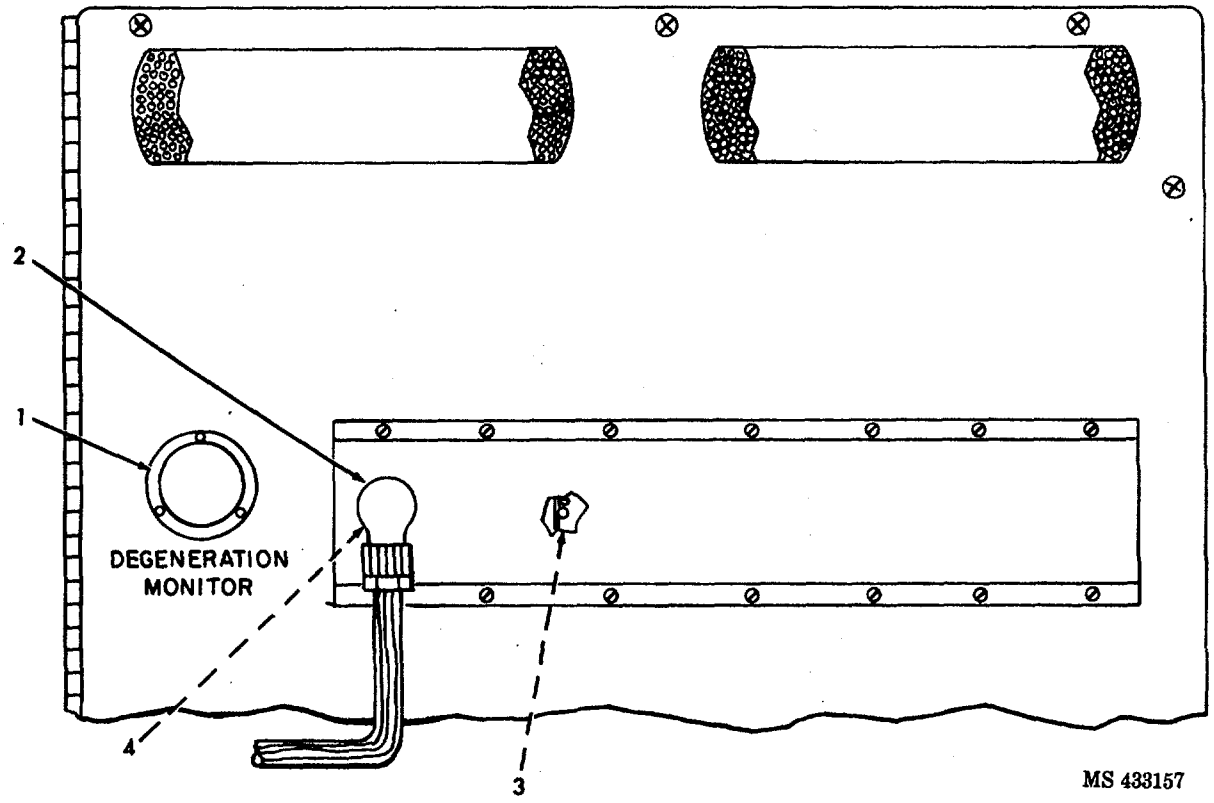
1—5.4-volt power supply
2—A1R12 control

Figure 8-6. Radar set group 5.4-volt power supply.



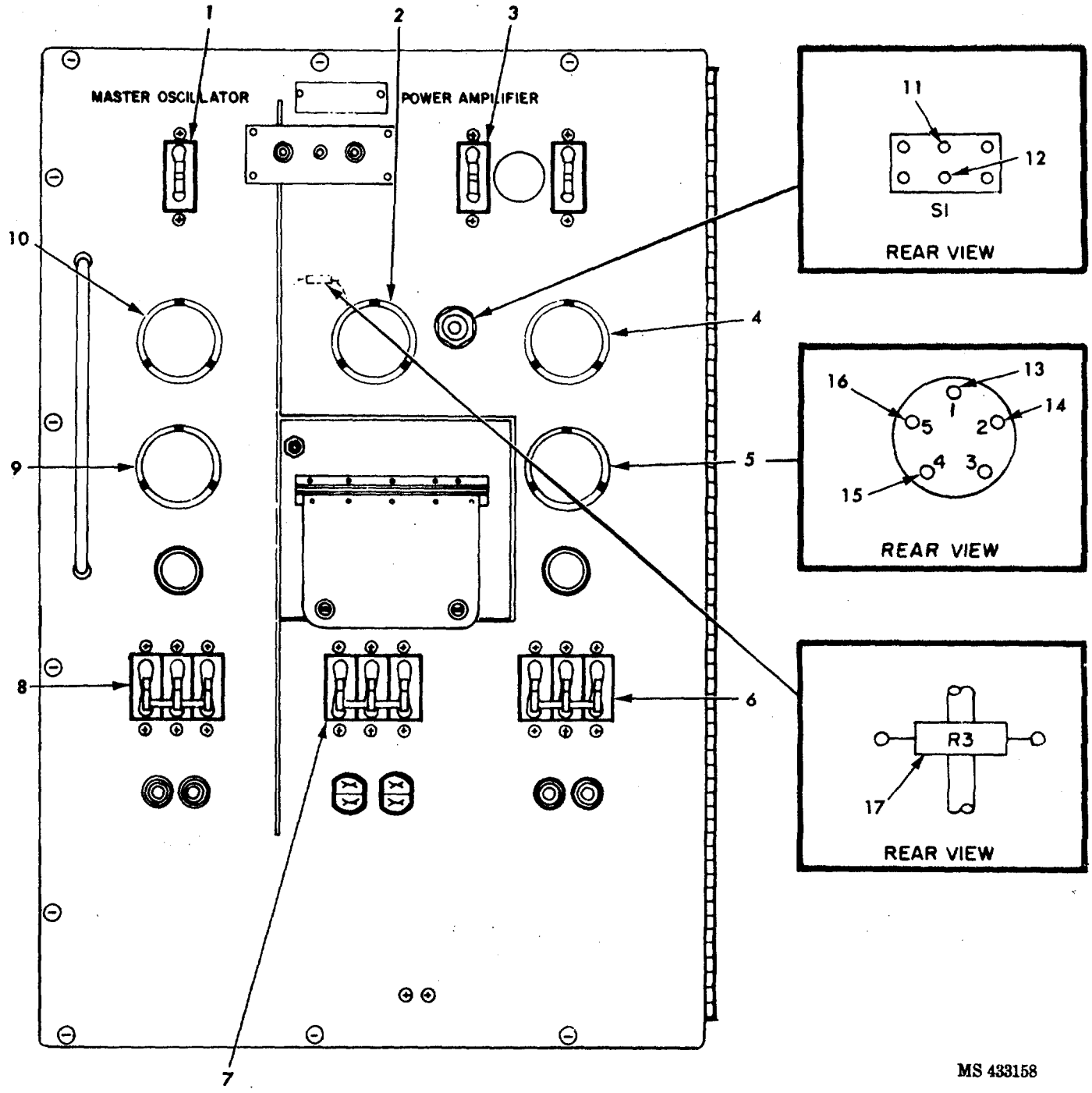
1—REFLECTED RF POWER meter
2—FORWARD RF POWER meter
3—DEGENERATION ALIGNMENT MONITOR meter
4—Degeneration alignment SELECTOR switch
5—MO/PA switch
6—DEGENERATION ALIGNMENT J8 jack
7—DEGENERATION ALIGNMENT J7 jack
8—DEGENERATION ALIGNMENT J6 jack
9—FORWARD RF POWER J5 jack
10—FORWARD RF POWER J4 jack
11—REFLECTED RF POWER J2 jack
12—REFLECTED RF POWER J3 jack

Figure 8-7. Transmitter panel No. 3.



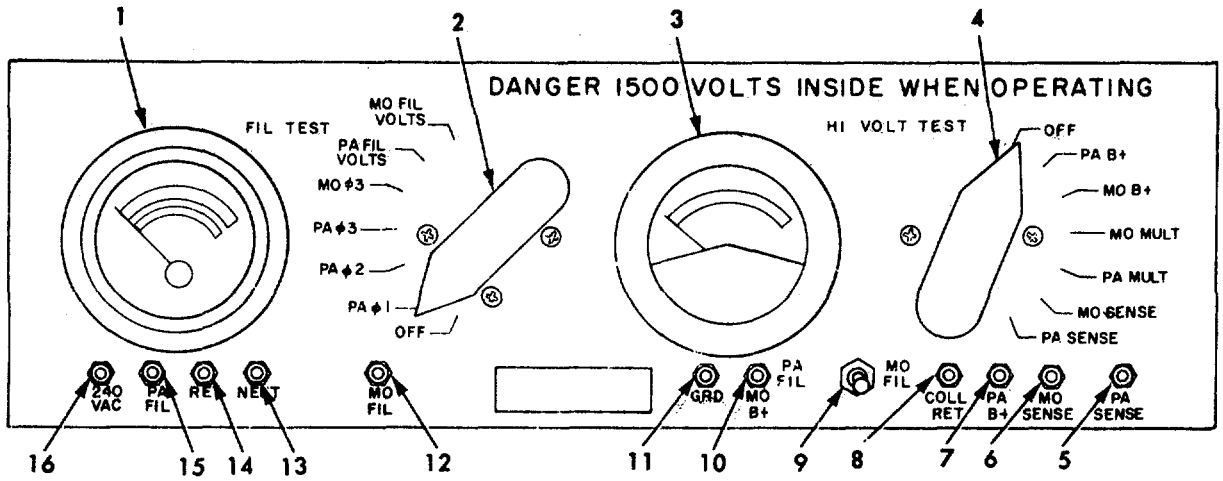
1—DEGENERATION MONITOR meter
2—P22 plug
3—R33NU
4—Jack J1

Figure 8-8. Transmitter panel No. 3 (rear view).



1—OVERLOAD COLLECTOR circuit breaker
2—REGULATOR VOLTS meter
3—OVERLOAD BODY CURRENT circuit breaker
4—Power amplifier BEAM AMPERES meter
5—Power amplifier BEAM VOLTAGE meter
6—Power amplifier BEAM circuit breaker
7—REGULATOR SCREEN & FILAMENT circuit breaker
8—Master oscillator BEAM circuit breaker
9—Master oscillator BEAM VOLTAGE meter
10—Master oscillator BEAM AMPERES meter
11—S1-5
12—S1-2
13—Terminal 1
14—Terminal 2
15—Terminal 4
16—Terminal 5
17—R3NU

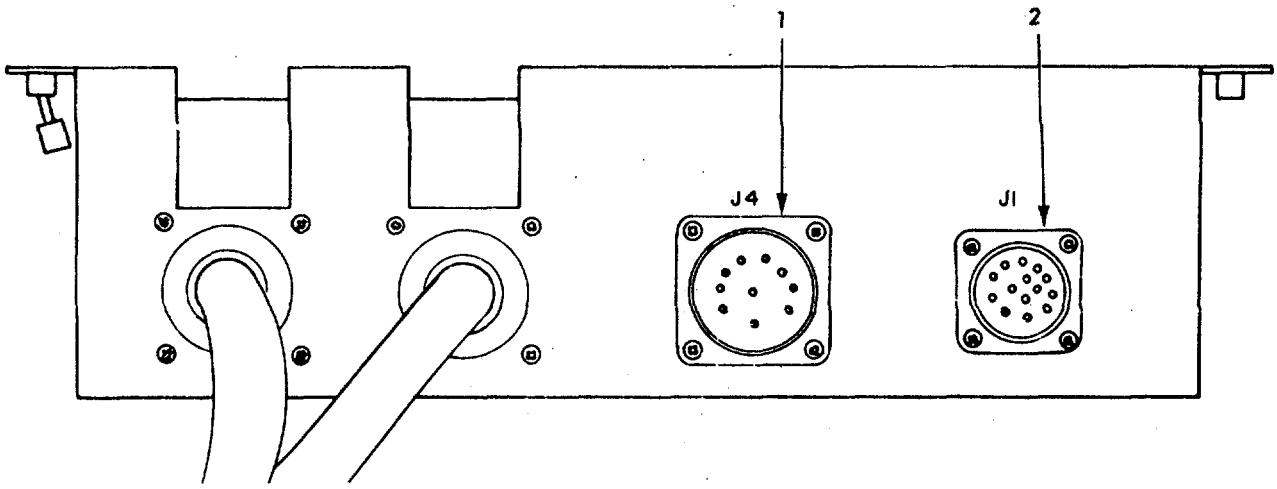
Figure 8-9. Transmitter panel No. 2.



MS 433159

1—FIL TEST meter
2—FIL TEST switch
3—HI VOLT TEST meter
4—HI VOLT TEST switch
5—PA SENSE jack
6—MO SENSE jack
7—PA B+ jack
8—COLL RET jack
9—PA-FIL/MO-FIL switch
10—MO B+ jack
11—GRD jack
12—MO FIL jack
13—NEUT jack
14—RET jack
15—PA FIL jack
16—240 VAC jack

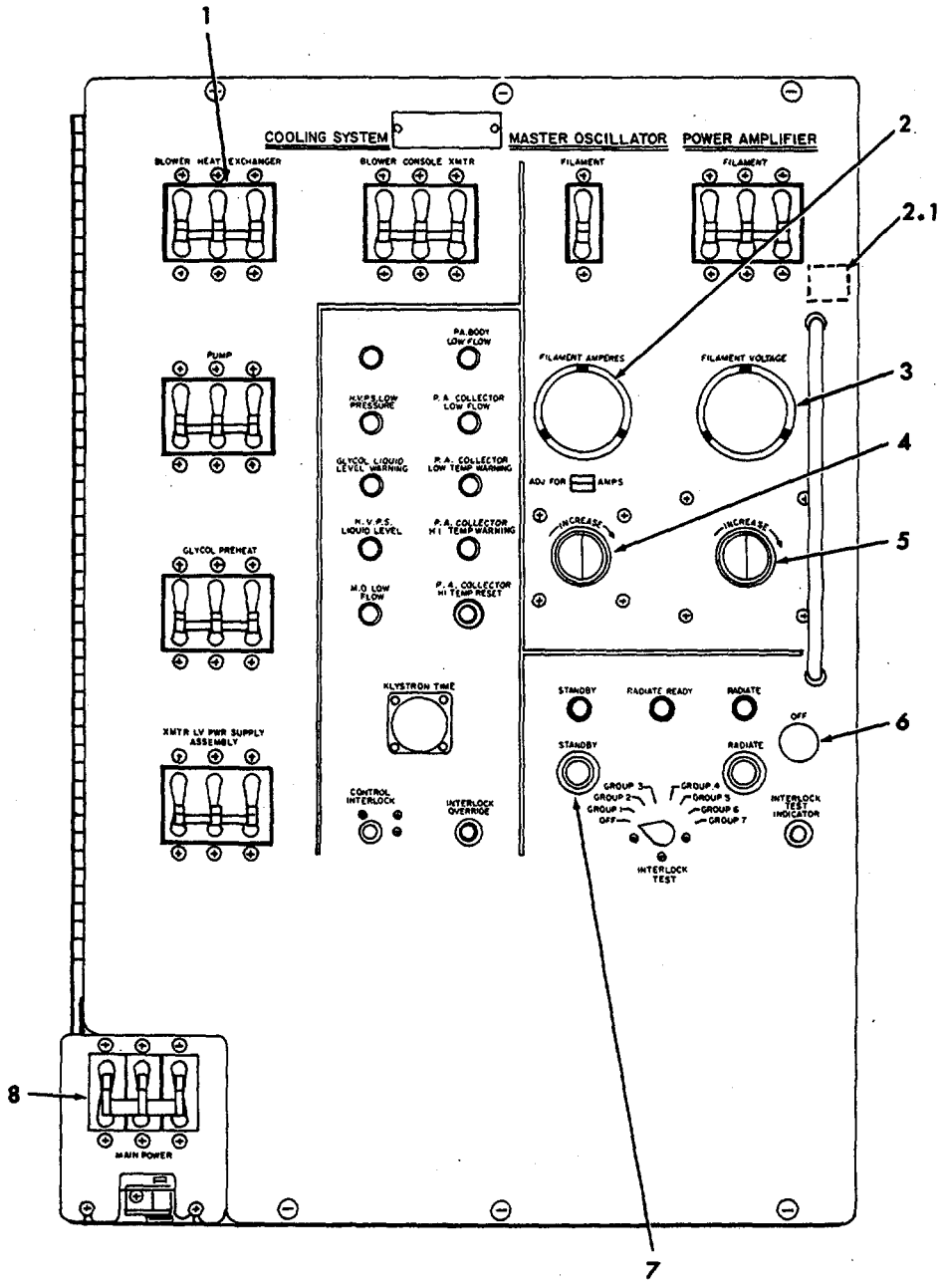
Figure 8-10. High-voltage power supply test set.



MS 433160

1—J4 Jack
2—J1 Jack

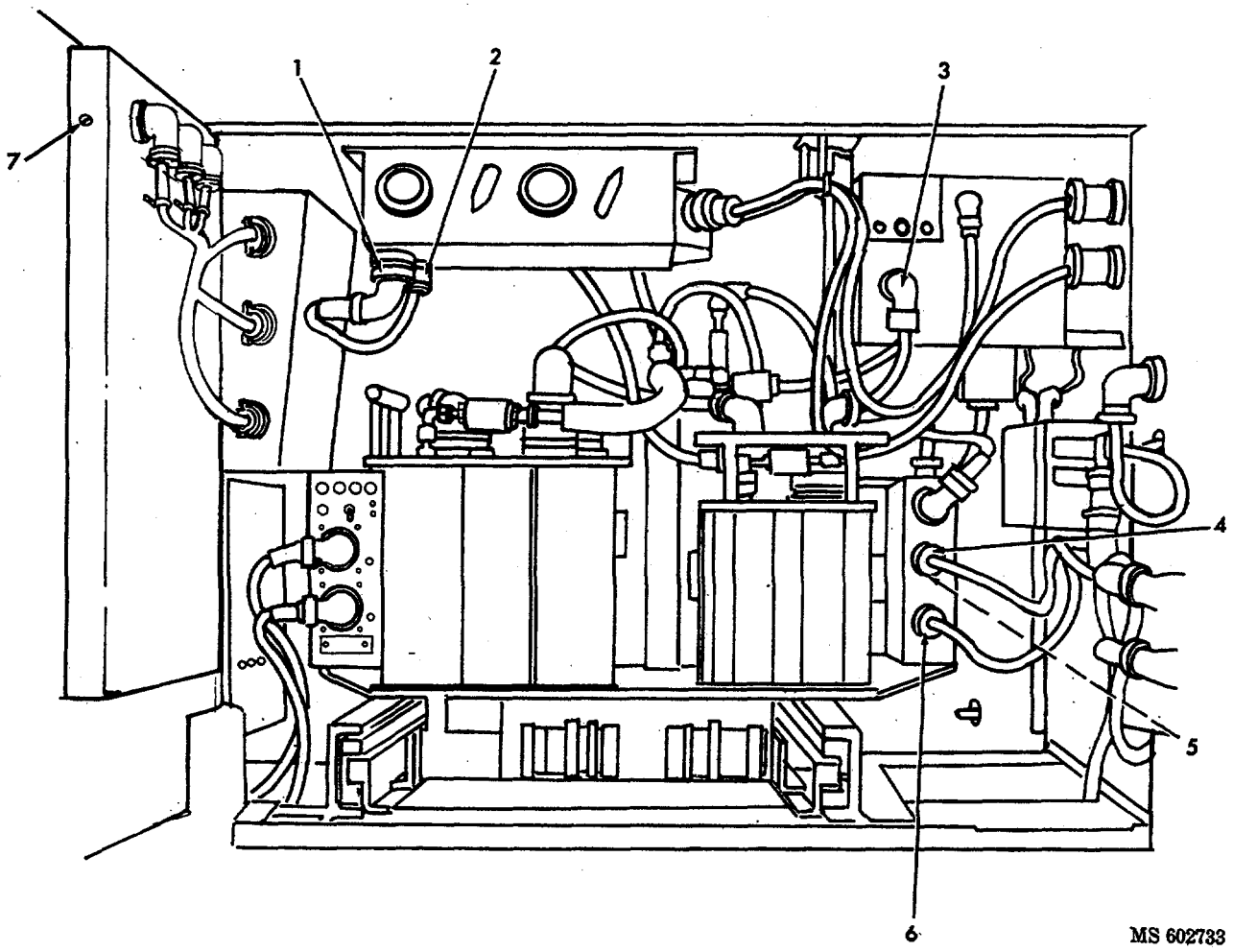
Figure 8-11. High-voltage power supply test set (rear view).



MS 433161A

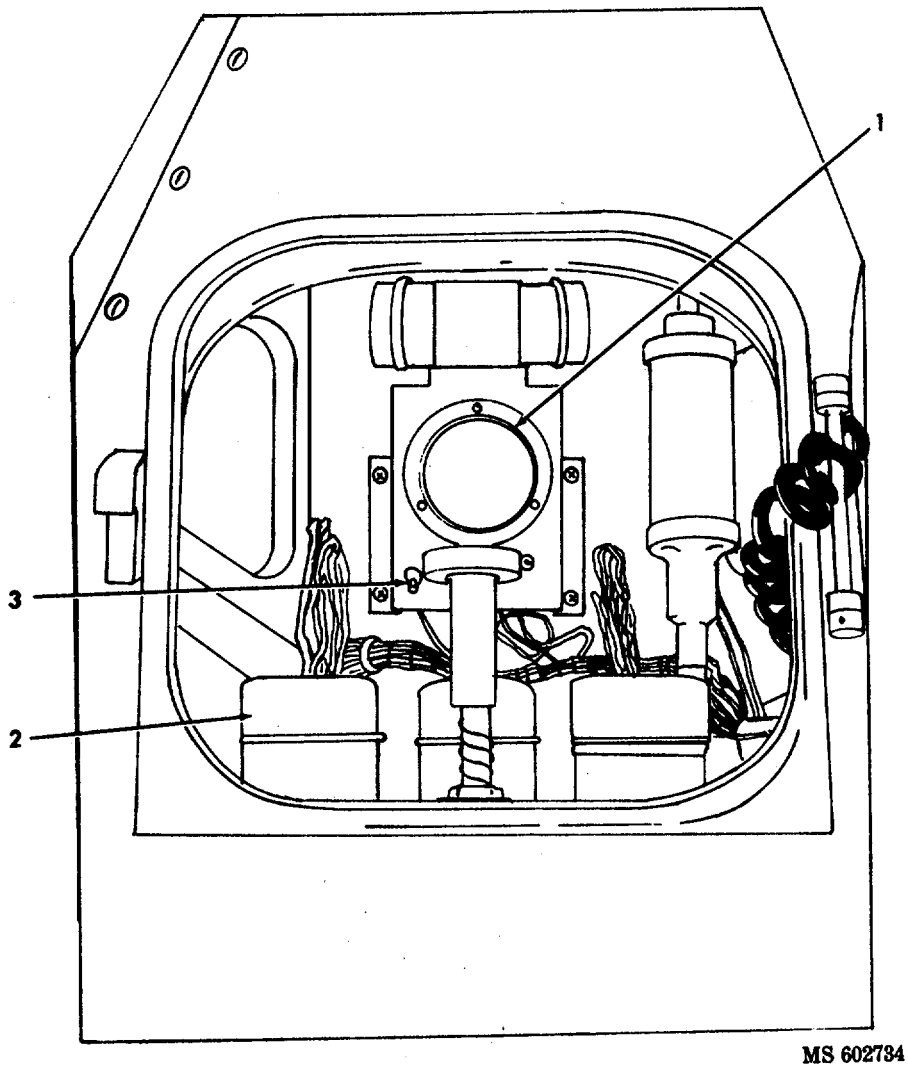
1 – BLOWER HEAT EXCHANGER circuit breaker
2 – MASTER OSCILLATOR FILAMENT AMPERES meter
2.1 – R1 control (see 7, fig. 8-13)
3 – POWER AMPLIFIER FILAMENT VOLTAGE meter
4 – MASTER OSCILLATOR filament control
5 – POWER AMPLIFIER filament control
6 – OFF switch
7 – STANDBY switch
8 – MAIN POWER circuit breaker

Figure 8-12. Transmitter panel No. 1.



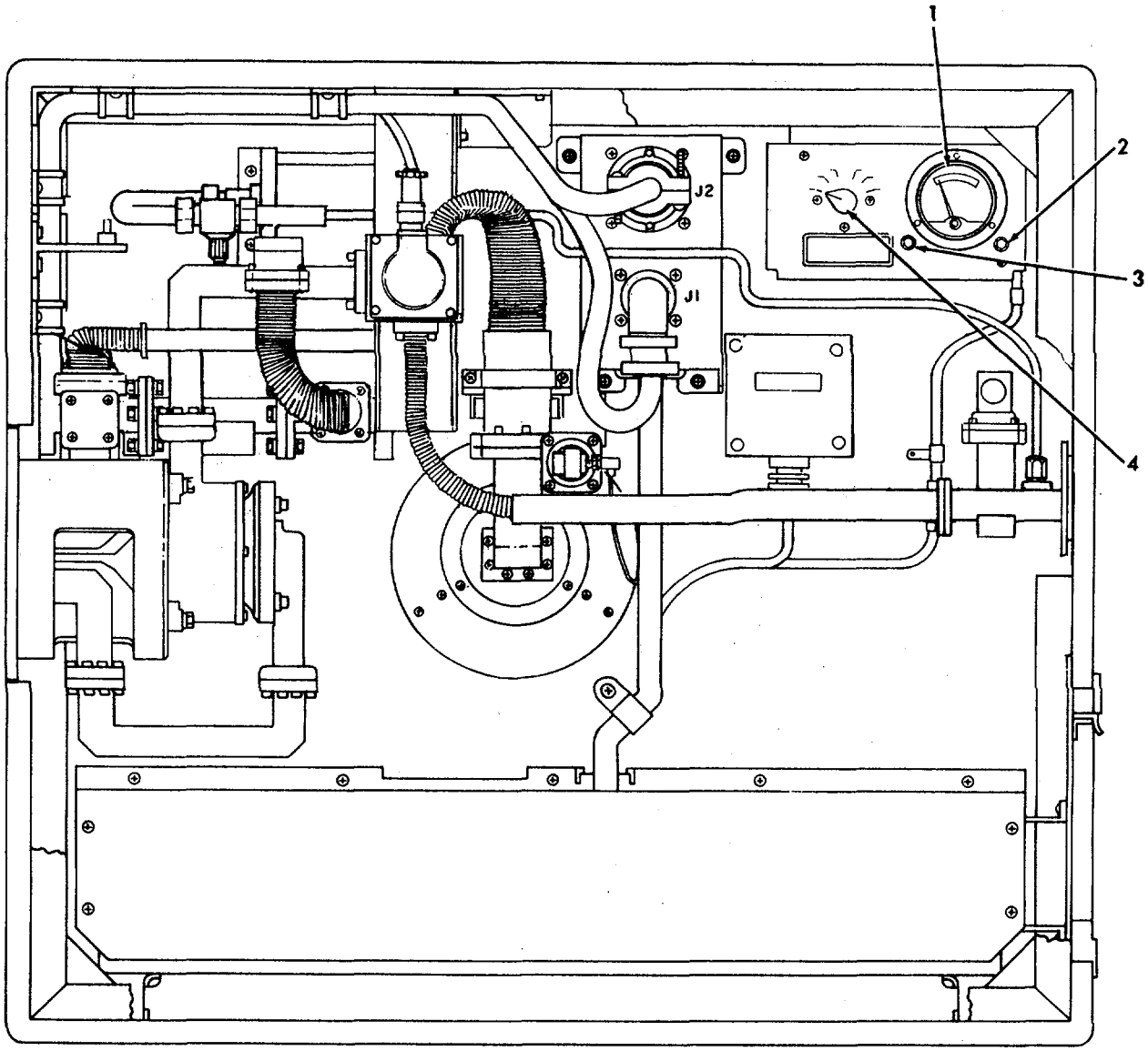
1—P4
2—P3
3—P2
4—A7P1
5—A6J2
6—A7P2
7—FILAMENT METER CAL control R1

Figure 8-13. High-voltage power supply area.



1—Meter M1
2—Synchro B3
3—Meter switch S1

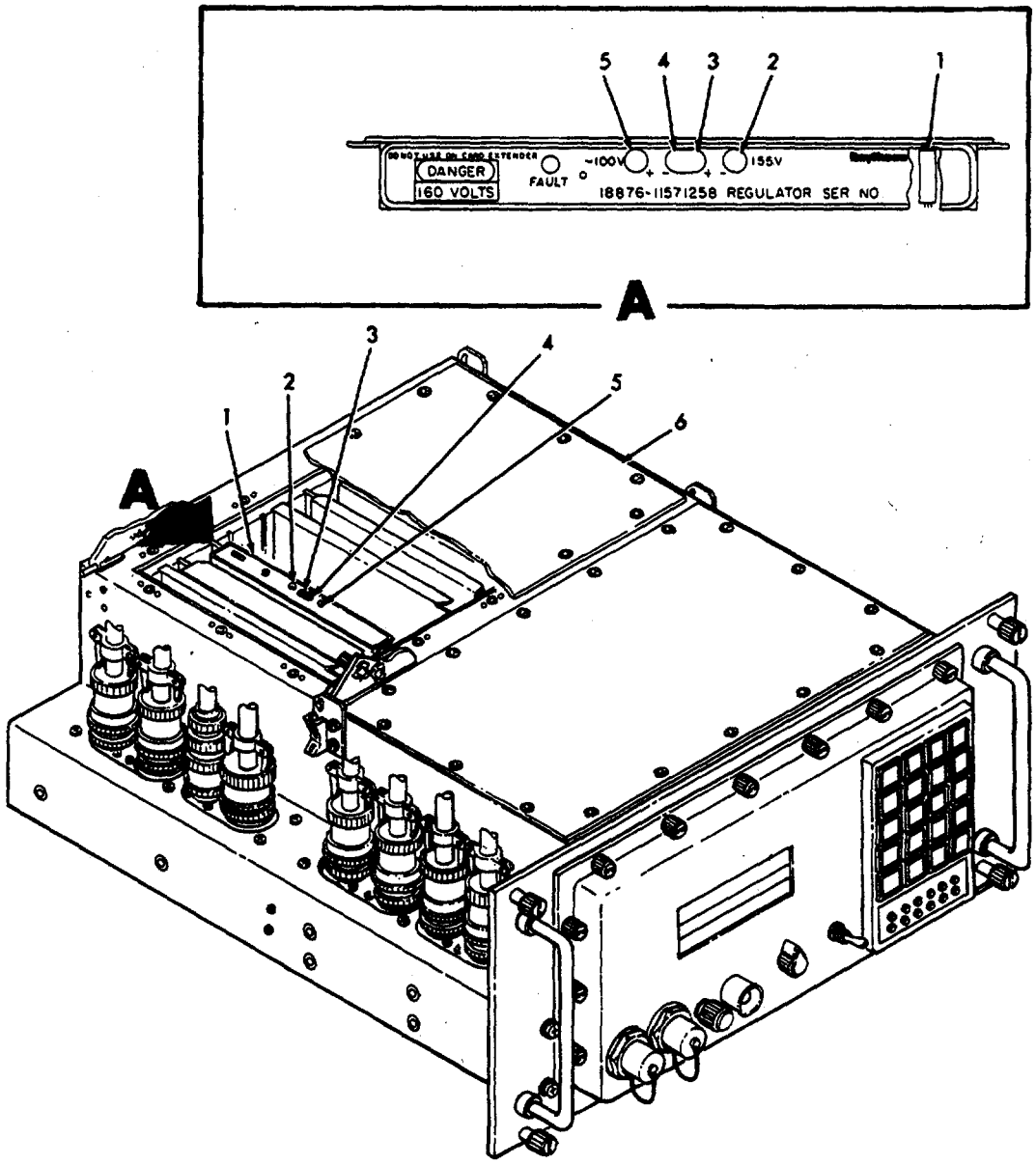
Figure 8-14. Antenna pedestal



MS 602735

1—POWER SUPPLY MONITOR
2—TP2
3—TP1
4—POWER SUPPLY MONITOR selector switch

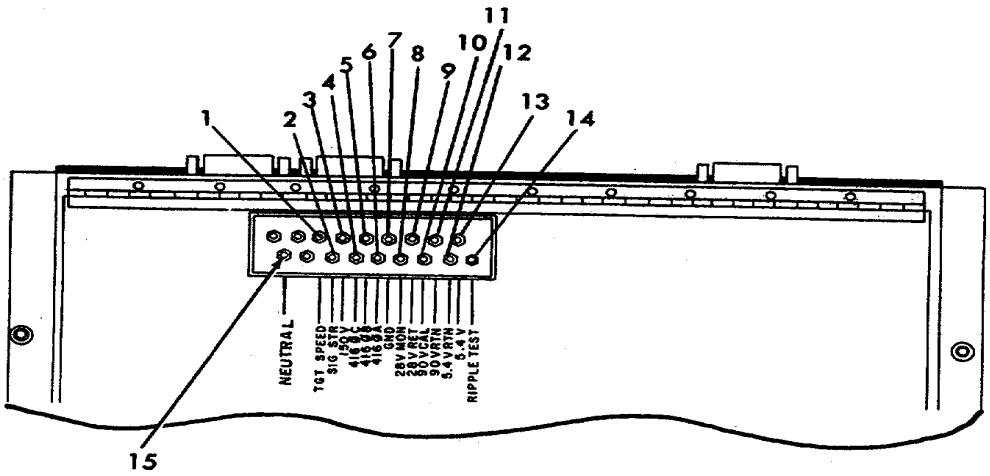
Figure 8-15. Transmitter housing.



1 – –100V adjustment
2 – 155V – jack
3 – 155V + jack
4 – –100V – jack
5 – –100V + jack
6 – Lower level electronics cover

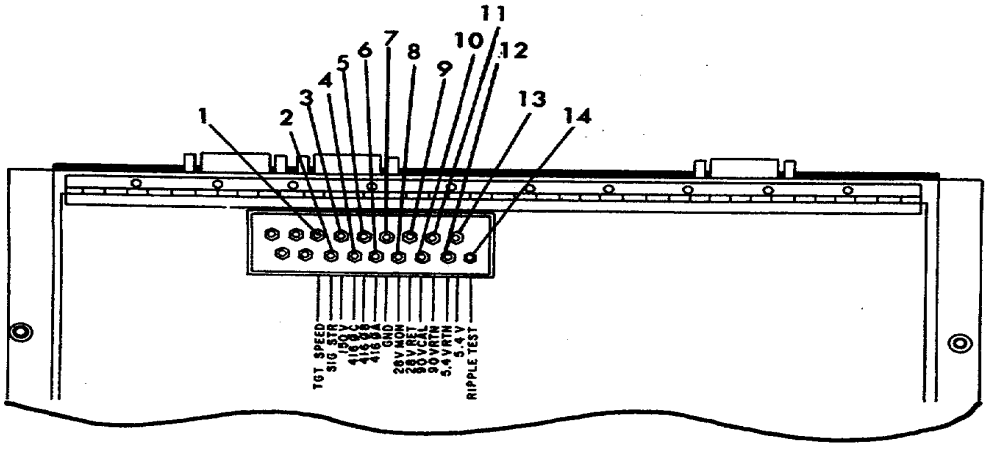
MS 602736A

Figure 8-16. Low level electronics microcomputer.



Control-indicator panel part number 13235313

1 – TGT SPEED jack
2 – SIG STR jack
3 – 150V jack
4 – 416 φC jack
5 – 416 φB jack
6 – 416 φA jack
7 – GND jack
8 – 28V MON jack
9 – 28V RTN jack
10 – 90V CAL jack
11 – 90V RTN jack
12 – 5.4V RTN jack
13 – 5.4V jack
14 – RIPPLE TEST jack
15 – NEUTRAL jack



Control-indicator panel part number 13219166

1 – TGT SPEED jack
2 – SIG STR jack
3 – 150V jack
4 – 416 φC jack
5 – 416 φB jack
6 – 416 φA jack
7 – GND jack
8 – 28V MON jack
9 – 28V RTN jack
10 – 90V CAL jack
11 – 90V RTN jack
12 – 5.4V RTN jack
13 – 5.4V jack
14 – RIPPLE TEST jack

MS 605797

Figure 8-17. AN/MPQ-57 Control-indicator panel.

CHAPTER 9

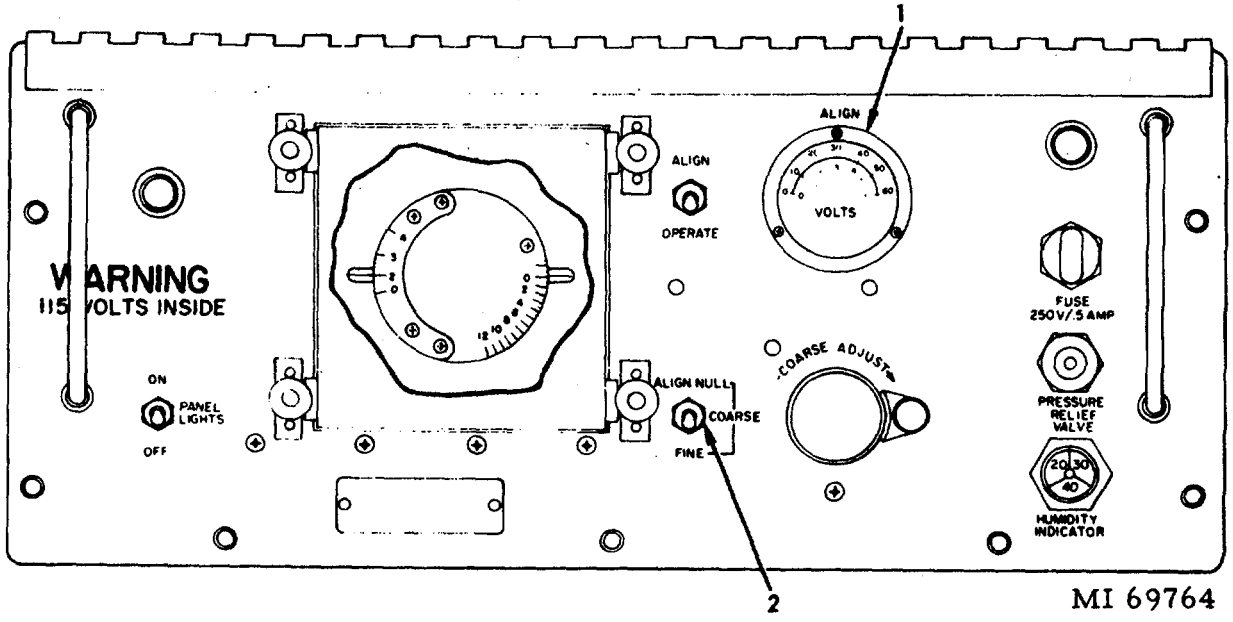
IMPROVED LAUNCHER (ILCHR) PERIODIC TEST PROCEDURES

Table 9-1. Compensation Group Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	ALIGN Meter (1, Fig. 9-1).
a.	Connect and energize the cal std. Loosen the fasteners that secure the panel to the launcher emplacement compensation group, and raise the panel. Disconnect connector P1022 (shoot-around cable) at the distribution box. Set the FUNCTION switch to VAC. Set the RANGE switch to 2. Adjust the VERNIER control full ccw. Connect the COMMON test lead to E1 (2, fig. 9-2). Connect the SH GUARD test lead to chassis ground. Connect the AC VOLTS test lead to S1-1 (1, fig. 9-2). Carefully lower the panel so that the connected test leads are not disturbed. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a full-scale indication on the meter under test. **The cal std indicates 57.00 to 63.00.** ALIGN meter, R3, S1.
b.	Release the TEST switch. Adjust the VERNIER control full ccw. Raise the panel, and transfer the AC VOLTS test lead to the cathode of CR2 (4, fig. 9-2). Carefully lower the panel. Set and hold the ALIGN NULL/COARSE/FINE switch (2, fig. 9-1) to ALIGN NULL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a full-scale indication on the meter under test. **The cal std indicates 66.0 to 74.00.** CR2, R2, S1.

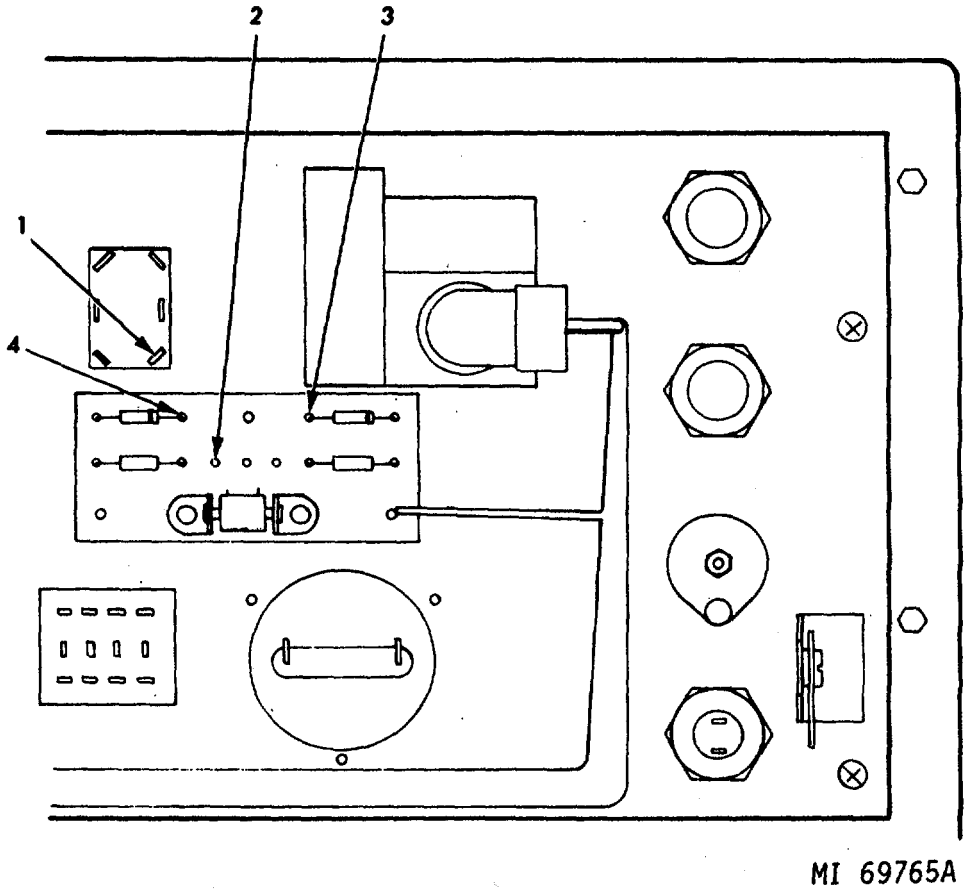
Table 9-1. Compensation Group Panel-Periodic Test Procedures-Continued

Step	Operation Normal indication Corrective procedure
c.	Release the TEST and ALIGN NULL/COARSE/FINE switches. Adjust the VERNIER control full ccw. Raise the panel, and transfer the AC VOLTS test lead to the anode of CR1 (3 fig. 9-2). Remove connector P1 from jack J1 on the azimuth correction servomechanism and carefully lower the panel. Set and hold the ALIGN NULL/COARSE/FINE switch to ALIGN NULL. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a full-scale indication on the meter under test. **The cal std indicates 93.0 to 101.0.** CR1, R1, S1. Release the TEST and ALIGN NULL/COARSE/FINE switches. Remove the test leads from the panel. Connect P1 to J1 on the azimuth correction servomechanism. Connect connector P1022 to the distribution box. Lower and secure the panel. Deenergize and store the cal std.



1 — ALIGN meter
2 — ALIGN NULL/COARSE/FINE switch

Figure 9-1. Shoot-around console front panel.



1 — S1-1
2 — E1
3 — CR1 anode
4 — CR2 cathode

Figure 9-2. Shoot around console front panel (rear view, panel raised).

CHAPTER 10

IMPROVED GUIDED MISSILE SYSTEM

RADAR SIGNAL SIMULATOR STATION AN/TPQ-29

PERIODIC TEST PROCEDURES

Table 10-1. Target Position Generator-- Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE **Perform steps 1 and 2 below for each of the six target position generators on the control console.**
1.	**TGT RANGE Meter (1, Fig. 10-1).**
a.	Connect and energize the cal std. Loosen the fasteners that secure the target position generator to the control console, and withdraw the panel. Remove the METER BAL module (3, fig. 10-1) from the target position generator. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Adjust the VERNIER control full ccw. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 100-km indication on the meter under test. **The cal std indicates 0.0151 to 0.0181.** TGT RANGE meter.
b.	Adjust the VERNIER control for a 200-km indication on the meter under test. **The cal std indicates 0.0318 to 0.0348.** TGT RANGE meter.
c.	Adjust the VERNIER control for a 300-km indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** TGT RANGE meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Replace the METER BAL module into the target position generator.

Table 10-1. Target Position Generator-- Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
2.	**RADIAL SPEED Meter (2, Fig. 10-1).**
a.	Remove the plugs from jacks J1, J2, and J3 at the rear of the target position generator chassis. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a 15-KM/HRx100 indication on the meter under test. **The cal std indicates 0.0135 to 0.0165.** RADIAL SPEED meter.
b.	Adjust the VERNIER control for a 35-KM/HRx100 indication on the meter under test. **The cal std indicates 0.0335 To 0.0365.** RADIAL, SPEED meter.
c.	Adjust the VERNIER control for a 50-KM/HRx100 indication on the meter under test. **The cal std indicates 0.0485 to 0.0515.** RADIAL SPEED meter. Release the TEST switch. Remove the test leads from the meter under test. Connect the plugs to J1, J2, and J3 on the target position generator chassis. Secure the target position generator to the control console.

Table 10-2. Voltage Regulator Group - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	Test Voltage Meter M1 (1, Fig. 10-3).
a.	Loosen the fasteners that secure the voltage regulator panel to the control console, then withdraw the panel. Disconnect plug J1 from the rear of the voltage regulator group chassis. Loosen the fasteners that secure the window clutter power panel (fig. 10-2) and open the panel. Adjust the VERNIER control full ccw. Set the FUNCTION switch to VAC. Set the RANGE switch to 2. Connect the AC VOLTS test lead to the 115-vac side of R1 (10, fig. 10-4). Connect the COMMON test lead at the junction of CR1 .and CR2 (11, fig. 10-4).

Table 10-2. Voltage Regulator Group - Periodic Test Procedures -- Continued

Step	Operation Normal indication Corrective procedure
a.	Set the test voltage selector switch (2, fig. 10-3) to 115VACØA.
Cont.	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a center line indication on the meter under test.
	The cal std indicates 109.0 to 127.0.
	CR1-CR4, R1, test voltage meter.
b.	Set the test voltage selector switch to 115VACØB.
	Adjust the VERNIER control for a center line indication on the meter under test.
	The cal std indicates 109.0 to 127.0.
	R2.
c.	Set the test voltage selector switch to 115VACØC.
	Adjust the VERNIER control for a center line indication on the meter under test.
	The cal std indicates 109.0 to 127.0.
	R3.
	Release the TEST switch.
d.	Adjust the VERNIER control full ccw.
	Remove the AC VOLTS test lead from R1.
	Connect J1 at the rear of the voltage regulator group chassis.
	Set the FUNCTION switch to MULTR.
	Momentarily set the VDC switch to the down position.
	Connect the DC VOLTS test lead to the -120-vdc side of R4 (12, fig. 10-4).
	Set the POWER switch on the control console plan indicator panel to STANDBY. When the READY lamp illuminates, set the- POWER switch to OPERATE.
	Set the test voltage selector switch to - 120 VDC REG.
	Adjust the A4 -120V DC ADJUST control (3, fig. 10-4) for a center line indication on the meter under test.
	The cal std indicates- 113.0 to - 132.4.
	A4, R4.
e.	Transfer the DC VOLTS test lead to the -28-vdc terminal of R5 (13, fig. 10-4).
	Set the test voltage selector switch to -28 VDC REG.
	Adjust the A2 -28V DC ADJUST control (2, fig. 10-4) for a center line indication on the meter under test.
	The cal std indicates - 27.20 to - 31.80.
	A2, R5.
f.	Transfer the DC VOLTS test lead to the +28-vdc terminal of R6 (7, fig. 10-4).
	Set the test voltage selector switch to 28 VDC REG (1).

Table 10-2. Voltage Regulator Group - Periodic Test Procedures -- Continued

Step	Operation Normal indication Corrective procedure
f. Cont.	Adjust the A7 +28V DC ADJUST control (1, fig. 10-5) for a center line indication on the meter under test. **The cal std(indicates 27.20 to 31.80.** A7, R6.
g.	Transfer the DC VOLTS test lead to the +120-vdc terminal of R7 (8, fig. 10-4). Set the test voltage selector switch to 120 VDC REG (1). Adjust the A8 +120V DC ADJUST control (2, fig. 10-5) for a center line indication on the meter under test. **The cal std indicates 113.0 to 132.4.** A8, R7.
h.	Transfer the DC VOLTS test lead to the +28-vdc terminal of R8 (9, fig. 10-4). Set the test voltage selector switch to +28 VDC REG. Adjust the A1 +28V DC ADJUST control (1, fig. 10-4) for a center line indication on the meter under test. **The cal std indicates 27.20 to 31.80.** A1, R8.
i.	Transfer the DC VOLTS test lead to the +60-vdc terminal of R9 (6, fig. 10-4). Set the test voltage selector switch to +60 VDC REG. Adjust the A6 +60V DC ADJUST control (14, fig. 10-4) for a center line indication on the meter under test. **The cal std indicates .57.00 to 66.70.** A6, R9.
j.	Transfer the DC VOLTS test lead to the +120-vdc terminal of R10 (5, fig. 10-4). Set the test voltage selector switch to 120 VDC REG. Adjust the A3 +120V DC ADJUST control (16, fig. 10-4) for a center line indication on the meter under test. **The cal std indicates 113.0 to 132.4.** A3, R10.
k.	Transfer the DC VOLTS test lead to the +250-vdc terminal of R11 (4, fig. 10-4). Set the test voltage selector switch to 250 VDC REG. Adjust the A5 +250V DC ADJUST control (15, fig. 10-4) for a center line indication on the meter under test. **The cal std indicates 231.4 to 270.4** A5, R11.

Table 10-2. Voltage Regulator Group - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
k. Cont.	Set the control console plan indicator panel POWER switch to OFF. Remove the test leads from the voltage regulator group. Secure the voltage regulator group panel in position. Secure the window clutter power panel in position.

Table 10-3. Deception Signals Generator - Periodic Test Procedures

NOTE
Perform these steps on both deception signals generators on the ECM GROUP console.

Step	Operation Normal indication Corrective procedure
	TUNING Meter (1, Fig. 10-6).
a.	Loosen the fasteners that secure the deception signals generator to the ECM GROUP console, and withdraw the panel. Set the FUNCTION switch to DCMA. Set the RANGE switch to 1. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for an indication on the lower edge of the green area on the meter under test. **The cal std indicates 0.0460 to 0.0540.** TUNING meter.
b.	Adjust the VERNIER control for an indication on the upper edge of the green area on the meter under test. **The cal std indicates 0.0960 to 0.1040.** TUNING meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Slide the deception signals generator into its normal position and secure.

Table 10-4. Antenna Pattern Signals Generator - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**PAR FREQ MC Meter (1, Fig. 10-7).**
a.	Loosen the fasteners that secure the antenna pattern signals generator to the ECM GROUP console, and withdraw the panel. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a center scale 0 indication on the meter under test. **The cal std indicates 0.0460 to 0.0540.** PAR FREQ MC meter.
b.	Adjust the VERNIER control for a +50 indication on the meter under test. **The real std indicates 0.0960 to 0.1040.** PAR FREQ MC meter. Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test.
2.	**ROR FREQ MCx10 Meter (2, Fig. 10-7).** Perform step 1 above. Secure the antenna pattern signals generator to its normal position in the ECM GROUP console.

Table 10-5. IF Modulator Group - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	RF OUTPUT Meter (1, Fig. 10-8).
a.	Loosen the fasteners that secure the IF modulator group to the ECM GROUP console, and withdraw the panel. Set the RF OUTPUT switch (2, fig. 10-8) to NORMAL. Disconnect cable P3/A7J1 (3, fig. 10-8) from the normal video IF amplifier. Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test. Connect the COMMON test lead to the (-) terminal on the meter under test. Set and hold the TEST switch to NORMAL.

Table 10-5. IF Modulator Group - Periodic Test Procedure - Continued

Step	Operation Normal indication Corrective procedure
a. Cont.	Adjust the VERNIER control for an indication of 5 on the meter under test.
	The cal std indicates 0.0460 to 0.0540.
	RF OUTPUT meter.
b.	Adjust the VERNIER control for an indication of 10 on the meter under test.
	The cal std indicates 0.0960 to 0.1040.
	RF OUTPUT meter.
	Release the TEST switch.
	Adjust the VERNIER control full ccw.
	Remove the test leads from the meter under test.
	Connect cable P3/A7J1 to the normal video IF amplifier.
	Slide the IF modulator group into its normal position and secure.

Table 10-6. Brute Force Signals Generator - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE **Perform these steps on all four brute force signals generators on the ECM GROUP console.**
	TUNING Meter (1, Fig. 10-9).
a.	Loosen the fasteners that secure the brute force signals generator to the ECM GROUP console, and withdraw the panel.
	Connect the CURRENT/K OHMS test lead to the (+) terminal on the meter under test.
	Connect the COMMON test lead to the (-) terminal on the meter under test.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for an indication on the lower edge of the green area on the meter under test.
	The cal std Indicates 0.0460 to 0.0540.
	TUNING meter.
b.	Adjust the VERNIER control for an indication on the upper edge of the green area on the meter under test.
	The cal std Indicates 0.0960 to 0.1040.
	TUNING meter.

Table 10-6. Brute Force Signals Generator - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
b. Cont.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the meter under test. Slide the brute force signals generator into its normal position and secure.

Table 10-7. ICWAR Console - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**Power Supply Monitor Meter (1, Fig. 10-10).**
a.	Loosen the fasteners that secure the power supply assembly to the ICWAR console and withdraw the panel. Disconnect P52 and P53 from J1 and J2 (4 and 3, fig. 10-10). Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Set the power supply selector switch (2, fig. 10-10) to +15 VDC. Connect the DC VOLTS test lead to the junction of R12 and C2 (7, fig. 10-10). Connect the COMMON test lead to the junction of CR7 and CR9 (11, fig. 10-10). Set and hold the test switch to NORMAL. Adjust the VERNIER control for a +15 indication on the cal std. **The meter under test indicates in the red area.** CR6-CR9, power supply monitor meter, R12, S1.
b.	Release the TEST switch. Set the power supply selector switch to +28 VDC REG (3). Transfer the DC VOLTS test lead to the junction of R11 and J1-S (9, fig. 10-10). Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a +28 indication on the cal std. **The meter under test indicates in the red area.** Power supply monitor meter. R11, S1.
c.	Release the TEST switch. Adjust the VERNIER control full ccw. Set the power supply selector switch to -15 VDC. Transfer the COMMON test lead to the junction of R8 and J1-L (5, fig. 10-10). Transfer the DC VOLTS test lead to the junction of CR7 and CR9 (11, fig. 10-10).

Table 10-7. ICWAR Console - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
c. Cont.	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a +15 indication on the cal std.
	The meter under test indicates in the red area.
	CR6-CR9, power supply monitor meter, R8, S1.
d.	Release the TEST switch.
	Set the power supply selector switch to -28 VDC REG (2).
	Transfer the COMMON test lead to the junction of R7 and J1-T (10, fig. 10-10).
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a +28 indication on the cal std.
	The meter under test indicates in the red area.
	Power supply monitor meter, R7, S1.
e·.	Release the TEST switch.
	Set the power supply selector switch to +28 VDC UNREG (2).
	Transfer the COMMON test lead to the junction of CR7 and CR9.
	Transfer the DC VOLTS test lead to the junction of R10 and J1-P (6, fig. 10-10).
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a +28 indication on the cal std.
	The meter under test indicates in the red area.
	R10, S1.
f.	Release the TEST switch.
	Set the power supply selector switch to +28 VDC UNREG (OVEN).
	Transfer the DC VOLTS test lead to the junction of R9 and J1-M (8, fig. 10-10).
	Connect the previously removed P53 and P52 to J2 and J1, respectively.
	Set the FUNCTION switch to MULTR.
	Momentarily set the VDC switch to the down position.
	Set the control console plan indicator POWER switch to STANDBY.
	NOTE **Before observing the normal indication, allow a 15-minute warmup period for the radar signal simulator station to stabilize.**
	The cal std indicates 23 to 33.0.
	S1.
g.	Set the power supply selector switch to OFF.
	Remove the test leads from the power supply.

Table 10-7. ICWAR Console - Periodic Test Procedures - Continued

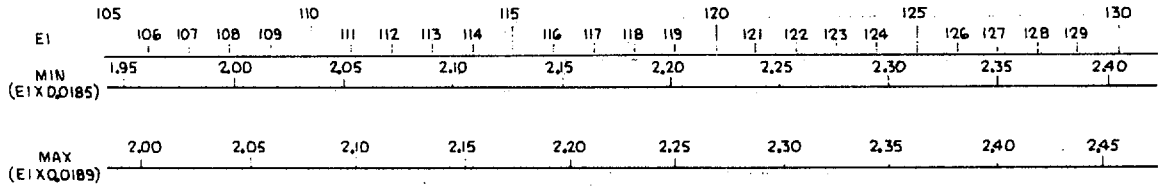
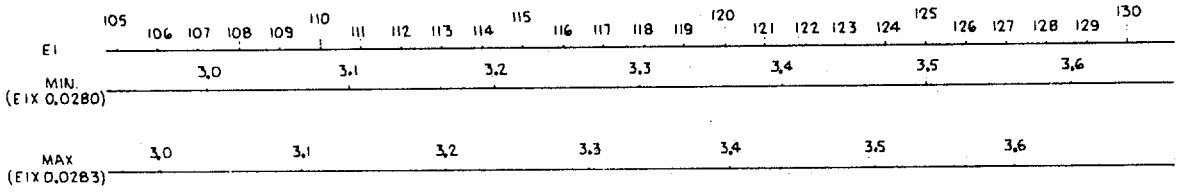
Step	Operation Normal indication Corrective procedure
2.	**Reference Transformers.**
a.	Remove protective covers from T1 and T2 (12 and 13, fig. 10-10).
	Momentarily set the VAC switch to the down position.
	Connect the COMMON and AC VOLTS test leads to T1-1 and -2, respectively.
	Set the control console plan indicator POWER switch to OPR.
	Record the cal std indication as E1.
	Set the control console plan indicator POWER switch to STANDBY.
	Transfer the COMMON test lead to T1-10.
	Transfer the AC VOLTS test lead to T1-8.
	Set the control console POWER switch to OPR.
	Enter the recorded value of E1 on the chart below. Project a line down to the MIN and MAX scales to determine the minimum and maximum cal std indications.
	
	T1.
b.	Set the control console POWER switch to STANDBY.
	Transfer the COMMON test lead to T1-11.
	Transfer the AC VOLTS test lead to T1-7.
	Set the control console plan indicator POWER switch to OPR.
	
	T1
c.	Set the control console panel indicator POWER switch to STANDBY.
	Transfer the COMMON test lead to T1-12.
	Transfer the AC VOLTS test lead to T1-6.

Table 10-7. ICWAR Console - Periodic Test Procedures - Continued

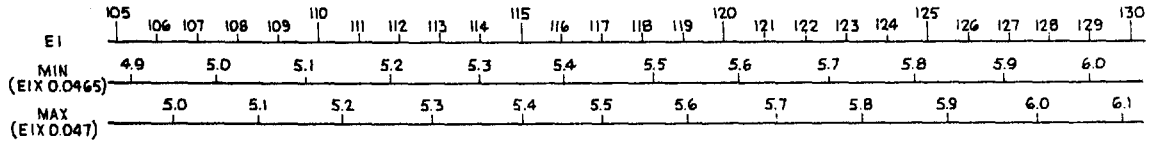
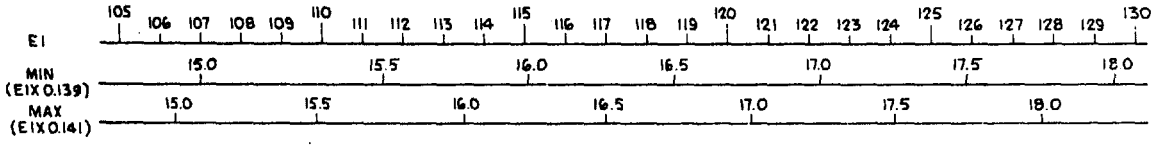
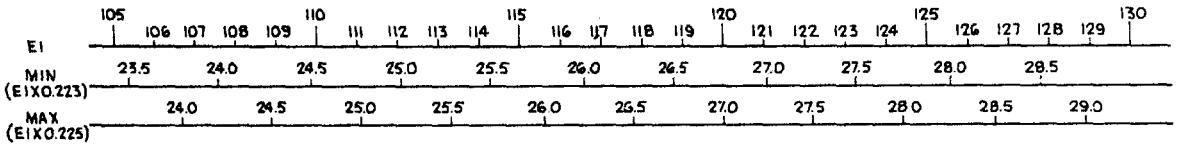
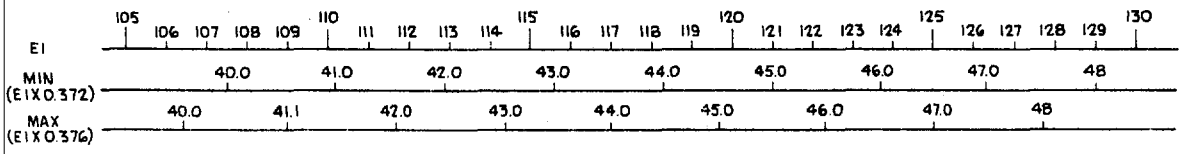
Step	Operation Normal indication Corrective procedure
2*c*. Cont.	Set the control console plan indicator POWER switch to OPR.
	
	T1.
d.	Set the control console plan indicator POWER switch to STANDBY. Transfer the COMMON test lead T1-13. Transfer the AC VOLTS test lead to T1-5. Set the control console plan indicator POWER switch to OPR.
	
	T1.
e.	Set the control console plan indicator POWER switch to STANDBY. Transfer the COMMON test lead to T1-14. Transfer the AC VOLTS test lead-to T1-4. Set the control console plan indicator POWER switch to OPR.
	
	T1.
f.	Set the control console plan indicator POWER switch to STANDBY. Transfer the COMMON test lead to T1-15. Transfer the AC VOLTS test lead to T1-3.

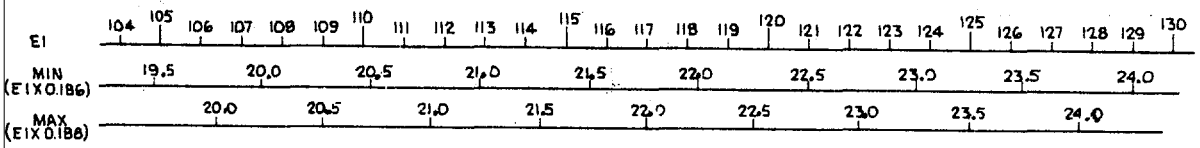
Table 10-7. ICWAR Console - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
2*f.* Cont.	Set the control console plan indicator POWER switch to OPR.



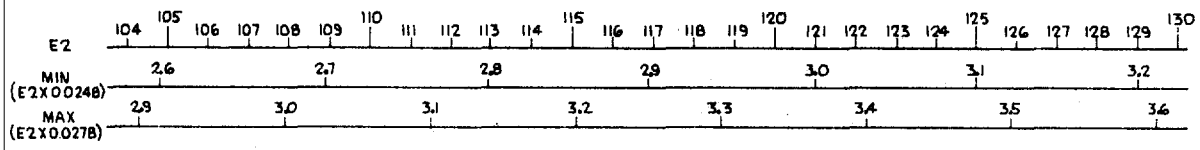
T1.

9.	Set the control console plan indicator POWER switch to STANDBY. Transfer the COMMON test lead to T1-9. Set the control console plan indicator POWER switch to OPR.



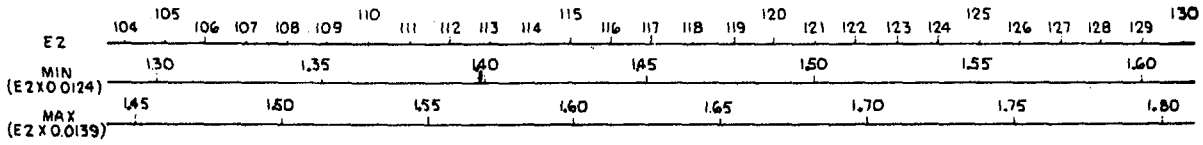
T1.

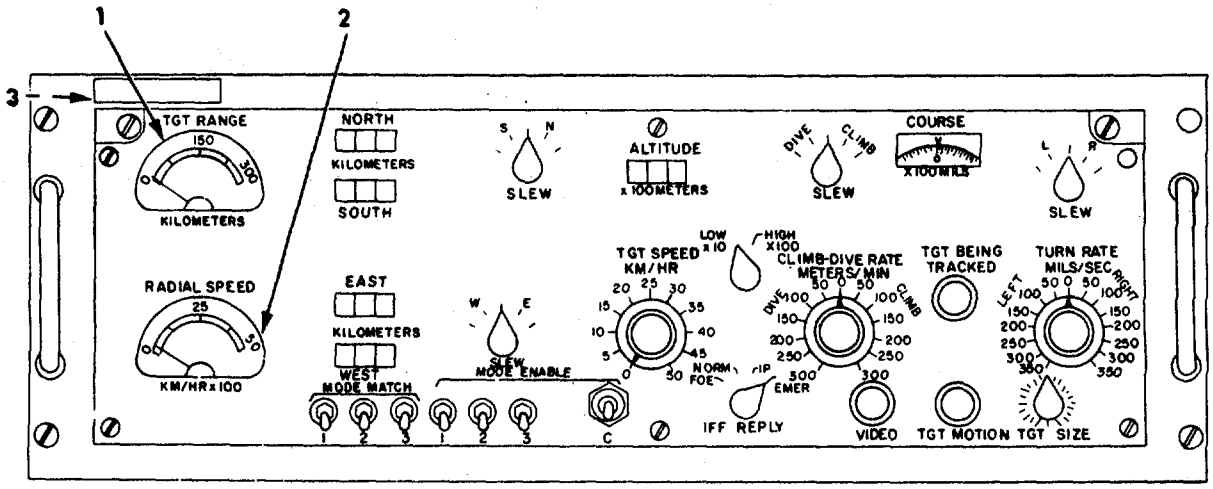
h.	Set the control console plan indicator POWER switch to STANDBY. Transfer the COMMON and AC VOLTS test leads to T2-1 and -2, respectively. Set the control console plan indicator POWER switch to OPR. Record the cal std indication as E2. Set the control console plan indicator POWER switch to STANDBY. Transfer the COMMON test lead to T2-5. Transfer the AC VOLTS test lead to T2-3. Set the control console plan indicator POWER switch to OPR.



T2.

Table 10-7. ICWAR Console - Periodic Test Procedures - Continued

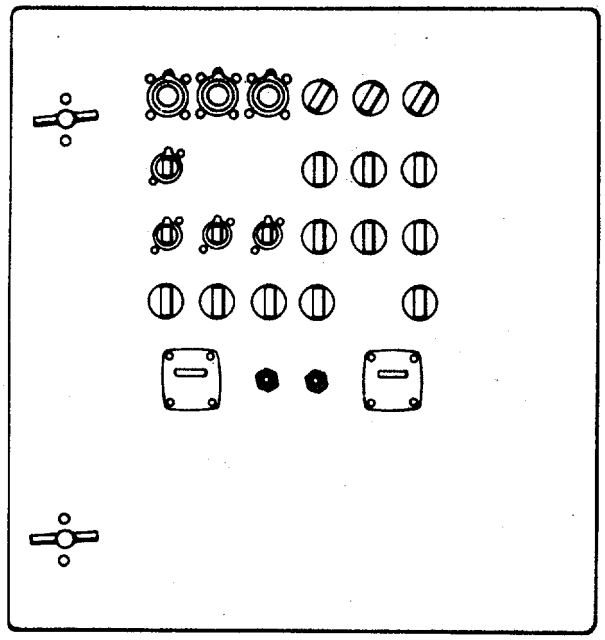
Step	Operation Normal indication Corrective procedure
2*i*.	Set the control console plan indicator POWER switch to STANDBY. Transfer the COMMON test lead to T2-4. Set the control console plan indicator POWER switch to OPR.  T2. Set the control console plan indicator POWER switch to OFF. Remove the test leads from transformer T2. Replace the protective covers on T1 and T2. Slide the power supply assembly into its normal position and secure. Deenergize and store the cal std.



MS 313539

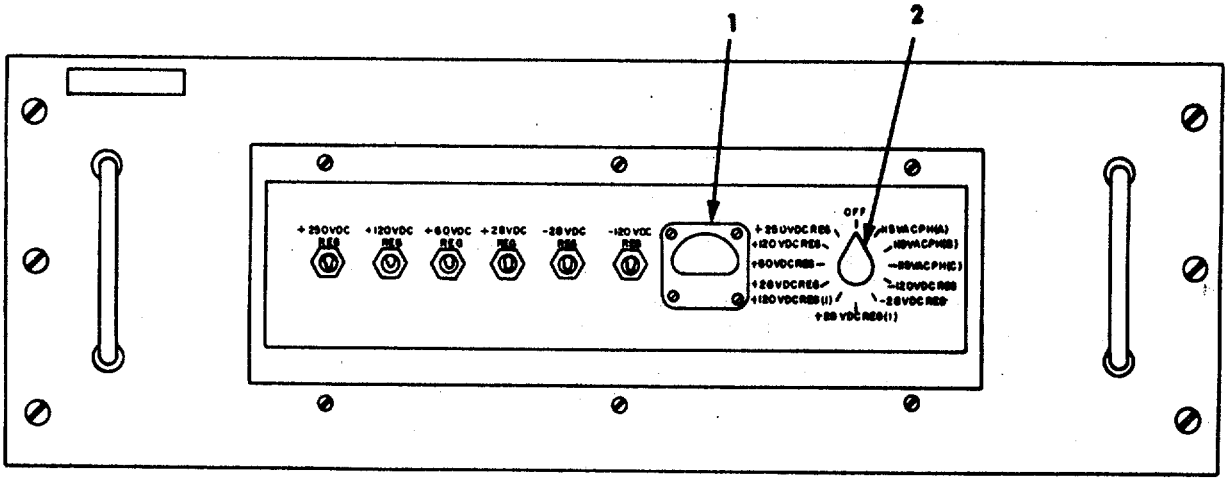
1–TGT RANGE meter
2–RADIAL SPEED meter
3–METER BAL module (located on the left side of the chassis)

Figure 10-1. Target position generator.



MS 313540

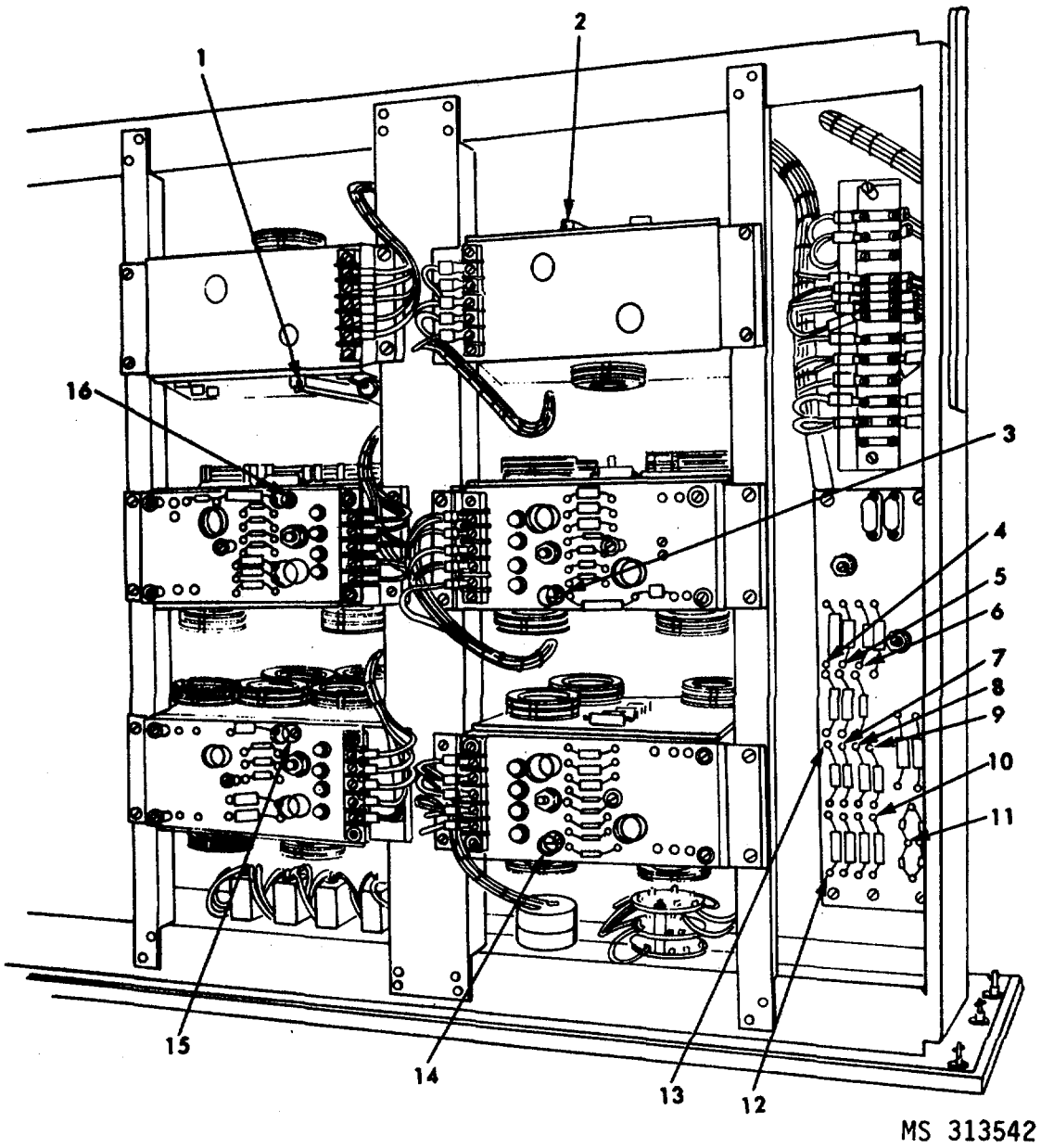
Figure 10-2. Window clutter power panel.



MS 313541

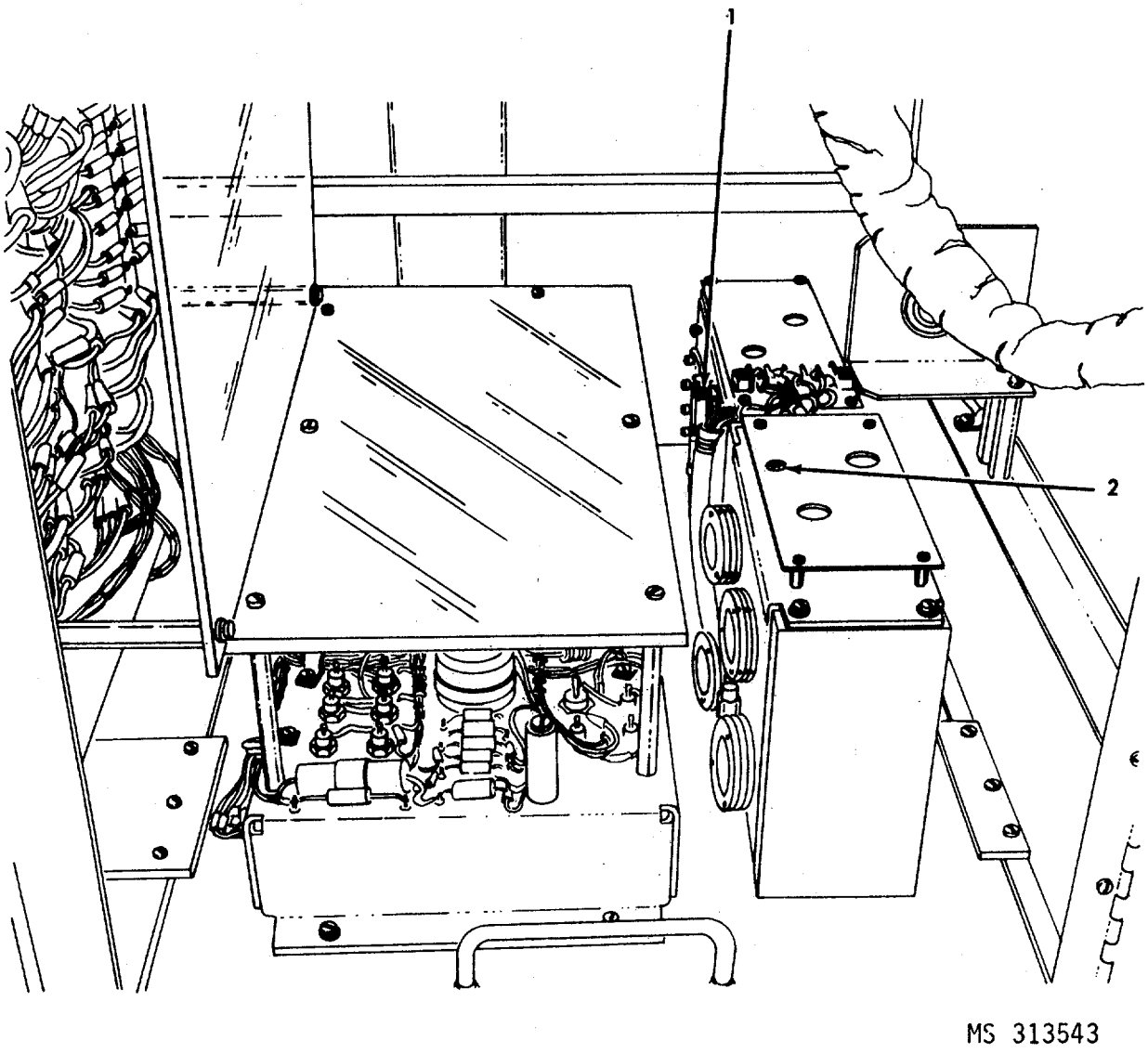
1—Test voltage meter M1
2—Test voltage selector switch

Figure 10-3. Voltage regulator group.



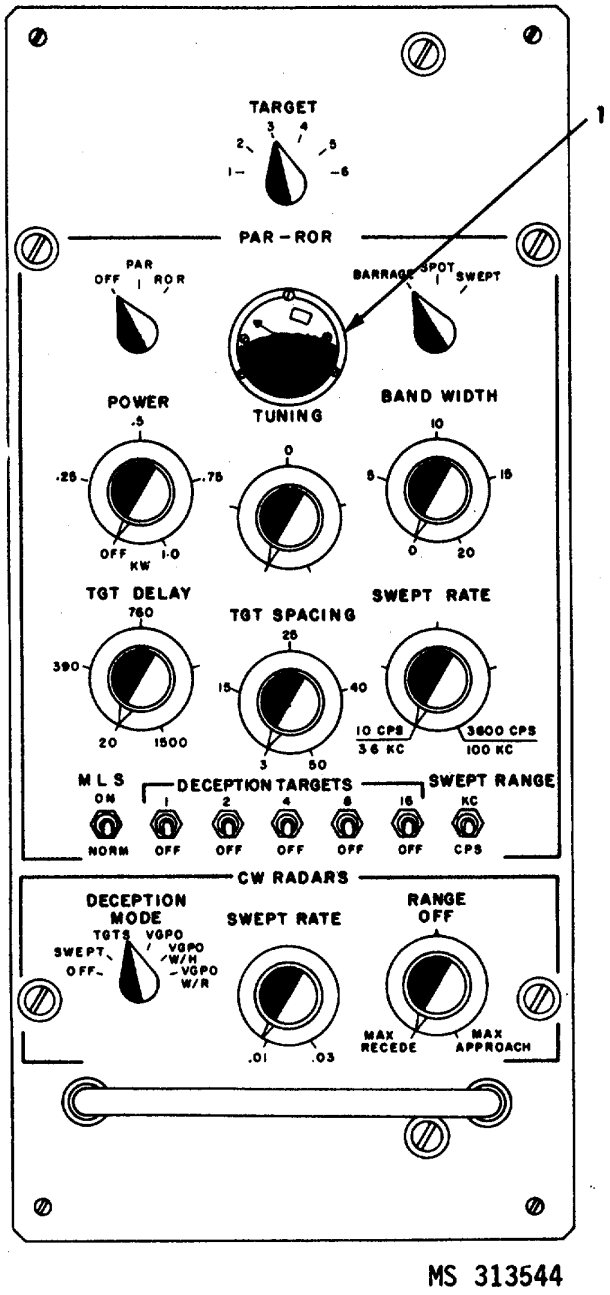
1–A1 +28V DC ADJUST
2–A2 –28V DC ADJUST
3–A4 –120V DC ADJUST
4–+250-vdc terminal (R11)
5–+120-vdc terminal (R10)
6–+60-vdc terminal (R9)
7–+28-vdc terminal (R6)
8–+120-vdc terminal (R7)
9–+28-vdc terminal (R8)
10–115-vac terminal (R1)
11–Junction of CR1 and CR2
12––120-vdc terminal (R4)
13––28-vdc terminal (R5)
14–A6 +60V DC ADJUST
15–A5 +250V DC ADJUST
16–A3 +120V DC ADJUST

Figure 10-4. Voltage regulator group-top.



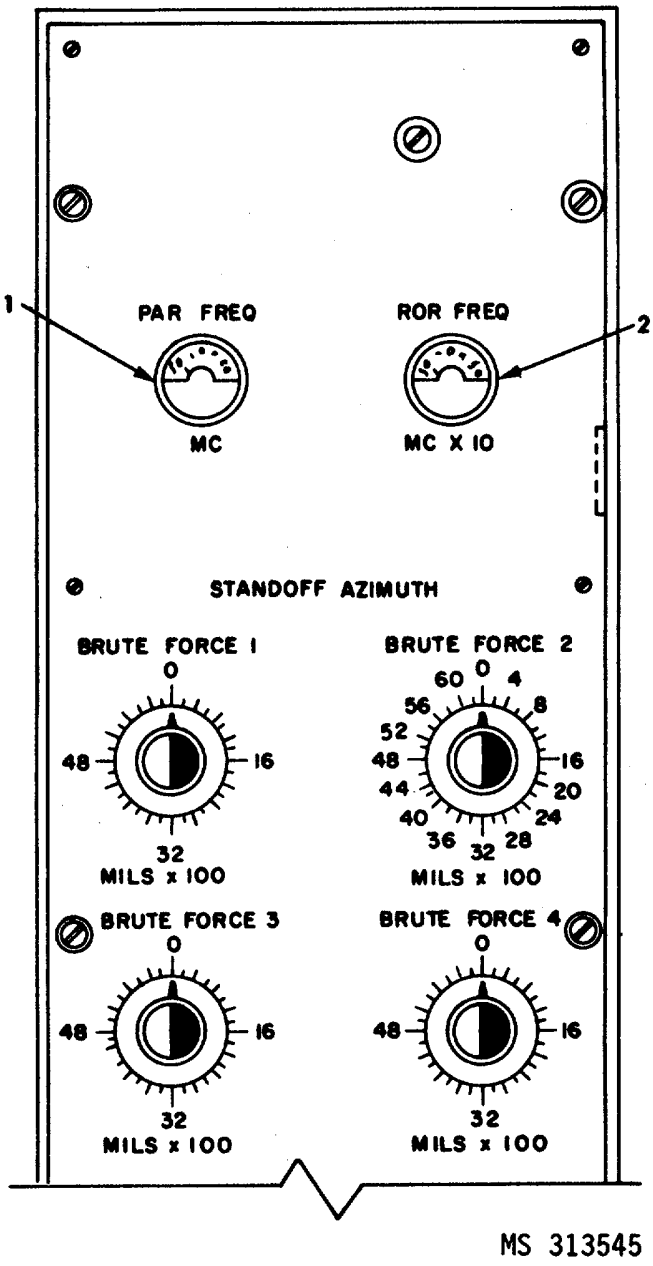
1–A7 +28V DC ADJUST
2–A8 +120V DC ADJUST

Figure 10-5. Window clutter power panel - top view.



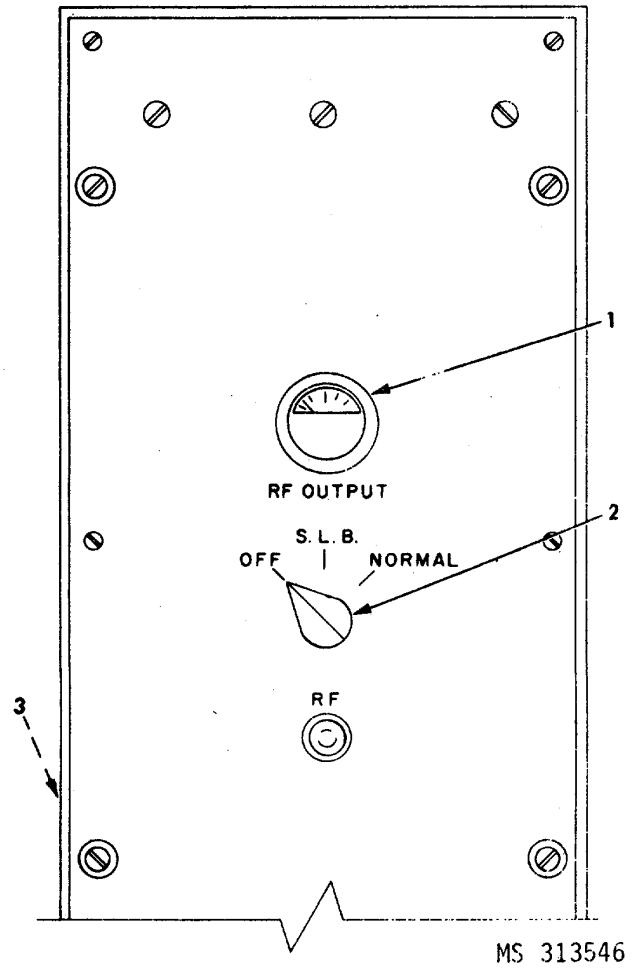
1–TUNING meter

Figure 10-6. Deception signals generator.



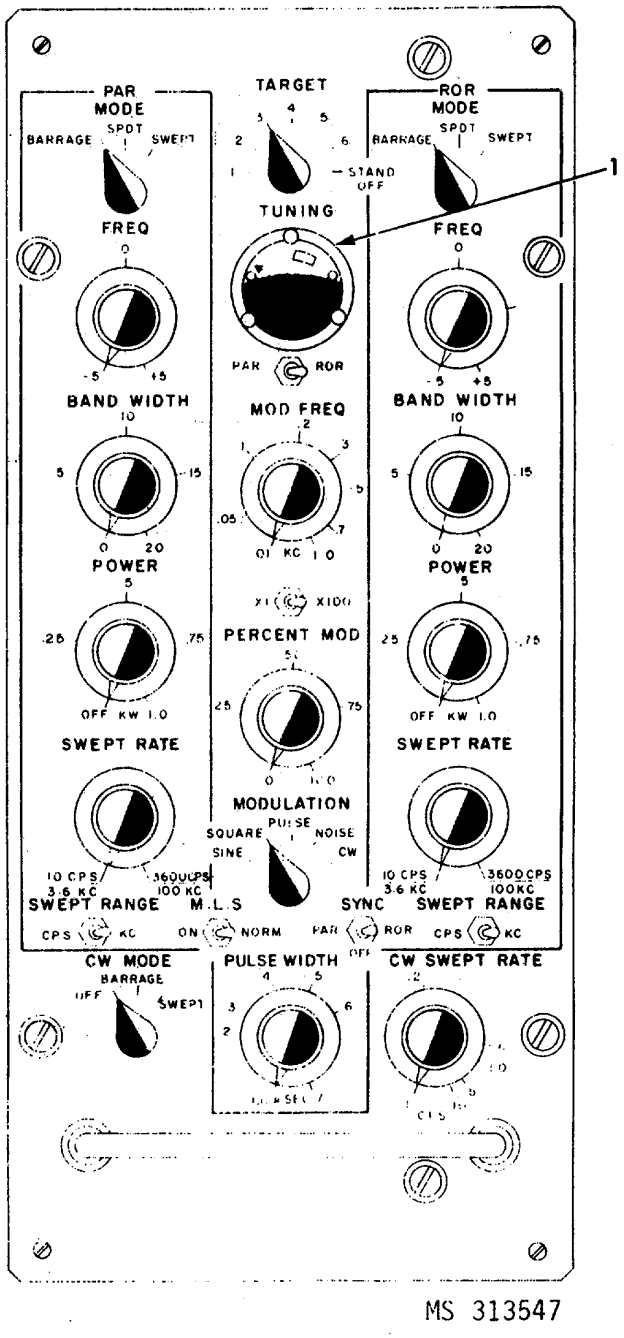
1–PAR FREQ MC meter
2–ROR FREQ MC x 10 meter

Figure 10-7. Antenna pattern signals generator.



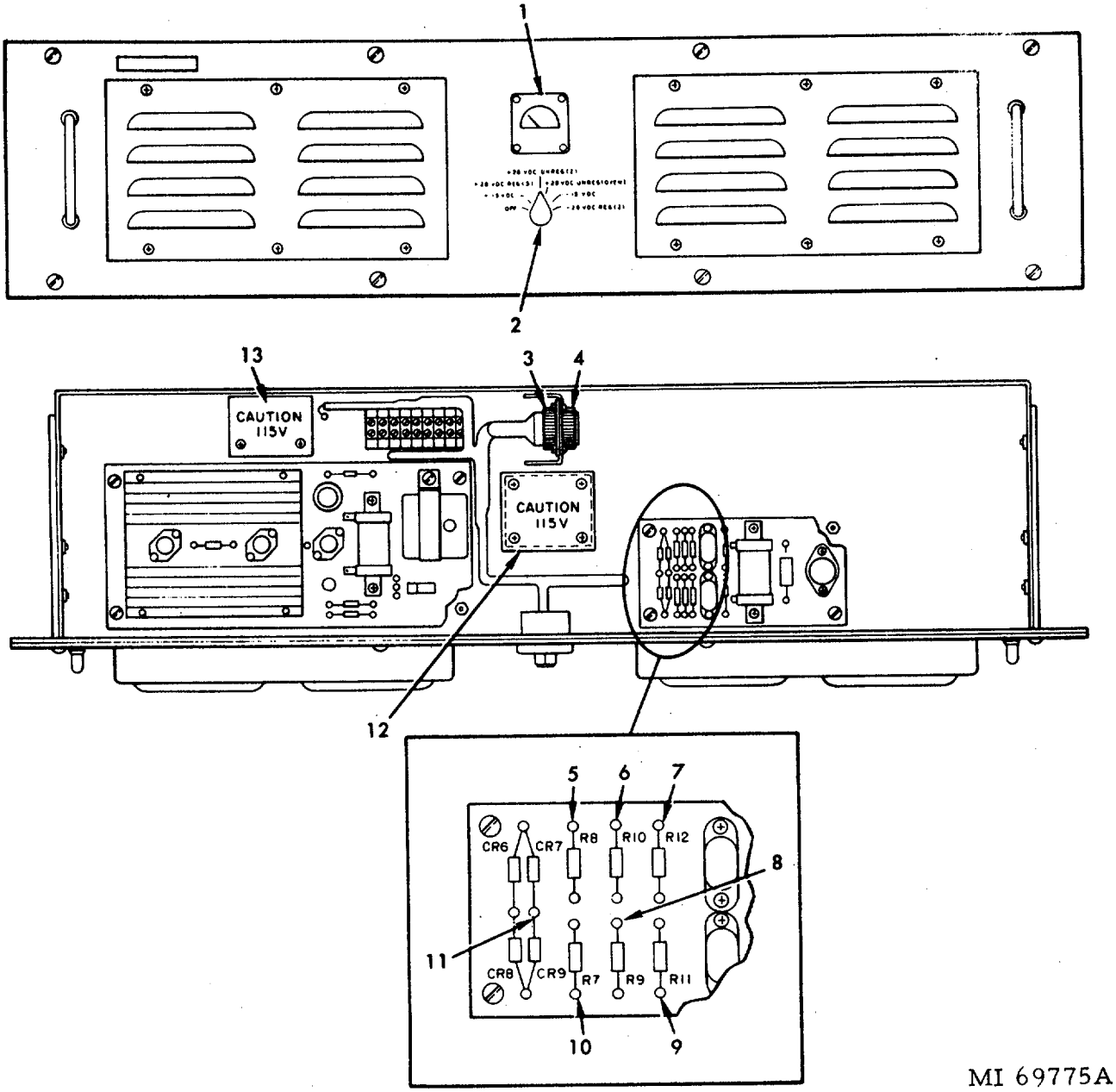
1–RF OUTPUT meter
2–RF OUTPUT switch
3–Cable P3/A7J1 (located at rear-center of chassis)

Figure 10-8. IF modulator group.



1–TUNING meter

Figure 10-9. Brake fuses signals generator



1 — Power supply monitor meter
2 — Power supply selector switch
3 — J1 (top), J2
4 — P52 (top), P53
5 — Junction of R8 and J1-L
6 — Junction of R10 and J1-P
7 — Junction of R12 and C2
8 — Junction of R9 and J1-M
9 — Junction of R11 and J1-S
10 — Junction of R7 and J1-T
11 — Junction of CR7 and CR9
12 — T1
13 — T2

Figure 10-10. ICWAR power supply assembly.

CHAPTER 10.1

PLATOON COMMAND POST (PCP) AN/MSW-20 and BATTERY COMMAND POST (BCP) AN/MSW-21 PERIODIC TEST PROCEDURES

Table 10-1.1 Auxiliary Control Indicator-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	POWER SUPPLY MONITOR Meter (1, Fig. 10.1-1).
a.	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 10.1-2) to ON. Set the 28V PS circuit breaker (2, fig. 10.1-2) to OFF. Set the power supply monitor selector switch (4, fig. 10.1-1) to METER. Connect and energize the cal std. Set the FUNCTION switch to DCMA. Set the RANGE switch to 3. Adjust the VERNIER control full ccw. Insert the CURRENT/K OHMS test lead into test jack TP1 (2, fig. 10.1-1). Insert the COMMON test lead into test jack TP2 (3, fig. 10.1-1). Connect the SH GUARD test lead to chassis ground. Set and hold the TEST switch to NORMAL. Slowly adjust the VERNIER control for a full-scale indication on the meter under test. **The cal std indicates 4.8 to 5.200.** M1, S1.
b.	Release the TEST switch. Adjust VERNIER control full ccw. Set the FUNCTION switch to VDC. Set the RANGE switch to 2. Remove the CURRENT/K OHMS test lead from TP1. Open and pull out the auxiliary control indicator. Remove the top cover. Connect the DC VOLTS test lead to the junction of R1 and E42 (6, fig. 10.1-1). Set and hold the TEST switch to normal.

Table 10-1.1 Auxiliary Control Indicator-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
b. Cont.	Adjust the VERNIER control for 24.25 to 25.75 vdc on the cal std. **The POWER SUPPLY MONITOR meter indicates 24 to 26 vdc.** Adjust R2NU (5, fig. 10.1-1). (Nominal range for R2NU; 4320 to 6040 ohms).
c.	Release the TEST switch. Adjust the VERNIER control full ccw. Remove the test leads from the test jacks. Replace the top cover. Install and secure the auxiliary control indicator. **Deenergize and store the cal std.**

Table 10.1-2. Power Distribution Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE **Step 1 is performed using the cal std only.**
1.	**MONITOR 416 VOLTS Meter (5, Fig. 10.1-2).**
	WARNING **416 Vac is present when making the following measurements. Use extreme caution.**
a.	**Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 10.1-2) to ON.** Set the 28V PS circuit breaker (2, fig. 10.1-2) to OFF. Loosen the fasteners that secure the bottom right-hand panel to the ADP main chassis (fig. 10.1-3) and remove the panel. Loosen the fasteners that secure the bottom left-hand, panel to the ADP main chassis, and open the panel. Remove the protective cover from A5TB1 (5, fig. 10.1-3). Set the FUNCTION switch to MULTR.

Table 10.1-2. Power Distribution Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1*a*. Cont.	Momentarily set the VAC switch to the down position. Connect the COMMON test lead to A5TB1-4 (4, fig. 10.1-3). Connect the AC VOLTS test lead to A5TB1-3 (3, fig. 10.1-3). Set the 28V PS circuit breaker to ON. Record the cal std indication as E1. Set the 28V PS circuit breaker to OFF. Transfer the AC VOLTS test lead to A5TB1-2 (2, fig. 10.1-3). Set the 28V PS circuit breaker to ON. Record the cal std indication as E2. Set the 28V PS circuit breaker to OFF. Transfer the AC VOLTS test lead to A5TB1-1 (1, fig. 10.1-3). Set the 28V PS circuit breaker to ON. Record the cal std indication as E3. Calculate the average indication as follows: $\frac{E1+E2+E3}{3}$ =Eav **The meter under test indicates Eav X 0.95 to Eav X 1.05 (see note).** MONITOR 416 VOLTS meter. **NOTE** **Interpolate the meter scale as follows: The left-hand red area is 223 to 227 vac, the left-hand green area is 227 to 240 vac, the red center-line is 240 vac, the right-hand green area is 240 to 263 vac, and the right-hand red area is 2658 to 257 vac.**
b.	Set the 28V PS circuit breaker to OFF. Remove the test leads from A5TB1. **Deenergize and store the cal std.** Install the protective cover on A5TB1. Close and secure the bottom panels to the ADP main chassis. Set the 28V PS circuit breaker to ON.

Table 10.1-2. Power Distribution Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE **Step 2 is performed using DMM 10177187 when the cal std is not available.**
2.	**MONITOR 416 VOLTS Meter (5, Fig. 10.1-2).** **WARNING** **416 Vac is present when making the following measurements. Use extreme caution.**
a.	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 10.1-2) to ON. Set the 28V PS circuit breaker (2, fig. 11-2) to OFF. Connect and energize the DMM. Loosen the fasteners that secure the bottom right-hand panel to the ADP main chassis, and remove the panel. Loosen the fasteners that secure the bottom left-hand panel to the ADP main chassis, and open the panel. Remove the protective cover from A5TB1 (5, fig. 10.1-3). Press the RANGE 1000 switch. Press the VAC switch. Connect the INPUT LO test lead to A5TB1-4 (4, fig. 10.1-3). Connect the INPUT HI test lead to A5TB1-3 (3, fig. 10.1-3). Set the 28V PS circuit breaker to ON. Record the DMM indication as E1. Set the 28V PS circuit breaker to OFF. Transfer the INPUT HI test lead to A5TB1-2 (2, fig. 10.1-3). Set the 28V PS circuit breaker to ON. Record the DMM indication as E2. Set the 28V PS circuit breaker to OFF. Transfer the INPUT HI test lead to A5TB1-1 (1, fig. 10.1-3). Set the 28V PS circuit breaker to ON. Record the DMM indication as E3.

Table 10.1-2. Power Distribution Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
2*a*. Cont.	Calculate the average indication as follow: $\frac{E1+ E2+ E3}{3}$ = Eav **The meter under test indicates Eav X 0.95 to Eav X 1.05 (see note).** MONITOR 416 VOLTS meter. **NOTE** **Interpolate the meter scale as follows: The left-hand red area is 223 to 227 vac, the left-hand green area is 227 to 240 vac, the red-center line is 240 vac, the right-hand green area is 240 to 253 vac, and the right-hand red area is 268 to 257 vac.**
b.	Set the 28V PS circuit breaker to OFF. Remove the test leads from A5TB1. Install the protective cover on A5TB1. Close and secure the bottom panels to the ADP main chassis. Set the 28V PS circuit breaker to ON. Deenergize and store the DMM.

Table 10-1.3. Power Supply BITE Panel-Periodic Test Procedures

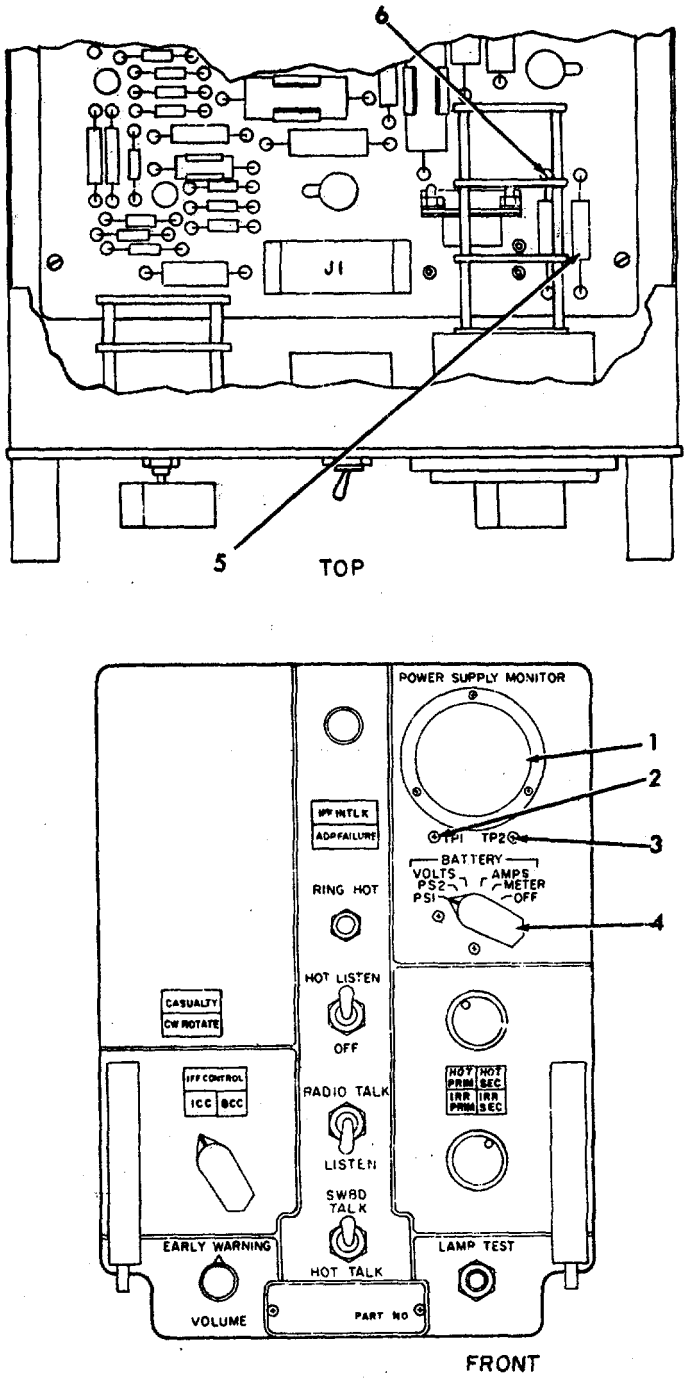
Step	Operation Normal indication Corrective procedure
	NOTE **Step 1 is performed using the cal std only.**
1.	**VOLTAGE MONITOR Meter (3, Fig. 10.14).**
a.	**Set the power distribution panel MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 10.1-2) to ON.** Set the power distribution panel 28V PS (2, fig. 10.1-2) circuit breaker to OFF. Connect and energize the cal std. Open the power supply drawer (1, fig. 10.1-7), leave the drawer open, and set the interlock switch. Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position.

Table 10-1.3. Power Supply BITE Panel-Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
a Cont.	Insert the COMMON test lead into power supply BITE panel test jack TP2 (2, fig. 10.1-4).
	Insert the DC VOLTS test lead into power supply BITE panel test jack TP1 (1, fig. 10.1-4).
	Set the power supply BITE panel voltage selector switch (4, fig. 10.1-4) to +5.
	Remove the power supply cover (fig. 10.1-7) by loosening the seven screws.
	Set the power distribution panel 28V PS (2, fig. 10.1-2) circuit breaker to ON.
	Set the TDECC power distribution panel POWER SUPPLY INPUT, BLOWERS, 28 VDC, -15 VDC, and +15 VDC circuit breakers (1, 2, 3, 4, and 5, fig. 10.1-5) to ON.
	Press the status display panel CONSOLE ON-indicator-switch (1, fig. 10.1-6).
	Adjust the 5.4-vdc power supply variable resistor R12 (2, fig. 10.1-8) for a center scale indication on the meter under test.
	The cal std indicates 4.95 to 5.050.
	M1, +5.4 vdc power supply PS1 (1, fig. 10.1-8).
b.	Set the power supply BITE panel voltage selector switch to +15.
	Adjust the power supply BITE panel +15 variable resistor R3 (5, fig. 10.1-4) for a center scale indication on the meter under test.
	The cal std indicates 14.85 to 15.15.
	M1, +15 vdc power supply PS2 (4, fig. 10.1-8).
c.	Set the power supply BITE panel voltage selector switch to -15.
	Set the power supply BITE panel -15 variable resistor R4 (6, fig. 10.1-4) for center scale indication on the meter under test.
	The cal std indicates 14.85 to 15.15.
	M1, -15-vdc power supply PS3 (3, fig. 10.1-8).
d.	Set the power supply voltage selector switch to OFF.
	Remove the test leads from the power supply BITE panel.
	Deenergize and store the cal std.
	Replace power supply cover and secure by tightening 7 screws.
	Secure the power supply drawer.
	NOTE **Step 2 is performed using the DMM 10177187 when the cal std is not available.**
2.	**VOLTAGE MONITOR Meter (3, Fig. 10.1-4).**
a.	Set the power distribution panel MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3 and 4, fig. 10.1-2) to ON.

Table 10-1.3. Power Supply BITE Panel-Periodic Test Procedures

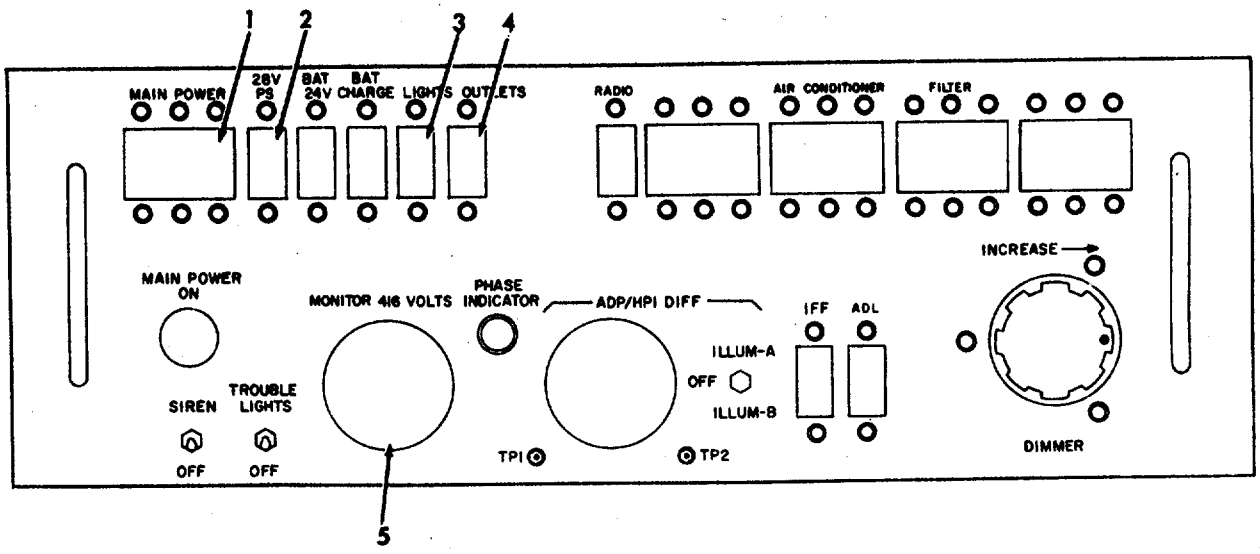
Step	Operation Normal indication Corrective procedure
2*a*. Cont.	Set the power distribution panel 28V PS (2, fig. 10.1-2) circuit breaker to OFF.
	Connect and energize the DMM.
	Open power supply drawer (1, fig. 10.1-7), leave the drawer open, and set the interlock switch.
	Press the RANGE 10 switch.
	Press the VDC switch.
	Insert the LO test lead into power supply BITE panel test jack TP2 (2, fig. 10.1-4).
	Insert the HI test lead into power supply BITE panel test jack TP1 (1, fig. 10.1-4).
	Set the power supply BITE panel voltage selector switch (4, fig. 10.1-4) to +5.
	Remove power supply cover by loosening the seven screws.
	Set the power distribution panel 28V PS (2, fig. 11-2) circuit breaker to ON.
	Set the TDECC power distribution panel POWER SUPPLY INPUT, BLOWERS, 28 VDC, - 15 VDC, and +15 VDC circuit breakers (1, 2, 3, 4, and 5, fig. 10.1-5) to ON.
	Press the status display panel CONSOLE ON indicator-switch (1, fig. 10.1-6).
	Adjust 5.4 vdc power supply variable resistor R12 (2, fig. 10.1-8) for a center scale indication on the meter under test.
	The DMM indicates 4.95 to 5.050.
	M1, +5.4-vdc power supply PS1 (1, fig. 10.1-8).
b.	Press the RANGE 100 switch.
	Set the power supply BITE panel voltage selector switch to + 15.
	Adjust the power supply BITE panel +15 variable resistor R3 (5, fig. 10.1-4) for a center scale indication on the meter under test.
	The DMM indicates 14.85 to 15.15.
	M1, +15-vdc power supply PS2 (4, fig. 10.1-8).
c.	Set the power supply BITE panel voltage selector switch to - 15.
	Adjust the power supply BITE panel -15 variable resistor R4 (6, fig. 10.1-4) for a center scale indication on the meter under test.
	The DMM indicates 14.85'to 15.15.
	M1, -15-vdc power supply PS3 (3, fig. 10.1-8).
d.	Set the power supply voltage selector switch to OFF.
	Remove the test leads from the power supply BITE panel.
	Deenergize and store the DMM.
	Replace the power supply cover and secure by tightening 7 screws.
	Close and secure the power supply drawer.
	Press the status display panel CONSOLE ON indicator-switch.



MS 602737

1—POWER SUPPLY MONITOR meter
2—TP1 test jack
3—TP2 test jack
4—Power supply monitor selector switch
5—R2NU
6—Jct of R1 and E42.

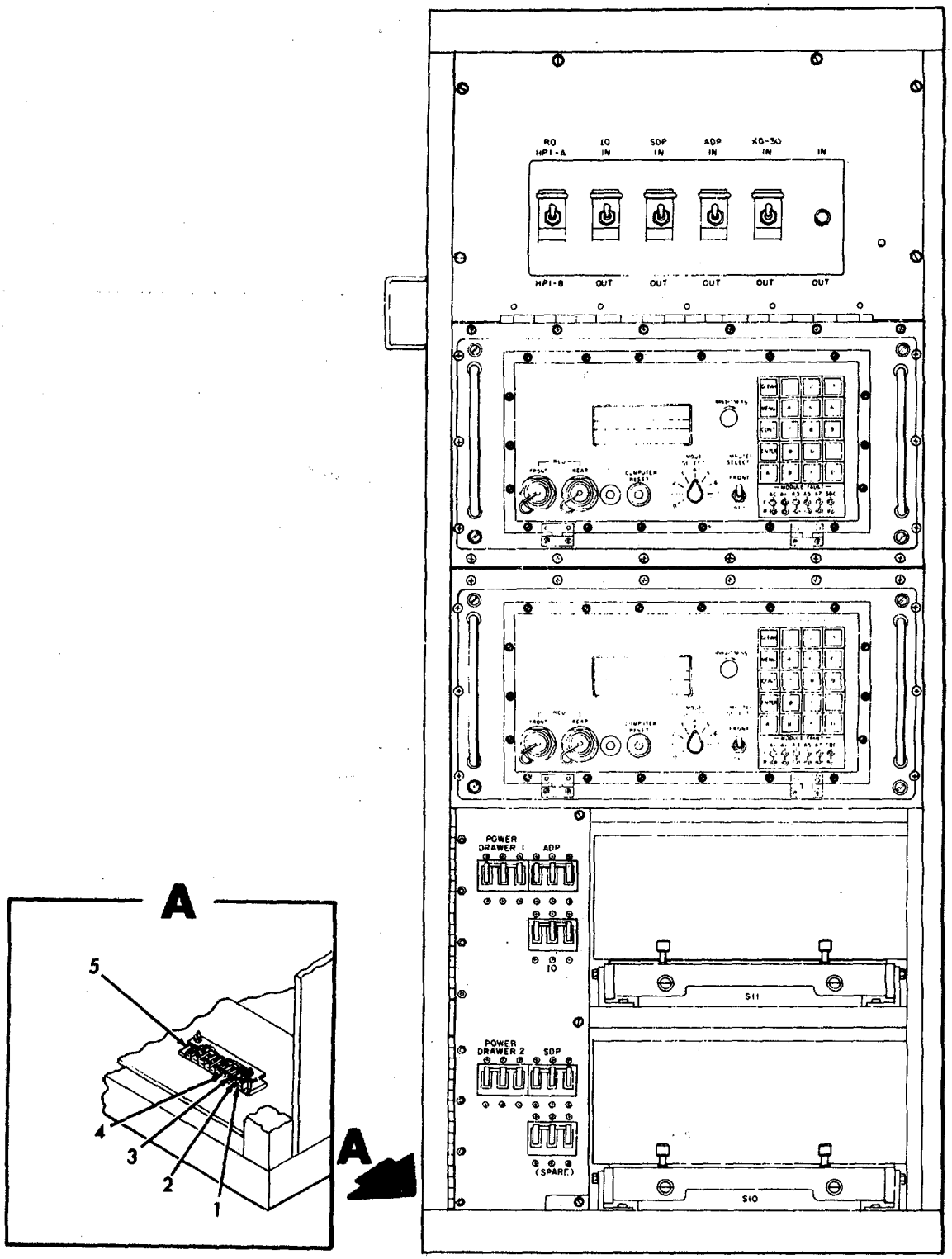
Figure 10.1-1. Auxiliary control indicator.



MS 602738

1—MAIN POWER circuit breaker
2—28V PS circuit breaker
3—LIGHTS circuit breaker
4—OUTLETS circuit breaker
5—MONITOR 416 VOLTS meter

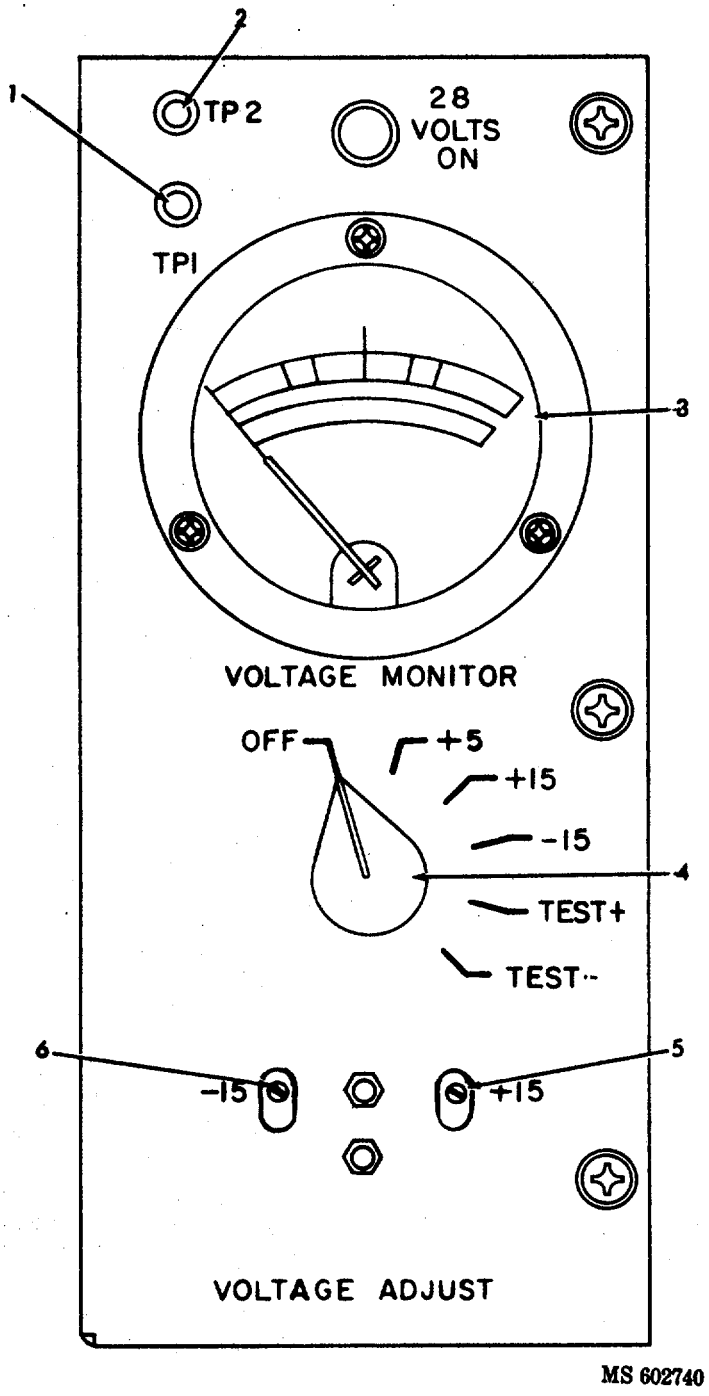
Figure 10.1-2. Power distribution panel.



MS 602739

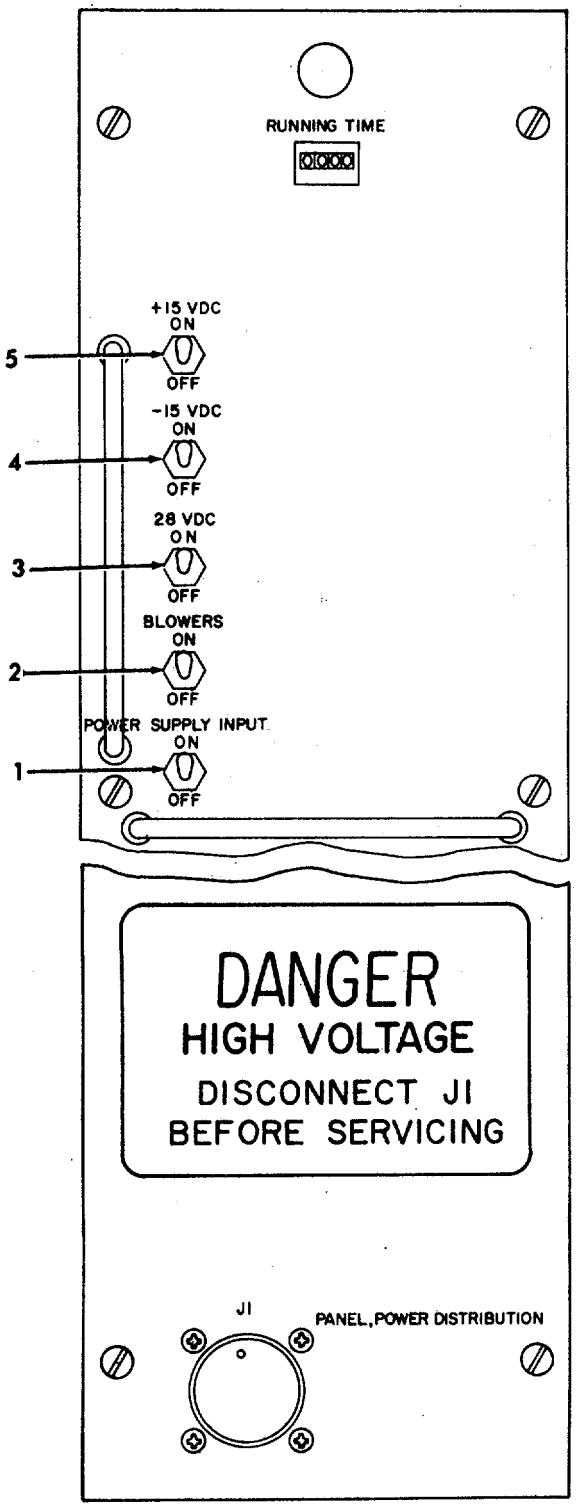
1—A5TB1-1
2—A5TB1-2
3—A5TB1-3
4—A5TB1-4
5—A5TB1

Figure 10.1-.3 Data processor rack (DPR).



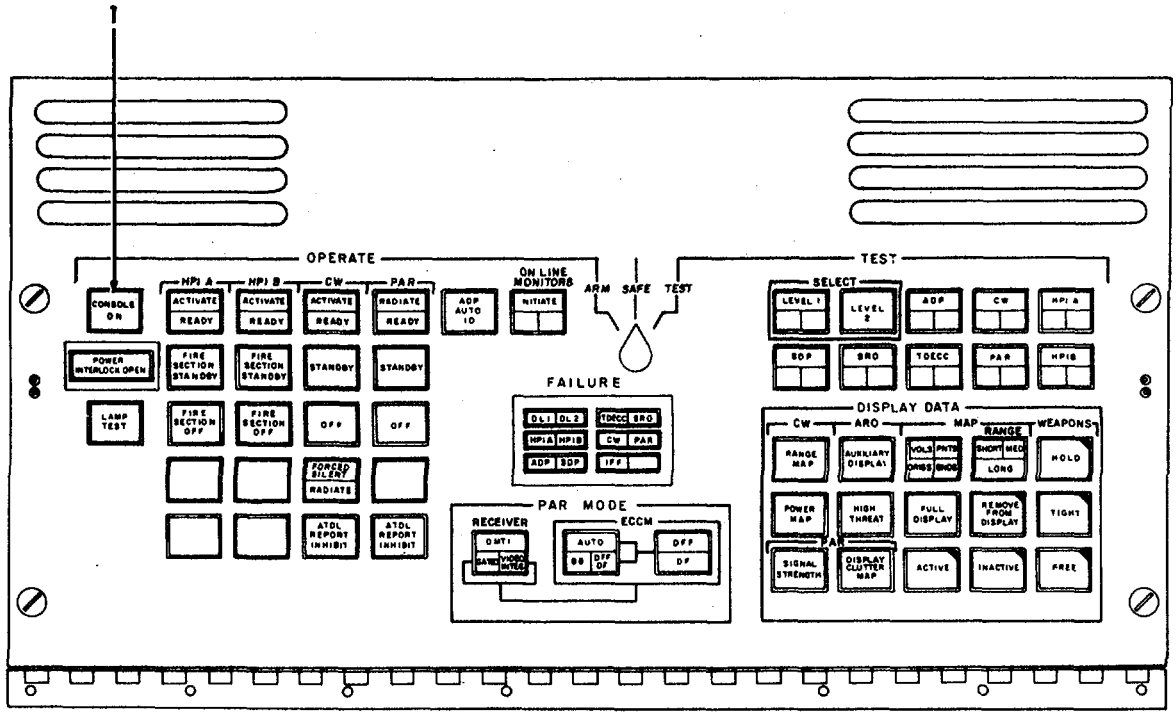
1—TP1 test jack
2—TP2 test jack
3—VOLTAGE MONITOR meter
4—Voltage selector switch S1
5—+15 Vdc variable resistor R3
6—−15 Vdc variable resistor R4

Figure 10.1-4 Power supply BITE panel.



1—POWER SUPPLY INPUT circuit breaker
2—BLOWERS circuit breaker
3—28 VDC circuit breaker
4—−15 VDC circuit breaker
5—+15 VDC circuit breaker

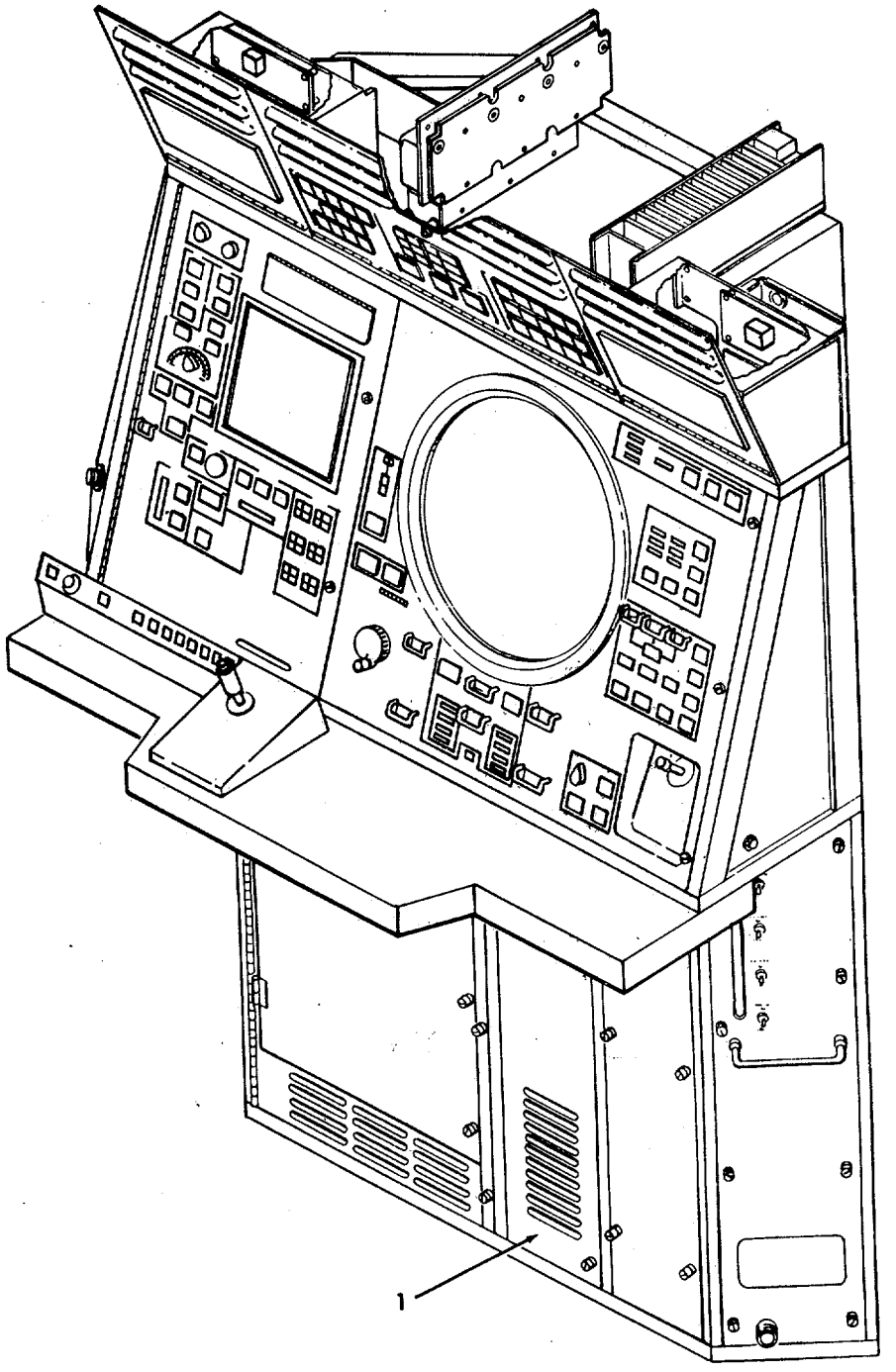
Figure 10.1-5. TDECC power distribution panel.



MS 602742

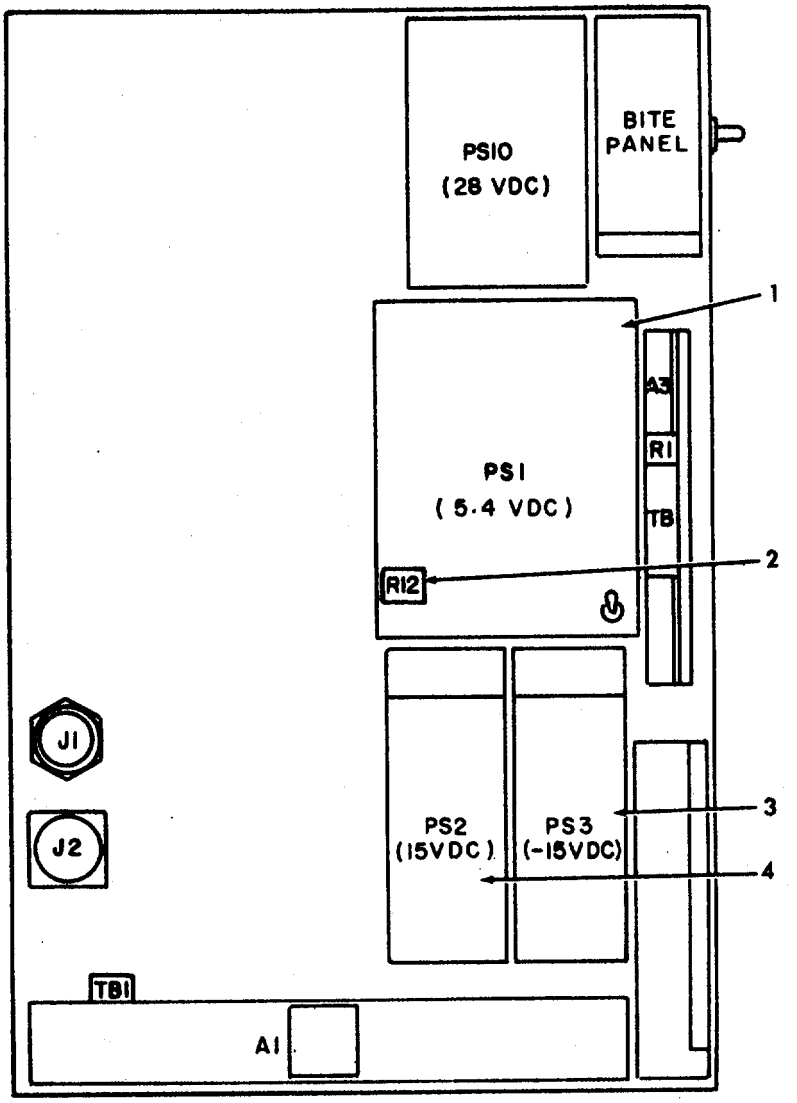
1—CONSOLE ON indicator-switch

Figure 10.1-6. Status Panel.



1—Power supply drawer

Figure 10.1-7. TDECC.



NOTE:
VOLTAGE IN PARENTHESES
ARE FOR REFERENCE ONLY

MS 602744

1—+5.4-Vdc power supply PS1
2—5.4 Vdc variable resistor R12
3—−15-Vdc power supply PS3
4—+15-Vdc power supply PS2

Figure 10.1-8. Power supply drawer-left side.

CHAPTER 11

PLATOON COMMAND POST (PCP) AN/MSW-19 - PERIODIC TEST PROCEDURES

Table 11-1. Power Supply BITE Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
	NOTE **The periodic test procedures in this chapter are for the TDECC units of the PCP. For testing other PCP units which are compatible with the ICC, refer to chapter 6.** **NOTE** **Step 1 is performed using the cal std only.**
1.	**VOLTAGE MONITOR Meter (3, Fig. 11-2).**
a.	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON.
	Set the 28V PS circuit breaker (2, fig. 6-2) to ON.
	Connect and energize the cal std.
	Set the PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF.
	Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON.
	Press the CONSOLE ON switch (1, fig. 11-5).
	Open the power supply drawer (figs. 11-3 and 11-4). Leave the drawer open, and reset the interlock switch.
	Set the FUNCTION switch to MULTR.
	Momentarily set the VDC switch to the down position.
	Insert the COMMON test lead into TP2 (2, fig. 11-2).
	Insert the DC VOLTS test lead into TP1 (1, fig. 11-2).
	Set the voltage selector switch (4, fig. 11-2) to +5.
	Remove the power supply cover by loosening the seven screws.
	Adjust output control R12 (4, fig. 11-3) for a center-scale indication on the meter under test.
	The cal std indicates 4.950 to 5.050.
	M1, PS1 (3, fig. 11-3).
b.	Set the voltage selector switch to +15.
	Adjust the +15 control (5, fig. 11-2) for a center-scale indication on the meter under test.
	The cal std indicates 14.85 to 15.15.
	M1, PS2 (6, fig. 11-3).
c.	Set the voltage selector switch to +20.
	Adjust the +20 control (6, fig. 11-2) for a center-scale indication on the meter under test.
	The cal std indicates 19.8 to 20.2.
	M1, PS6 (10, fig. 11-3).

Table 11-1. Power Supply BITE Panel-Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
d.	Set the voltage selector switch to +100. Adjust the +100 control (7, fig. 11-2) for a center-scale indication on the meter under test. **The cal std indicates 99.0 to 101.0.** M1, PS4 (8, fig. 11-3).
e.	Set the voltage selector switch to +250. Adjust the +250 control (8, fig. 11-2) for a center-scale indication on the meter under test. **The cal std indicates 247.5 to 252.5.** M1, PS8 (1, fig. 11-3).
f.	Set the voltage selector switch to -15. Adjust the -15 control (12, fig. 11-2) for a center-scale indication on the meter under test. **The cal std indicates 14.85 to 15.15.** M1, PS3 (5, fig. 11-3).
g.	Set the voltage selector switch to -20. Adjust the -20 control (11, fig. 11-2) for a center-scale indication on the meter under test. **The cal std indicates 19.8 to 20.2.** M1, PS7 (9, fig. 11-3).
h.	Set the voltage selector switch to -100. Adjust the -100 control (10, fig. 11-2) for a center-scale indication on the meter under test. **The cal std indicates 99.0 to 101.0.** M1, PS5 (7, fig. 11-3).
i.	Set the voltage selector switch to -250. Adjust the -250 control (9, fig. 11-2) for a center-scale indication on the meter under test. **The cal std indicates 247.5 to 252.5.** M1, PS9 (2, fig. 11-3).
j.	Set the voltage selector switch to +5. The LVPS FAILURE lamp (9, fig. 11-5) is not flashing. Adjust the A2 HI REF R37 control (1, fig. 11-4) cw (not more than 20 turns) until the LVPS FAILURE lamp stops flashing, and proceed to step *k*. If the LVPS FAILURE lamp does not stop flashing by adjusting HI REF R37 above, adjust the A2 LO REF R36 control (2, fig. 11-4) ccw (not more than 20 turns) until the LVPS FAILURE lamp stops flashing, and proceed to step *k*. If the LVPS FAILURE lamp does not stop flashing by adjusting HI REF R37 and LO REF R36 above, replace A5A2 (3, fig. 11-4) and repeat step *j*.

Table11-1. Power Supply BITE Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1k.	Adjust output control R12 slowly cw until the LVPS FAILURE lamp starts flashing. (Do not exceed 5.30 on the cal std.) The cal std indicates 5.20 to 5.30. Adjust output control R12 for a 5.25 indication on the cal std. If the LVPS FAILURE lamp is flashing, perform substeps (1) through (3) below. If the LVPS FAILURE lamp is not flashing, perform substeps (2) and (3) below. (1) Adjust the A2 HI REF R37 control cw until the LVPS FAILURE lamp stops flashing. (2) Adjust A2 HI REF R37 control slowly ccw (not more than 20 turns) until the LVPS FAILURE lamp starts flashing. If the LVPS FAILURE lamp does not flash, replace A5A2 and repeat step j. (3) Adjust output control R12 ccw until the LVPS FAILURE lamp stops flashing, and repeat step k.
l.	Adjust output control R12 ccw until the LVPS FAILURE lamp stops flashing. Adjust output control R12 slowly ccw until the LVPS FAILURE lamp starts flashing. (Do not go below 4.70 on the cal std.) The cal std indicates 4.7 to 4.80. Adjust output control R12 for a4.75 indication on the cal std. If the LVPS FAILURE lamp is flashing, perform substeps (1) through (3) below. If the LVPS FAILURE lamp is not flashing, perform substeps (2) and (3) below. (1) Adjust A2 LO REF R36 control ccw until the LVPS FAILURE lamp stops flashing. (2) Adjust A2 LO REF R36 control slowly cw (not more than 20 turns) until the LVPS FAILURE lamp starts flashing. If the LVPS FAILURE lamp does not flash, replace A5A2 and repeat step j. (3) Adjust output control R12 cw until the LVPS FAILURE lamp stops flashing, and repeat step 1. Adjust output control R12 cw until the cal std indicates 5.00. Set the voltage selector switch to OFF. Remove the test leads from the power supply BITE panel. Deenergize the cal std. Replace the power supply cover and secure with the seven screws. Secure the power supply drawer.

Table11-1. Power Supply BITE Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
	NOTE **Step 2 is performed using DMM 10177187 when the cal std is not available.**
2.	**VOLTAGE MONITOR Meter (3, Fig. 11-2)**
a.	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1,3, and 4, fig. 6-2) to ON
	Set the 28V PS circuit breaker (2, fig. 6-2) to ON.
	Connect and energize the DMM.
	Set the PPI Display circuit breaker (1, fig. 11-1) to OFF.
	Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON
	Press the CONSOLE ON switch (1, fig. 11-5)
	Open the power supply drawer (figs. 11-3 and 11-4). Leave the drawer open, and reset the interlock switch.
	Press the RANGE 10 switch.
	Press the VDC switch.
	Insert the INPUT LO test lead into TP2 (2, fig. 11-2).
	Insert the INPUT HI test lead into TP1 (1, fig. 11-2).
	Set the voltage selector switch (4, fig. 11-2) to +5.
	Remove the power supply cover by loosening the seven screws.
	Adjust output control R12 (4, fig. 11-3) for a center-scale indication on the meter under test.
	The DMM indicates 4.950 to 5.050.
	M1, PS1 (3, fig. 11-3).
b.	Press the RANGE 100 switch.
	Set the voltage selector switch to +15.
	Adjust the +15 control (5, fig. 11-2) for a center-scale indication on the meter under test.
	The DMM indicates 14.85 to 15.15.
	M1, PS2 (6, fig. 11-3)
c.	Set the voltage selector switch to +20.
	Adjust the +20 control (6, fig. 11-2) for a center-scale indication on the meter under test.
	The DMM indicates 19.8 to 20.2.
	m1. PS6 (10, fig. 11-3).
d.	Set the voltage selector switch to +100.
	Adjust the +100 control (7, fig. 11-2) for a center-scale indication on the meter under test.
	The DMM indicates 99.0 to 101.0.
	M1, PS4 (8, fig. 11-3).

Table11-1. Power Supply BITE Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
2e.	Press the RANGE 1000 switch. Set the voltage selector switch to +250. Adjust the +250 control (8, fig. 11-2) for a center-scale indication on the meter under test. **The DMM indicates 247.5 to 252.5.** M1, PS8 (1, fig. 11-3).
f.	Set the voltage selector switch to -15. Press the RANGE 100 switch. Adjust the -15 control (12, fig. 11-2) for a center-scale indication on the meter under test. **The DMM indicates 14.85 to 15.15.** M1, PS3 (5, fig. 11-3).
g.	Set the voltage selector switch to -20. Adjust the -20 control (11, fig. 11-2) for a center-scale indication on the meter under test. **The DMM indicates 19.8 to 20.2.** M1, pS7 (9, fig. 11-3)
h.	Set the voltage selector switch to -100. Adjust the -100 control (10, fig. 11-2) for a center-scale indication on the meter under test. **The DMM indicates 99.0 to 101.0.** M1, PS5 (7, fig. 11-3.).
i.	Press the RANGE 1000 switch. Set the voltage selector switch to -250. Adjust the -250 control (9, fig. 11-2) for a center-scale indication on the meter under test. **The DMM indicate 247. 5 to 252.5.** M1, PS9 (2, fig. 11-3).
j.	Set the voltage selector switch to +5. Press the RANGE 10 switch. **The LVPS FAILURE lamp (9, fig. 11-5) is not flashing.** Adjust the A2HI REF R37 control (1, fig. 11-4) cw (not more than 20 turns) until the LVPS FAILURE lamp stops flashing, and proceed to step k. If the LVPS FAILURE lamp does not stop flashing by adjusting HI REF R37 above, adjust the A2 LO REF R36 control (2, fig. 11-4) cw (not more than 20 turns) until the LVPS FAILURE lamp stops flashing, and proceed to step k. If the LVPS FAILURE lamp does not stop flashing by adjusting HI REF R37 and LO REF R36 above, replace A5A2 (3, fig. 11-4) and repeat step j.

Table11-1. Power Supply BITE Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
2k.	Adjust output control R12 slowly cw until the LVPS FAILURE lamp starts flashing. (DO not exceed 5.3 on the DMM). The DMM indicates 5.2 to 5.30. Adjust output control R12 for a 5.25 indication on t he DMM. If the LVPS FAILURE lamp is flashing, perform substeps (1) through (3) below. If the LVPS FAILURE lamp is not flashing, perform substeps (2) and(3) below. (1) Adjust the A2 HI REF R37 control cw until the LVPS FAILURE lamp stops flashing. (2) Adjust the A2 HI REF R37 control slowly ccw (not more than 20 turns) until the LVPS FAILURE lamp starts flashing. If the LVPS FAILURE lamp does not flash, replace A5A2 and repeat step j. (3) Adjust output control R12 ccw until the LVPS FAILURE lamp stops flashing, and repeat step k.
l.	Adjust output control R12 ccw until the LVPS FAILURE lamp stops flashing. Adjust output control R12 slowly ccw until the LVPS FAILURE lamp starts flashing (Do not go below 4.70 on the DMM). The DMM indicates 4.70 to 4.80. Adjust output control R12 for a 4.775 indication on the DMM. If the LVPS FAILURE lamp is flashing, perform substeps (1) through (3) below. If the LVPS FAILURE lamp is not flashing, perform substesp (2) and (3) below. (1) Adjust the A2 LO REF R36 control ccw until the LVPS FAILURE lamp stops flashing. (2) Adjust the A2 LO REF R36 control slowly cw (not more than 20 turns) until the LVPS FAILURE lamp starts flashing. If the LVPS FAILURE lamp does not flash, replace A5A2 and repeat step j. (3) Adjust output control R12 until the LVPS FAILURE lamp stops flashing, and repeat step l. Adjust output control R12 cw until the DMM indicates 5.00. Set the voltage selector switch to OFF. Remove the test leads from the power supply BIT panel. Deenergize and store the DMM. Replace and secure the power supply cover with the sever screws. Close and secure the power supply drawer. Press the status display panel CONSOLE ON switch.

Table11-2. Status Display Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**GROUND SPEED Meter (3, Fig. 11-5).**
	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON.
	Set the 28V PS circuit breaker (2, fig. 6-2) to ON.
	Connect and energize the cal std.
	Set the PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF.
	Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON.
	Press the CONSOLE ON switch (1, fig. 11-5).
	Disconnect the HPI No. 1 and No. 2 data cables from the PCP.
	Open the flip-up cover on the RO control panel (fig. 11-6).
	Set the supplemental RO control panel selector switch (2, fig. 11-6) to OPERATE 1.
	Open the RO control panel. Leave the panel open and reset the interlock switch (3, fig. 11-6).
	Set the OPERATE/CALIBRATE switch (9, fig. 11-7) to OPERATE.
	Set the RANGE switch to 1.
	Set the FUNCTION switch to VDC.
	Adjust the VERNIER control full ccw.
	Unfasten and lower the status display panel (fig. 11-5).
	Connect the COMMON test lead to the (-) terminal of the meter under test.
	Connect the DC VOLTS test lead to the junction of P2-57 and R6 (4, fig. 11-5).
	Set and hold the TEST switch to NORMAL.
	Press the LAMP TEST switch (5, fig. 11-5).
	Adjust the VERNIER control for 2000 KILOMETERS/HOUR on the meter under test.
	The cal std indicates 7.200 to 8.800.
	M1.
	Release the TEST switch.
	Release the LAMP TEST switch.
	Disconnect all cables and accessories from meter under test.
	Press the CONSOLE ON switch.
	Close and secure the status panel.
	Close and secure the RO control panel.
	Reconnect the HPI No.1 and No. 2 data cables to the PCP.
	Deenergize and store the cal std.
	Set the power distribution panel circuit breakers to OFF.

Table11-2. Status Display Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
2.	**AADCP Meter (6, Fig. 11-5).**
	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON.
	Set the 28V PS circuit breaker (2, fig. 6-2) to ON.
	Connect and energize the cal std.
	Disconnect the HPI No. 1 and No. 2 data cables from the PCP.
	Set the PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF.
	Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON.
	Press the CONSOLE ON switch (1, fig. 11-5).
	Open the flip-up cover on the RO control panel (fig. 11-6).
	Set the supplemental RO control panel selector switch (2, fig. 11-6) to OPERATE 1.
	Open the RO control panel. Leave the panel open and reset the interlock switch (3, fig. 11-6).
	Set the OPERATE/CALIBRATE switch (9, fig. 11-7) to OPERATE.
	Set the RANGE switch to 2.
	Set the FUNCTION switch to VDC.
	Unfasten and lower the status display panel (fig. 11-5).
	Adjust the VERNIER control full ccw.
	Set the RANGE switch to 2.
	Connect the COMMON test lead to the (-) terminal of the meter under test.
	Connect the DC VOLTS test lead to the junction of R7 and P2-63 (2, fig. 11-5).
	Set and hold the TEST switch to NORMAL.
	Press the LAMP TEST switch (5, fig. 11-5).
	Adjust the VERNIER control for a 20-krm indication on the meter under test. The cal std indicates 24.33 to 25.19. M4, R7, R8.
	Release the TEST switch.
	Disconnect all cables and accessories from meter under test.
	Press the CONSOLE ON switch.
	Set the power distribution panel circuit breakers to OFF.
	Close and secure the status display panel.
	Close and secure the RO control panel.
	Reconnect the HPI No. 1 and No. 2 data cables to the PCP.
	Deenergize and store the cal std.

Table11-2. Status Display Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
3.	HIGH Meter (7, Fig. 11-5).
a.	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON.
	Set the 28V PS circuit breaker (2, fig. 6-2) to ON.
	Connect and energize the cal std.
	Disconnect the HPI No. 1 and No. 2 data cables from the PCP.
	Set the PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF.
	Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON.
	Press the CONSOLE ON switch (1, fig. 11-5).
	Open the flip-up cover on the RO control panel (fig. 11-6).
	Set the supplemental RO control panel selector switch (2, fig. 11-6) to 2.
	Open the RO control panel. Leave the panel open, and reset the interlock switch (3, fig. 11-6).
	Set the RANGE switch to 1.
	Set the FUNCTION switch to VDC.
	Set the OPERATE/CALIBRATE switch (9, fig. 11-7) to CALIBRATE.
	The meter under test indicates 0 km.
	Remove the meter bezel, and adjust meter ZERO ADJ for 0 km.
	M3.
b.	Set the OPERATE/CALIBRATE switch to OPERATE.
	NOTE **Each minor division of the meter under test is equal to 50 meters.**
	The meter under test indicates -0.05 to 0.05 km.
	Adjust meter ZERO ADJ.
	S1, A1.
c.	Replace the meter bezel.
	Set the OPERATE/CALIBRATE switch to CALIBRATE.
	Adjust the VERNIER control full ccw.
	Set the RANGE switch to 1.
	Connect the COMMON test lead to jack J2 (8, fig. 11-7).
	Connect the DC VOLTS test lead to the + terminal of the HIGH meter (7, fig. 11-5).
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a 10.00 indication on the cal std.
	The meter under test indicates 20 km.
	Adjust 3-20 KM control R15 (3, fig. 11-7).
	M3, R13, R15.

Table11-2. Status Display Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
3d.	Release the TEST switch.
	Set the OPERATE/CALIBRATE switch to OPERATE.
	The meter under test indicates -0.05 to 0.05 km.
	M3.
e.	Set the OPERATE/CALIBRATE switch to CALIBRATE.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a 10.00 indication on the cal std.
	The meter under test indicates 19.95 to 20.5 km.
	M3.
	Release the TEST switch.
	Set the OPERATE/CALIBRATE switch to OPERATE.
	Disconnect all cables and accessories from the meter under test.
	Set the supplemental RO control panel selector switch (2, fig. 11-6) to OPERATE 1.
	Press the CONSOLE ON switch.
	Set the power distribution panel circuit breakers to OFF.
	Close and secure the RO control panel.
	Reconnect the HPI No. 1 and No. 2 data cables to the PCP.
	Deenergize and store the cal std.
4.	**LOW Meter (8, Fig. 11-5) and Height Driver Reference Voltage.**
a.	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON.
	Set the 28V PS circuit breaker (2, fig. 6-2) to ON.
	Connect and energize the cal std.
	Disconnect the HPI No. 1 and No. 2 data cables from the PCP.
	Set the PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF.
	Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON.
	Press the CONSOLE ON switch (1, fig. 11-5).
	Open the flip-up cover on the RO control panel (fig. 11-6).
	Set the supplemental RO control panel selector switch (2, fig. 11-6) to 2.
	Open the RO control panel. Leave the panel open, and reset the interlock switch (3, fig. 11-6).
	Set the OPERATE/CALIBRATE switch (9, fig. 11-7) to CALIBRATE.
	The meter under test indicates 0 km.
	Remove the meter bezel, and adjust meter ZERO ADJ for 0 km.
	M2.

Table11-2. Status Display Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
4b.	Set the OPERATE/CALIBRATE switch to OPERATE.
	NOTE **Each minor division of the meter under test is equal to 50 meters.**
	The meter under test indicates -0.05 to 0.05 km.
	Adjust meter ZERO ADJ.
	S1, A1.
c.	Replace the meter bezel.
	Set the OPERATE/CALIBRATE switch to CALIBRATE Set the RANGE switch to 1.
	Set the FUNCTION switch to VDC.
	Adjust the VERNIER control full ccw.
	Connect the COMMON test lead to jack J3 (1, fig. 11-7).
	Connect the DC VOLTS test lead to the + terminal of the LOW meter (8, fig. 11-5).
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a 1.50 indication on the cal std.
	The meter under test indicates 3.0 km.
	Adjust 0-3 KM control R16 (2, fig. 11-7).
	M2, R14, R16.
d.	Release the TEST switch.
	Set the OPERATE/CALIBRATE switch to OPERATE.
	The meter under test indicates 0.05 to 0.05 km
	M2.
e.	Set the OPERATE/CALIBRATE switch to CALIBRATE.
	Set and hold the TEST switch to NORMAL.
	The meter under test indicates 2.95 to 3.05 km
	M2.
f	Release the TEST switch Set the FUNCTION switch to MULTR.
	Momentarily press the VDC switch to the down position.
	Transfer the COMMON test lead to jack J4 (7, fig. 11-7).

Table11-2. Status Display Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
4f.	Set the supplemental RO control panel selector switch to 4.
	The cal std indicates 2.00.
	Adjust REF VOLT control R8 (6, fig. 11-7).
	R7. R8, VR2.
g.	Set the OPERATE/CALIBRATE switch to OPERATE.
	The meter under test indicates 1.5 to' 2.05 km.
	Adjust 2 KM ALTITUDE control R3 (3.1, fig. 11-6).
	R3, A1.

Table11-2. Status Display Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
4g. Cont.	Disconnect all cables and accessories form the meter under test.
	Press the CONSOLE ON switch.
	Set the power distribution panel circuit breakers to OFF.
	Close and secure the RO control panel
	Reconnect the HPI No. 1 and No. 2 data cables to the PCP.
	Deenergize and store the cal std.
	Set the supplemental RO control panel selector switch to OPERATE 1.
	NOTE **Step 5 is performed using the DMM 10177187 only when the cal std is not available.**
5.	Height Driver Reference Voltage.
	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON.
	Set the 28V PS circuit breaker (2, fig. 62) to ON.
	Connect and energize the DMM.
	Disconnect the HPI No. 1 and No. 2 data cables from the PCP.
	Set the PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF.
	Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON.
	Press the CONSOLE ON switch (1, fig. 11-5).
	Open the flip-up cover on the RO control panel (fig. 11-6).
	Set the supplemental RO control panel selector switch (2, fig. 11-6) to 2.
	Open the RO control panel. Leave the panel open and reset the interlock switch (3, fig. 11-6).
	Set the OPERATE/CALIBRATE switch (9, fig. 11-7) to CALIBRATE.
	Press the RANGE 10 switch.
	Press the VDC switch.
	Connect the LO test lead to jack J4 (7, fig. 11-7).
	Connect the HI test lead to E2 (4, fig. 11-6).
	The DMM indicates -1.8 to -2.02.
	Adjust REF VOLT control R8 (6, fig. 11-7).
	R7, R8, VR2.
	Set the OPERATE/CALIBRATE switch to OPERATE.
	Set the supplemental RO control panel selector switch to OPERATE 1.
	Press the CONSOLE ON switch.
	Set the power distribution panel circuit breakers to OFF.

Table11-2. Status Display Panel - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
5. Cont.	Disconnect all cable and accessories. Close and secure the RO control panel. Reconnect the HPI No. 1 and No. 2 data cables to the PCP. Deenergize and store the DMM.

Table11-3. RO Control Panel - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	SIGNAL STRENGTH Meter (5, fig. 11-6). Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON. Set the 28V PS circuit breaker (2, fig. 6-2) to ON. Connect and energize the cal std. Disconnect the HPI NO. 1 and No. 2 data cables form the PCP. Set the power distribution panel PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF. Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON. Press the ONSOLE ON switch (1, fig. 11-5). Open the flip-up cover on the RO control panel (fig. 11-6). Set the supplemental RO control panel selector switch (2, fig. 11-6) to OPERATE 1. Open the RO control panel. Leave the panel open and reset the interlock switch (3, fig. 11-6). Set the RANGE switch to 1. Set the OPERATE/CALIBRATE switch (9, fig. 11-78) to OPERATE. Set the FUNCTION switch BDC. Adjust the VERNIER control full ccw. Connect the COMMON test lead to terminal 4 of the meter under test. Connect the DC VOLTS test lead to terminal 3 of the meter under test. Set and hold the TEST switch to NORMAL. Adjust the VERNIER control for a full-scale indication on the meter under test. **The cal std indicates 9 to 11.0.** M2 Release the TEST switch. Press the CONSOLE ON switch

Table11-3. RO Control Panel - Periodic Test Procedures Continued

Step	Operation Normal indication Corrective procedure
1. Cont.	Set the power distribution panel circuit breakers to OFF.
	Disconnect all cable and accessories from meter under test.
	Close and secure the RO control panel.
	Reconnect the HPI No. 1 and No. 2 data cable to the 1PCP.
	Deenergize and store the cal std.
2	ELEVATION MILS Meter (6, Fig. 11-6)
a.	Set the MAIN POWER, LIGHTS, and OUTLETS circuits breakers (1, 3, and 4, fig. 6-2) to ON.
	Set the 28V PS circuit breaker (2, fig. 6-2) to ON
	Connect and energize the cal std.
	Disconnect the HPI No. 1 and No. 2 data cables form the IPCP.
	Set the PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF.
	Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON.
	Press the CONSOLE ON switch (1, fig. 11.5).
	Open the flip-up cover on the RO control panel (fig. 11-6).
	Set the supplemental RO control panel selector switch (2, fig. 11-6) to OPERATE 1
	Open the RO control panel. Leave the panel open and reset the interlock switch (3, fig. 11-6)
	Set the OPERATE/CALIBRATE switch (9, fig. 11-7) to OPERATE.
	Set the RANGE switch to 1.
	Set the FUNCTION switch BDC.
	Adjust the VERNIER control full ccw.
	Disconnect P4 (5, fig. 11-7) from A17-J1 (1, fig. 11-6).
	Connect the COMMON test lead to the terminal 6 of the meter under test.
	Connect the DC VOLTS test lead to terminal 3 of the meter under test.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a full-scale deflection on the HPI section of the meter under test.
	The cal std indicates 1.8 to 2.20.
	M1
b.	Release the TEST switch.
	Adjust the VERNIER control full ccw.
	Transfer the DC VOLTS test lead to terminal 5 of the meter under test.
	Set and hold the TEST switch to NORMAL.
	Adjust the VERNIER control for a full scale deflection on the MANUAL section of the meter under test.
	The cal std indicates 1.8 to 2.20.
	M1.

Table11-3. RO Control Panel - Periodic Test Procedures Continued

Step	Operation Normal indication Corrective procedure
2b. Cont.	Release the TEST switch. Adjust the VERNIER control full ccw. Press the CONSOLE ON switch. Remove the test leads from the meter under test. Set the distribution panel circuit breakers to Off. Connect P4 to A17-J1 Reconnect the HPI No. 1 and No. 2 data cables to the IPCP. Close and secure the RO control panel door. Deenergize and store the cal std.

Table11-4. Coordinate Computer - Periodic Test Procedures

Step	Operation Normal indication Corrective procedure
1.	**BITE References.**
a.	Set the MAIN POWER< LIGHTS, and OUTLEST circuits breakers (1, 3, and 4, fig. 6-2) to ON. Set the 28 V PS circuit breaker (2, fig. 6-2) to ON. Connect and energize the cal std. Set the FUNCTION switch to VDC. Set the RANGE switch to 1. Set the PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF. Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON. Press the CONSOLE On switch (1, fig. 11-5). Unfasten and extend the coordinate computer (fig. 11-8). Reset the interlock switch. Set the OPERATE/TEST switch (3, Fig. 11-8) to TEST. Set switch S2 (2, fig. 11-8) to SELF TEST/CAL. Connect the COMMON test lead to T3 (5, fig. 11-89) Set and hold the SET switch to ON. Adjust the VERNIER control for a 7.0 indication on the cal std. Release the SET switch. Set and hold the TEST switch to NORMAL.

Table11-4. Coordinate Computer - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
1a. Cont.	**NOTE** **The following indication, and the indications of steps b through d below, must be obtained with no adjustment of HI REF control R37 and LO REF control R36 (7 and 6, fig. 11-8). If either of these controls is adjusted to obtain the specified indications, steps b through d must be repeated until the indications are obtained without adjusting r36 and R37.** **The FAIL lamp (1, fig. 11-8) is extinguished**. Alternately adjust HI REF control R37 cw and LO REF Control R36 ccs, incrementally, until the FAIL lamp extinguishes. A11 **CAUTION** **In the following step do not exceed a 7.430 indication on the cal std.**
b.	Adjust the VERNIER control slowly cw until the FAIL lamp illuminates. **The cal std indicates 7.41 to 7.430.** Adjust HI REF R37. A11.
c.	Adjust the VERNIER control slowly ccw until the FAIL lamp extinguishes and then illuminates. **The cal std indicates 6.71 to 6.730.** Adjust LO REF R36. A11.
d.	Adjust the VERNIER control for a 7.00 indication on the cal std. **The FAIL lamp is extinguished**. See note preceding the normal indication of step 1a above.
e.	Release the TEST switch. Remove the test leads form the unit under test. Set the OPERATE/TEST switch to OPERATE. Secure the coordinate computer. Press the CONSOLE ON switch. Set the power distribution panel circuit breakers to OFF. Deenergize and store the cal std.

Table 11-4. Coordinate Computer - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
2.	**BITE Transformer T2 (8, Fig. 11-8).**
	NOTE **Step is performed using the cal std only.**
a.	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON
	Set the 28V PS circuit breaker (2, fig. 6-2) to ON.
	Set the PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF.
	Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON
	Connect and energize the cal std.
	Unfasten and extend the coordinate computer (fig. 11-8).
	Reset the interlock switch.
	Unfasten and open the left-side access door of the coordinate computer.
	Remove the two nuts an washers holding module A2 (9, fig. 11-8)
	Remove module A2 from connector XA2 (10, fig. 11-8)
	Set the OPERATE/TEST switch TEST.
	Set the FUNCTION switch to MULTR.
	Momentarily press the VAC switch.
	Connect the COMMON test lead to XA2 pin 3 (11, Fig. 11-8).
	Connect the AC VOLTS test lead to XA2 pin 4 (12, fig. 11-8)
	Record the cal std indication as E1.
	The cal std indicates 78.0 to 94.0 vac.
	T2.
b.	Transfer the AC VOLTS lead to XA2 pin 5 (13, fig. 11-8).
	Record the cal std indication as E2. Calculate E2.
	E2 = 0.724 to 0.739 X E1.
	T2.
	Set the OPERATE/TEST switch to OPERATE.
	Replace A2 into connector XA2.
	Secure the two nuts and washers hdding A2 in position.
	Close the left-side access door and secure the coordinate compute.
	Press the CONSOLE ON switch.
	Set the power distribution panel circuit breakers to OFF.
	Deenergize and store the cal std.

Table 11-4. Coordinate Computer - Periodic Test Procedures - Continued

Step	Operation Normal indication Corrective procedure
	NOTE **Step 3 is performed using DMM 10177187 when the cal std is not available.**
3.	**BITE Transformer T2 (8, Fig. 11-8).**
a.	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON
	Set the 28V PS circuit breaker (2, fig. 6-2) to ON.
	Set the PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF.
	Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON
	Press the CONSOLE ON switch (1, fig. 11-5).
	Connect and energize the DMM..
	Unfasten and extend the coordinate computer (fig. 11-8).
	Reset the interlock switch.
	Set the OPERATE/TET switch to OPERATE.
	Unfasten and open the left-side access door of the coordinate computer.
	Remove the two nuts an washers holding module A2 (9, fig. 11-8)
	Remove module A2 from connector XA2 (10, fig. 11-8)
	Set the OPERATE/TEST switch TEST.
	Press the VAC switch.
	Press the RANGE 100 switch.
	Connect the INPUT LO test lead to XA2 pin 3 (11, fig. 11-8).
	Connect the INPUT HI test lead to XA2 pin 4 (12, fig. 11-8)
	Record the DMM indication as E1.
	The cal std indicates 78.0 to 94.0 vac.
	T2.
b.	Transfer the INPUT HI lead to XA2 pin 5 (13, fig. 11-8).
	Record the DMM indication as E2. Calculate E2.
	E2 = 0.724 to 0.739 X E1.
	T2.
	Set the OPERATE/TEST switch to OPERATE.
	Replace A2 into connector XA2.
	Secure the two nuts and washers holding A2 in position.
	Close the left-side access door and secure the coordinate compute.
	Press the CONSOLE ON switch.
	Set the power distribution panel circuit breakers to OFF.
	Deenergize and store the DMM

Table 11-5. Digital Assembly - Periodic Test Procedure

Step	Operation Normal indication Corrective procedure
	NOTE **Step 1 is performed using the cal std only.**
1	BITE References AS.1 (1, Fig. 11-9).
a.	Unfasten and open the digital assembly door (fig. 11-9). Set the FUNCTION switch to MULTR. Momentarily set the VDC switch to the down position. Connect the cal std COMMON test lead to chassis ground. Connect the DC VOLTS test lead to A51.-TP1 (6, fig. 11-9). **The cal std indicates 1.09 to 1.110.** Adjust REFERENCE VOLTAGE 1, R5 (2, fig. 11-9). A51.
b.	Transfer the DC VOLTS test lead to A51-TP2 (7, fig. 11-9), **The cal. std indicates -1.09 to -1.110**. Adjust REFERENCE VOLTAGE 2, R9 (3, fig. 11-9). A51.
c.	Transfer the DC VOLTS test lead to A.51-TP3.(8, fig. 11-9). **The cal std indicates 0.24 to 0.260** Adjust REFERENCE VOLTAGE 3, R6 (4, fig. 11-9); A51.
d.	Transfer the DC VOLTS test lead to A51-TP4 (9, fig. 11-9). **The cal std indicates 1.49 to 1.510.** Adjust REFERENCE VOLTAGE 4, R10 (5, fig. 11-9). A51.
e.	Transfer the DC VOLTS test lead to A51-TP5 (10, fig. 11-9). **The cal std indicates 0.49 to 0.510.** Adjust REFERENCE VOLTAGE 5, R7 (14, fig. 11-9). A51.
f	Transfer the DC VOLTS test lead to A51-TP6 (11, fig. 11-9). **The cal std indicates%-0.49 to -0.510.** Adjust REFERENCE VOLTAGE 6, Rl11(15, fig. 11-9). A51.
g.	Transfer the DC VOLTS test lead to A51-TP7 (12, fig. 11-9). **The cal std indicates 1.49 to 1.510.** Adjust REFERENCE VOLTAGE 7, R8 (16, fig. 11-9). A51.

Table 11-5. Digital Assembly - Periodic Test Procedure - Continued

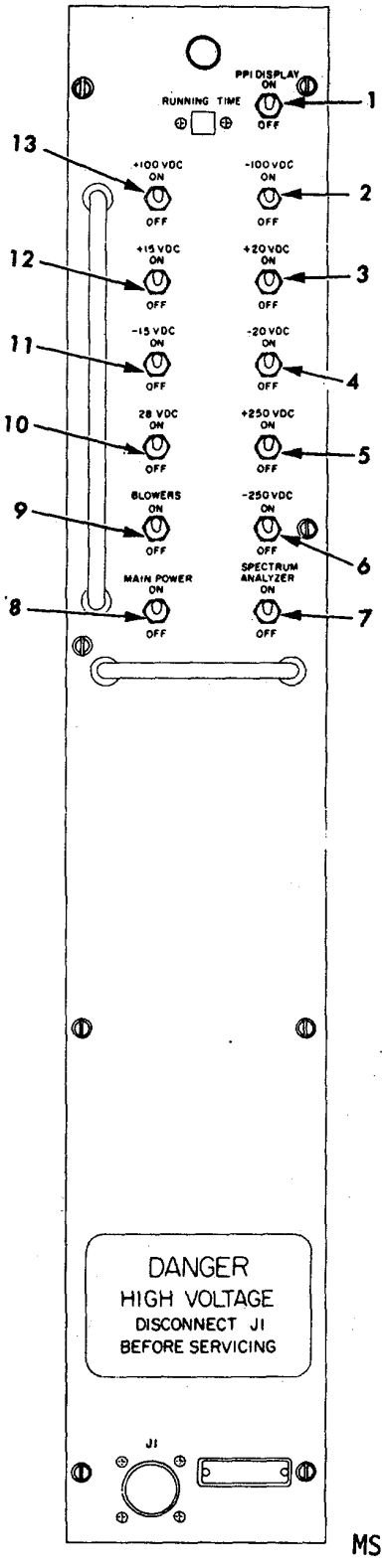
Step	Operation Normal indication Corrective procedure
1h.	Transfer the DC VOLTS test lead to A51-TP8 (13, fig. 11-9). The cal std indicates -0.24 to -0.260.. Adjust REFERENCE VOLTAGE 8 A51. Remove the test leads from unit under test. Deenergize and store the cal std.
	NOTE **Step 2 is performed using DMM 10177187 when the cal std is not available.**
3.	BITE References A51 (1, Fig. 11-9).
a.	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON. Set the 28V PS circuit breaker (2, fig. 6-2 to ON. Unfasten and open the digital assembly door (fig. 11-9) Connect and energize the DMM. Press the RANGE 10 switch. Press the VDC switch. Connect the DMM INPUT LO test lead to chassis ground. Connect the INPUT HI test lead to A51-TP1 (6, fig. 11-9). The DMM indicates 1.09 to 1.110. Adjust REFERENCE VOLTAGE 1, R5, (2, fig. 11-9). A51.
b.	Transfer the INPUT HI test lead to A51-TP2 (7, fig. 11-9). The DMM indicates - 1.09 to - 1.110. Adjust REFERENCE VOLTAGE 2, R9 (3, fig. 11-9). A51.
c.	Transfer the INPUT HI test lead to A51-TP7 (12, fig. 11-9). The DMM indicates 1.49 to 1.510. Adjust REFERENCE VOLTAGE 7, R8 (16, fig. 11-9). A51.
d.	Transfer the INPUT HI test lead to A51-TP4 (9, fig. 11-9). The DMM indicates - 1.49 to - 1.510. Adjust REFERENCE VOLTAGE 4, R10 (5, fig. 11-9). A51.

Table 11-5. Digital Assembly - Periodic Test Procedure - Continued

Step	Operation Normal indication Corrective procedure
2c.	Transfer the INPUT HI test lead to A51-TP5 (10, fig. 11-9).
	Press the RANGE 1 switch.
	The DMM indicates 0.49 to 0.510.
	Adjust REFERENCE VOLTAGE 5, R7 (14, fig. 11-9).
	A51.
f.	Transfer the INPUT HI test lead to A51-TP6 (11, fig. 11-9).
	The DMM indicates - 0.49 to - 0.510.
	Adjust REFERENCE VOLTAGE 6, R11 (15, fig. 11-9).
	A51.
g.	Transfer the INPUT HI test lead to A51-TP3 (8, fig. 11-9).
	The DMM indicates 0.25 to 0.260.
	Adjust REFERENCE VOLTAGE 3, R6 (4, fig. 11-9).
	A51.
h.	Transfer the INPUT HI test lead to A51-TP8 (13, fig. 11-9).
	The DMM indicates - 0.24 to - 0.260.
	Adjust REFERENCE VOLTAGE 8, R12 (17, fig. 11-9).
	A51.
	Remove the test leads from unit under test.
	Close and secure the digital assembly door.
	Deenergize and store the DMM.
3.	Digital Clock Pulse Generator A137.
	Set the MAIN POWER, LIGHTS, and OUTLETS circuit breakers (1, 3, and 4, fig. 6-2) to ON.
	Set the 28V PS circuit breaker (2, fig. 6-2) to ON.
	Set the PPI DISPLAY circuit breaker (1, fig. 11-1) to OFF.
	Set the remaining power distribution panel circuit breakers (fig. 11-1) to ON.
	Press the CONSOLE ON switch (1, fig. 11-5).
	Connect and energize calibration test set TF8-1020.
	Set the calibration test set COUNTER switch . EXT.
	Set the calibration test set FUNCTION switch to FREQ.
	Unfasten and open the digital assembly door.
	Unfasten and open the digital assembly (fig. 11-10).
	Reset the cabinet interlock switch.
	Unfasten and open the cover on the rear of the digital assembly.
	Connect a 10178170-1 probe to pin 17 of XA137 (1, fig. 11-10).

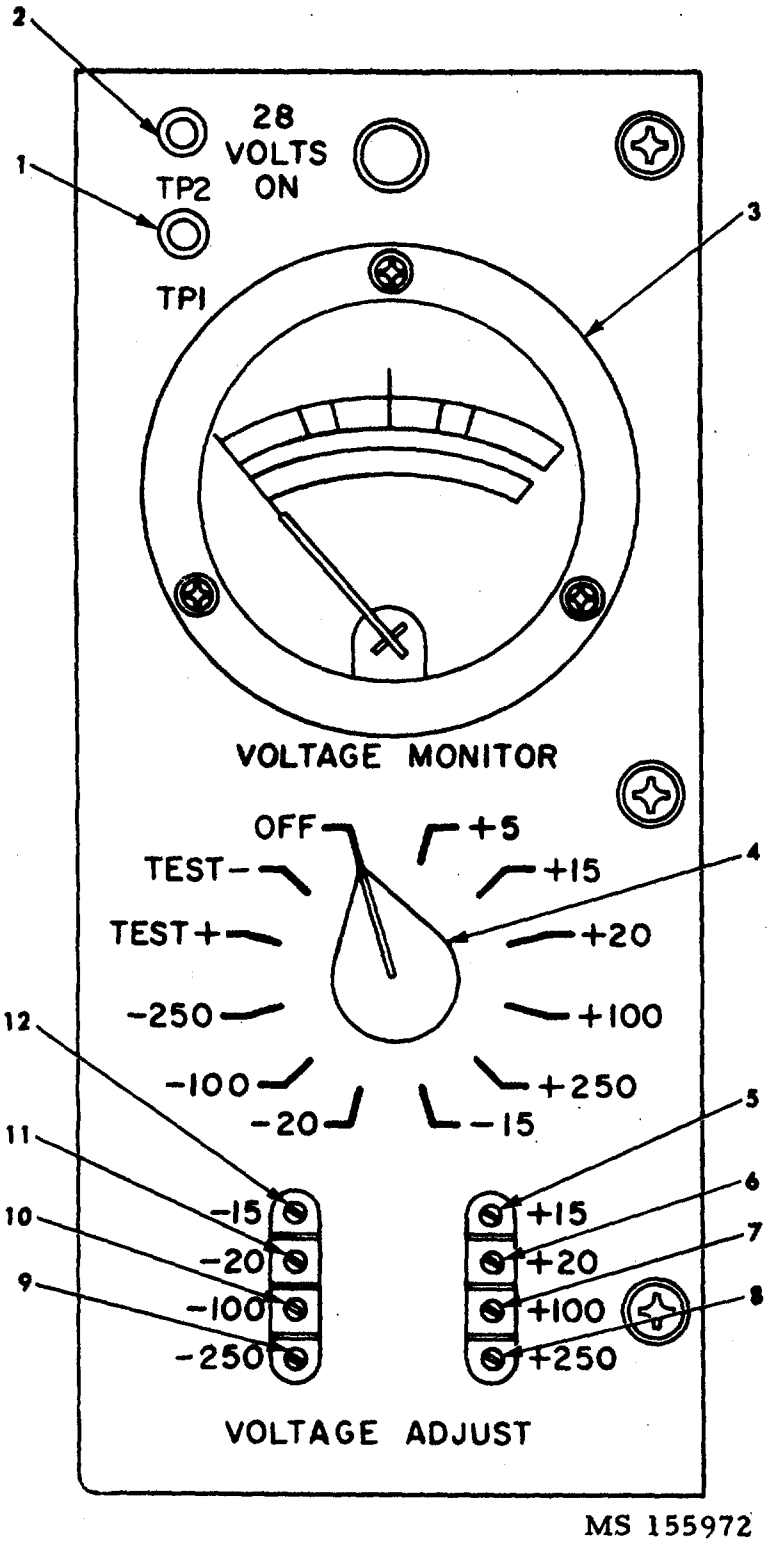
Table 11-5. Digital Assembly - Periodic Test Procedure - Continued

Step	Operation Normal indication Corrective procedure
3. Cont.	Connect the red clip of the W8-1032 to the 10178170-1 probe on pin 17 of XA137. Connect the W8-1032 BNC to the calibration test set COUNTER IN BNC jack. The calibration test set counter indicates 5-499400 to 5500600. A137. Remove the test leads from the digital assembly. Close and secure the cover on the rear of the digital assembly. Close and secure the digital assembly. Close and secure the digital assembly door. Secure and store the calibration test set. Press the CONSOLE ON switch. Set the power distribution panel circuit breakers to OFF. Set the PPI DISPLAY circuit breaker to ON.



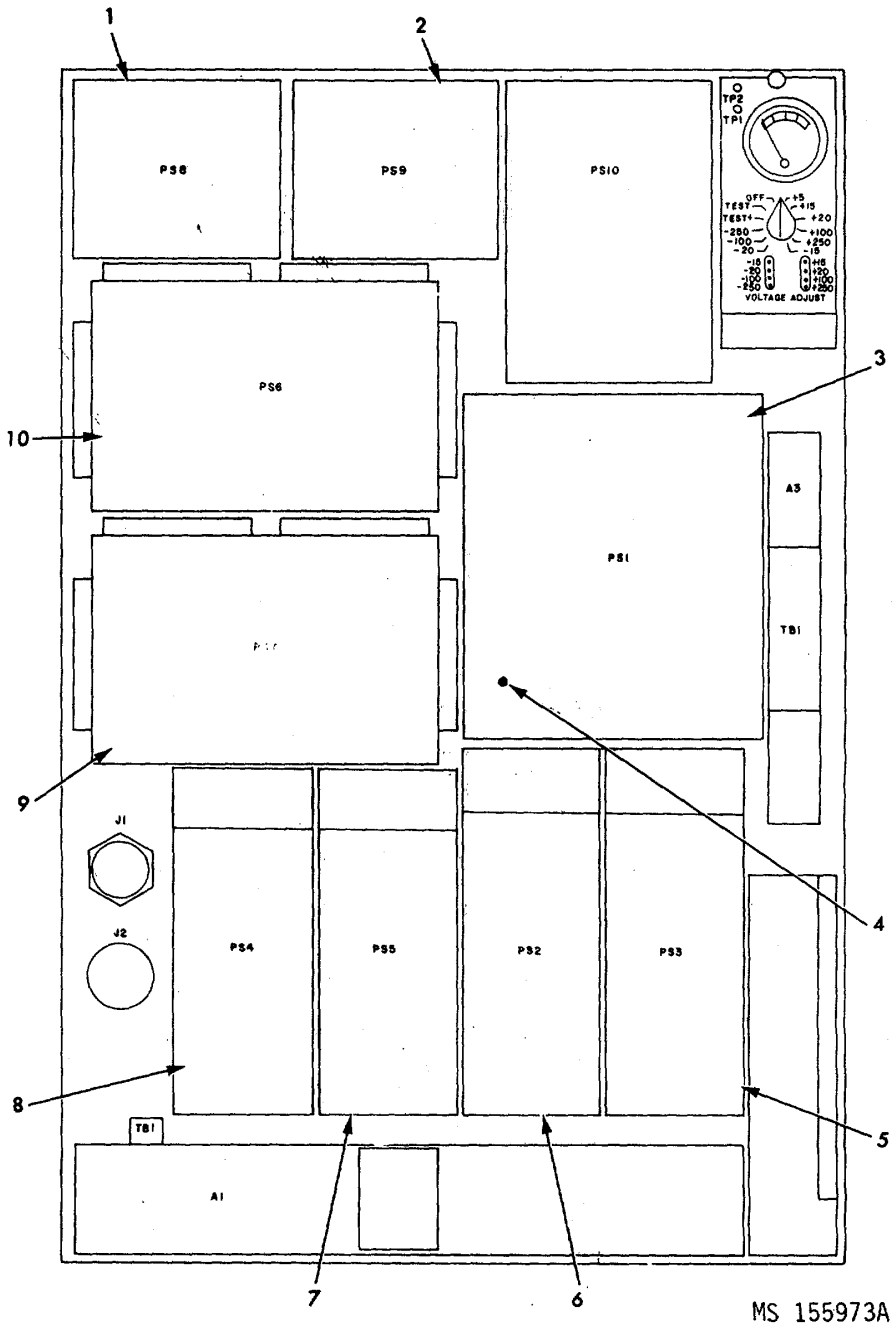
1— PPI DISPLAY circuit breaker
2— −100 VDC circuit breaker
3— +20 VDC circuit breaker
4— −20 VDC circuit breaker
5— +250 VDC circuit breaker
6— −250 VDC circuit breaker
7— SPECTRUM ANALYZER circuit breaker
8— MAIN POWER circuit breaker
9— BLOWERS circuit breaker
10— −28 VDC circuit breaker
11— −15 VDC circuit breaker
12— +15 VDC circuit breaker
13— +100 VDC circuit breaker

Figure 11-1. TDECC power distribution panel.



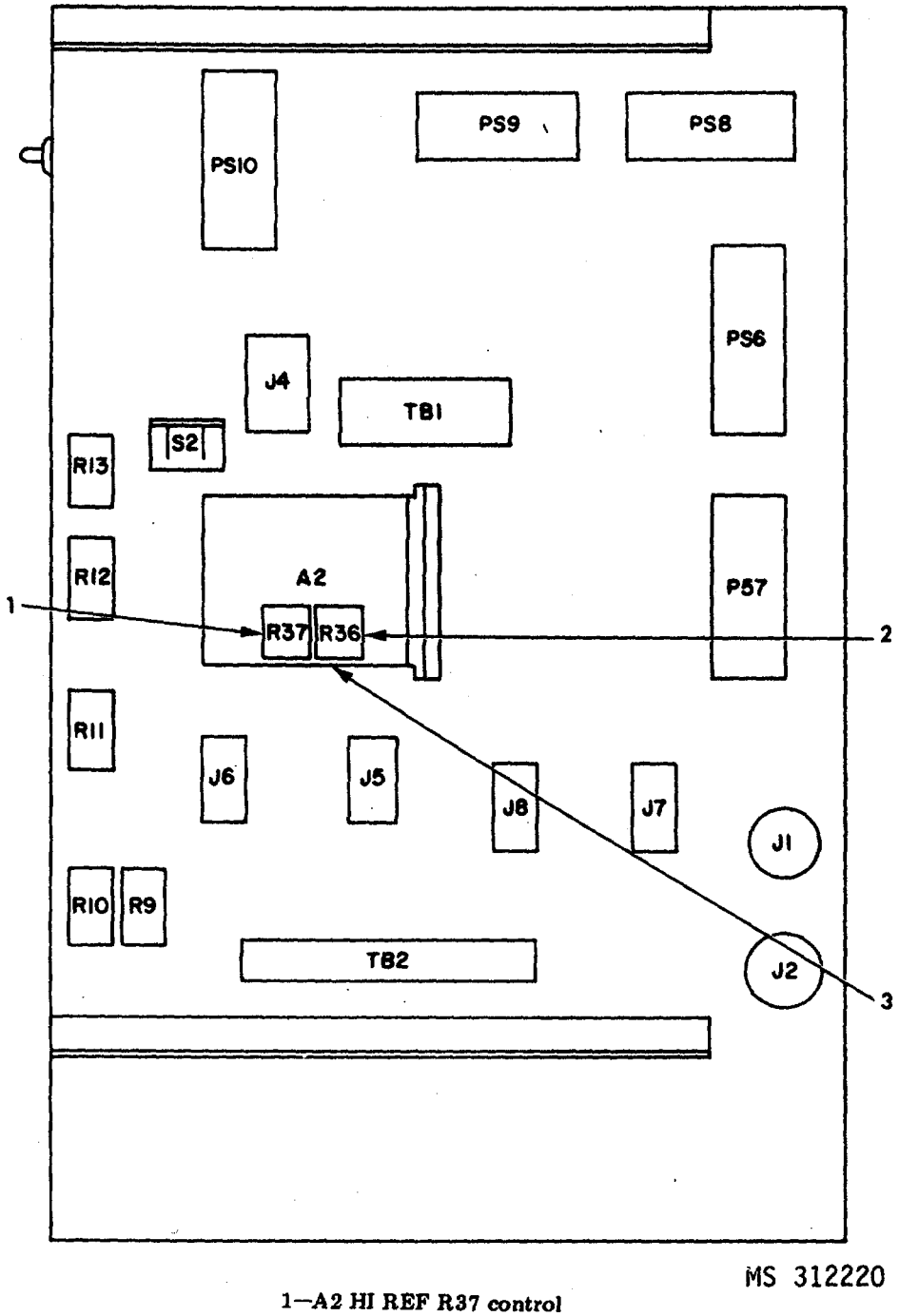
1— TP1
2— TP2
3— VOLTAGE MONITOR *meter*
4— Voltage selector switch
5— +15 control
6— +20 control
7— +100 control
8— +250 control
9— −250 control
10— −100 control
11— −20 control
12— −15 control

Figure 11-2. Power supply BITE Panel



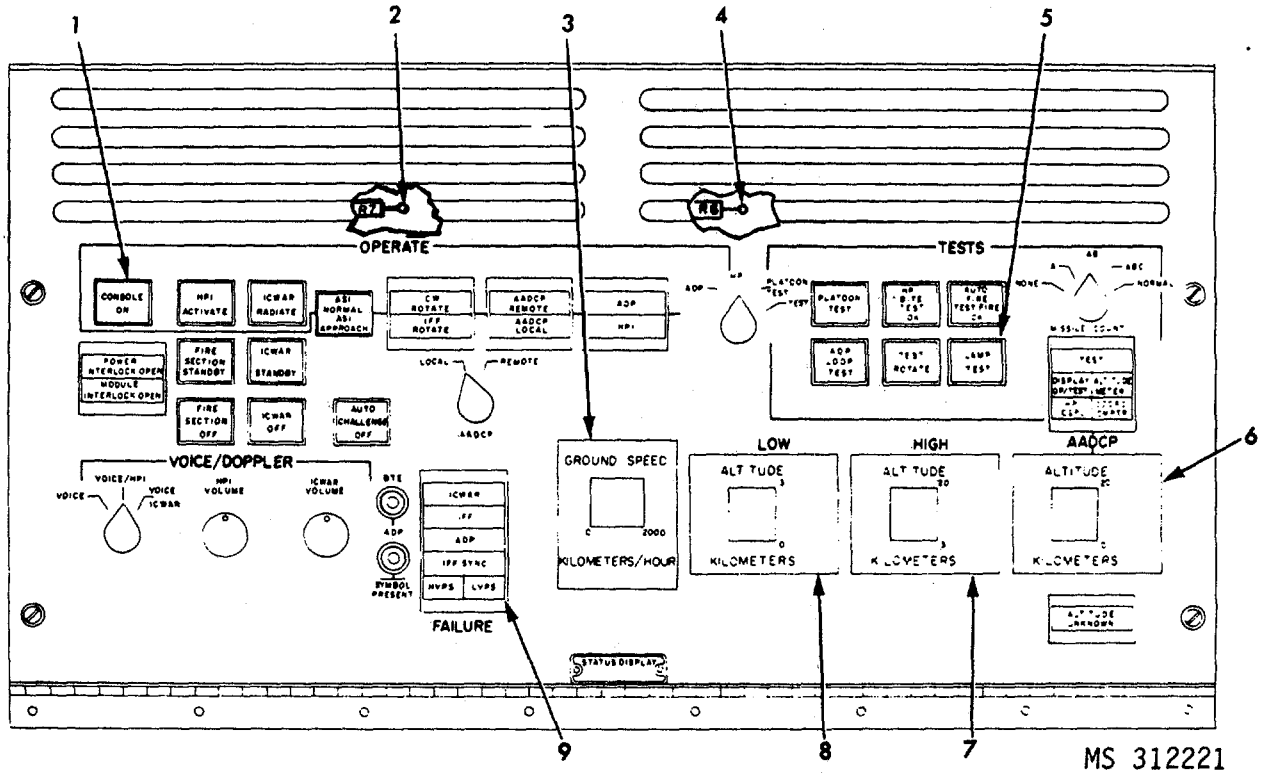
1— +250-Vdc power supply PS8
2— −250-Vdc power supply PS9
3— +5.4-Vdc power supply PS1
4— Output control R12
5— −15-Vdc power supply PS3
6— +15-Vdc power supply PS2
7— −100-Vdc power supply PS5
8— +100-Vdc power supply PS4
9— −20-Vdc power supply PS7
10— +20-Vdc power supply PS6

Figure 11-3. Power supply drawer - left side.



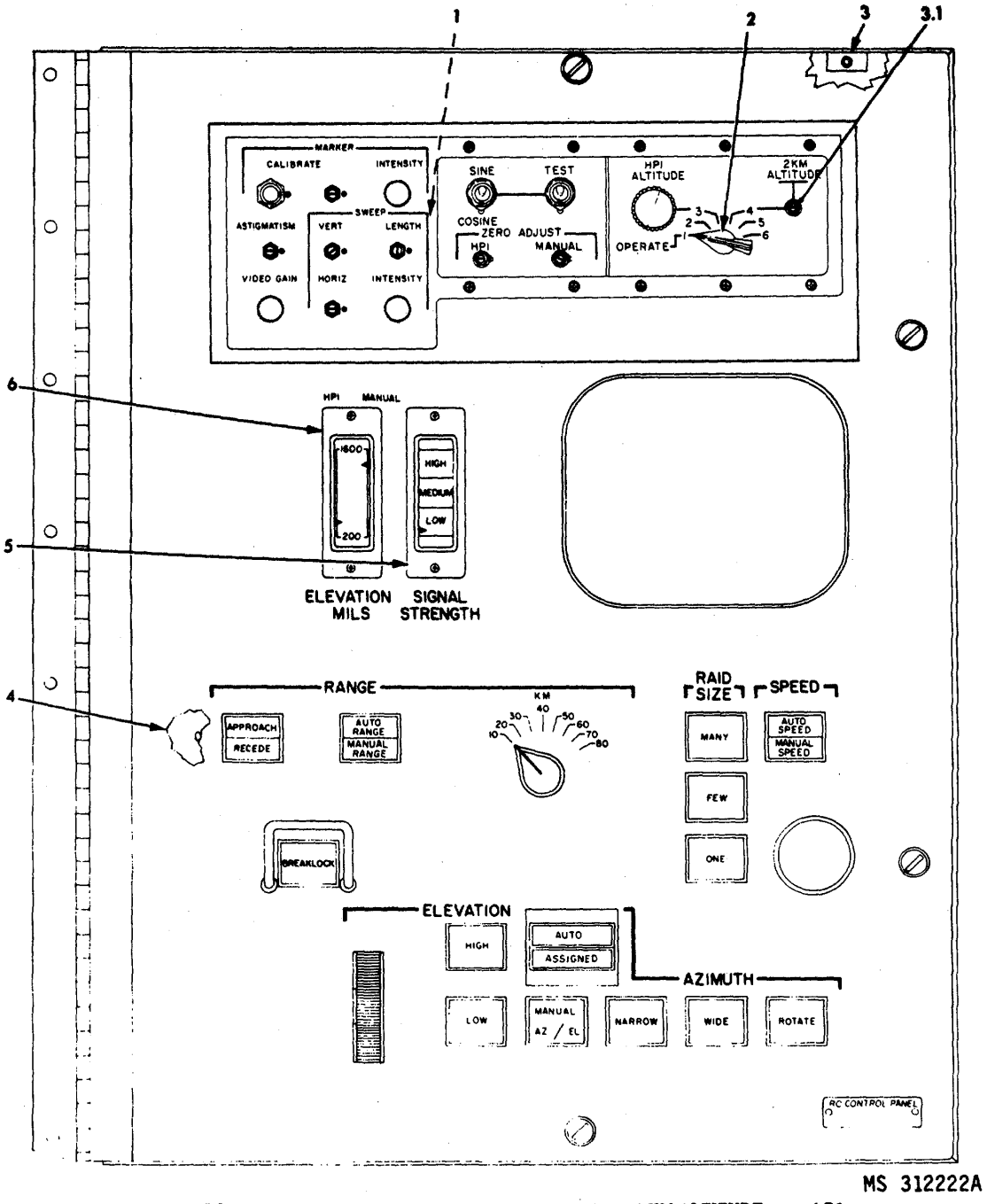
1—A2 HI REF R37 control
2—A2 LO REF R36 control
3—A5A2

Figure 11-4. Power supply drawer - right side.



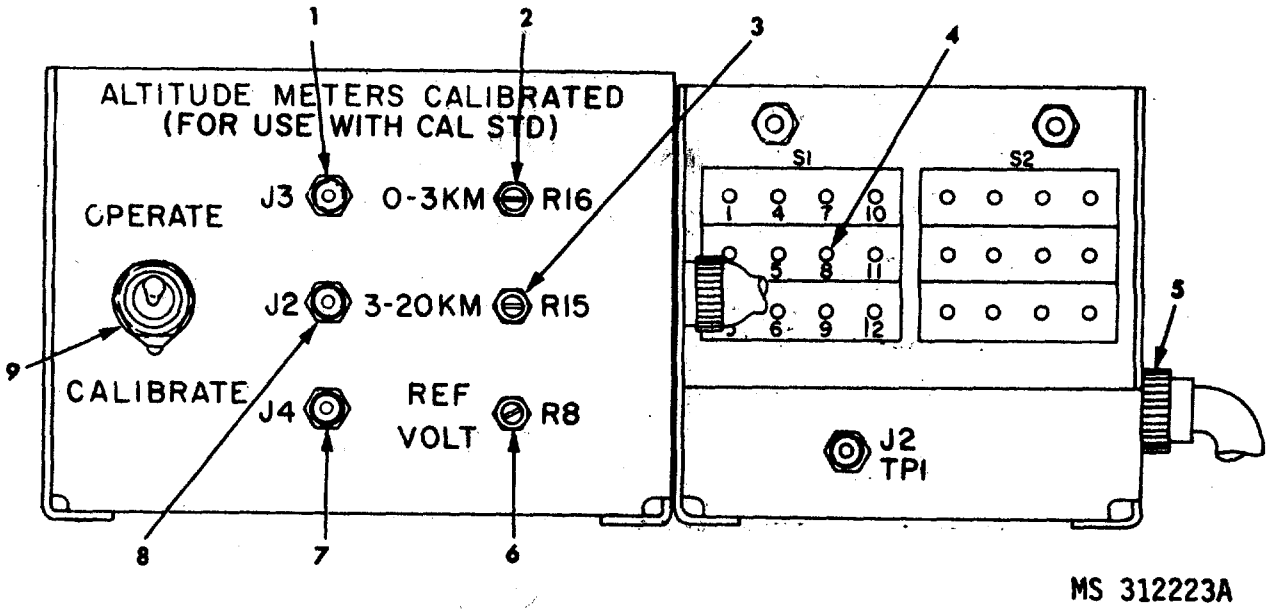
1—CONSOLE ON switch
2—Junction R7 and P2-63
(with panel in lowered position)
3—GROUND SPEED meter
4—Junction of P2-57 and R6 (with panel in lowered position)
5—LAMP TEST switch
6—AADCP meter
7—HIGH meter
8—LOW meter
9—LVPS FAILURE lamp

Figure 11-5. Status display panel.



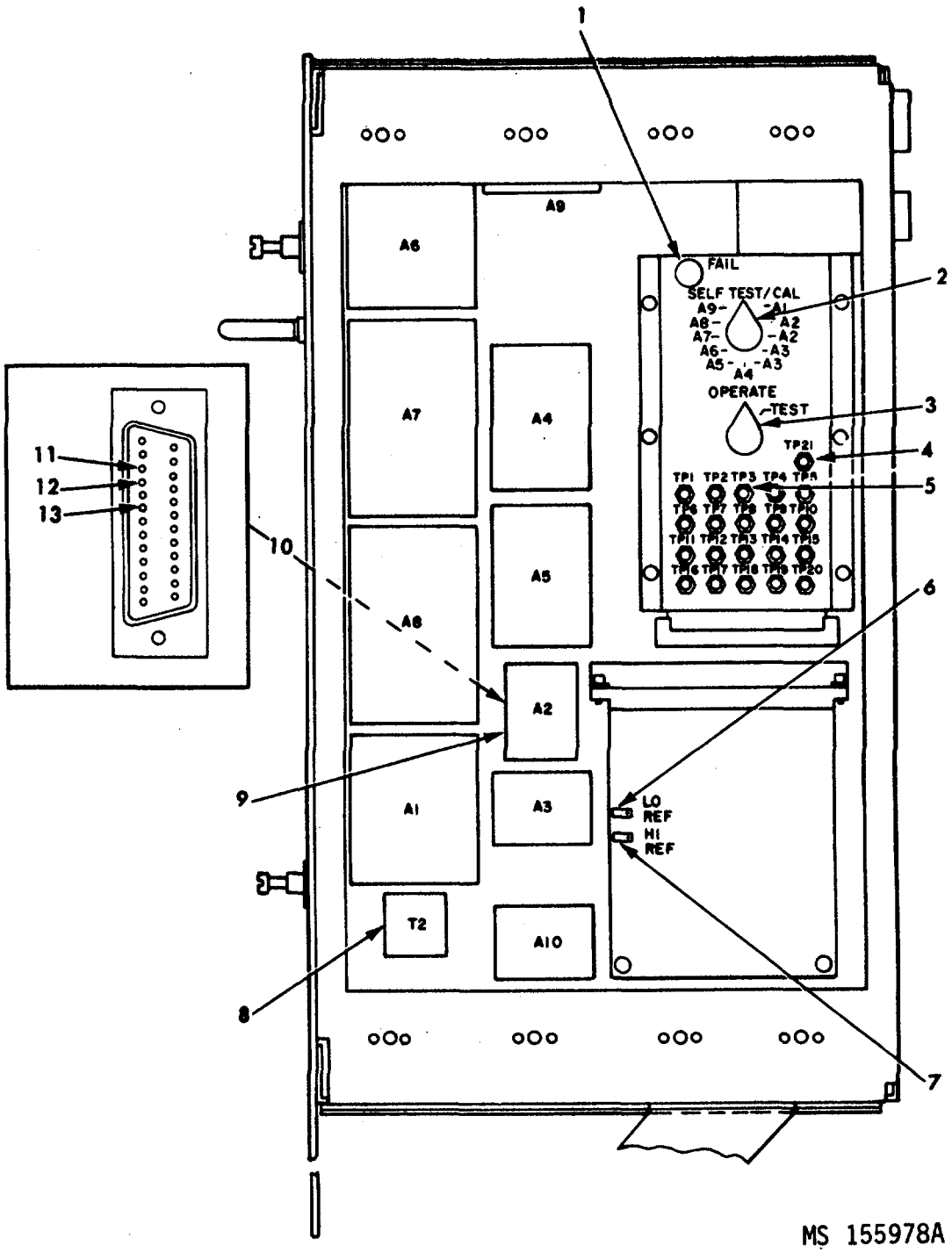
1 — A17-J1
2 — Supplemental RO control panel selector switch
3 — Interlock switch
3.1 — 2 KM ALTITUDE control R3
4 — Terminal E2
5—SIGNAL STRENGTH meter
6—ELEVATION MILS meter

Figure 11-6. RO control panel (front view)



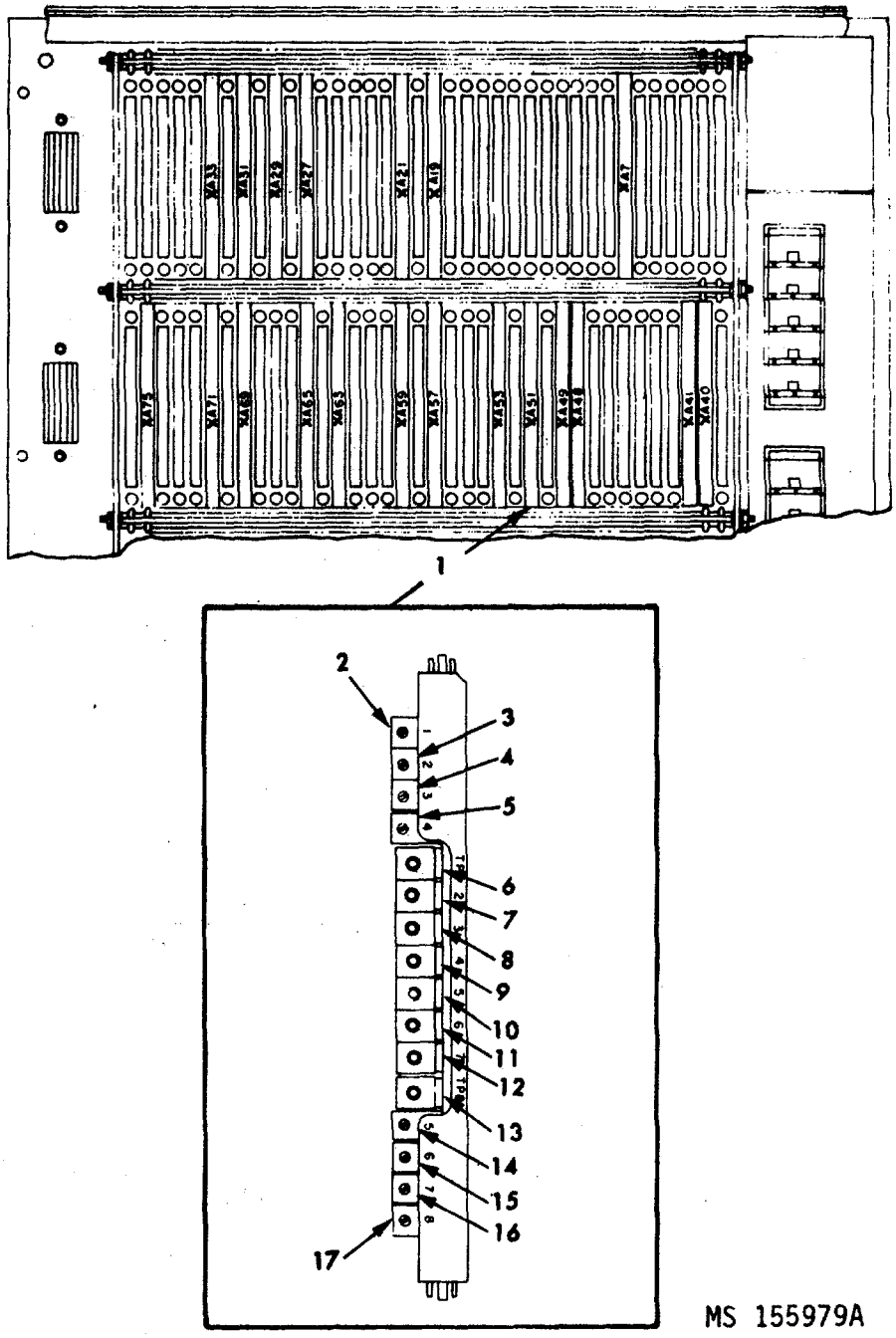
1—J3
2—0-3KM control R16
3—3-20KM control R15
4—S1-8
5—P4
6—REF VOLT control R8
7—J4
8—J2
9—OPERATE/CALIBRATE switch

Figure 11-7. RO control panel (rear view).



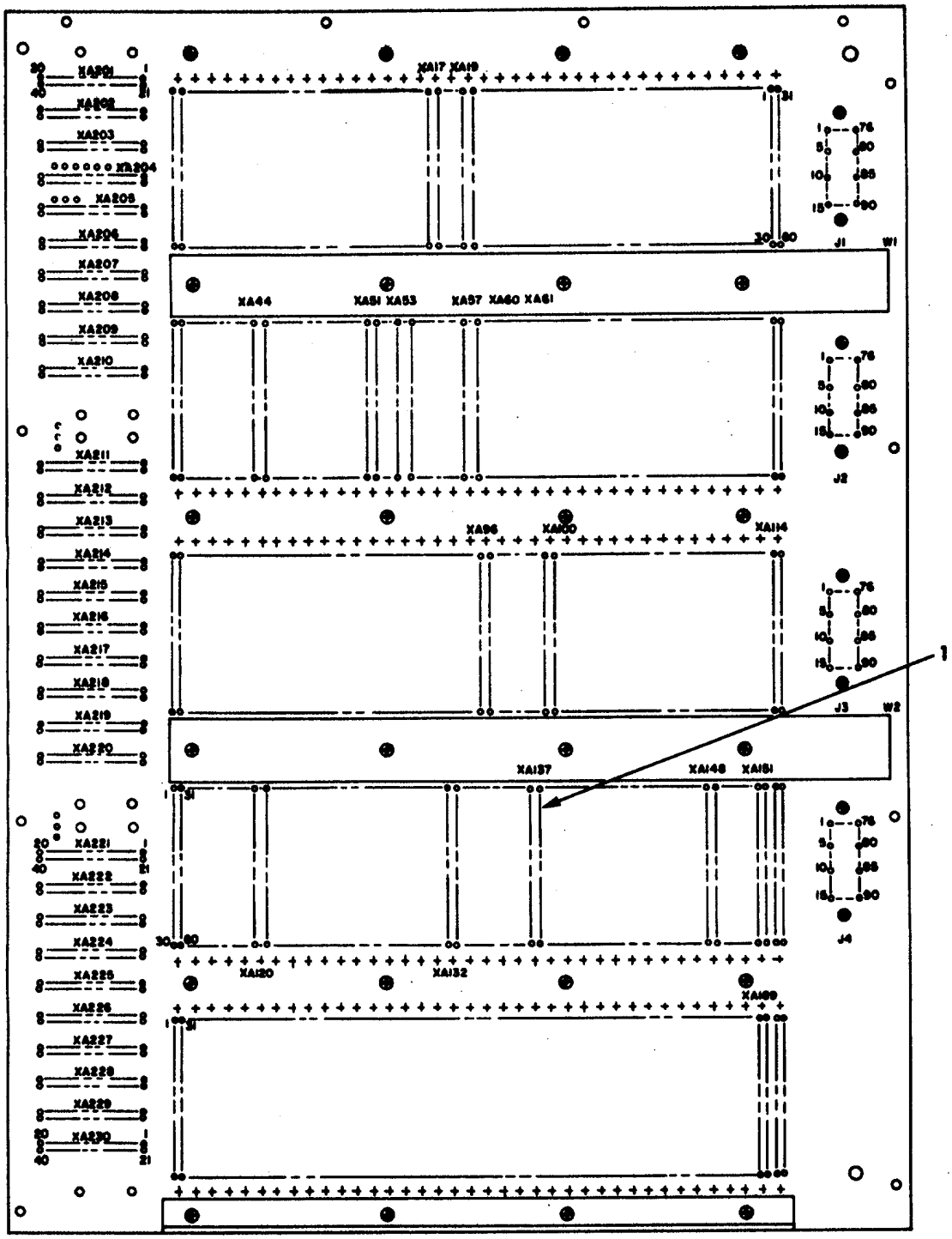
1—FAIL lamp
2—S2
3—OPERATE/TEST switch
4—TP21
5—TP3
6—LO REF control R36
7—HI REF control R37
8—BITE transformer T2
9—A2 module
10—XA2 connector
11—XA2 *pin* 3
12—XA2 pin 4
13—XA2 pin 5

Figure 11-8. Coordinate computer - right side.



1—A51 module
2—REFERENCE VOLTAGE 1, R5
3—REFERENCE VOLTAGE 2, R9
4—REFERENCE VOLTAGE 3, R6
5—REFERENCE VOLTAGE 4, R10
6—TP1
7—TP2
8—TP3
9—TP4
10—TP5
11—TP6
12—TP7
13—TP8
14—REFERENCE VOLTAGE 5, R7
15—REFERENCE VOLTAGE 6, R11
16—REFERENCE VOLTAGE 7, R8
17—REFERENCE VOLTAGE 8, R12

Figure 11-9. Digital assembly



1—XA137 pin 17

Figure 11-10. Digital assembly - clock pulse generation module.

APPENDIX A REERENCES

Refer to TM 9-14251525-L for a list of other publications pertinent to this material and associated equipment.

APPENDIX B

SERIAL NUMBER EFFECTIVITY CODE

B-1. General

The serial number effectivity code is an alphabetical code used to indicate differences among models.

B-2. Symbols Used

Alphabetical symbols are used in the code. The symbol represents the serialization of the major assembly. An asterisk preceding the symbol indicates that the serialization is not of the major assembly, but instead is of the major item in which the assembly is normally located.

B-3. Symbols Not Used

To avoid possible confusion with classification markings, numerals, and certain units of equipment, the symbols (A), (B), (C), (I), (0), (S) and (U) are not used.

B-4. Serial Number Effectivity Code

The following is a list of the code symbols used in this manual.

*(D) Shop 2 serial numbers 275001 through 630451 provided MWO 9-4935-1545-50-1 has been applied and 630452 and up; and provided MWO 9-4935-1545-50-2 has not been applied.

*(E) Shop 2 serial numbers 275001 through 570119 provided MWO 9-4935-1545-50-2 has been applied and 730189 and up.

(*F) Shop 1 serial numbers 275001 through 540156; shop 8 serial numbers 275001 through 540156; shop 9 serial numbers 300001 through 400001; and TAG serial numbers 275001 through 520340 provided MWO 94900252550-1 has not been applied.

*(G) Shop 1 serial numbers 275001 through 540156; shop 8 serial numbers 275001 through 540156; shop 9 serial numbers 300001 through 400001; and TAG serial numbers 275001 through 520340 provided MWO 9-4900-2525-50-1 has been applied and 680221 and up.

*(H) Shop 1 serial numbers 165003 through 590345; shop 2 serial numbers 275001 through 570119; shop 9 serial numbers 300001 through 660351; and TAG serial numbers 275001. through 670001 provided MWO 9-4900-2525-50-5 has not been applied.

*(J) Shop 1 serial numbers 165003 through 590345; shop 2 serial numbers 275001 through 570119; shop 9 serial numbers 300001 through 660351 and TAG serial numbers .275001 through 670001 provided MWO 9-4935-1545-50-3 and MWO 9-4900-2525-50-5 have been applied and 790075 and up.

APPENDIX C

SCHEDULE OF PERIODIC TEST PROCEDURES

C-1. General

This appendix lists all units in the HAWK system which require periodic tests to ensure their accuracy. The tables are divided into columns as described below.

a. Nomenclature. This column lists the name of each item. The names are in alphabetical order within each interval of test requirement.

b. Part number. This column lists the part number of each item.

c. Reference. This column lists the TM in which the test procedures are provided.

d. Interval. This column lists the interval at which each unit must be tested. There is a column for each shop or battery major item involved. The intervals are as follows:120 days, 240 days, and 360 days.

C-2. Responsibilities

All the periodic tests references in this appendix are performed by DS/GS personnel. However, organizational maintenance personnel are responsible for ensuring that the tests are performed and that the units are available for testing.

Table C-1. FME Scheduled Maintenance

Nomenclature	Part Number	Reference	INTERVAL											
			MTS	SHOP 1	SHOP 2	SHOP 3	SHOP 5	SHOP 6	SHOP 8	SHOP 9	SHOP 20	SHOP 21	TAG	VTG
High-frequency console	10182561	TM 9-4935-1540-14-1												
Console control	10676000	TM 9-4935-1540-14-1	120		120	120								
Console power supplies	10182561	TM 9-4935-1540-14-1	120		120	120								
Generator, dual pulse	10182657	TM 9-4935-1540-14-1	120		120	120								
Generator, multi-function	10182653	TM 9-4935-1540-14-1	120		120	120								
Generator, signal	10182039	TM 9-4935-1540-14-1	120		120	120								
Generator, thermal noise	10182651	TM 9-4935-1540-14-1	120		120	120								
Indicator amplifier	10676983	TM 9-4935-1540-14-1	120		120	120								
Distribution box dummy load TF7-105	11566717	TM 9-4935-1540-14-1			120									
Hydraulic test console, de circuits	9197500	TM 9-4935-543-14					360							
Launcher test set	10292253	TM 9-4935-542-34							120			120		
Multimeter	TS-505D/U	TM 9-4935-542-34		120						120				
Launcher boresight fixture level and telescope	9080712 and 9080612	TM 9-4935-1541-14							240			240		
TF8-103	10671776	TM 9-4935-1540-14-1		120						120			120	
Voltmeter, electronic	1010.5385	TM 9-4935-542-34		120						120	120			
Ac/dc power source p/o cal std	10178633	TM 9-4935-1540-14-1		240					240	240	240			

Table C-1. FME Scheduled Maintenance-Continued

Nomenclature	Part Number	Reference	INTERVAL											
			MTS	SHOP 1	SHOP 2	SHOP 3	SHOP 5	SHOP 6	SHOP 8	SHOP 9	SHOP 20	SHOP 21	TAG	VTG
Panel & indicator timer	9187407	TM 9-4935-543-14					360							
Pressure gage 0-100 psi	9081193	TM 9-4935-543-14					360							
Pressure gage 0-10,000 psi	9197332	TM 9-4935-543-14					360							
Pressure gage 0-400 psi	9081192	TM 9-4935-543-14					360							
Pressure gage 0-4000 psi	9081194	TM 9-4935-543-14					360							
Pressure gage 0-2000 psi	9180611	TM 9-4935-543-14					360							
Test console degreaser and accumulator	9194500	TM 9-4935-543-14					360							
TF8-1013	10675949	TM 9-4935-1540-14-1		240						240			240	
TF8-1014A	10669035	TM 9-4935-1540-14-1		240						240			240	
Antenna rotation simulator	10108793	TM 9-4935-1540 14-1		360										
Antenna rotation simulator	10046996	TM 9-4935-1540-14-1		360						360			360	
Attenuator, HIZ 100:1	10183580	TM 9-4935-1540-14-1	360		360	360								
Attenuator, HIZ 1000:1	10183581	TM 9-4935-1540-14-1	360		360	360								
Attenuator, TA8-103	10670748	TM 9-4935-1540-14-1	360		360	360								
BCC8-102	10670908	TM 9-4935-1540-14-1		360						360			360	
BCC8-103	10671754	TM 9-4935-1540-14-1		360						360			360	
BCC8-1012	10671755	TM 9-4935-1540-14-1		360						360			360	
CWR8-1017	11566013	TM 9-4935-1540-14-1		360						360				
Detector, rf TA8-1019	10672246	TM 9-4935-1540-14-1	360		360	360								
Gage pressure, p/o nitrogen purging kit	8035247	TM 9-4935-543-14						360	360			360		
HPAR-410A	11566016	TM 9-4935-1540-14-1		360						360			360	
HPAR8-101	10675326	TM 9-4935-1540-14-1		360						360			360	
HPI-526	10180531	TM 9-4935-1540-14-1		360						360			360	
HT8-1010A	10288432	TM 9-4935-1540-14-1		360										
HT8-1024A	10669023	TM 9-4935-1540-14-1	360		360	360								
Probe HIZ AC	10669154	TM 9-4935-1540-14-1	360		360	360								
Probe HIZ RF	10670652	TM 9-4935-1540-14-1	360		360	360								
Probe HV	10672247	TM 9-4935-1540-14-1							360			360		
Pulse radar load	10675174 or 9172499	TM 9-4935-1541-14	360	360										
Radar target simulator	10045265	TM 9-4935-1540-14-1		240						240		240		
Stopwatch	9173493 or 6645-00-126-0286	TM 9-4935-1540-14-1		360						360	360		360	
Transmitter synchro calibrator assembly	10110818	TM 9-4935-1540-14-1		360										
VTG maintenance kit	11567850	TM 9-4935 1536 14												
CSGG electronic tester	98453-304000	TM 9-4935-1536-14												240
Display and control unit adapter	11567820	TM 9-4935-1536-14												240

Table C-1. FME Scheduled Maintenance-Continued

Nomenclature	Part Number	Reference	INTERVAL											
			MTS	SHOP 1	SHOP 2	SHOP 3	SHOP 5	SHOP 6	SHOP 8	SHOP 9	SHOP 20	SHOP 21	TAG	VTG
Display unit	11567600	TM 9.1430-1536-40												120
Sensor unit adapter assembly	11567800	TM 9-4935-1536-14												240
Video processor and power supply tester assembly	98453-304004	TM 9 4935 1536 14												240
Video processor and power supply adapter	98453-304342	TM 9-4935-1536-14												240
Termination BSM 51 ohm	10067063-1	TM 9-4935-1540-14-1	360		360	360								
Termination BSM 100 ohm	10067063-2	TM 9-4935-1540-14-1	360		360	360								
Termination BSM 1000 ohm	10067063-3	TM 9-4935-1540-14-1	360		360	360								
Termination BSM 75 ohm	10067063-4	TM 9-4935-1540-14-1	360		360	360								
Termination TA8-104	10670746	TM 9-4935-1540-14-1	360		360	360								
Termination TA8-105	10670747-2	TM 9-4935-1540-14-1	360		360	360								
Termination TA8-106	10670747-1	TM 9-4935-1540-14-1	360		360	360								
Termination TA8-107	10670747-3	TM 9-4935 1540-14 1	360		360	360								
TA8-1024	11566020	TM 9-4935-1540-14-1		240						240				
TF8-106A	11565960	TM 9-4935-1540-14-1		360						360			360	
TF8-109	10671070	TM 9-4935-1540-14-1		360										
TF8-1011	10671777	TM 9-4935-1540-14-1		360						360			360	
TF8-1016	10677234	TM 9-4935-1540-14-1		360										
TF8-1019	11571393	TM 9-4935-1540-14-1		240						240				
TF8-1020	13233663*(G)[1] 11570924*(F)[1]	TM 9-4935-1540-14-1		120					120	120		120		
TF8-1021	13384971*(J)[1] 13234185*(E)[1] 11570859*(D)[1]	TM 9-4935-1540-14-1			120					120			120	
TF8-1022	13234179	TM 9-4935-1540-14-1				120								
Transformer test set	10674766	TM 9-4935-1540-14-1		360										
Test lead, 10:1	10672243	TM 9-4935-1540-14-1	120		120	120								

[1]Refer to appendix B for serial number effectivity.

Table C-2. Battery/Platoon Scheduled Maintenance

Nomenclature	Part number	Reference	INTERVAL									
			GETS	ROR	BCC	PAR	LCHR	ICC	CWAR	HIPIR	SIM	PCP/BCP
PCP/BCP Panel meters/ BITE		TM 9-4935-1548-14										
AN/MSW-20,	13039013,											120
AN/MSW-21	13219563											120
ICC Panel meters/BITE		TM 9-4935-1548-14						120				
AN/MSQ-110 or	11510982 or											
AN/MSQ-111	11510983											
PCP Panel meters/BITE		TM 9-4935-1548-14										120
AN/MSW-19 or	11568123											
or AN/MSW-18	11568124											
CWAR Panel meters/		TM 9-4935-1548-14							120			
BITE AN/MPQ-55,	11510700 or											
AN/MPQ-62	13039088											
Rcvr BITE osc. test	10288332	TM 9-1430-1528-34-1							120			
HIPIR Panel meters/BITE		TM 9-4935-1548-14								120		
AN/MPQ-57,	11568205 or											
AN/MPQ-61	13219212											
BCC Panel meters/BITE		TM 9-4935-1548-14			120							
AN/TSW-14	11568450											
PAR Panel meters/BITE		TM 9-4935-1548-14				120						
AN/MPQ-50 (XO-2)	11510155											
ROR Panel meters/BITE		TM 9-4925-1548-14		120								
AN/MPQ-51	10674604											
LCHR Panel meters/BITE		TM 9-4935-1548-14					360					
XM-192	10674109											
SIM Panel meters/BITE		TM 9-4925-1548-14								360		
AN/TPQ-29	10243300											
Generator, signal	HP202C or	TM 9-1430-1532-34-1								240		
	AN/UTRM-127	TM 9-1430-1532-34-1								240		
GETS Panel meters/BITE		TM 9-4935-542-34	120									
Test set, launcher	10292253											

Table C-3. Tool Kit Schedule Maintenance

Nomenclature	Part number	Reference	INTERVAL	
			OME	FME
Tool kit, field maintenance electro-mechanical				
Timer, interval	6645-00-303-7698	TM 9-4935-1540-14-1		360

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

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