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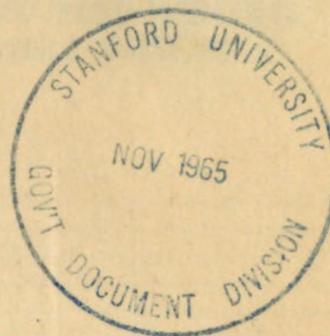
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DEPARTMENT OF THE ARMY PAMPHLET

750-1-2



PREVENTIVE MAINTENANCE GUIDE FOR COMMANDERS

**NIKE-HERCULES AND IMPROVED NIKE-HERCULES
AIR DEFENSE GUIDED MISSILE SYSTEM**



PAMPHLET
No. 750-1-2

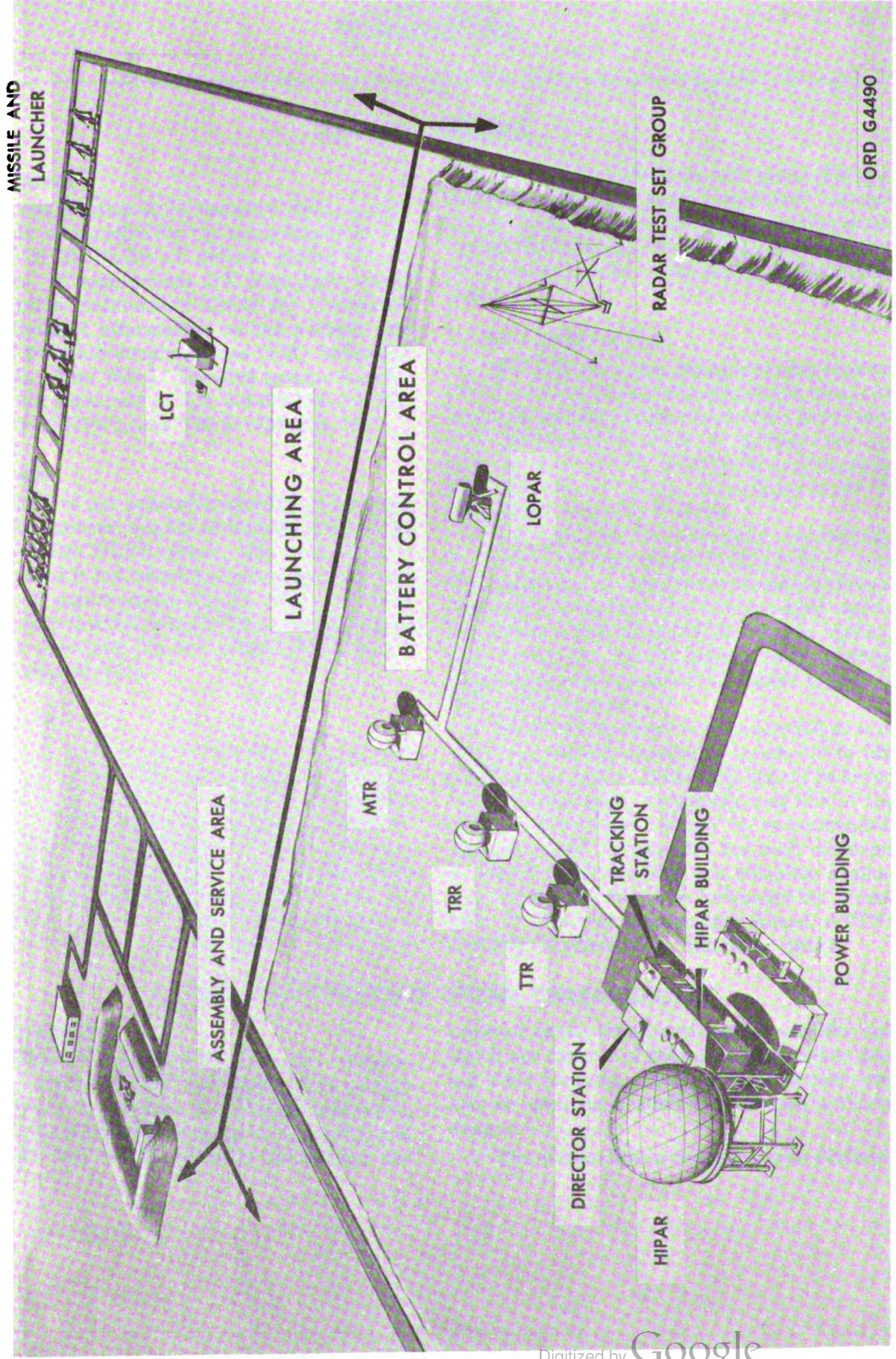
HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C. 18 August 1965

**PREVENTIVE MAINTENANCE GUIDE FOR COMMANDERS
NIKE-HERCULES AND IMPROVED NIKE-HERCULES
AIR DEFENSE GUIDED MISSILE SYSTEMS**

	Paragraph	Page
CHAPTER 1. INTRODUCTION		3
Section I. General		3
Purpose	1	3
Scope	2	3
Format	3	3
Procedures for use	4	3
Section II. NIKE-HERCULES system characteristics		3
Description	5	3
Section III. IMPROVED NIKE-HERCULES system characteristics		4
Description	6	4
Section IV. The plan of inspection		4
General	7	4
Operational PM indicators	8	5
Visual PM indicators	9	5
CHAPTER 2. TYPICAL PM INDICATORS		7
CHAPTER 3. BATTERY CONTROL AREA		
Section I. Director station		10
Operational indicators		12
Basic system		12
Improved system		14
ATBM system		16
Computer (basic, improved, and ATBM)		19
Section II. Tracking station		20
Tracking radar operational indicators		23
Section III. Antenna-receiver-transmitter group		24
Range and tracking radars		24
Acquisition radar		26
Antenna-mast group and radar test set		27
Section IV. High power acquisition radar		29
HIPAR systems 502 through 537 visual checks		29
Liquid cooler		30
Waveguide pressurizer		31
High voltage power supply		31
High voltage pulse generator		32
Klystron amplifier		32
HIPAR antenna		33
HIPAR systems 538 and above visual checks		34
Liquid cooler (538 thru 583)		35
Power control-indicator		35
High voltage power supply		36
Klystron amplifier		36
HIPAR antenna		37
Transmitter power output operational indicators		38
Minimum discernible signal check		38

*This pamphlet supersedes DA Pam 750-1-2, 20 December 1962

	Paragraph	Page
Section V. Radar-signal simulator station AN/MPQ-T1		39
Operational indicators		40
CHAPTER 4. LAUNCHING AREA		
Section I. Missile and launching set		42
Launcher and associated equipment		42
Missile-and-rocket motor cluster		44
Launcher and missile operational indicators		45
Section control indicator and simulator group		46
Operational indicators		47
Launching control trailer and flight simulator		48
Operational indicators		49
Section II. Servicing and test equipment		50
Servicing equipment		50
Test equipment		51
Section III. Handling equipment		52
CHAPTER 5. ALTERNATE BATTERY ACQUISITION RADAR (ABAR)		
ABAR visual checks		53
Amplitron power supply		54
Amplifier modulator		55
Air compressor		55
Transmitter and modulator		56
ABAR antenna		57
Operational indicators		59
CHAPTER 6. FIRE UNIT INTEGRATION FACILITY (FUIF)		
FUIF visual checks		60
Operational indicators		63
CHAPTER 7. CODER-DECODER GROUP		64



MISSILE AND LAUNCHER

LCT

LAUNCHING AREA

BATTERY CONTROL AREA

LOPAR

RADAR TEST SET GROUP

ASSEMBLY AND SERVICE AREA

MTR

TRR

TRR

TRACKING STATION

HIPAR BUILDING

POWER BUILDING

DIRECTOR STATION

HIPAR

ORD G4490

CHAPTER 1 INTRODUCTION

Section I. GENERAL

1. Purpose

This publication is for the use of commanders who are responsible for the maintenance of the NIKE-HERCULES air defense guided missile system. It supplements DA Pamphlet 750-1, Preventive Maintenance Guide for Commanders. Detailed information on the purpose and use of preventive maintenance (PM) indicators is in DA Pam 750-1. Detailed system descriptions are contained in TM 9-1400-250-10, TM 9-1400-250-10/2, and TM 9-1430-268-12/1.

2. Scope

Indicators are selected inspection points that show the general quality of maintenance of the NIKE-HERCULES system. The scope of these inspections is not broad enough to give the last word on maintenance quality. Nor are these inspections a substitute for the detailed system checks described in the NIKE-HERCULES technical manuals.

3. Format

This pamphlet presents indicators for each of the two major areas into which the NIKE-HERCULES system is divided: the battery control area and the launching area which includes the assembly and service area. An entire chapter is devoted to each of the areas. Indicators within the battery control area and the launching area are divided into two categories, visual indicators and operational indicators.

Only the visual indicators are given for the assembly and service area. In addition to coverage for these two areas, a separate chapter gives typical PM indicators for equipment which may be found anywhere in the NIKE-HERCULES system.

4. Procedures for Use

a. It is suggested that the commander observe a few of these checks, on a spot-check basis. It is recommended that the commander direct battery operational personnel to perform the desired checks while he observes the appropriate PM indicators as well as the manner in which the battery personnel function.

b. The status of the repair parts, availability of required current technical publications, and the availability of adequately trained technical personnel are factors vital to the proper operation of the NIKE-HERCULES missile system. The commander should inspect these maintenance aspects as suggested in Chapter 1, Section VII, of DA Pam 750-1.

c. Users of this Guide are encouraged to submit recommended changes or comments to improve the pamphlet. Comments should be keyed to the specific page, paragraph, and line of the text in which the change is recommended. Reasons should be provided for each comment to ensure understanding and complete evaluation. Comments should be forwarded to: President, U. S. Army Maintenance Board, ATTN: SSMMB-00, Fort Knox, Kentucky 40121.

Section II. NIKE-HERCULES SYSTEM CHARACTERISTICS

5. Description

a. The NIKE-HERCULES air defense guided missile system was designed to engage and destroy long-range, high-flying, supersonic, bomber-type aircraft formations and individual aircraft that would normally be beyond the

range of conventional antiaircraft artillery and which are capable of taking evasive action during their bombing missions. The system may also be used as a surface-to-surface artillery weapon.

b. The system uses a command-type guidance

which permits continuous correction of missile trajectory to adjust to changes or defensive maneuvers of the target. This is done by monitoring the position of the target and the missile by tracking radars and comparing the course of the missile with the course required for interception of the target. The comparison is performed by a computer in the battery control area. The computer generates steering commands which are transmitted to the missile via the beam of the missile tracking radar (MTR).

Section III. IMPROVED NIKE-HERCULES SYSTEM CHARACTERISTICS

6. Description

a. The Improved NIKE-HERCULES air defense guided missile system, with high power acquisition radar/alternate battery acquisition radar (HIPAR/ABAR), is capable of defending an area against attack by either hostile aircraft or tactical ballistic missiles. The system can do this in either a nonelectronic countermeasures or an electronic countermeasures (ECM) environment. The system can also engage surface targets.

b. The basic configurations of the NIKE-HERCULES system are the same in the Improved NIKE-HERCULES system but have been improved upon to increase system capability. The addition of the target ranging radar (TRR), which supplies only range information to the system, is a major improvement. Adding this radar increases the electronic counter countermeasures (ECCM) capabilities of the system without decreasing system efficiency. Also, modifications were made to the target tracking radar to increase its capability against small radar-cross-section targets.

Section IV. THE PLAN OF INSPECTION

7. General

In the following pages, preventive maintenance indicators are presented for each of the units of a NIKE-HERCULES battery. The indicators are keyed directly to the equipment, allowing a rapid, concise inspection. Preventive maintenance indicators of a general nature, in DA Pam 750-1, should be used with those in Chapter 2. Refer to the appropriate equipment guide in DA Pam 750-1 for inspection aids for items of equipment such as generators, trailers,

The computer also determines the optimum time of missile burst and generates the burst command which is transmitted via the missile tracking radar to the missile.

c. An acquisition radar, with associated selective identification feature/identification friend or foe (SIF/IFF), is used to detect, observe, and identify possible targets and to supply target azimuth and range information to the target tracking radar (TTR).

c. The improved systems may have two acquisition radars; the description depends upon which configuration is being discussed.

- (1) The first is the Improved NIKE-HERCULES with HIPAR. In this system, the NIKE-HERCULES acquisition radar, referred to as the low-power acquisition radar (LOPAR), remains unchanged. With the addition of HIPAR, the system detection range and ECCM capabilities are increased against both manned aircraft and tactical ballistic missiles.
- (2) The second is the Improved NIKE-HERCULES with ABAR. This system will also have two acquisition radars. The ABAR also provides increased range and ECCM capabilities.
- (3) In either configuration, the LOPAR will be equipped with an Anti-Jam Display (AJD) receiver to further increase ECCM capabilities.

air compressors, and test equipment. The inspection of the NIKE-HERCULES system should be performed by two methods: visual PM indicators and operational PM indicators. Either method may be first and both may be used while inspecting the major components. As you become more familiar with the equipment, you will learn of additional inspection points and their importance as part of the overall system checkout. For example, if there are many malfunctions traced to faulty connectors

which come to your attention, you may want to inspect the tightness of connectors and the cable layout.

8. Operational PM Indicators

Warning: Voltages and pressures dangerous to life are present when the equipment is energized. Exercise caution when performing inspections while power is on.

These indicators represent checks to be made with the equipment in operational status, with power applied, and crewmen standing by to perform the necessary operations. Make constant checks for indications of overheating, erratic actions, incorrect response, unusual noises, and voltage fluctuations. Check for correct air and hydraulic pressures; air, oil, and

fuel leaks; and the correct action of interlocks.

9. Visual PM Indicators

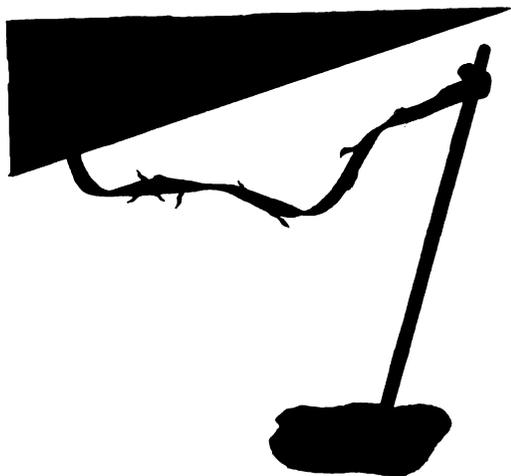
a. As the commander responsible for a personal inspection of the NIKE systems, you should determine which items of equipment you are going to inspect. You must become thoroughly familiar with Chapter 2, typical PM indicators. These indicators are found throughout the NIKE system. Select a few of the typical indicators and check them at each inspection station.

b. These indicators represent checks for the general appearance and apparent condition of the equipment. They are also an indication of the care the equipment receives from the maintenance specialist and the operator.

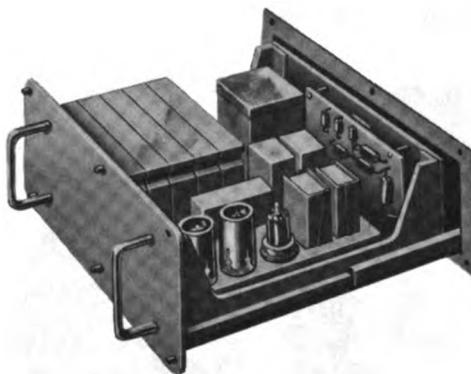
CHAPTER 2

TYPICAL PM INDICATORS

These indicators represent checks for the general appearance and condition of NIKE systems. They illustrate examples of maintenance failures which may exist anywhere in the system. Additional general indicators on equipment not specifically considered to be missile system components (common tools, fire extinguishers, etc.) are covered in DA Pam 750-1. During your inspection, pay particular attention to maintenance deficiencies similar to those shown in this chapter. Seals, markings, ducts, and other items are generally used throughout the NIKE systems. They are easy to overlook, but their proper functioning is vital to the effective operation of the system. In addition to the specific items illustrated, all equipment should be inspected for corrosion, rust, fungus, and general cleanliness. Hydraulic systems should show no signs of leakage.



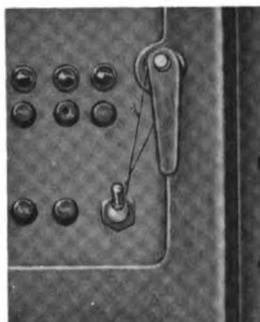
GROUNDS—grounding bars should not be loose in the ground. The connection to the strap should be tight, and the strap should have no broken strands. The connection to the equipment should be tight.



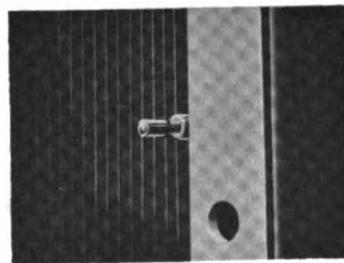
ELECTRONIC CHASSIS—no signs of moisture or corrosion, tube shields present where a base for the shield is present, chassis markings legible, no loose components. The chassis moves freely on its slides, all fasteners are present and functional.



INTERLOCKS—secure, have free movement.

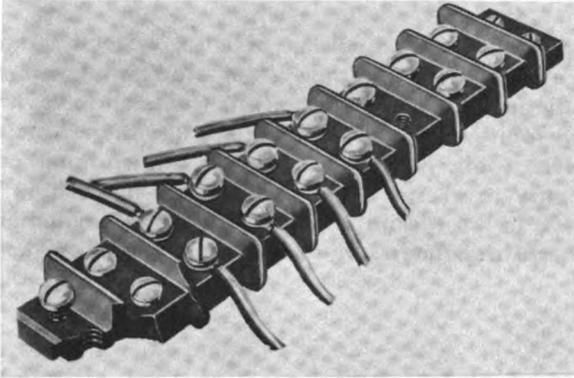


INTERLOCK OVERRIDE SWITCH
—not permanently cheated.

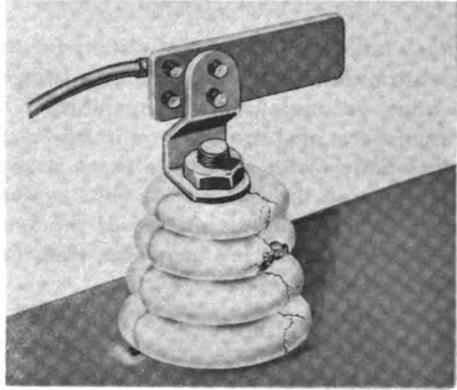


INTERLOCKS—secure, have free movement.
ORD G4440

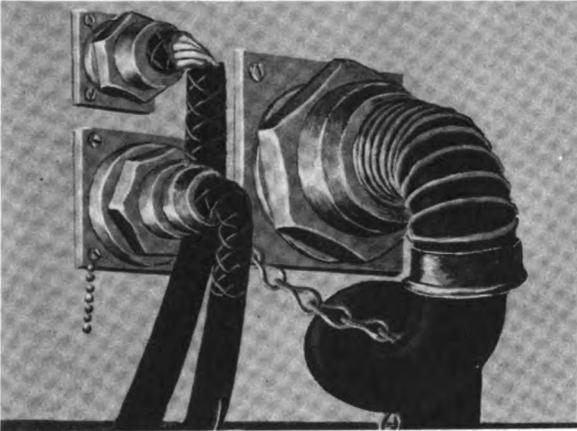
TYPICAL PM INDICATORS (continued)



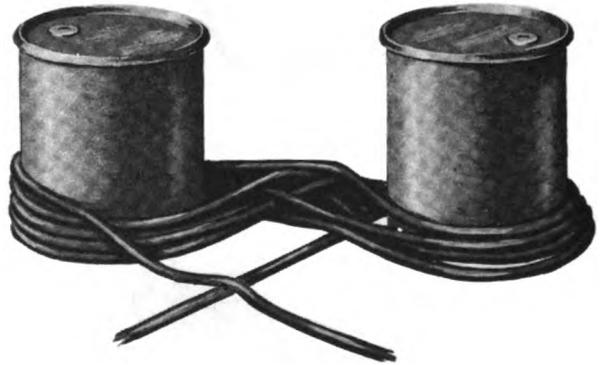
TERMINAL BOARDS—secure, clean, good connection, no missing or damaged screws, strips not cracked, and safety covers in place, if required.



HIGH VOLTAGE LEADS—no dust collection, no paint or cracks, no indication of carbon buildup.



CABLES, COVERS AND CONNECTORS—cables not kinked or under heavy strain. No sharp bends or damaged insulation, properly color coded, covers present and in place on unused connectors. Cable insulation should be free of paint.



SLACK CABLES—Arranged in "figure eight" pattern; no sharp bends or kinks.



METERS AND GAGES—facings clean and not broken. Pointers must not be bent or broken.

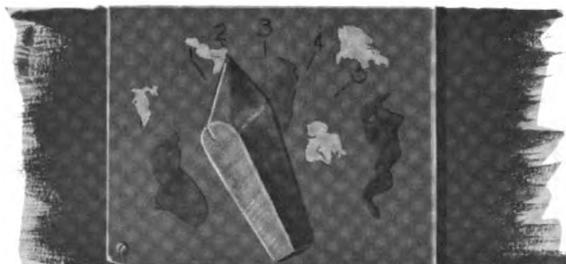


FUSES—ampere ratings on the fuses must be the same as those stenciled on the fuse and control panels, and be of the correct diameter.
ORD 64441

TYPICAL PM INDICATORS (Continued)



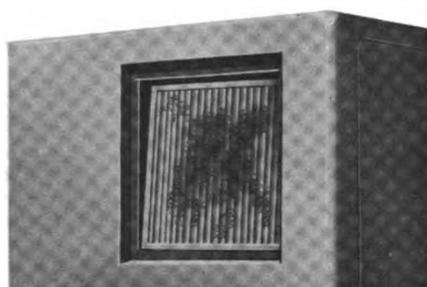
INDICATOR LENSES—clean, not missing, cracked, or broken.



CONTROLS AND SWITCHES—must work freely without binding or rubbing, and without excessive play or looseness. Setscrews in rotary-switch knobs must be secure. (The range switch on the PPI uses mechanical linkage with a universal joint; some movement is normal with this type control-switch combination.)



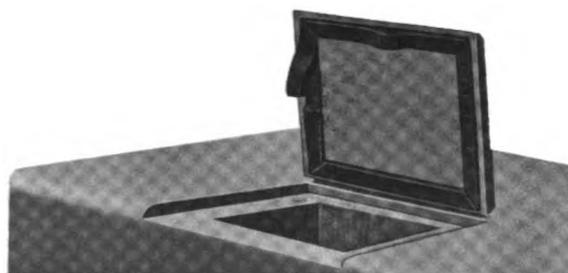
MARKINGS—not covered by dirt, legible, wording relates to the equipment, no evidence of missing markings.



AIR FILTERS—not rusted or corroded, not cocked or tilted, not excessively dirty. Some dirt on the face of an intake filter denotes air flow.



LADDERS AND PLATFORMS—clean, securely installed, and free of obstacles.



DOORS, COVERS, LIDS, AND PANEL SEALS—securely attached, not broken or cracked, pliable enough that the seal can easily be dented by the thumbnail. Fasteners fit securely and are not missing.

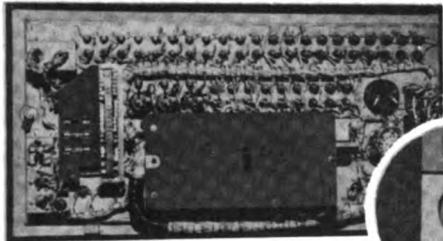
ORD 64442

CHAPTER 3

Section I. DIRECTOR STATION

Begin your inspection of the director station by performing a visual inspection as outlined in the typical Indicator chapter.

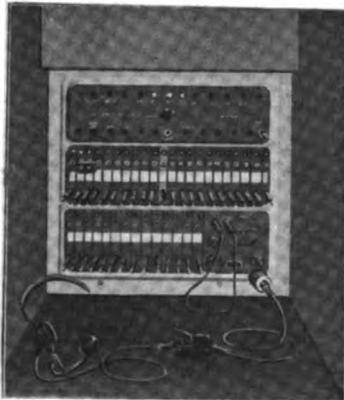
Warning: Voltages DANGEROUS TO LIFE are present when the equipment is energized. Exercise caution when performing inspections while power is on. Do not perform inspections, either visual or operational, on open chassis with power applied.



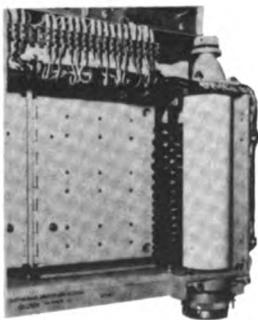
- ① Assume blackout status and inspect the blackout switch, insuring that the white and blue lights operate properly.



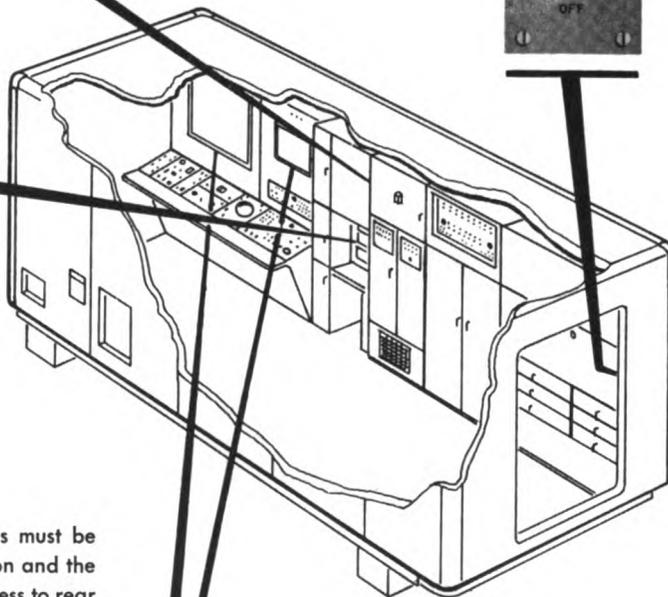
- ② Instruct the crewman to open the acquisition-power control-panel located on the director station group. Inspect the equipment cooling system.

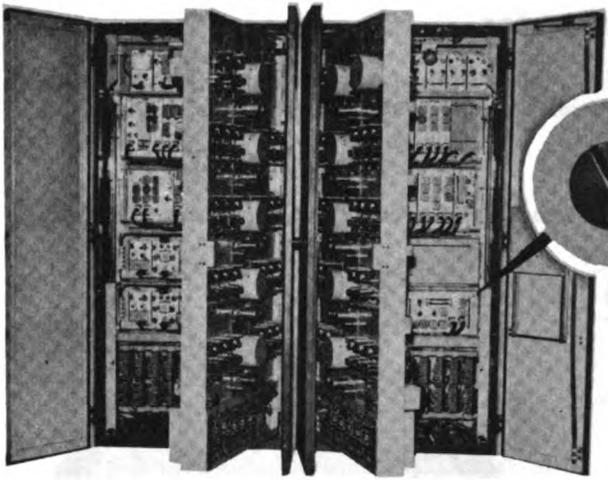


- ③ The telephone station should be clean. The cables must be firmly attached, with no gaps between the insulation and the wire attachment point. Instruct crewman to gain access to rear of telephone station. Inspect the batteries for leakage and corrosion.



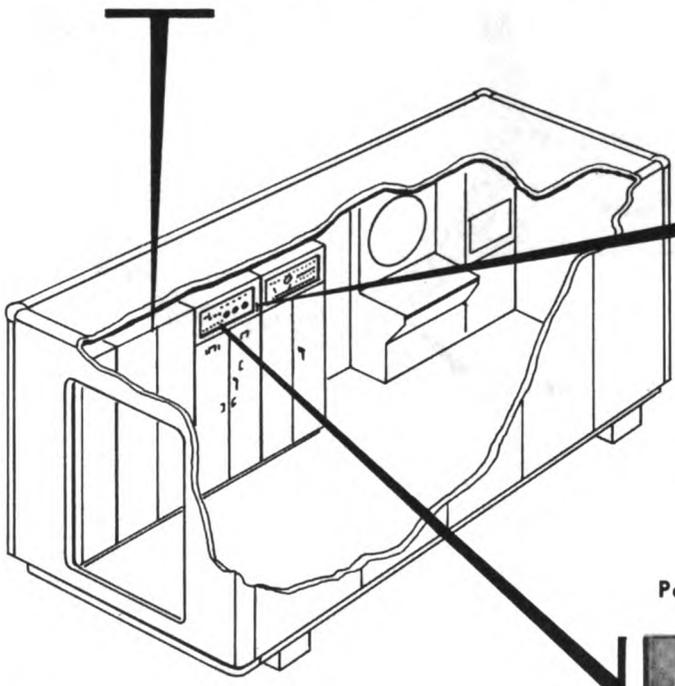
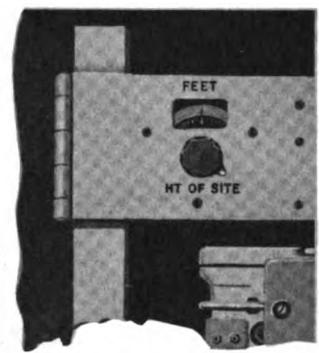
- ④ Instruct the crewman to open the plotting board cabinets. Each roll should have enough tracing paper for several missions.



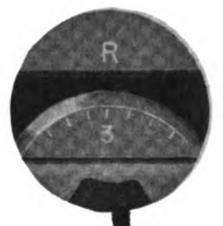


8 Instruct the crewman to open the doors and swinging frames on the amplifier relay group cabinets. All of the panel fasteners must be securely fastened.

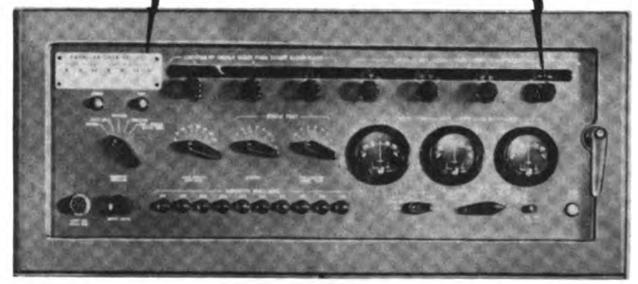
7 Instruct the crewman to open the computer control panel. The height-of-site dial should be set to the actual height above sea level of the launcher.



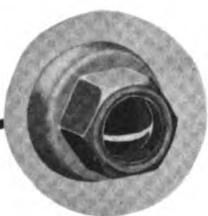
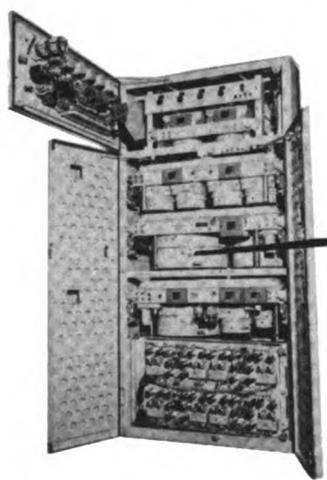
Parallax Data Record



Parallax Potentiometers



6 The parallax potentiometers should agree with the PARALLAX DATA RECORD.



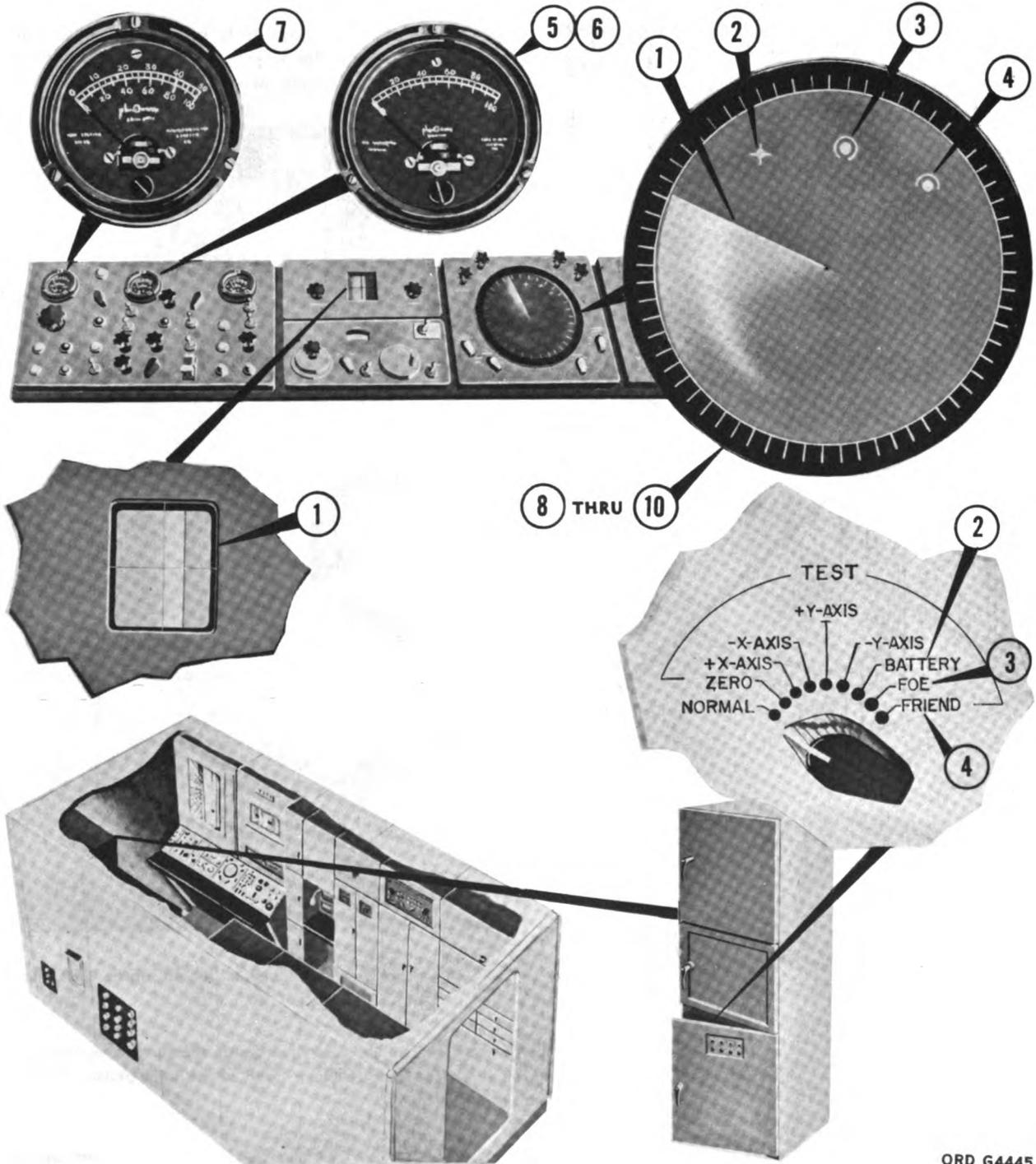
5 Instruct the crewman to open the cabinet doors on the servo computer assembly. The oil level should be visible in each of the sight glasses. There should be no signs of oil leakage.

OPERATIONAL INDICATORS

The operational preventive maintenance indicators have been broken out separately for Basic, Improved, and ATBM systems. Insure that the section selected corresponds to the equipment being inspected.

BASIC SYSTEMS

Your inspection station is within the trailer mounted director station group, the battery control console, and the target data processing unit.



ORD G4445

- ① Instruct the operator to energize the acquisition radar to low voltage. Set the antenna RPM switch to 10.
- ② Instruct the operator to set the TEST switch on the PPI test panel to BATTERY.
- ③ Set the TEST switch to FOE.
- ④ Set the TEST switch to FRIEND.
- ⑤ Have the main-channel receiver-noise checks performed.
- ⑥ Have the auxiliary-channel receiver-noise checks performed.
- ⑦ Instruct the operator to energize through high voltage.
- ⑧ Have the RECEIVER STC knob set fully clockwise.
- ⑨ Condition the receiver for each mode of operation.

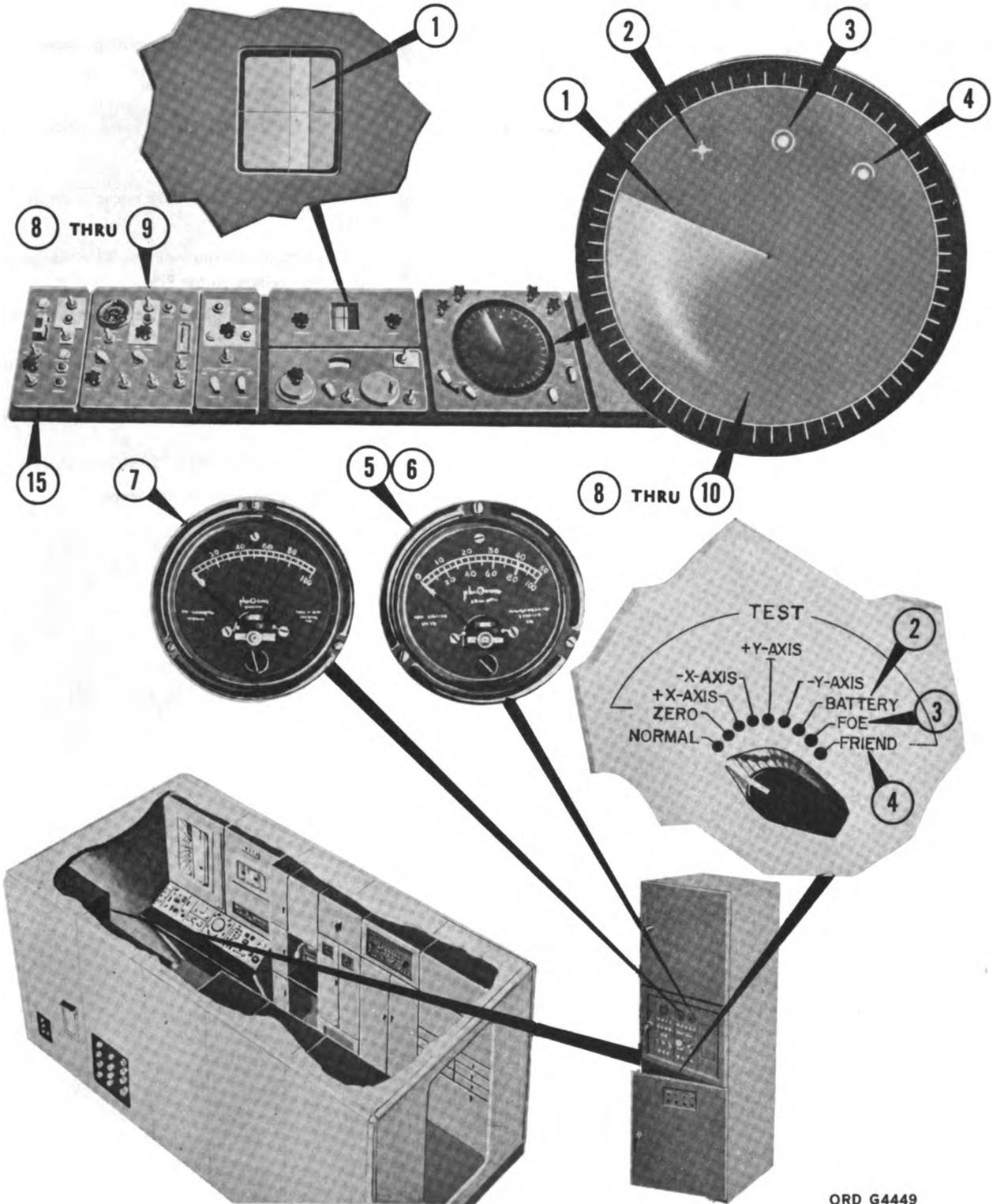
Note. Intensity and gain adjustments are varied according to operator's preference.

- ⑩ Instruct the operator to select AAR video, if available.

- ▶ The sweep of the PPI rotates at 10 RPM's and the sweep on the PI appears once each antenna rotation.
- ▶ A defocused spot appears on the PPI.
- ▶ A small circle with a 30° arc missing appears on the PPI.
- ▶ A semicircle appears on the PPI.
- ▶ The MAG FREQ & REC NOISE meter indicates 48 or less.
- ▶ The MAG FREQ & REC NOISE meter indicates 48 or less.
- ▶ The MAGNETRON meter indicates 30 milliamperes and video appears on the PPI.
- ▶ Ground clutter is not present near the center of the PPI scope.
- ▶ Video appears on the PPI scope for each mode of operation selected.
- ▶ AAR video appears on the PPI scope.

IMPROVED SYSTEMS

Your inspection station is within the trailer mounted director station, and consists of the director station group, the battery control console, and the auxiliary acquisition interconnecting group.



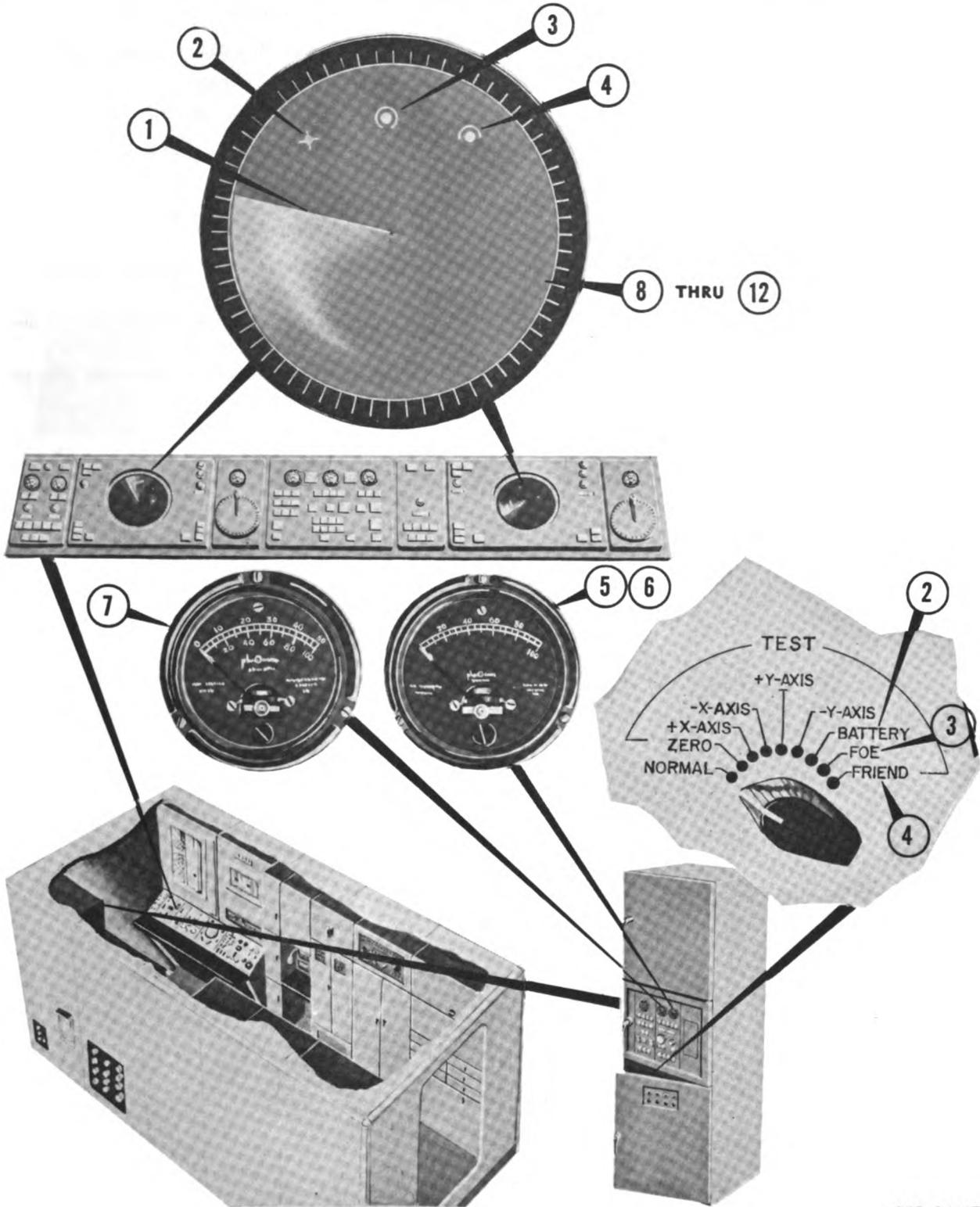
ORD G4449

- ① Instruct the operator to energize the acquisition radar to low voltage. Set the antenna RPM switch to 10.
- ② Instruct the operator to set the TEST switch on the PPI test panel to BATTERY.
- ③ Set the TEST switch to FOE.
- ④ Set the TEST switch to FRIEND.
- ⑤ Have the main-channel receiver-noise checks performed.
- ⑥ Have the auxiliary-channel receiver-noise checks performed.
- ⑦ Instruct the operator to energize through high voltage.
- ⑧ Have the receiver STC knob set fully clockwise.
- ⑨ Condition the receiver for each mode of operation.
Note. Intensity and gain adjustments are varied according to operator's preference.
- ⑩ Instruct the operator to select HIPAR/ARR operation.

- ▶ The sweep of the PPI rotates at 10 RPM's and the sweep on the PI appears once each antenna rotation.
- ▶ A defocused spot appears on the PPI.
- ▶ A small circle with a 30° arc missing appears on the PPI.
- ▶ A semicircle appears on the PPI.
- ▶ The NOISE meter indicates 48 or less.
- ▶ The NOISE meter indicates 48 or less.
- ▶ The MAGNETRON meter indicates 30 milliamperes and video appears on the PPI.
- ▶ Ground clutter is not present near the center of the PPI scope.
- ▶ Video appears on the PPI scope for each mode of operation selected.
- ▶ HIPAR/AAR video appears on the PPI scope.

ATBM SYSTEMS

Your inspection station is within the trailer mounted director station, and consists of the director station group, the battery control console, and the auxiliary acquisition interconnecting group.



ORD G4447

- ① Instruct the operator to energize the acquisition radar to low voltage. Set the antenna RPM switch to 10.
- ② Instruct the operator to set the TEST switch on the PPI test panel to BATTERY.
- ③ Set the TEST switch to FOE.
- ④ Set the TEST switch to FRIEND.
- ⑤ Have the main-channel receiver-noise checks performed.
- ⑥ Have the auxiliary-channel receiver-noise checks performed.
- ⑦ Instruct the operator to energize through high voltage.
- ⑧ Have the receiver STC knob set fully clockwise.
- ⑨ Condition the receiver for each mode of operation.

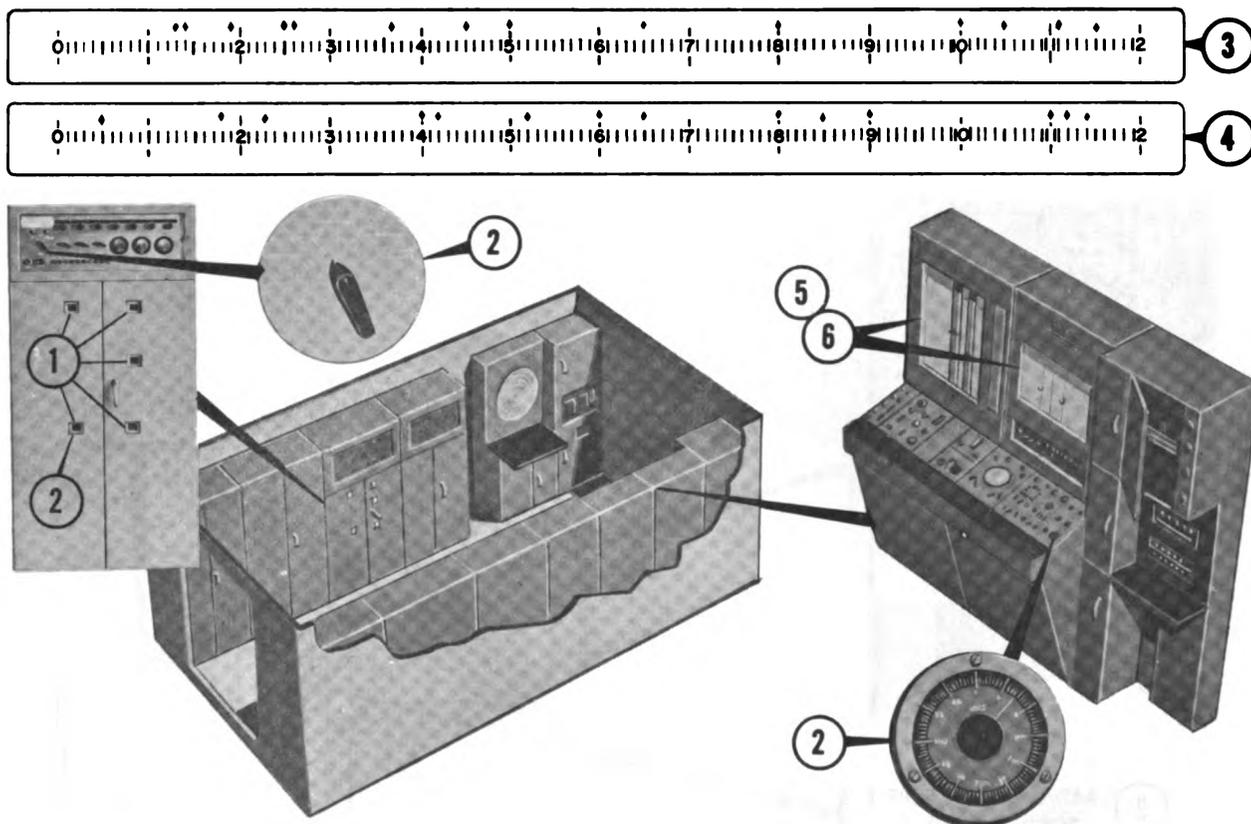
Note. Intensity and gain adjustments are varied according to operator's preference.

- ⑩ Instruct the operator to depress the LONG PERST—SHORT PERST switch indicator on both PPI scopes.
- ⑪ Instruct the operator to depress the ERASE switch indicators on both PPI scopes.
- ⑫ Instruct the operator to select HIPAR/AAR operation.

- ▶ The sweep of the PPI's rotates at 10 RPM's.
- ▶ A defocused spot appears on the PPI.
- ▶ A small circle with a 30° arc missing appears on the PPI.
- ▶ A semicircle appears on the PPI.
- ▶ The noise meter indicates 48 or less.
- ▶ The noise meter indicates 48 or less.
- ▶ The magnetron meter indicates 30 milliamperes and video appears on the PPI.
- ▶ Ground clutter is not present near the center of the PPI scope.
- ▶ Video appears on the PPI scope for each mode of operation selected.
- ▶ The LONG PERST indicator illuminates and any video present on the PPI scopes increase in intensity with each rotation of the PPI sweep.
- ▶ The ERASE switch indicator illuminates and no presentation appears on the PPI scopes during the 1-second erase period.
- ▶ HIPAR/AAR video appears on the PPI scope.

COMPUTER (Basic, Improved, and ATBM)

Begin your inspection by instructing the crewman to condition the computer to **STANDBY**. The amplifier overload lights may flash several times as the servos drive to this position. In a few seconds, the lights should stop flashing and the servo dials should settle to the values indicated in step (1).



① CLIMB ANGLE (CA)—1600
GYRO AZIMUTH (AG)—400

TURN ANGLE (TA)—0
BALLISTIC EL (B)—370

TIME TO INTERCEPT (T)—60-65

Instruct the crewman as outlined in this column.

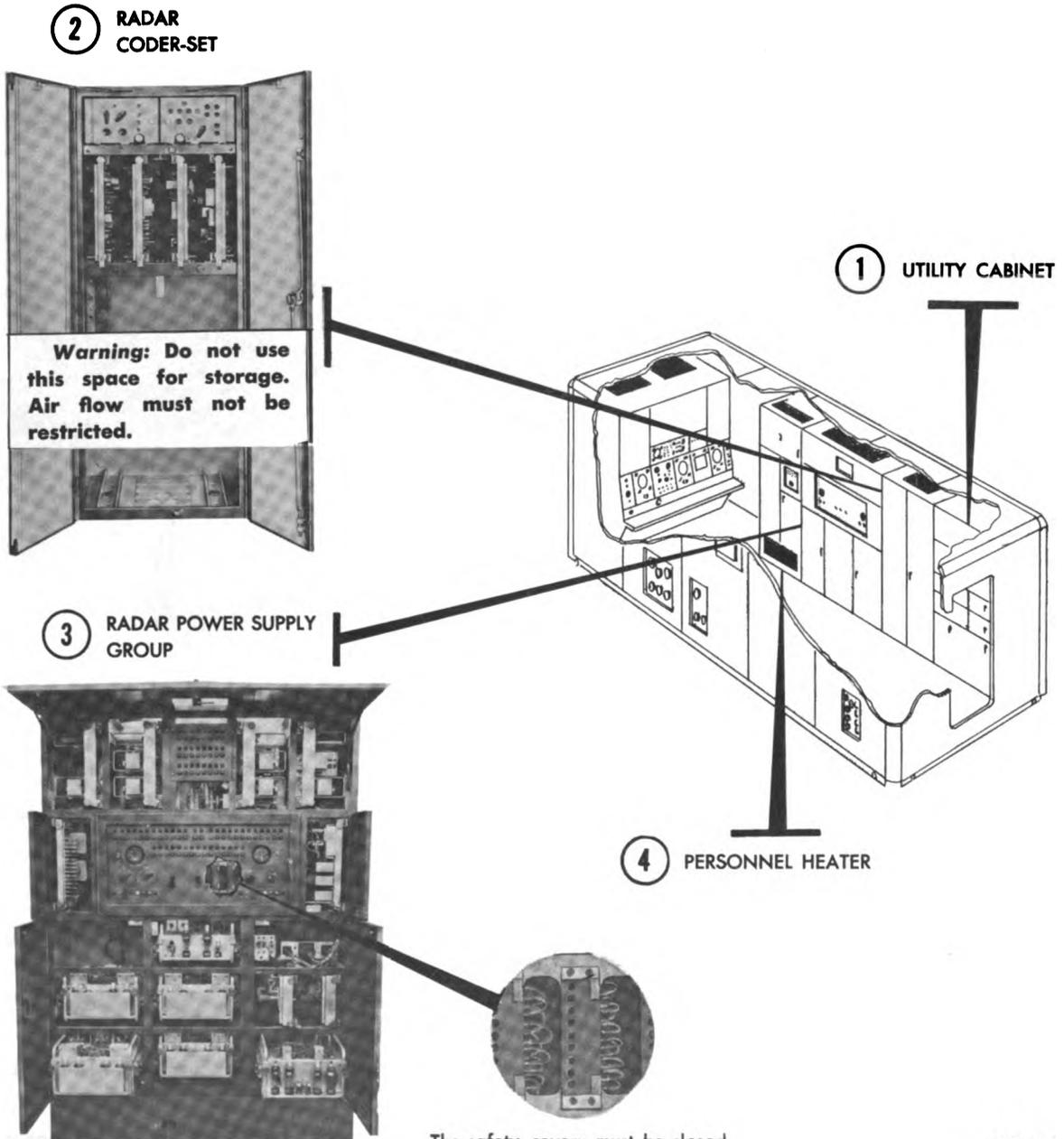
The correct indication is described in this column.

- | | |
|--|---|
| <p>② Rotate the AG selector switch to each position.</p> <p>③ Condition the multi-channel data recorder for a zero check.</p> <p>④ Condition the multi-channel data recorder for a calibrated check.</p> <p>⑤ Cause the plotting board to scribe reference marks.</p> <p>⑥ Perform dynamic test course II.</p> | <p>▶ The reading on the GYRO AZIMUTH dial corresponds to the switch position.</p> <p>▶ The galvanometer traces appear in the zero position.</p> <p>▶ The galvanometer traces appear in the calibrated position.</p> <p>▶ The scribe traces conform to the description contained in TM 9-1430-250-20/3.</p> <p>▶ The scribe traces compare with those illustrated in TM 9-1430-251-12/1.</p> |
|--|---|

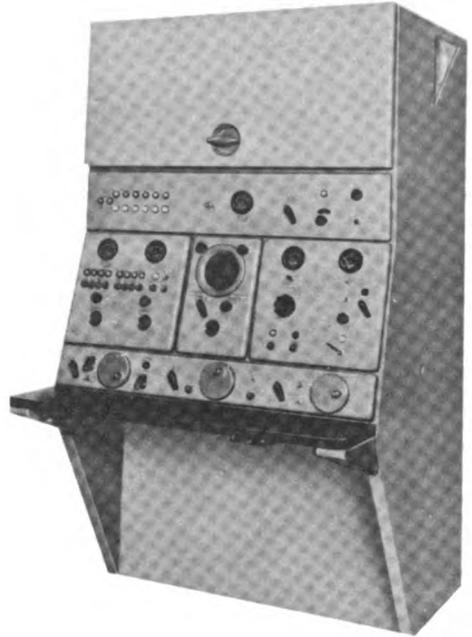
ORD 64452

Section II. TRACKING STATION

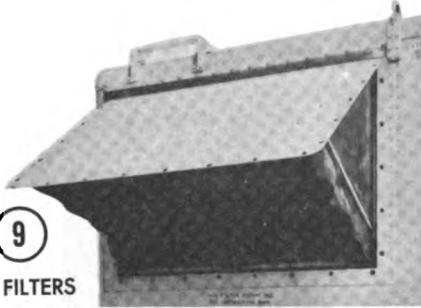
Begin your inspection of the tracking station by performing a visual inspection as outlined in the typical indicator chapter. The filters, Item 9, are on the exterior of the van and may be inspected either first or last.



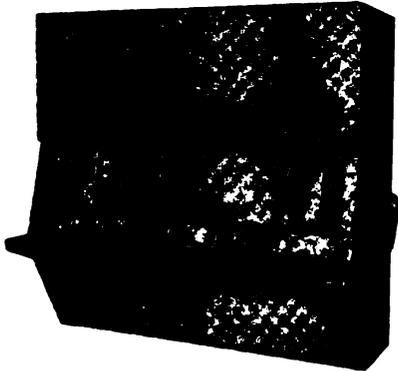
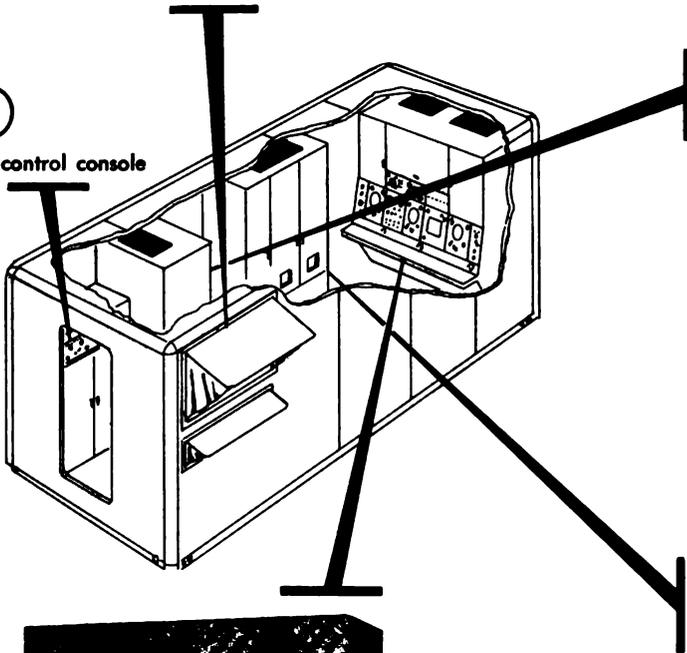
7 MISSILE-RADAR-CONTROL CONSOLE



9 FILTERS

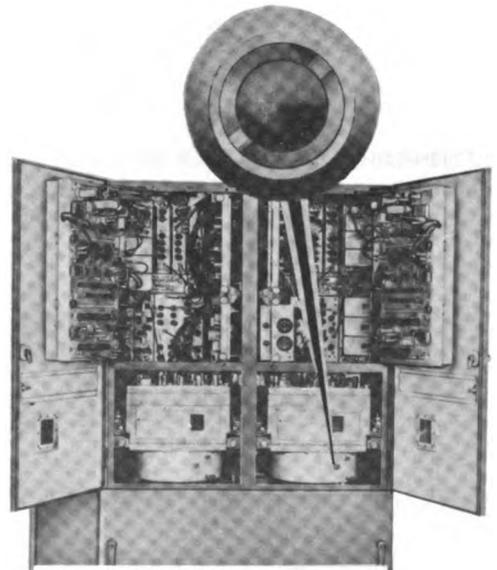


8 TRR control console



5 TARGET-RADAR-CONTROL CONSOLE
Scope faces must be free of scratches.

6

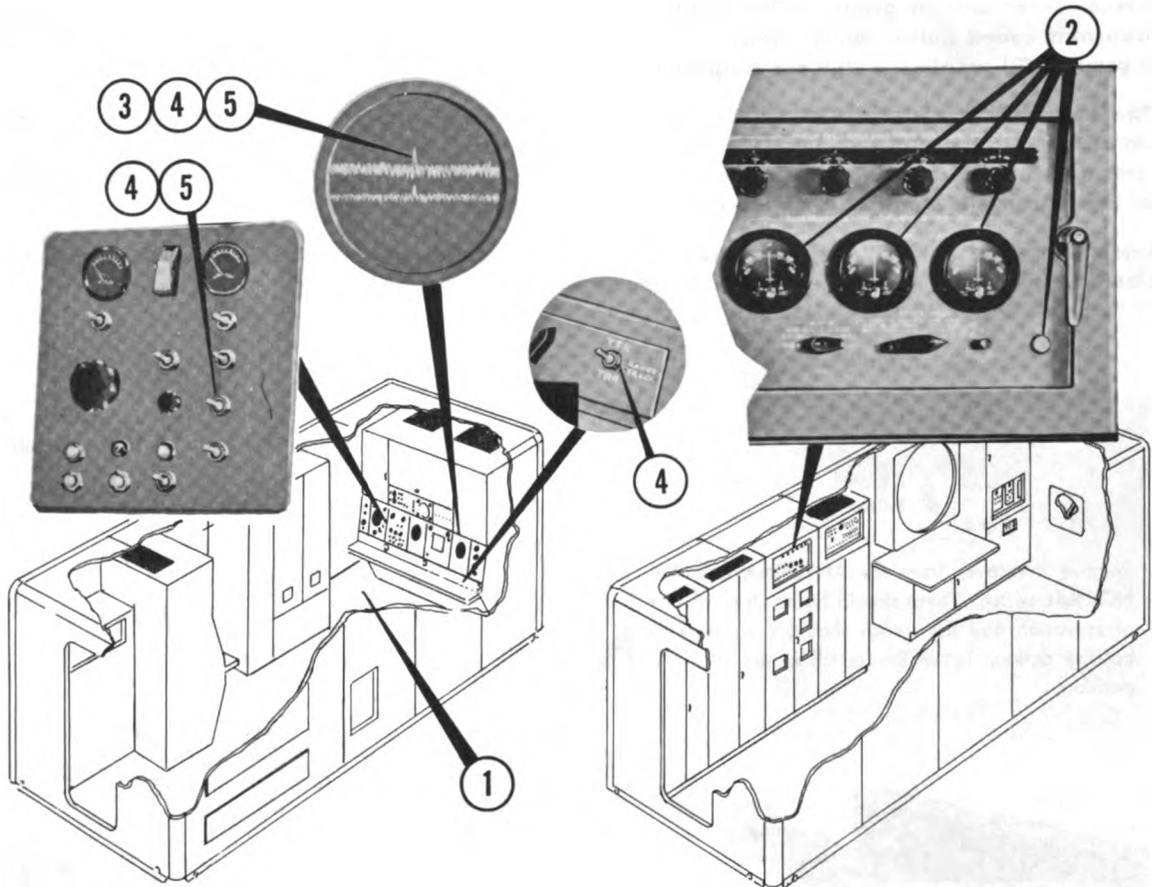


RADAR SET GROUP
The oil should be visible in the site glass.

ORD G4454

TRACKING RADAR OPERATIONAL INDICATOR

Your inspection stations for this inspection are the tracking station and the director station. On NIKE-HERCULES systems, perform steps 1 and 2 only. On Improved NIKE-HERCULES, perform all steps.



① Have the crewmen prepare for a simultaneous tracking test as prescribed in TM 9-1430-252-12/1 (NIKE-HERCULES) or TM 9-1430-256-12/1 (Improved NIKE-HERCULES). When the equipment is conditioned, perform the following checks:

- ② Enter the director station and depress the POS ► The ACCELERATION, VELOCITY AND POSITION DIFFERENCE meters indicate within the tolerances specified in the TM.
- ③ Return to the target radar control console in the tracking station. ► A target pip is centered in the range notch.
- ④ Set the RANGE TRACK switch to TRR and the PULSE ► The target pip remains centered in the range notch.
switch to LONG.
- ⑤ Alternately set the PULSE switch to SHORT and ► The target pip remains centered in the range notch.
LONG.

ORD G4456

Section III. ANTENNA-RECEIVER-TRANSMITTER GROUP

Warning: Because of the radiation hazard, the transmitters must be deenergized. Instruct the crewman to deenergize the MTR, TTR, and TRR transmitters and post the DO NOT ENERGIZE signs.

RANGE AND TRACKING RADARS

The NIKE-HERCULES system uses two antenna-receiver-transmitter groups. The missile tracking antenna-receiver-transmitter group (MTR) supplies continuous missile-position information to the computer and transmits coded pulses which direct the missile in flight. The target-tracking antenna-receiver-transmitter group (TTR) supplies continuous target-position information to the computer.

The Improved NIKE-HERCULES system uses the target ranging antenna-receiver-transmitter group (TRR) in addition to the MTR and TTR. The TRR supplies continuous target-range-position information to the computer and the TTR and TRR presentation systems. The TRR is slaved to the TTR in azimuth and elevation. Each of these groups is identical in appearance and may be inspected by this procedure.

Prior to your inspection, instruct the crewman to open all pedestal doors and remove the covers from the telescope mount and the canvas cover from one or more of the pedestal legs.

**ANTENNA
DISABLE**

NORMAL

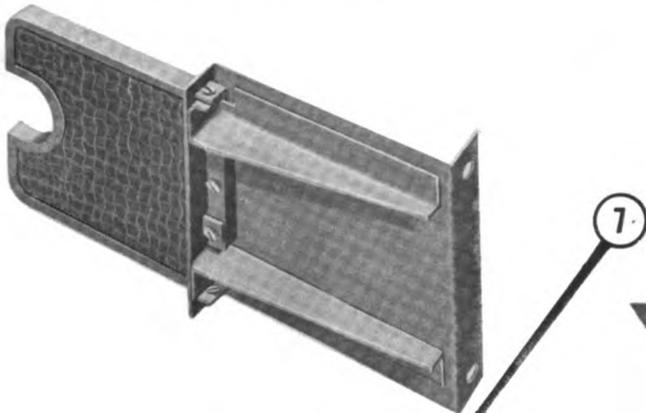
- 1 Remove the cover from the ANTENNA DISABLE NORMAL switch. There should be no signs of dirt or corrosion and the switch should operate with positive action. Leave the switch in the DISABLE position.
- 2 Instruct the crewman to remove the telescopes from the pedestal storage compartment. Inspect the telescope for dirt, rust, corrosion, and cloudy or broken lenses. Telephone and batteries should be free of moisture and corrosion.
- 3 Inspect the terminal boards for loose connection, dirt, corrosion, and the compartment for signs of leakage.

ORD G4457

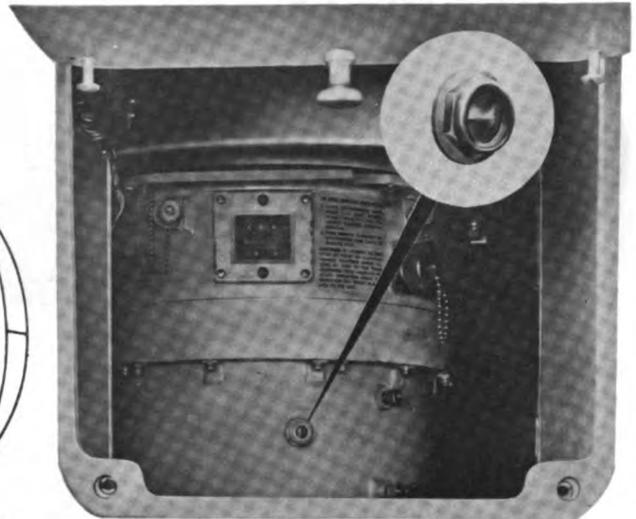
- 8 Have the crewman enter the radome and remove the two air filters from the equipment enclosure. Some dirt denotes air flow; however, it should not be excessive.



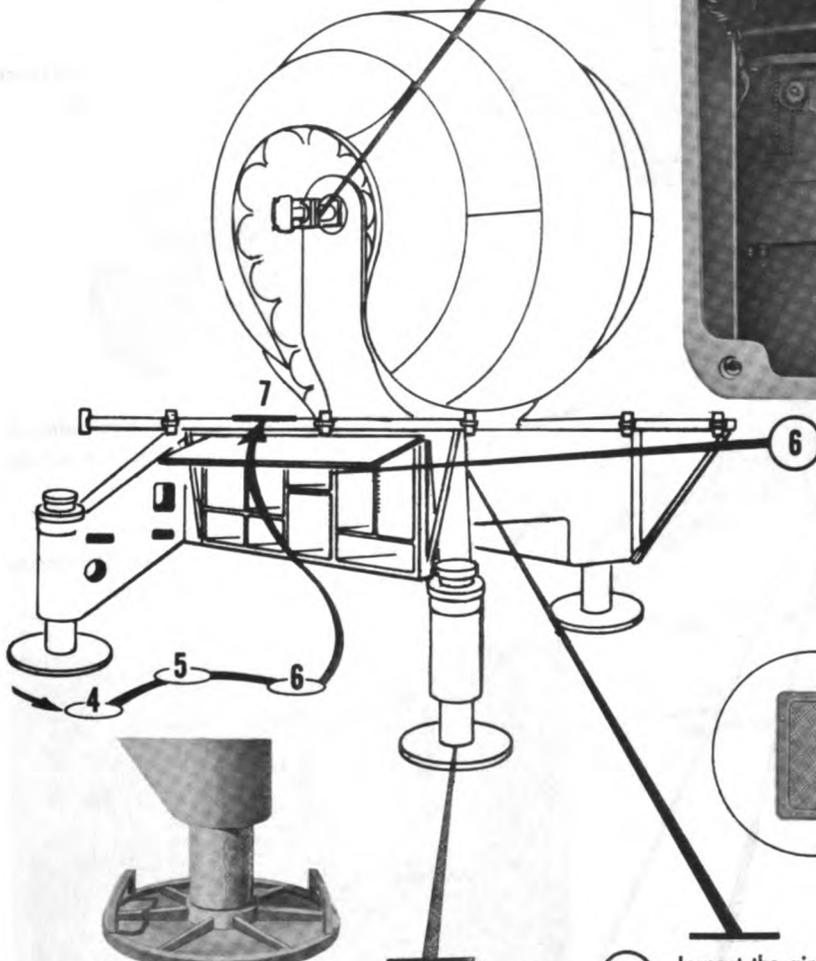
Mount the antenna platform and inspect the telescope mount. The mount should be free of rust, dirt, and paint on the machined surfaces.



7

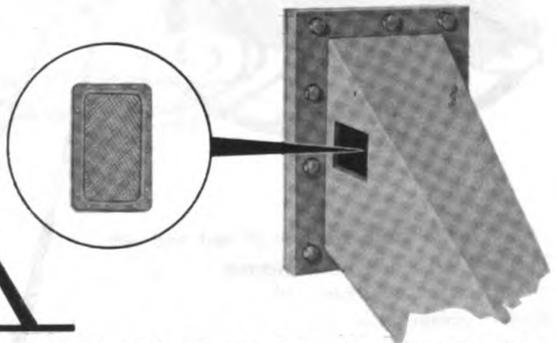


6 The azimuth drive equipment enclosure should show no signs of rust, corrosion, or moisture. The chassis should be securely mounted and oil should be visible in the sight glass on the potentiometer.



4 The pistons should be free of rust, paint, and corrosion and should have a light coat of grease.

5 Inspect the air intake filter located under each antenna leg. Some dirt on the face of the filter denotes airflow; however, it should not be excessive. Inside of pedestal legs should be free of rust, dirt, and corrosion.



ACQUISITION RADAR

Warning: Because of the radiation hazard, the transmitters must be deenergized. Instruct the crewman to deenergize the MTR, TTR, and TRR, transmitters and post the DO NOT ENERGIZE signs, and place the antenna ON-OFF switch S1 in the OFF position.

Begin your inspection of the LOPAR by instructing the crewman to set the antenna disable switch to OFF and to remove all covers.

1 Remove the cover from the antenna ON-OFF switch S1 and inspect for dirt and corrosion. Leave the switch in the OFF position.

2 The jacks are free of rust and dirt and must be lubricated.

3 LEGS AND LEG BRACES — The leg braces are free of rust and dents and are properly secured to the antenna pedestal legs with captive hex nuts.

4 The level should not be cracked or broken and the antenna should be level. The case is free of excessive rust and dents.

5 The guide rail is properly secured. The clamps and lifting eyes are free of corrosion.

6 The waveguide covers are not corroded or missing, and flexible waveguides are not deteriorated.

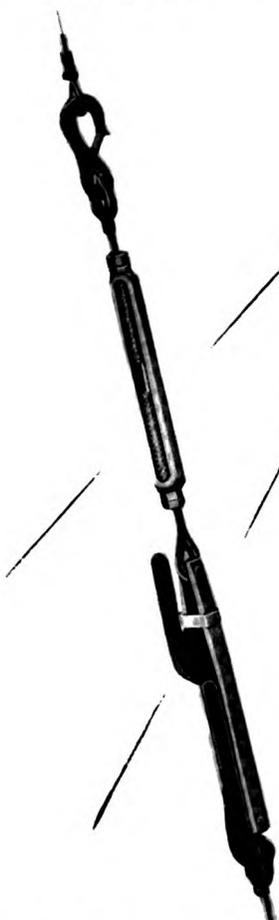
7 OIL LEVEL — The site glass is not cracked or broken and oil is visible in the window.

8 Visually check the radome and IFF equipment for damage.

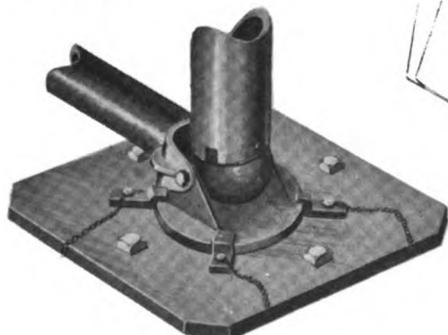
ANTENNA— MAST GROUP AND RADAR TEST SET

Begin your inspection in this area by checking the stay wires. They should be reasonably tight and no slack present.

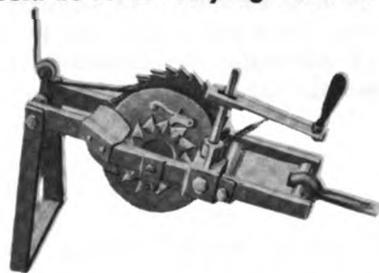
- ① Turnbuckles should be free of dirt and rust and must be lubricated.



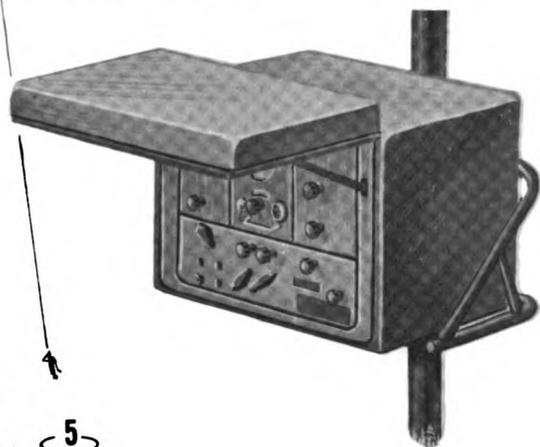
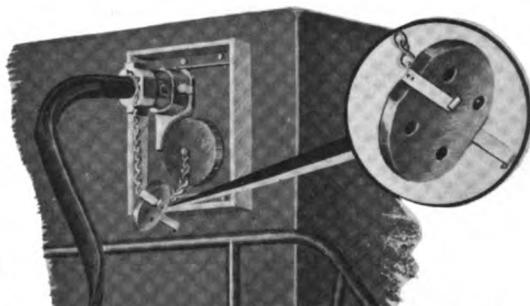
- ② Check that the base plate is not rusted or corroded. Check that the clamps, bolts, cotter pins, and the stakes are not missing.



- ⑤ Inspect the wire rope hoist. It must be lubricated and free of dirt and rust. The rope must have approximately two feet of slack.



- ④ Check that the waveguide cover is present and not damaged or corroded, and flexible waveguides are not deteriorated.



- ③ Insure that the equipment rack and the radar test set are properly secured. Have the crewman open the test set cover and the chassis drawers. The interior must be clean and free of corrosion. Check the two air filters in the bottom and back for cleanliness.

ORD G4460

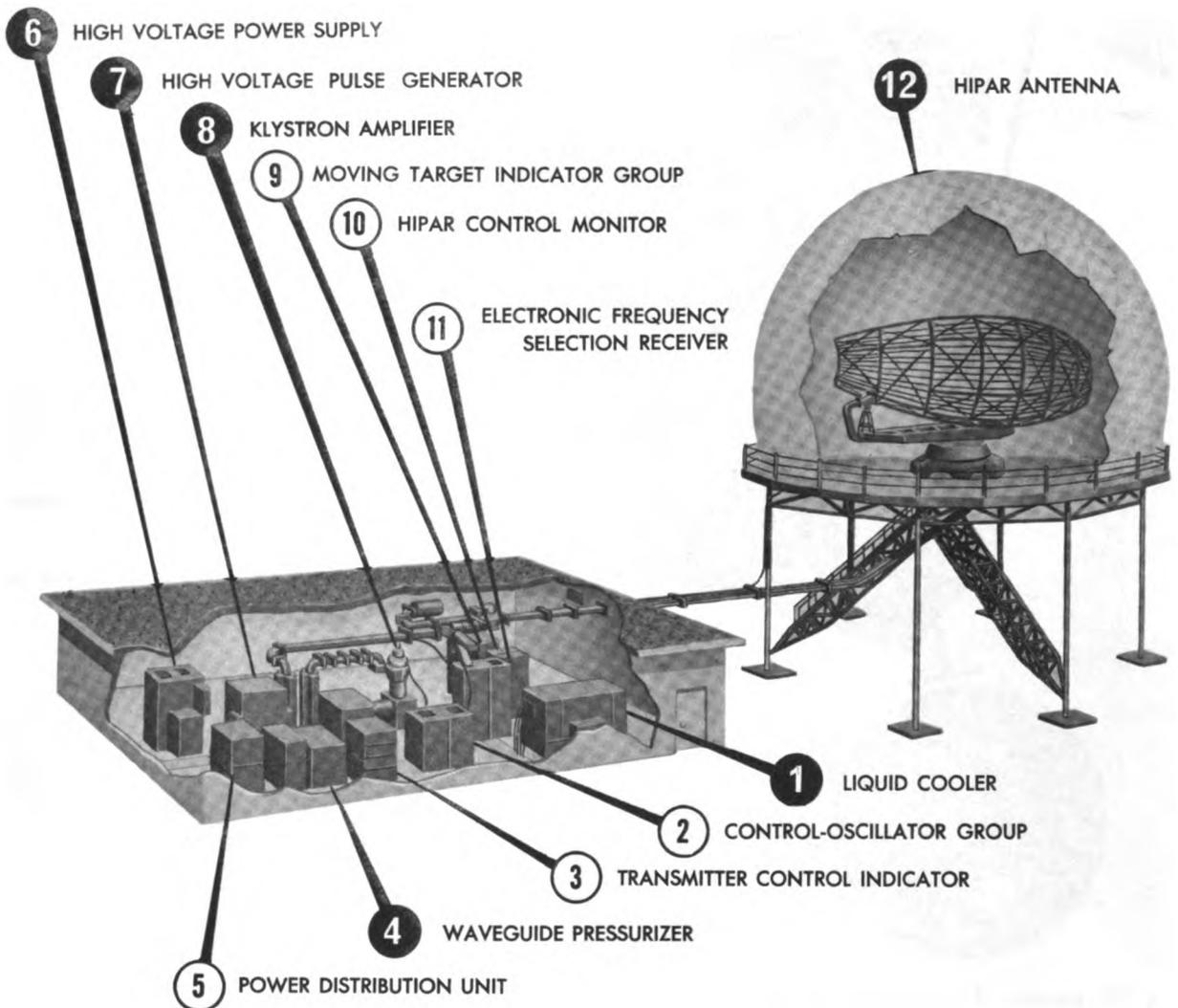
Section IV. HIGH POWER ACQUISITION RADAR

Two series of checks are provided: the first, written for systems 502 through 537, contains identical checks for each system within the series; the second, written for systems 538 and above, has many variations. These variations, caused by improvements in the system during production, are identified by the production cut-in serial number where the change was made. Determine the system serial number of the system to be inspected, and then follow the applicable series of instructions.

HIPAR SYSTEMS 502 THROUGH 537 VISUAL CHECKS

Warning: Some units contain voltages DANGEROUS TO LIFE with power applied and after power is removed. These units contain warning plates with grounding instructions. Have the crewman identify these units, and observe and adhere to these instructions prior to performing any inspections.

Visual checks, performed with the system deenergized, should be performed in the sequence shown on the following locational diagram. All the cabinets should be inspected for the typical indicators. In addition, the specific checks listed for items 1, 4, 6, 7, 8, and 12 should be performed.

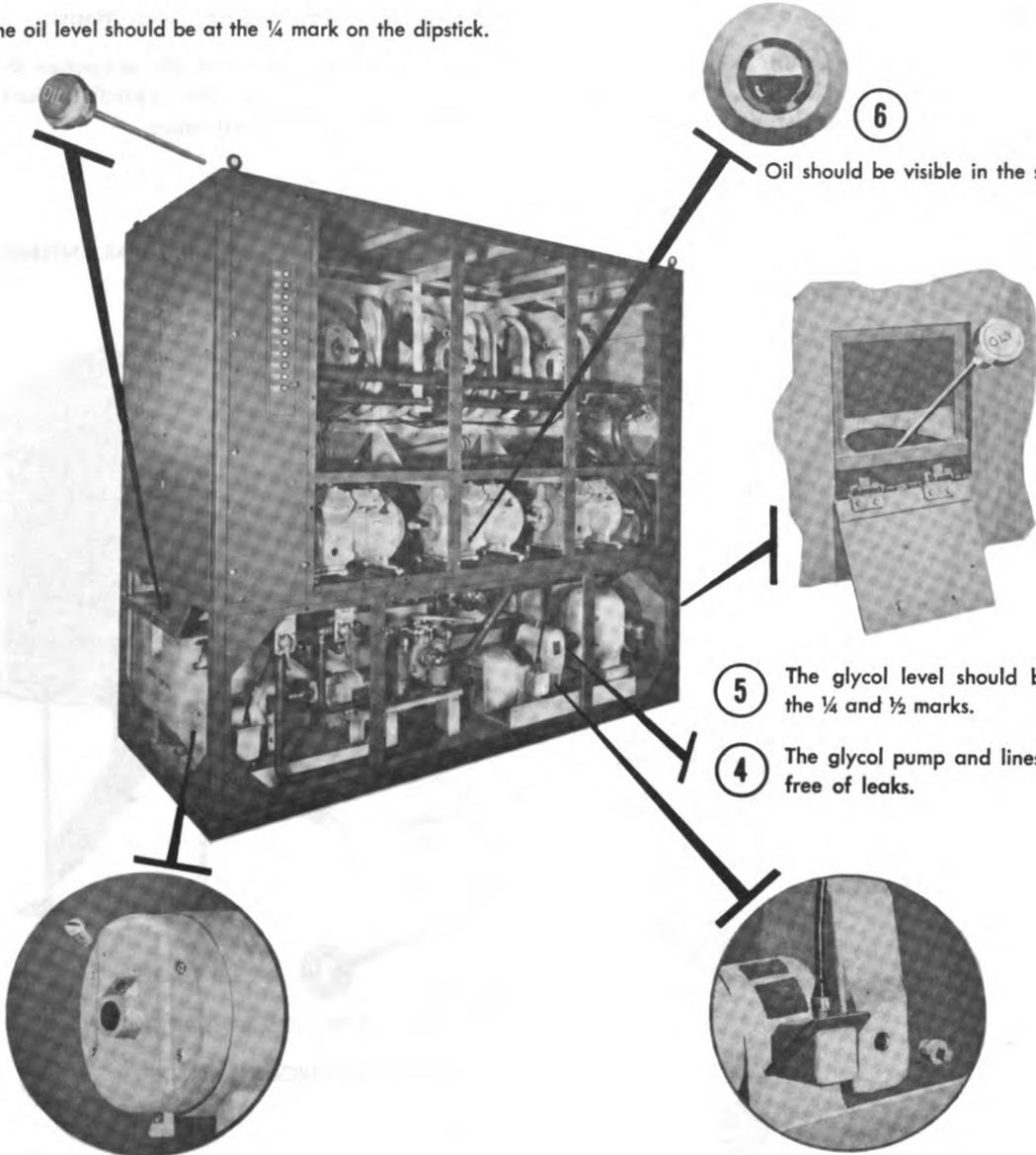


ORD G4462

LIQUID COOLER (1)

Instruct crewmen to remove the front panels from the cooler. Observe for typical PM indicators and perform the inspections listed below.

- ① The oil level should be at the $\frac{1}{4}$ mark on the dipstick.



⑥ Oil should be visible in the sight glass.

- ⑤ The glycol level should be between the $\frac{1}{4}$ and $\frac{1}{2}$ marks.

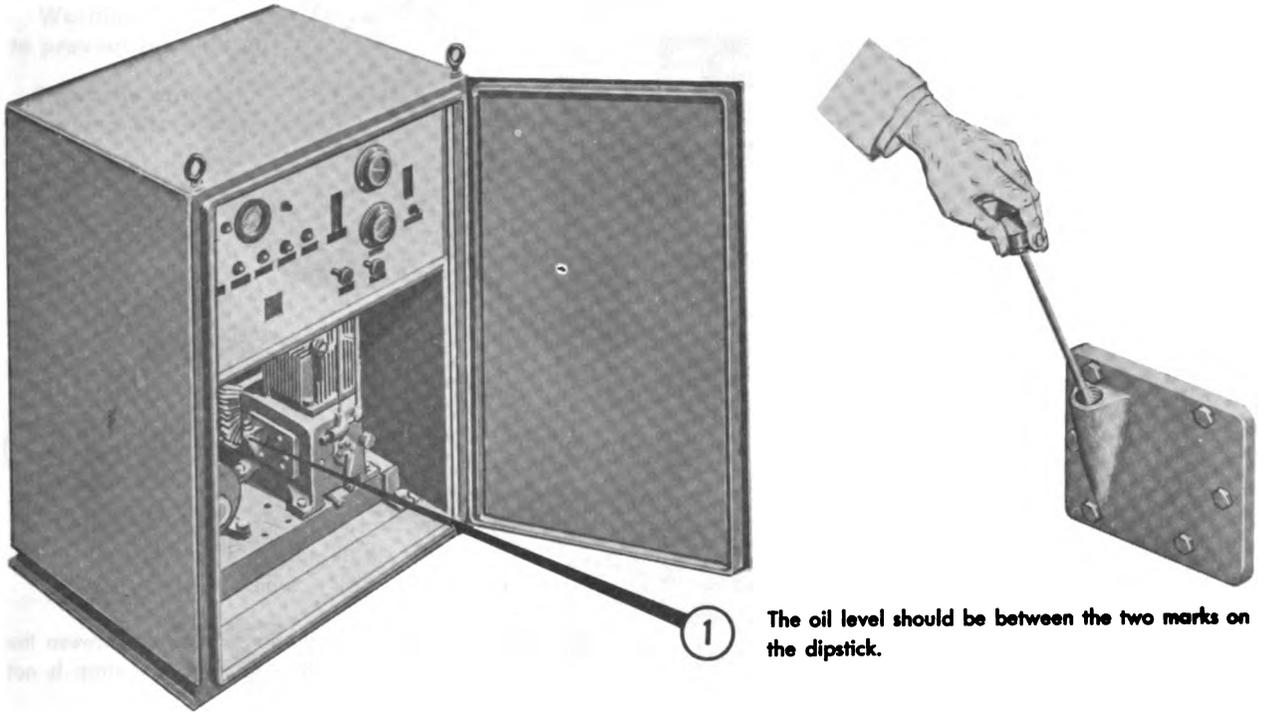
- ④ The glycol pump and lines should be free of leaks.

- ② The presence of grease should be evident when the plug is removed.

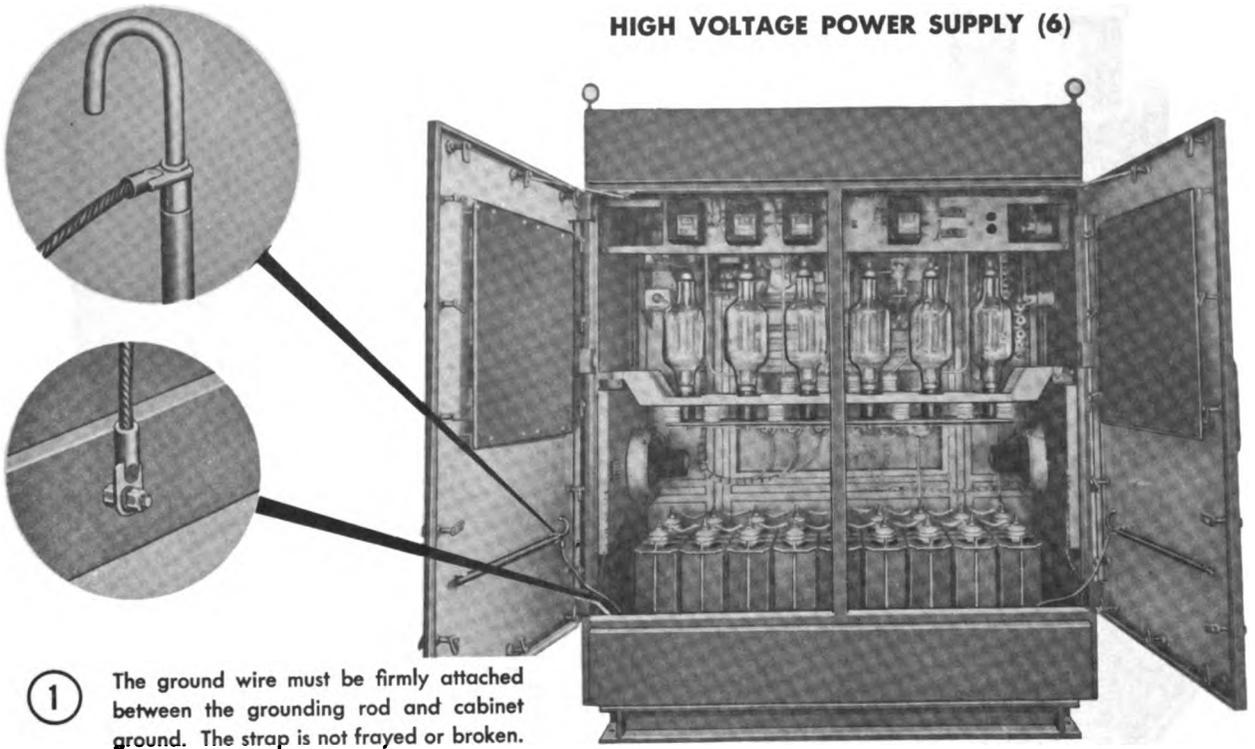
- ③ Oil should be visible when the oil plugs are removed.

ORD 64463

WAVEGUIDE PRESSURIZER (4)

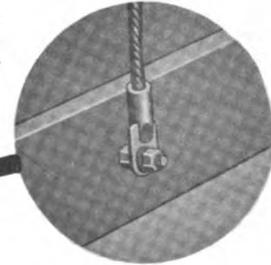
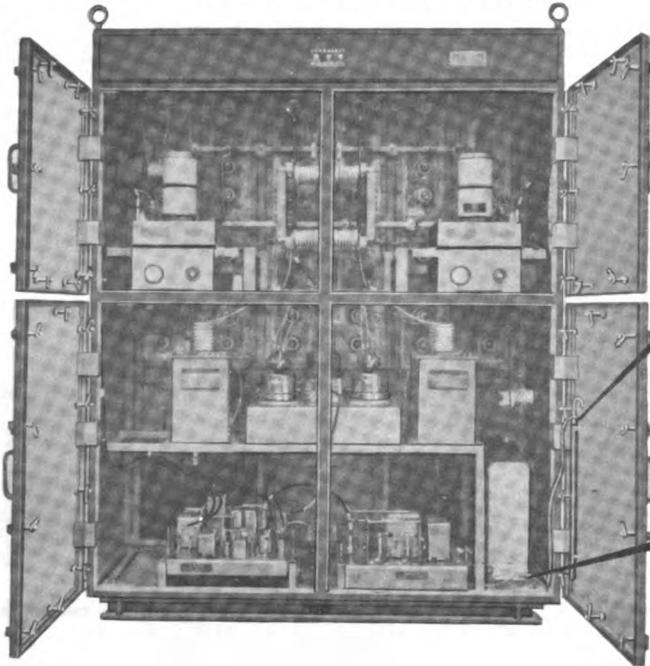


HIGH VOLTAGE POWER SUPPLY (6)



ORD 64464

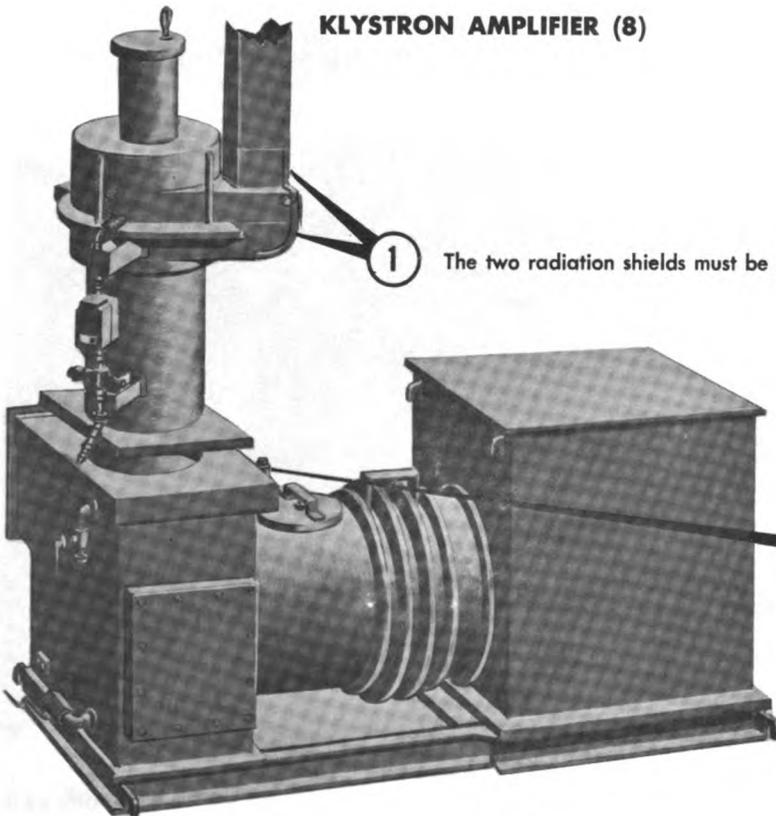
HIGH VOLTAGE PULSE GENERATOR (7)



①

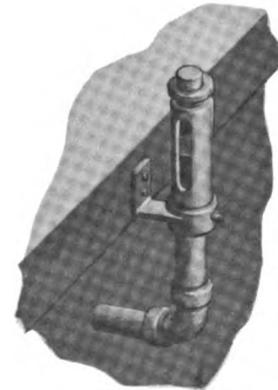
The ground wire must be firmly attached between the grounding rod and cabinet ground. The strap is not frayed or broken.

KLYSTRON AMPLIFIER (8)



①

The two radiation shields must be in place.



②

The oil level should not be lower than 1 inch below the indicator.

HIPAR ANTENNA (12)

Warning: While inspecting the antenna, be sure that the antenna trap door is left in the open position to prevent rotation of, or radiation from the antenna.

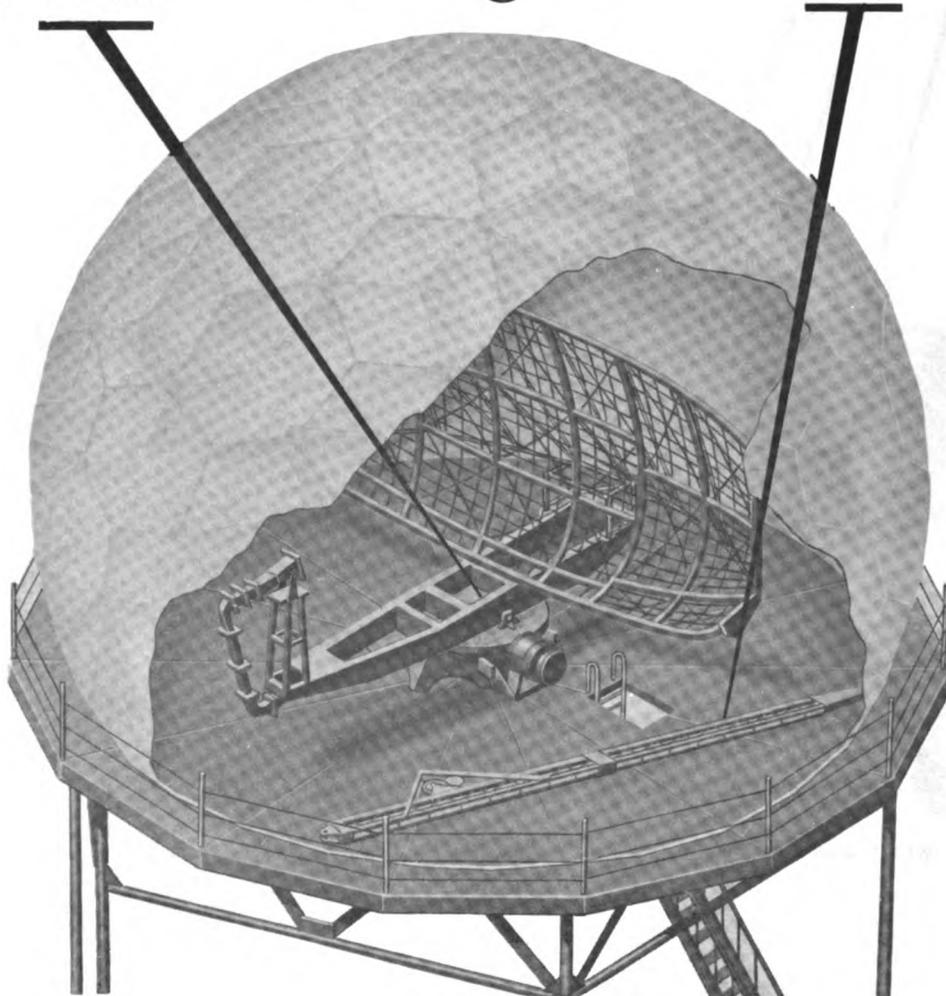
Enter the antenna compartment through the trap door in the platform, and begin your inspection by observing the overall cleanliness of the floor.



- 1 Direct the crewman to remove the oil dipstick. When the temperature is above 0°F, the oil level should be within the NORMAL temperature range on the dipstick. With temperatures below 0°F the oil level should indicate in the LOW temperature range on the dipstick.

Note. Unless MWO 9-1400-250-30/33 has been applied, the dipstick which is illustrated will not be available.

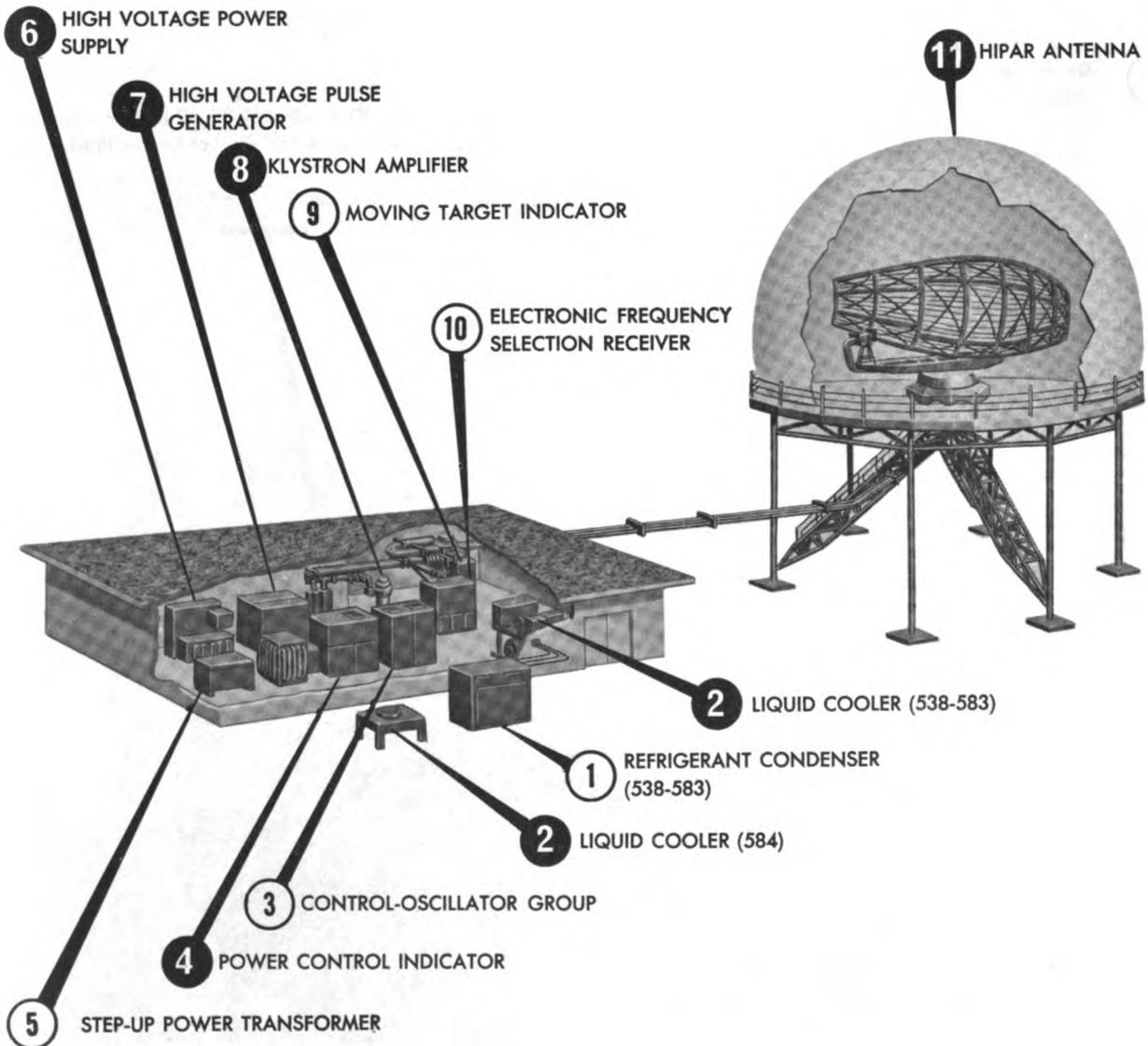
- 2 The guy derrick pulleys should rotate freely.



ORD G4466

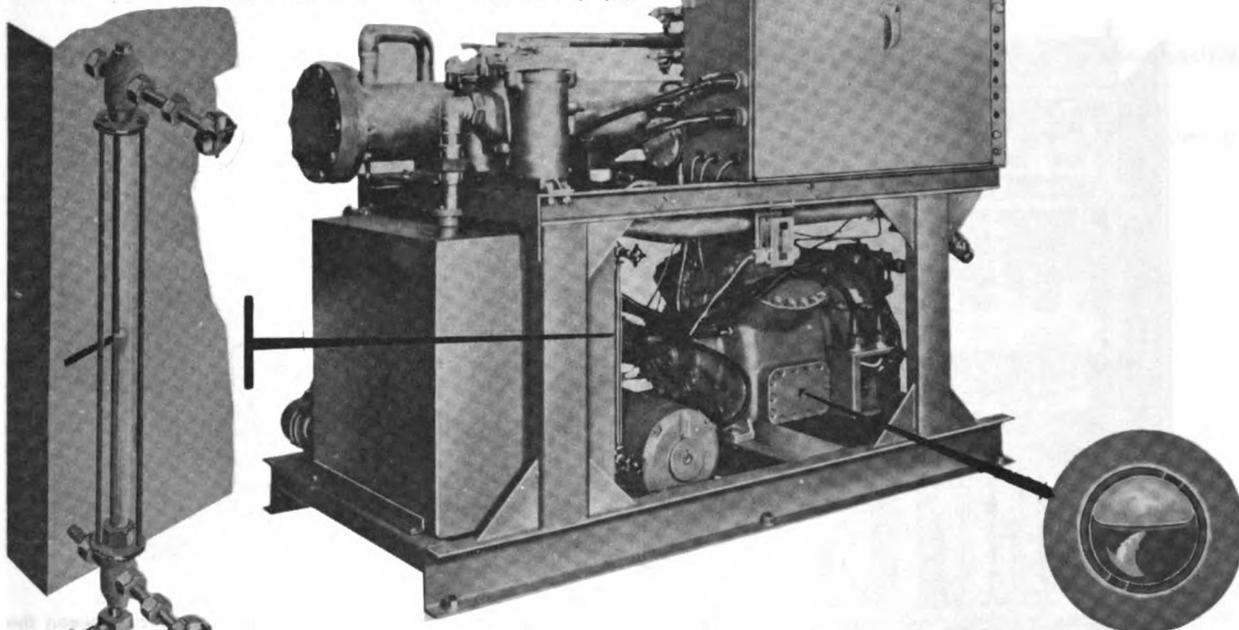
HIPAR SYSTEMS 538 AND ABOVE VISUAL CHECKS

Visual checks, performed with the system deenergized, should be performed in the sequence shown in the following locational diagram. All the cabinets should be inspected for the typical indicators. In addition, the specific checks listed in items 2, 4, 6, 7, 8, and 11 should be performed.



ORD G4468

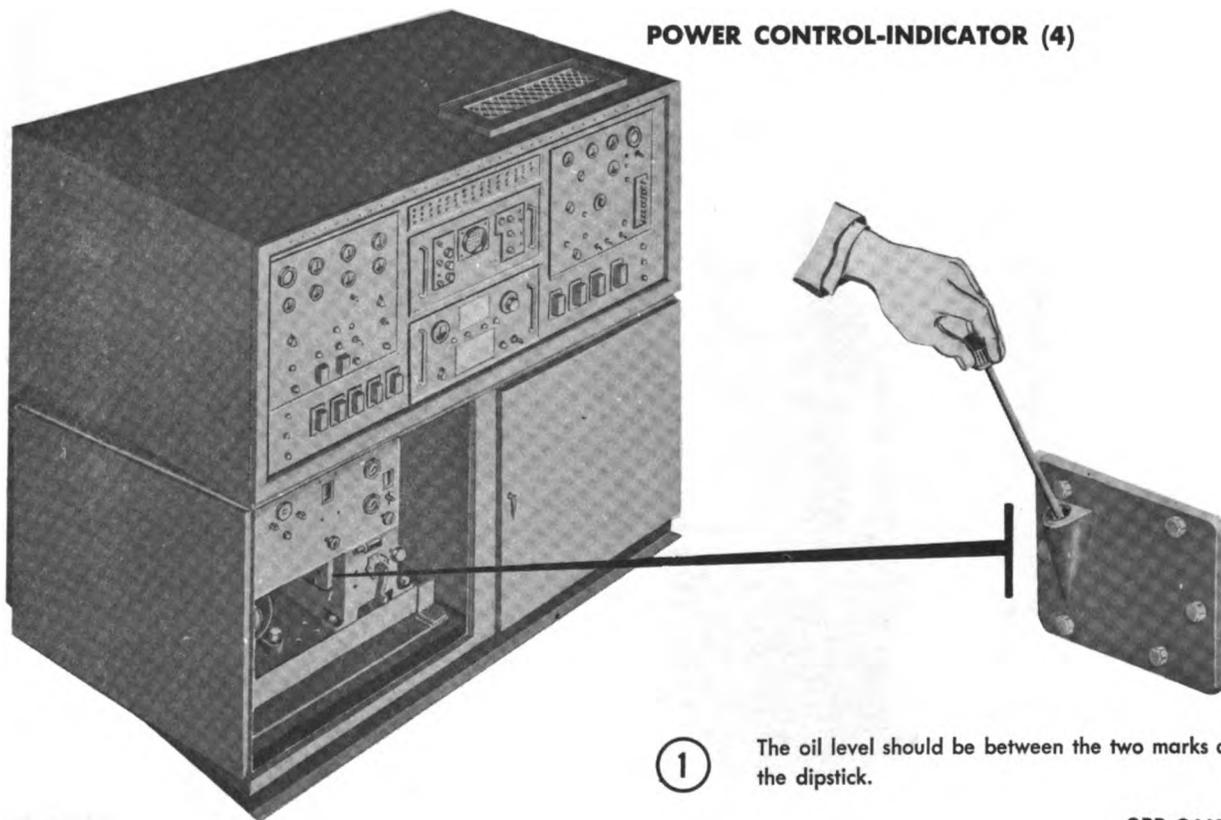
LIQUID COOLER (Systems 538 through 583) (2)



① The glycol should be above the **MINIMUM OPERATING LEVEL** in the sight glass.

② The oil should be visible in the sight glass.

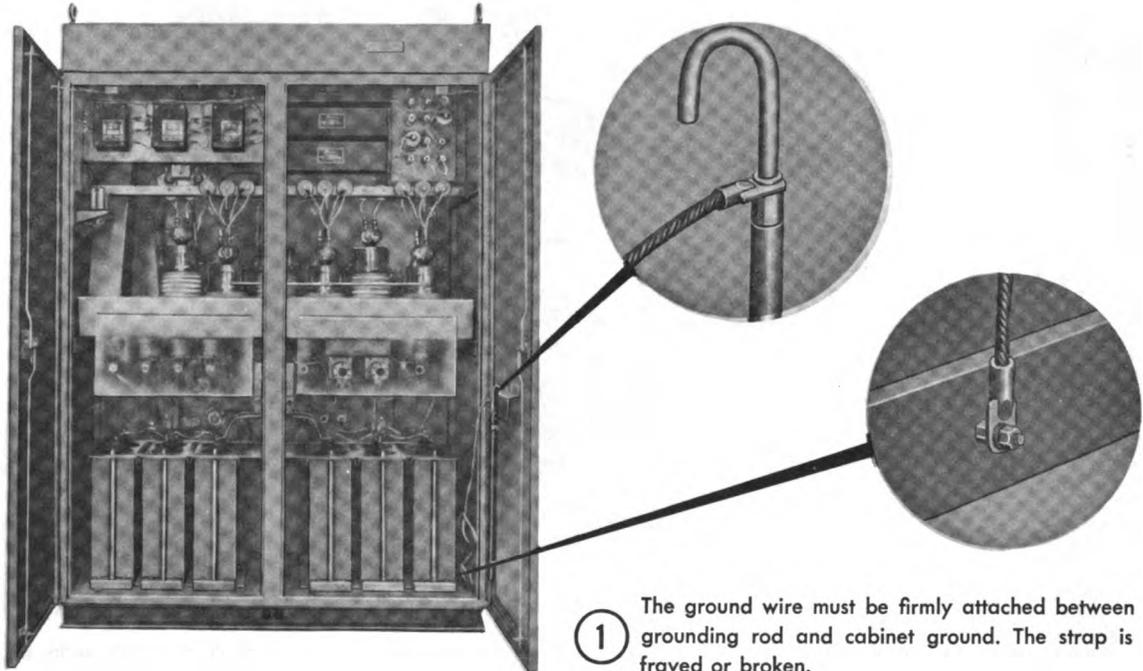
POWER CONTROL-INDICATOR (4)



① The oil level should be between the two marks on the dipstick.

ORD 64469

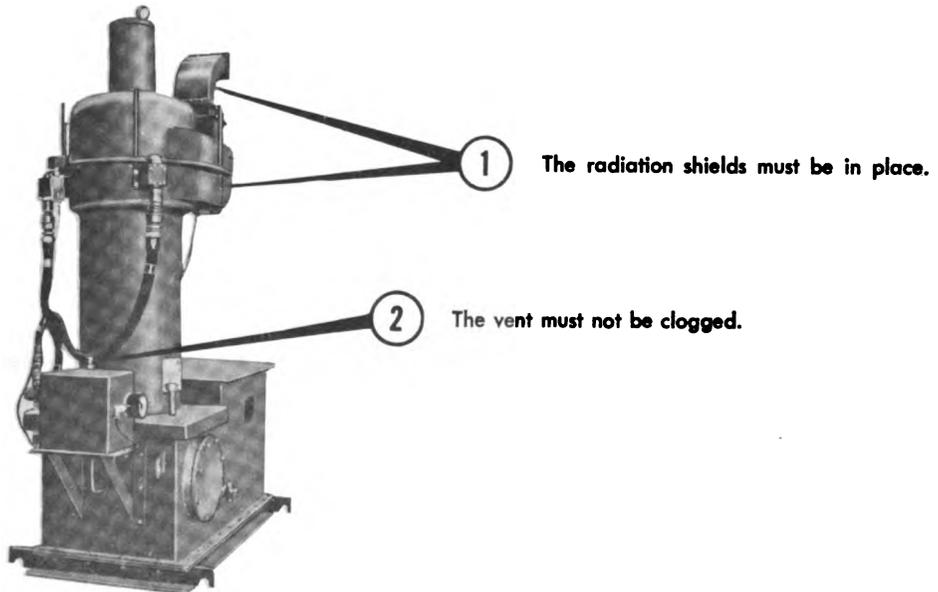
HIGH VOLTAGE POWER SUPPLY (6)



- 1 The ground wire must be firmly attached between the grounding rod and cabinet ground. The strap is **not** frayed or broken.

Note. Inspect the grounding rod in the high voltage pulse generator (7) for the same indications specified above.

KLYSTRON AMPLIFIER (8)



- 1 The radiation shields must be in place.

- 2 The vent must not be clogged.

HIPAR ANTENNA (11)

Warning: While inspecting the antenna, be sure that the antenna trap door is left in the open position to prevent rotation of, or radiation from the antenna.

Enter the antenna compartment through the trap door in the platform, and begin your inspection by observing the overall cleanliness of the floor.

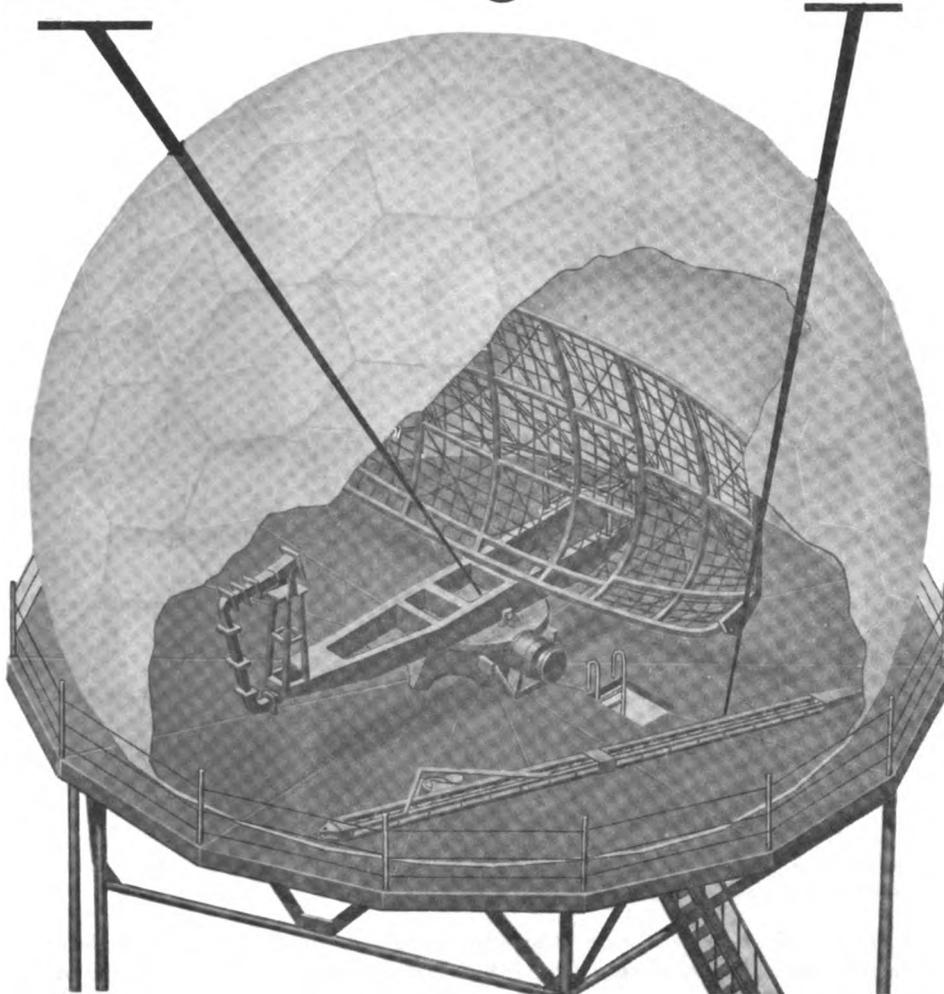


①

Direct the crewman to remove the oil dipstick. When the temperature is above 0°F, the oil level should be within the NORMAL temperature range on the dipstick. With temperatures below 0°F the oil level should indicate in the LOW temperature range on the dipstick.

②

The guy derrick pulleys should rotate freely.



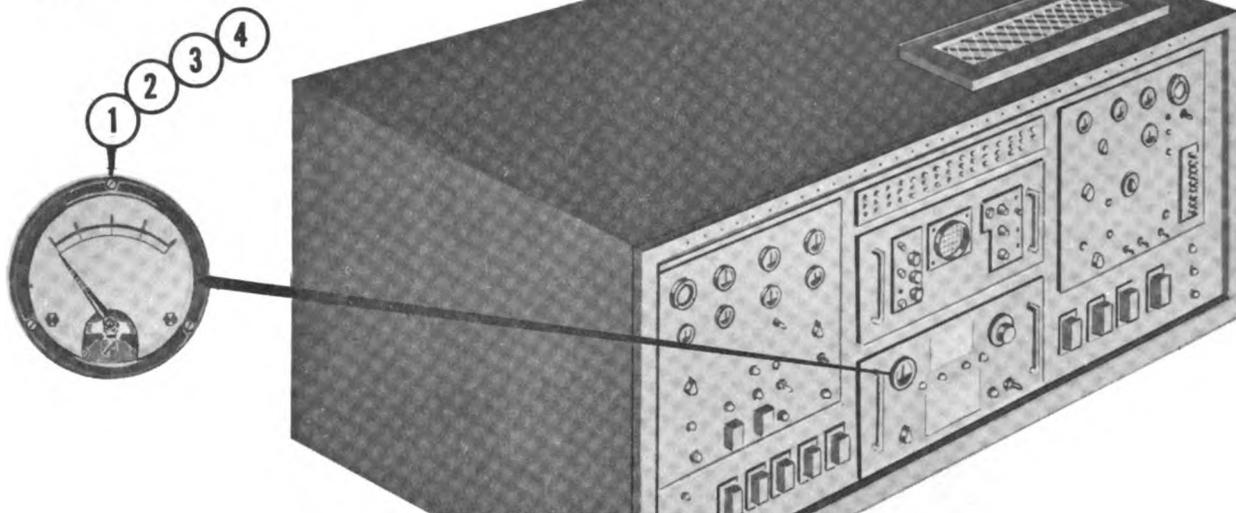
ORD G4467

TRANSMITTER POWER OUTPUT OPERATIONAL INDICATORS

Warning: Do not apply high voltage to the HIPAR system unless the X-ray shields on the klystron amplifier and the tube cradles in the high voltage pulse generator are in place. With the X-ray shields in place, a radiation hazard may possibly exist in the immediate vicinity of the klystron amplifier and the tube cradles in the high voltage pulse generator when high voltage is applied to the system. Hazardous radiation may cause death or serious injury to personnel.

Warning: Voltages DANGEROUS TO LIFE are present when the equipment is energized. Exercise caution when performing inspections while power is on. Do not perform inspections, either visual or operational, on open chassis with power applied.

Direct the crewman to establish the operate condition. Check the power output and VSWR as indicated below.



Instruct the crewman as outlined in this column.

- ① Set the NORMALIZING ATTENUATOR to its highest reading, the FUNCTION switch to FWD PWR-ZERO SET, and adjust the FWD PWR ZERO SET-COURSE and -FINE controls to zero the RF MONITOR meter.
- ② Set the RF MONITOR SELECTOR to FORWARD POWER and the FUNCTION SWITCH TO FWD PWR-READ.
- ③ Set the FUNCTION switch to VSWR-ZERO SET. Set the NORMALIZING ATTENUATOR to the indication noted in 2 above. Adjust the VSWR ZERO SET-COURSE and -FINE controls to zero the RF MONITOR meter.
- ④ Set the FUNCTION switch to VSWR-READ.

The correct indication is described in this column.

- ▶ The RF MONITOR meter indicates zero.
- ▶ The power reading must be within the range specified in TM 9-1430-250-12/5.
- ▶ The RF MONITOR meter indicates zero.
- ▶ The VSWR should not be greater than 1.50 on the lower scale.

MINIMUM DISCERNIBLE SIGNAL CHECK

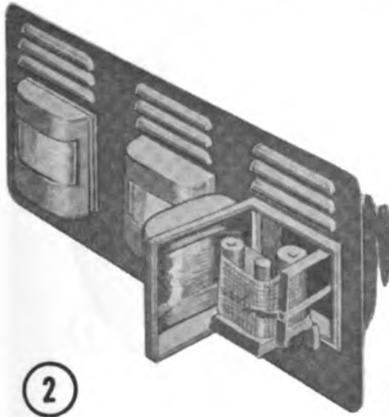
Instruct the operator to prepare the equipment for a minimum discernible signal (MDS) check as outlined in TM 9-1430-250-12/5 and TM 9-1430-250-12/6.

The MDS reading must be at least 114 db. (The attenuation of the cable, the directional coupler, and the signal generator must be added to calculate the MDS). With the SYNC SELECTOR in the MTI position, the MDS reading must be within 2.0 db of the calculated MDS.

ORD G4471

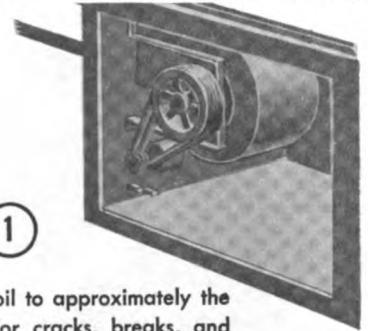
Section V. RADAR-SIGNAL SIMULATOR AN/MPQ-T1

Begin your inspection by instructing the crewman to deenergize the simulator. While performing the inspection, select at random several latches, hinges, slides and rollers, doorstops, and exposed machined surfaces and inspect them for a light coat of general purpose oil. Check the air conditioning and heating system for the typical PM indicators.



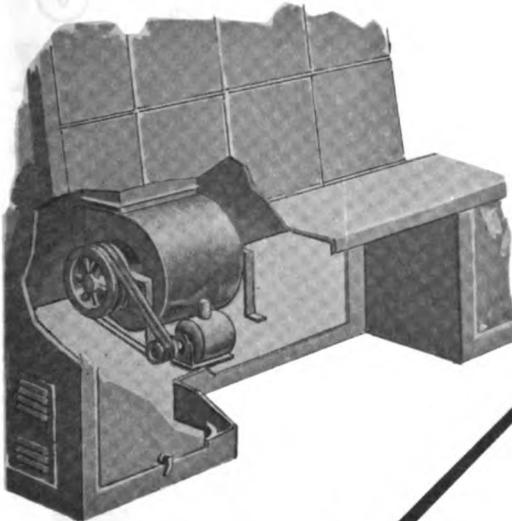
2

Check that the error recorder pens are clean, unlogged, and have a supply of ink. Check that the paper rolls contain a supply of paper.



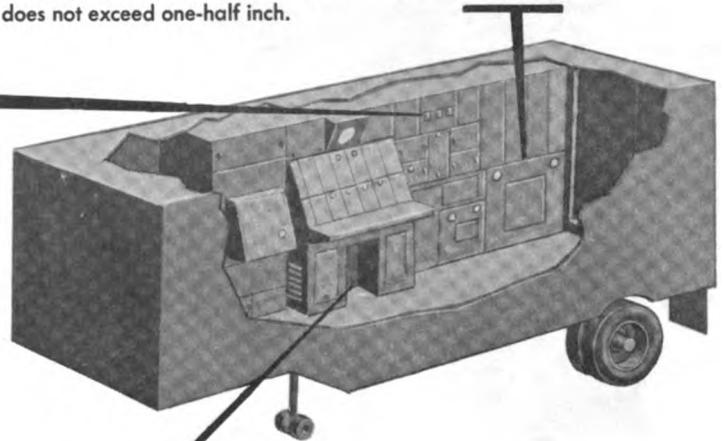
1

Check that the blower oil cups are full of oil to approximately the three-quarter level. Check the fan belts for cracks, breaks, and fraying. Depress the fan belt and check that the amount of depression does not exceed one-half inch.



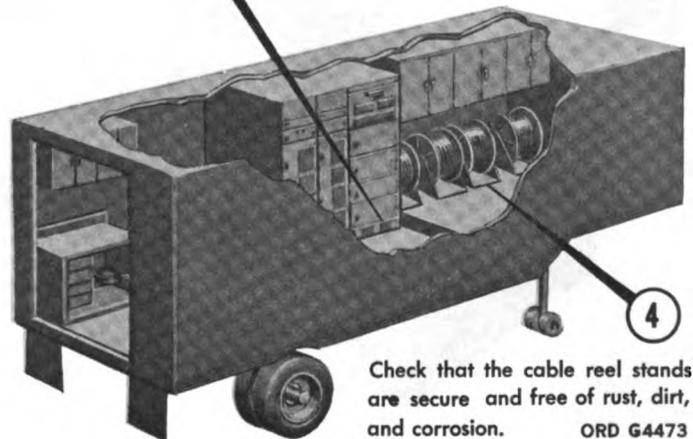
3

Check that the blower oil cups are full of oil to approximately the three-quarter level. Check the fan belts for cracks, breaks, and fraying. Depress the fan belt and check that the amount of depression does not exceed one-half inch.



5

Check that the filter is clean and free of excessive dirt.

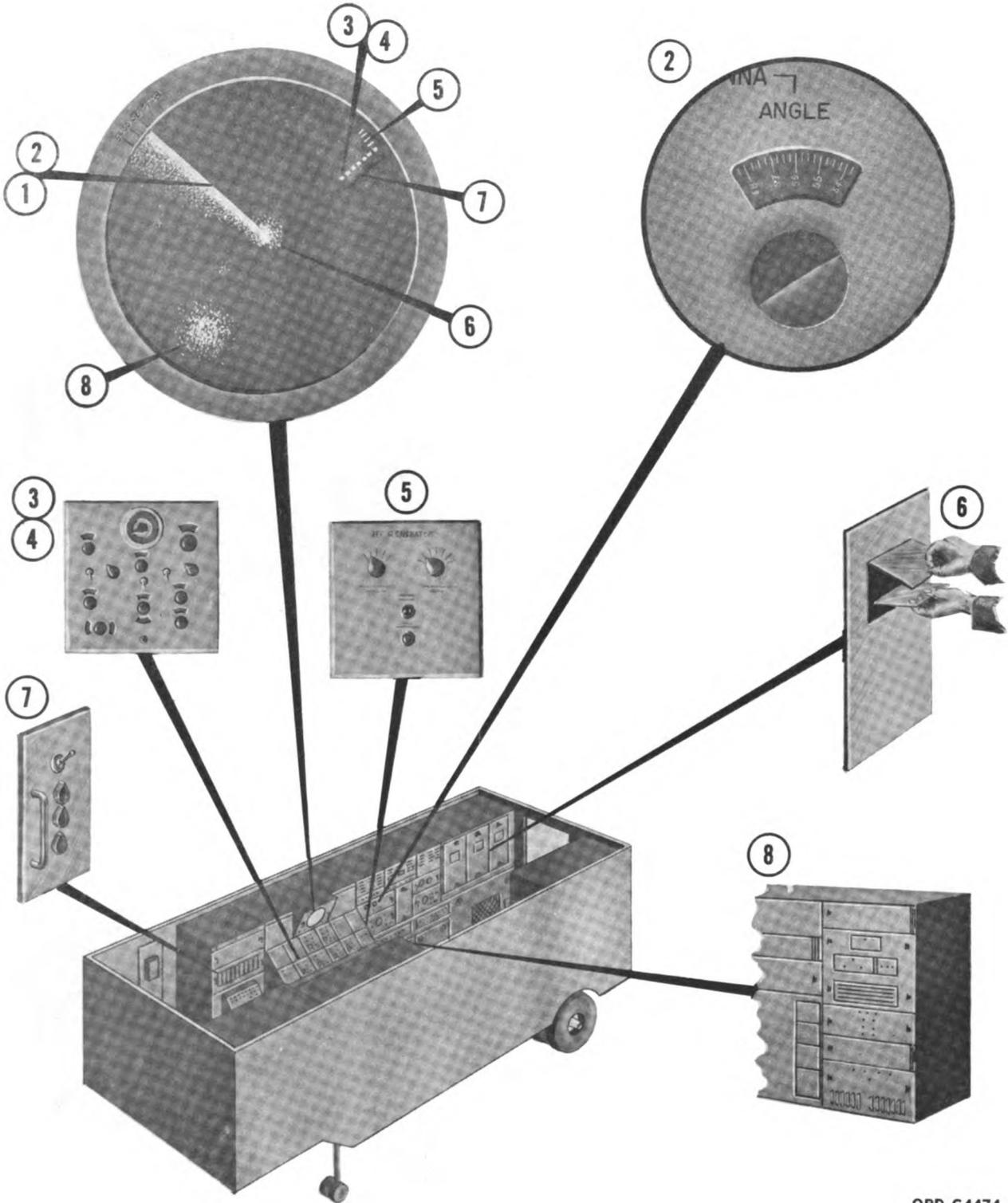


4

Check that the cable reel stands are secure and free of rust, dirt, and corrosion. ORD G4473

OPERATIONAL INDICATORS

This inspection determines the capability of the simulator station to simulate a target, chaff, and various types of jamming.



ORD G4474

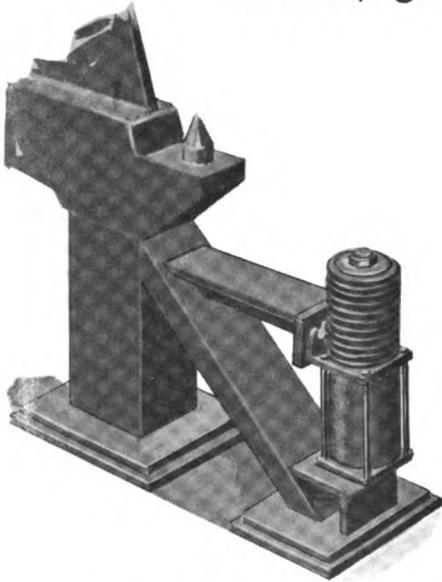
- ① Instruct the operator to energize the simulator station and position the controls to check the PPI monitor.
 - ② Instruct the operator to position the controls on the PPI monitor and antenna position simulator to check the synchronization of the radial sweep.
 - ③ Instruct the operator to position the controls on one or more of the six target coordinate generators (TCG) to check for the presence of a target.
 - ④ Instruct the operator to fly a target in a circular counterclockwise path to check target movement.
 - ⑤ Instruct the operator to operate the IFF generator to check the IFF challenge.
 - ⑥ Instruct the operator to insert a slide in the passive interference generators (PIG) and condition them for operation.
 - ⑦ Condition the simulator station to simulate acquisition ECM. (Select S- and L-SPOOFING, NOISE, CW, PULSE, and SQUARE types of jamming)
 - ⑧ Instruct the operator to condition the simulator station to simulate acquisition chaff. (Select a single, delayed, multiple, and corridor chaff drop.)
- ▶ A radial sweep is present on the PPI monitor.
 - ▶ The radial sweep rotates in synchronism with the ACQUISITION ANTENNA ANGLE dial.
 - ▶ A target is present on the PPI monitor for each TCG selected.
 - ▶ The target flies in a circular counterclockwise path.
 - ▶ The IFF response appears on the PPI monitor outward in range on the same radial line as the target. Check that the face of the CRT in each PIG is free from dust. A rotating radial sweep is present on each PIG CRT, in synchronism with the ACQUISITION ANTENNA ANGLE dial. Ground clutter is present on the PPI.
 - ▶ With spoofing selected, a train of false targets appears on the PPI monitor, displayed outward in range from the target. Other types of jamming are present on the PPI monitor, corresponding to the mode selected.
 - ▶ Chaff appears on the PPI monitor corresponding to the mode selected.

CHAPTER 4
LAUNCHING AREA

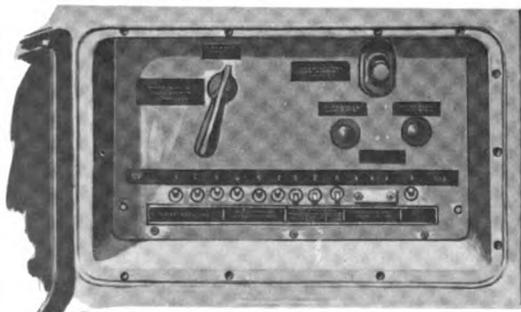
Section I. MISSILE AND LAUNCHING SET
LAUNCHER AND ASSOCIATED EQUIPMENT

Begin your inspection of the launcher and the associated equipment at the hydraulic pumping unit of the launcher. Instruct the crewman to open all access doors and covers. Observe for typical PM indicators.

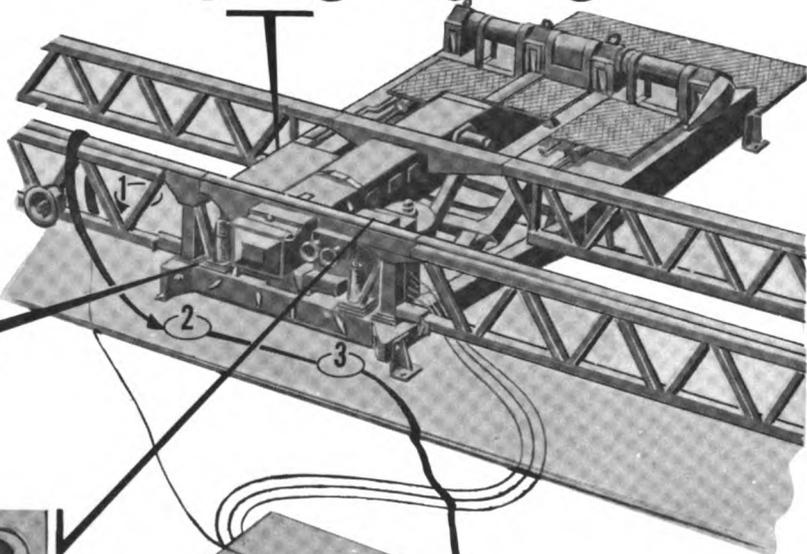
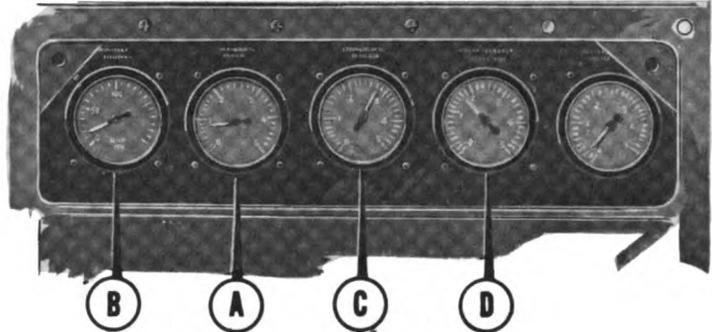
- ① At the hydraulic pumping unit, instruct the crewman to make sure that the equilibrator and system-bypass valves are closed. The equilibrator pressure should be between 1,500 and 2,700 psi (A). Instruct the crewman to open the system-bypass valve and the equilibrator system-bypass valve. The hydraulic reservoir pressure should be 18 to 25 psi (B), the equilibrator accumulator pressure should be 500 to 700 psi (A), the surge accumulator pressure should be 1,800 to 2,200 psi (C), and the air reservoir pressure should be 600 to 2,000 psi (D).



- ② Inspect the launcher erecting beam shock absorbers for signs of leaks and deterioration.

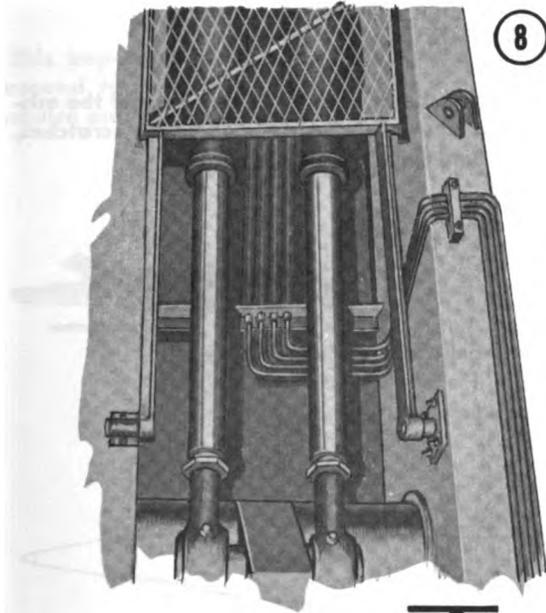


- ③ Inspect the power distribution box for rust, moisture, and corrosion.



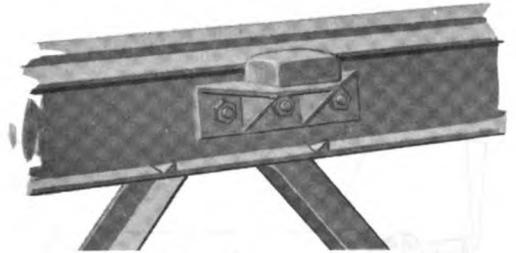
- ④ Inspect the launcher control indicator for signs of dirt and corrosion.

ORD G4476



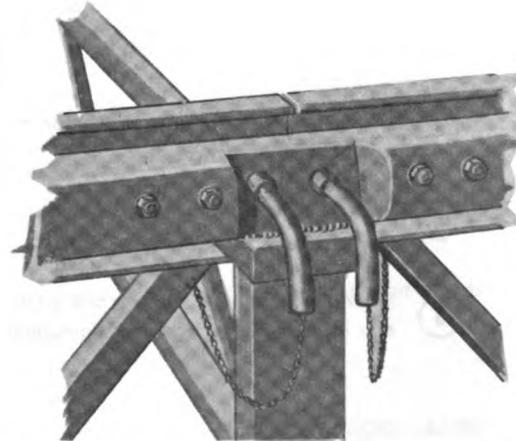
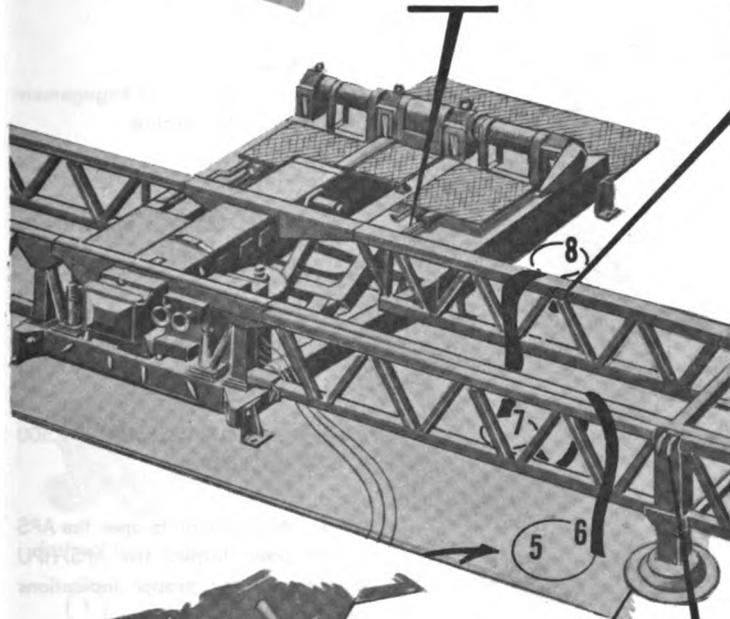
8

Inspect the hydraulic system for leaks. Check the pistons for signs of rust and corrosion. The pistons should be bright and shiny and have a light coating of oil and be free of paint.



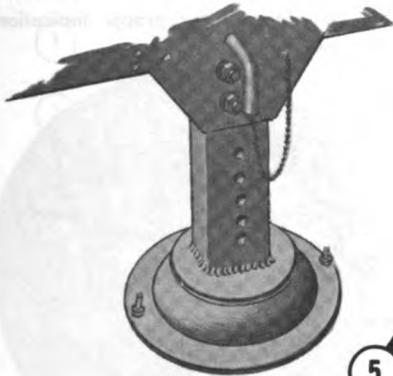
7

Check that the safety stops and positioning blocks are serviceable and are not loose or broken.



6

Check that the locking pins and chains are not bent, broken, or missing.

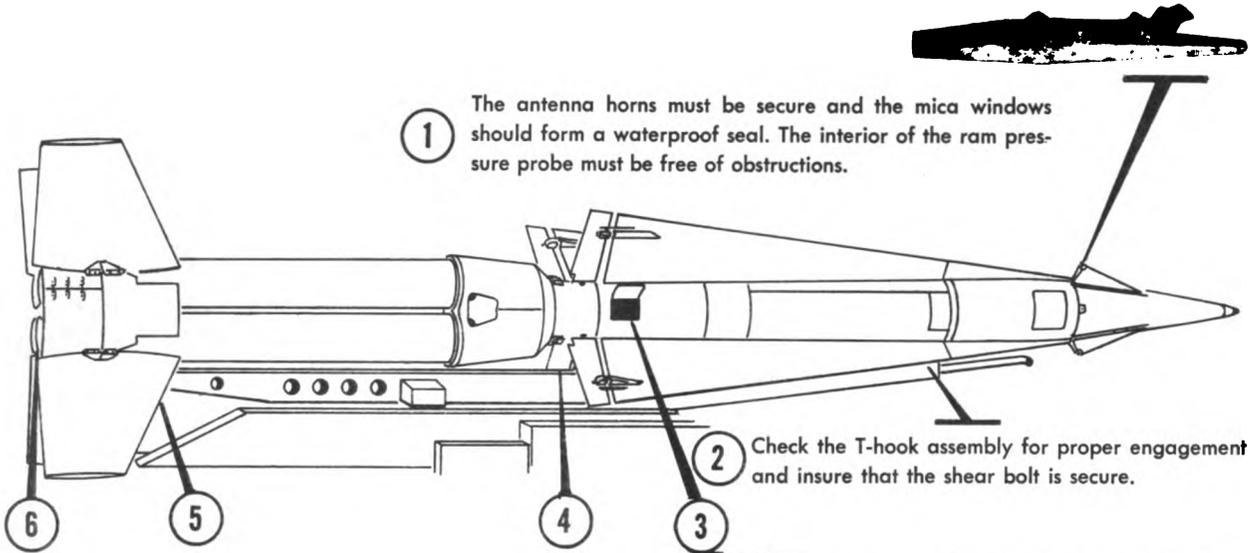


5

Inspect the pads for signs of dirt and corrosion. The attaching hardware must be secure.

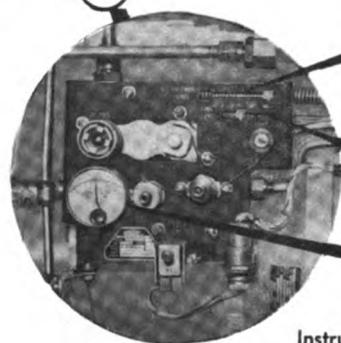
MISSILE-AND-ROCKET-MOTOR CLUSTER

Begin your inspection of the missile-and-rocket-motor cluster at the antennas. As you inspect the missile, check for loose, missing, or improperly seated screws, and check the missile skin for dents, scratches, and for a smooth paint finish. Also check for proper color coding and legible stenciling.



1 The antenna horns must be secure and the mica windows should form a waterproof seal. The interior of the ram pressure probe must be free of obstructions.

2 Check the T-hook assembly for proper engagement and insure that the shear bolt is secure.



FUEL LEVEL is at or above center line.
 HYD RES LEVEL is not less than 25° below the ambient temperature.
 ACC AIR PRESSURE is 2,500 to 3,000 psi.

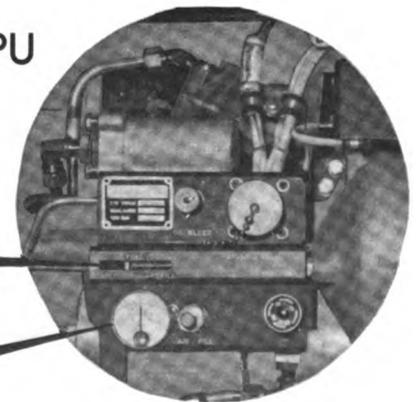
- 4 Check the missile away switch for no audible click.
- 5 Inspect for firm seating of rocket motor cluster fins.
- 6 Nozzle closures are present and properly installed, not cracked or damaged.

APS 3

OR

HPU

Instruct the crewman to open the APS service door. Inspect the APS/HPU service pad for proper indications below.

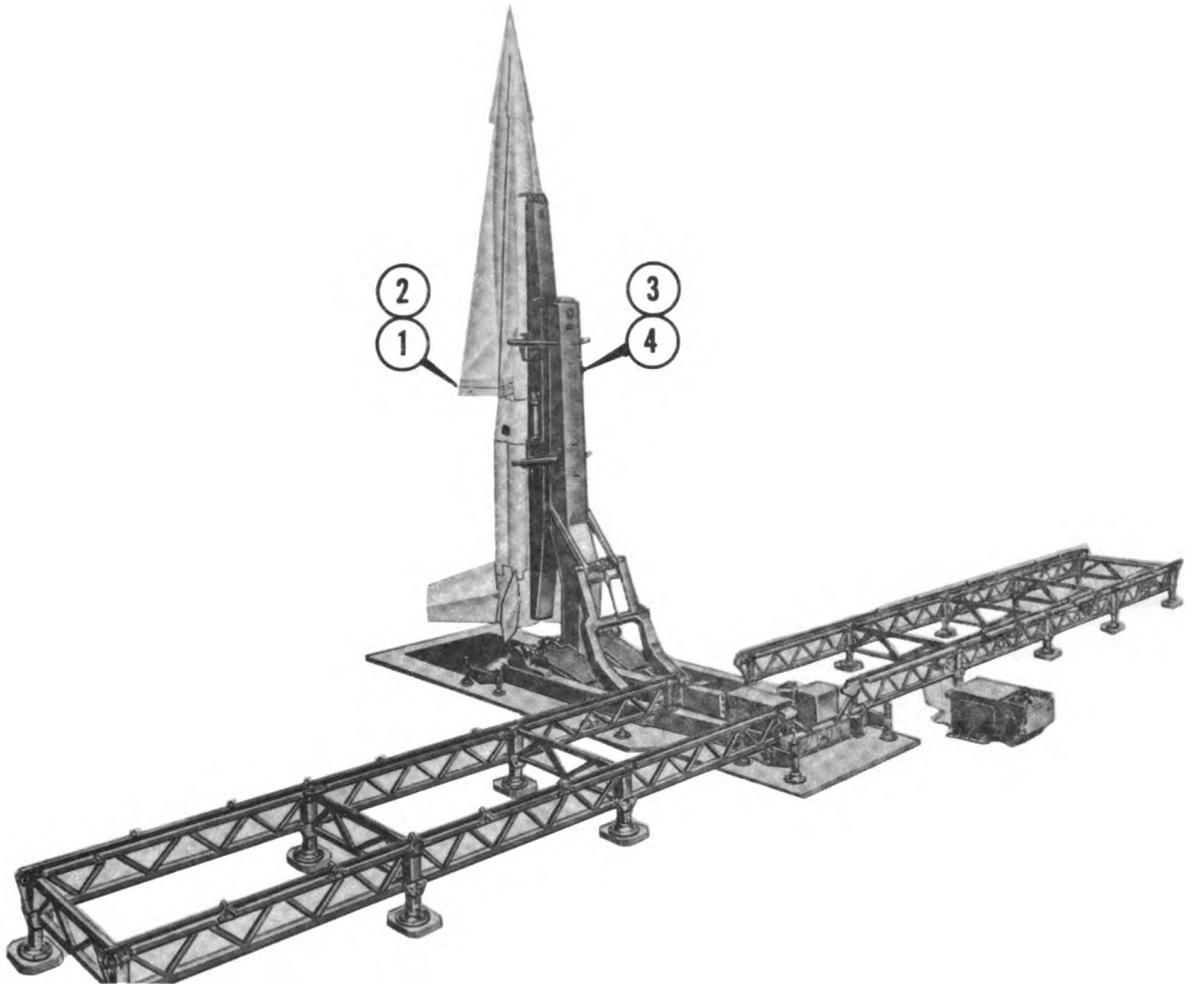


Hydraulic reservoir level is within the FULL marks.
 Air pressure is within the limits specified in TM 9-1440-250-12/1.

ORD G4478

LAUNCHER AND MISSILE OPERATIONAL INDICATORS

This inspection reveals the ability of the launcher to erect a missile and the ability of the missile to respond to commands from the missile tracking radar. Have crewmen condition the equipment for the acquire and command check.



Instruct the crewman as outlined in this column.

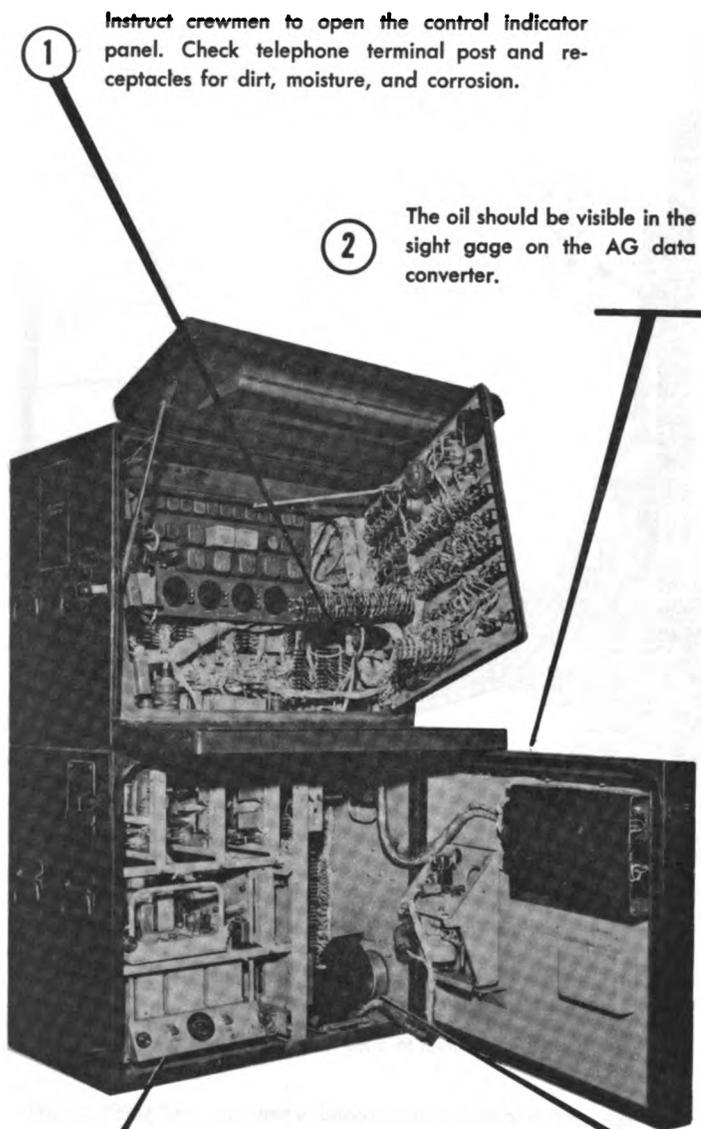
The correct indication is described in this column.

- | | |
|--|--|
| <p>① Notify the missile-track radar operator "Ready for command check".</p> | <p>▶ The elevons deflect positive and negative when the commands are transmitted by the missile track radar.</p> |
| <p>② Request battery control personnel to initiate a burst command.</p> | <p>▶ The elevons deflect to a hard over position.</p> |
| <p>③ Perform check of roll amount gyro.</p> | <p>▶ The elevons do not respond when the UNCAGED-CAGED switch is set to CAGED and responds in a smooth continuous movement when UNCAGED.</p> |
| <p>④ Lower the launcher erecting beam.</p> | <p>▶ The launcher erecting beam lowers with a smooth continuous motion.</p> |
| <p>⑤ Raise the launcher erecting beam.</p> | <p>▶ The launcher erecting beam raises with a smooth and continuous motion.</p> |
| <p>⑥ Instruct the crewman to condition the equipment for the launching section fire-and-reject check, up to initiating the fire command. Proceed to the section control indicator.</p> | |

ORD G4479

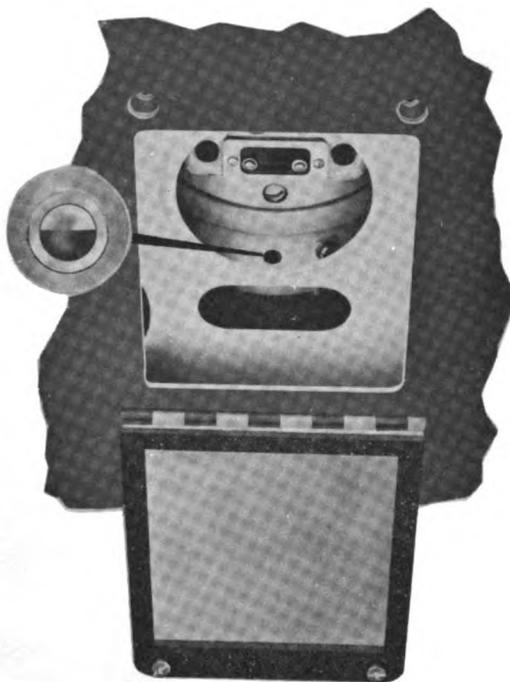
SECTION CONTROL INDICATOR AND SIMULATOR GROUP

Begin your inspection by instructing the crewman to open the access and blower doors. Inspect for proper operation of the hold bar and hinges.



1 Instruct crewmen to open the control indicator panel. Check telephone terminal post and receptacles for dirt, moisture, and corrosion.

2 The oil should be visible in the sight gage on the AG data converter.



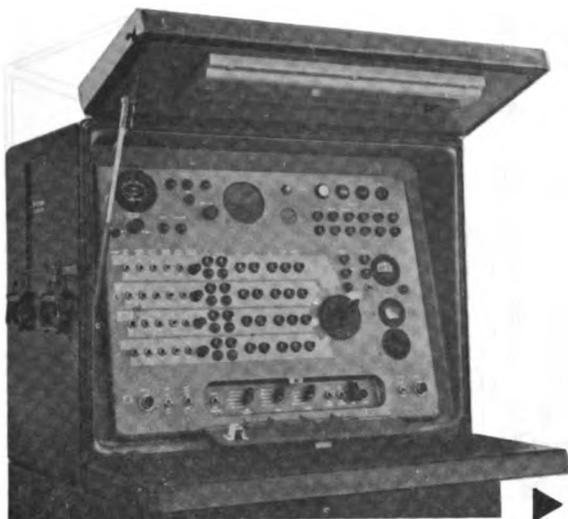
3 The equipment should show no signs of rust, corrosion, or moisture. The chassis should be securely mounted.



4 Have the crewman remove the air filter. Some dust denotes air flow; however, it should not be excessive.

OPERATIONAL INDICATORS

This inspection reveals the ability of the section control indicator to indicate the proper condition of the launching equipment and the missile. At this time, the equipment should be conditioned for the launching section fire-and-reject check, up to initiating the fire command.



1

The following green indicator lights should be illuminated:

PREPARED
SAME
LAUNCHER DESIG
MISSILE READY TO FIRE
SECTION READY
ALERT STATUS-RED
SECTION STATUS-ON-DECK
SECTION STATUS-SELECTED
MISSILE REJECT

2

Familiarize yourself with the indicator panel and the expected indications described in the column on the right, because the indicator lights change rapidly. Instruct the crewman to operate the MANUAL ORDERS-FIRE switch to ON.

- ▶ The amber SECTION STATUS-FIRE indicator light extinguishes and the green indicator light illuminates.
- ▶ The HEAT MONITOR indicator light illuminates momentarily.
- ▶ The buzzer sounds.
- ▶ The green SECTION STATUS-LAUNCH ORDER indicator light illuminates approximately 2 seconds later.
- ▶ The buzzer stops.
- ▶ The green SECTION STATUS-MISSILE REJECT indicator light extinguishes and the red indicator light illuminates.
- ▶ The green SECTION READY indicator light extinguishes and the red indicator light illuminates.
- ▶ The green MISSILE READY TO FIRE indicator light extinguishes and the amber LAUNCHER READY indicator light illuminates.
- ▶ The green SAME indicator light extinguishes and the red DIFF indicator light illuminates.
- ▶ The green PREPARED indicator light extinguishes and the red NOT PREPARED indicator light illuminates.
- ▶ The green SECTION STATUS-FIRE indicator light extinguishes and the amber indicator light illuminates.

3

Instruct the crewman to condition the equipment for a fire-and-launch check to be performed at the launcher control trailer. Proceed to the launcher control trailer.

ORD G4481

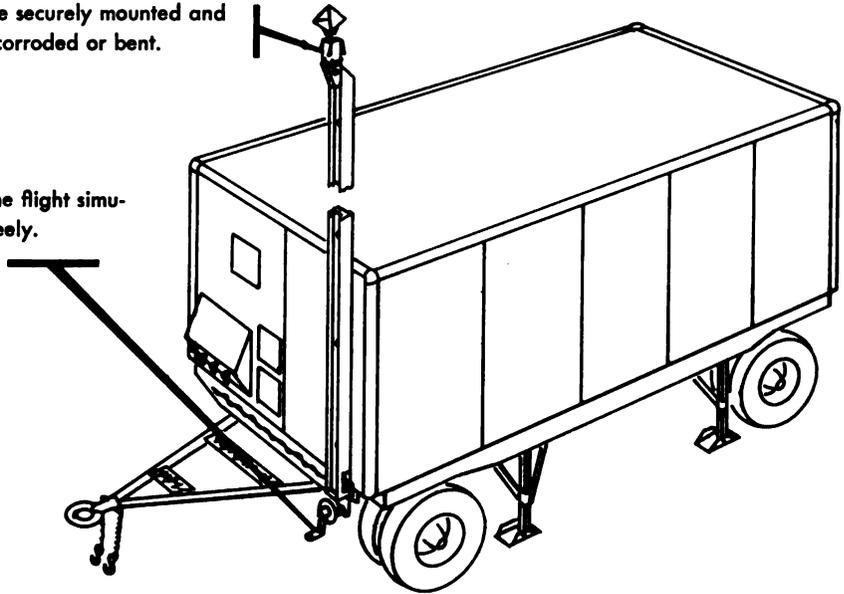
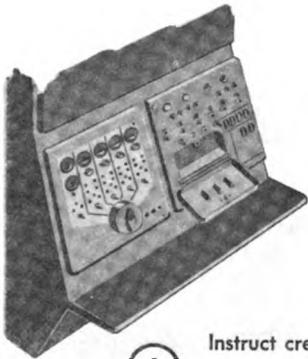
47

LAUNCHING CONTROL TRAILER AND FLIGHT SIMULATOR

Perform steps 1 and 2 below and begin your inspection inside the launching control trailer on the right after entering the van. Instruct the crewman to open all access doors.

- 2 The flight simulator must be securely mounted and the antennas must not be corroded or bent.

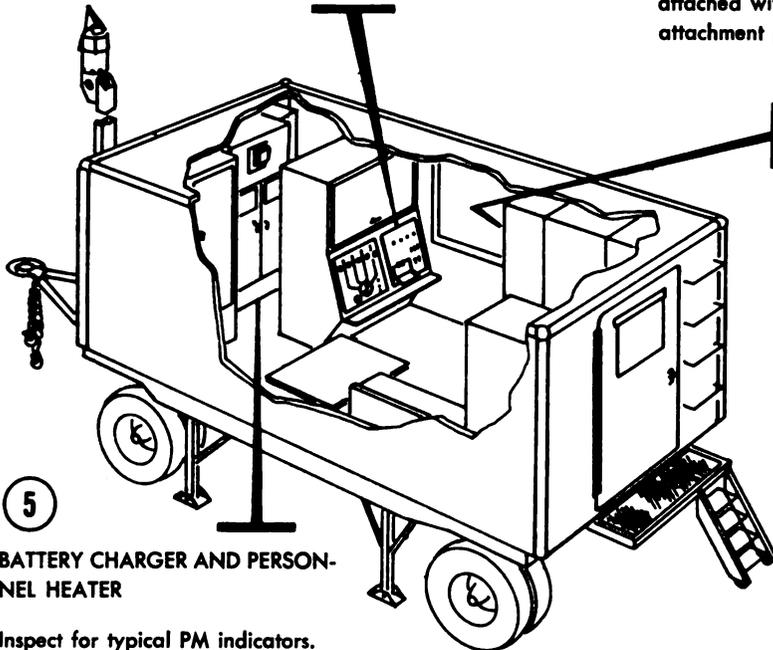
- 1 Instruct the crewman to lower the flight simulator. The winch should move freely.



- 4 Instruct crewman to open the launching control console. Inspect for rust, moisture, and corrosion.

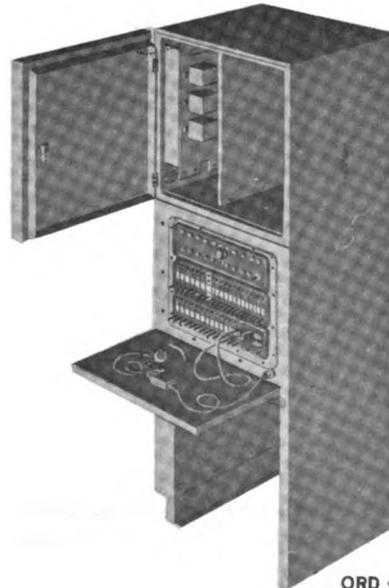
3

Instruct crewman to gain access to the telephone case and inspect the batteries for moisture and corrosion. The telephone station should be clean. The cables must be firmly attached with no gaps between the insulation and the wire attachment point.



- 5
BATTERY CHARGER AND PERSONNEL HEATER

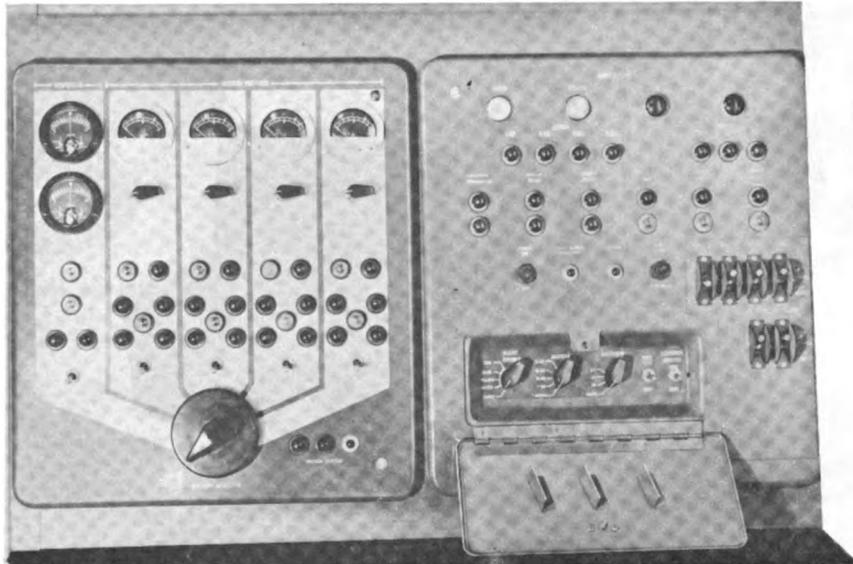
Inspect for typical PM indicators.



ORD G4482

OPERATIONAL INDICATORS

This inspection reveals the ability of the launching control group to indicate the proper condition of the launching sections. At this time, the equipment should be conditioned for the fire-and-launch check from the launching control console, up to initiating the fire command.



① Check for the indications described in this column.

② Familiarize yourself with the console panel and the indications described in the column on the right, because the indicator lights change rapidly. Instruct the crewman to operate the MANUAL ORDERS-FIRE switch to ON.

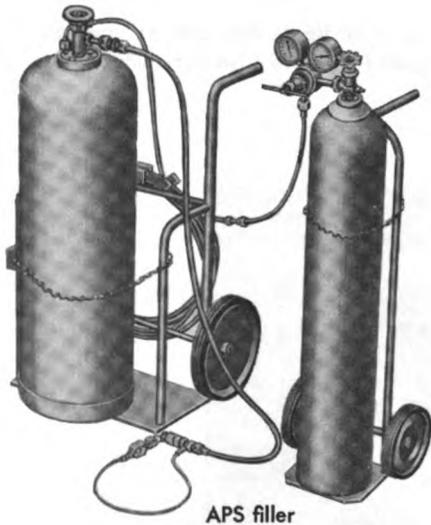
- ▶ The MISSILES PREPARED meter indicates the number of each type missiles prepared.
- ▶ The green launcher identification light is illuminated.
- ▶ The green SECTION READY indicator light is illuminated.
- ▶ The red ALERT STATUS indicator light is illuminated.
- ▶ The green SECTION SELECTED indicator light is illuminated.
- ▶ The green LAUNCHER DESIGNATED indicator light is illuminated.
- ▶ The green MISSILE READY indicator light is illuminated.
- ▶ The green MISSILE REJECT indicator light is illuminated.

- ▶ The amber FIRE indicator light extinguishes and the green indicator light illuminates.
- ▶ The buzzer sounds.
- ▶ After approximately 2 seconds, the amber LAUNCH ORDER indicator light extinguishes and the green indicator lights illuminate momentarily; then the amber indicator light illuminates.
- ▶ The buzzer stops.
- ▶ The green MISSILE AWAY indicator light illuminates.
- ▶ The MISSILES PREPARED meter reduces one unit.
- ▶ The green MISSILE READY indicator light extinguishes and the red indicator light illuminates.
- ▶ The green LAUNCHER DESIGNATED indicator light extinguishes and the red indicator light illuminates.
- ▶ The green section READY indicator light extinguishes and the amber section NOT READY indicator light illuminates.

ORD G4483

Section II. SERVICING AND TEST EQUIPMENT

SERVICING EQUIPMENT

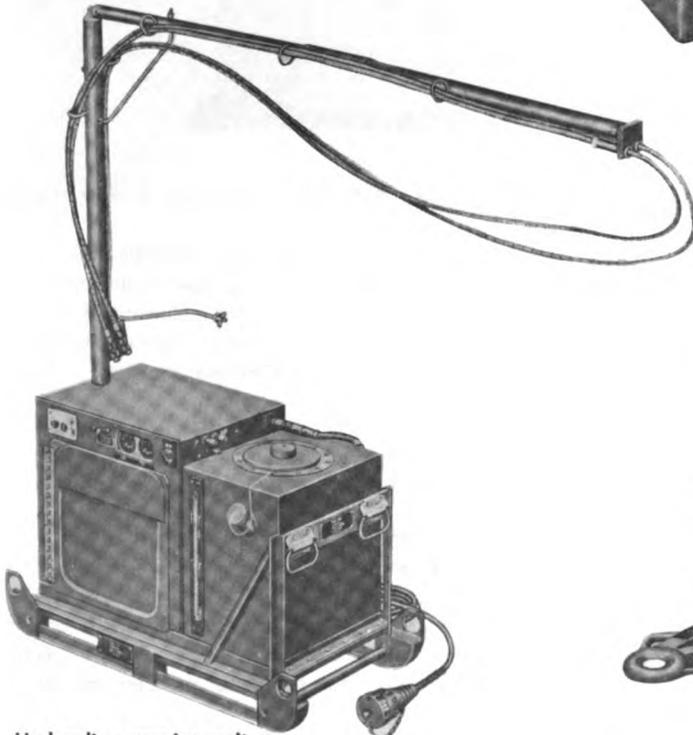


APS filler

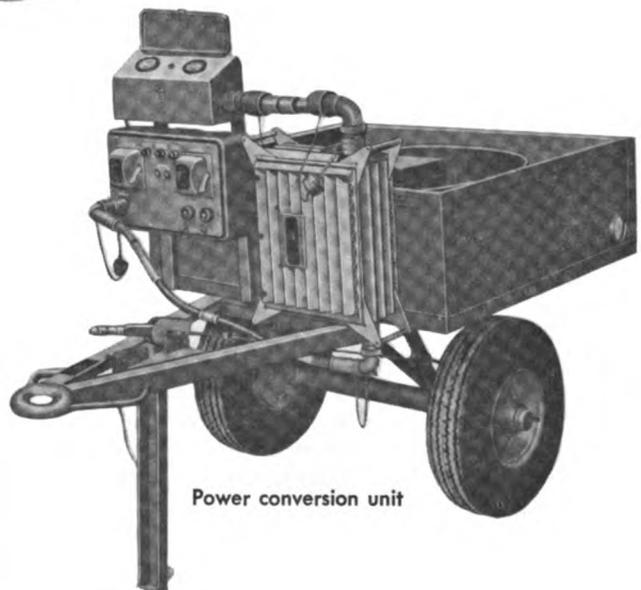
Portable oil fill unit



Portable cooling unit



Hydraulic pumping unit



Power conversion unit

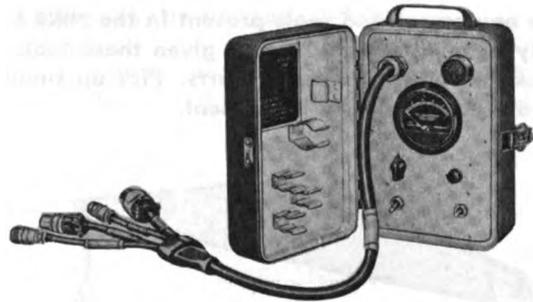
SERVICING EQUIPMENT—The cases should not have scratches or dents. The casters should allow the equipment to be wheeled easily and smoothly. Valve handles and switches should be firmly attached. Pressure meters should indicate 0 when the equipment is empty and deenergized.

ORD G4484

TEST EQUIPMENT



Prelaunch signal simulator



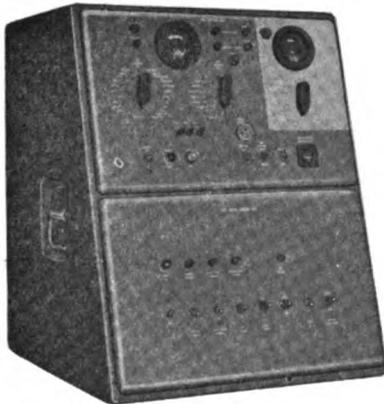
Squib test set



Launching area Hercules missile test set



Air leakage test set



Electrical test set



RF test set



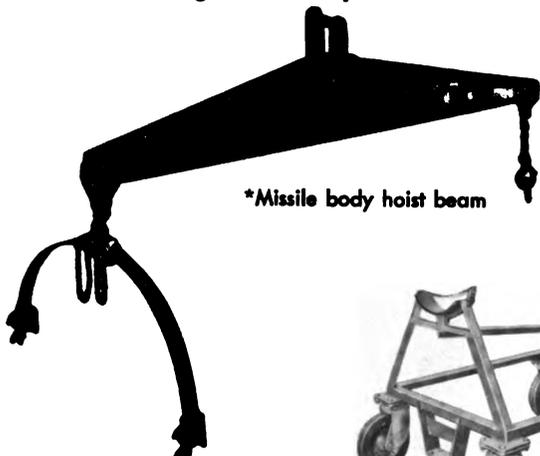
Electrical circuit test set

TEST EQUIPMENT — The exterior of the equipment should not have scratches and dents. Switches must be firmly mounted, and the setscrews or knobs must be tight. Cables must not show evidence of loose connectors or insulation pulled away from the connectors.

ORD G4485

Section III. HANDLING EQUIPMENT

The equipment and tools present in the NIKE system are varied and highly specialized. However, the quality of maintenance or care given these tools can be determined by inspecting for scratches, dents, gouges and loose or missing parts. Pick up small parts and operate their controls. No roughness, looseness, or rubbing should be present.



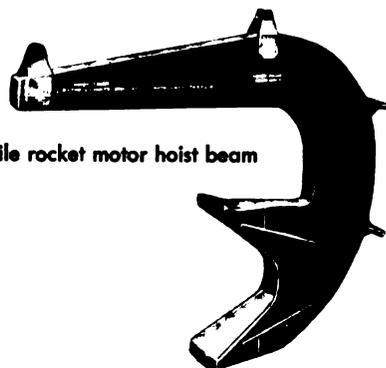
*Missile body hoist beam



*Rear body section hoist beam



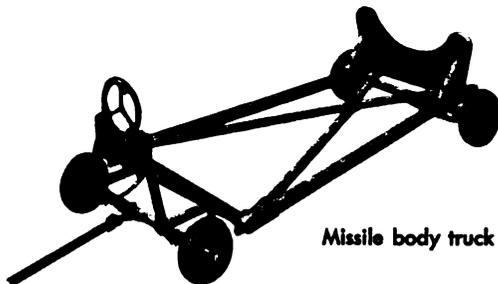
Forward body section truck



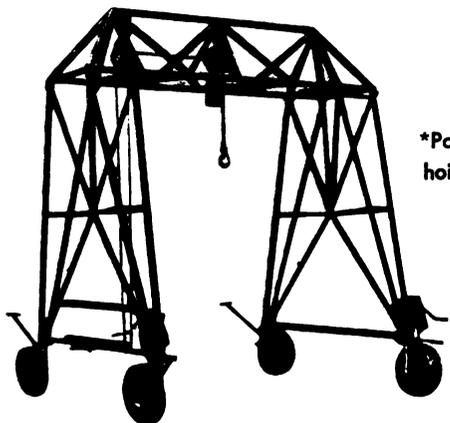
*Missile rocket motor hoist beam



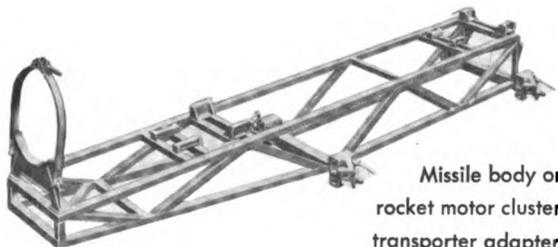
*Warhead body section hoist beam



Missile body truck



*Portable hoisting unit



Missile body or rocket motor cluster transporter adapter

HANDLING EQUIPMENT—Handling fixtures should be inspected very carefully for cracks and bent members. Tying eyes, straps, and clevises must be correctly fastened, and securing pens and safety wire must be present where required.

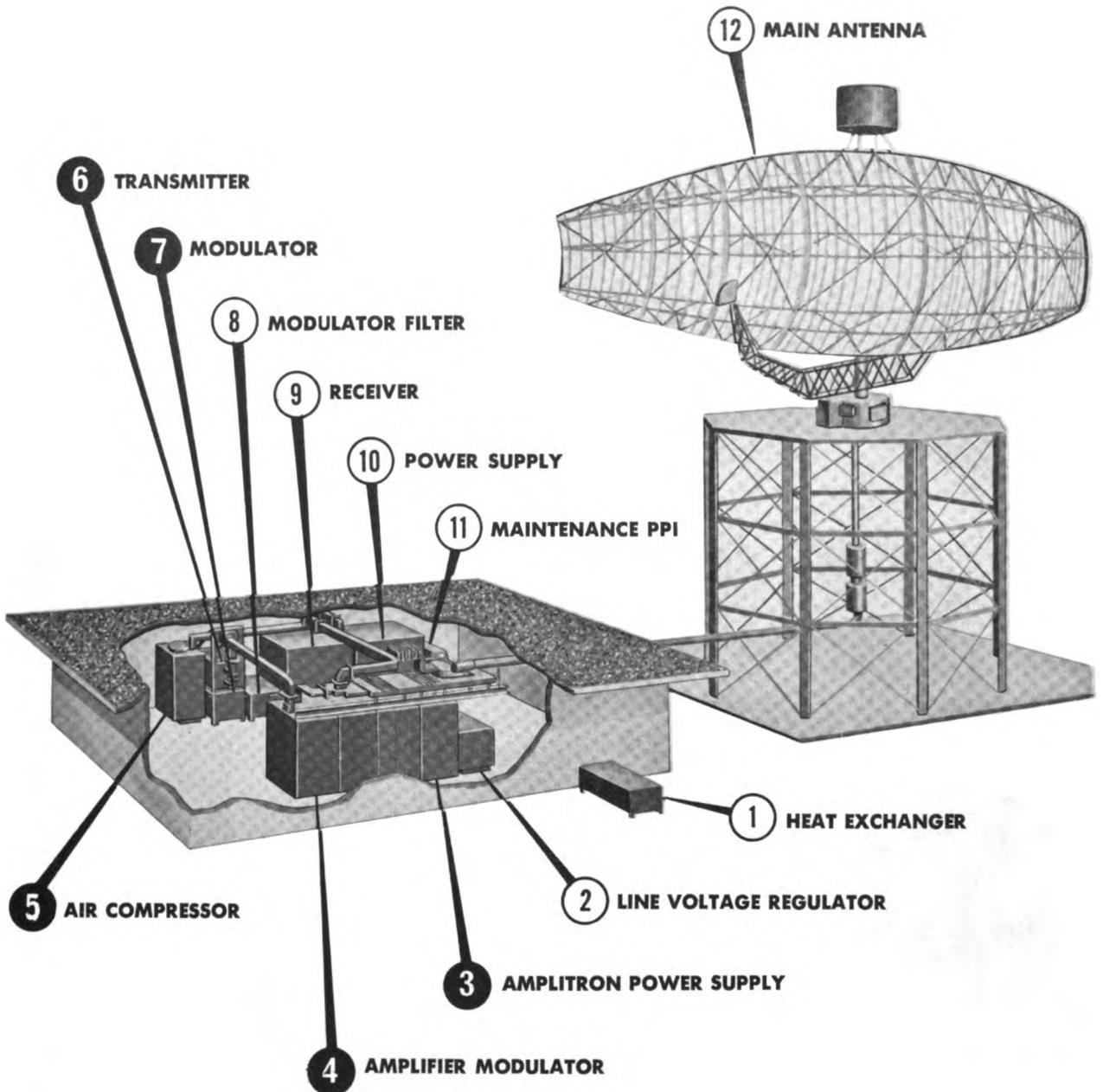
*Check last load test indications and/or markings on these items.

ORD G4486

CHAPTER 5

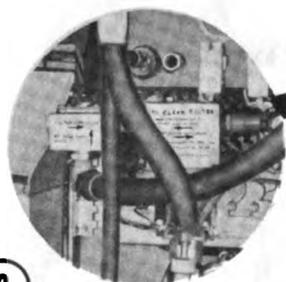
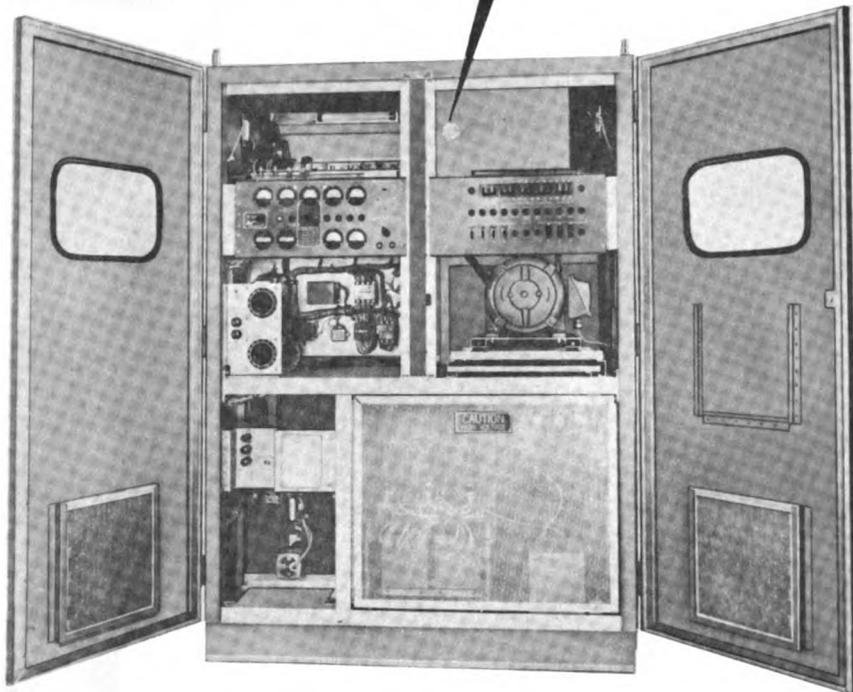
ALTERNATE BATTERY ACQUISITION RADAR (ABAR) VISUAL CHECKS

Visual checks, performed with the system deenergized, should be performed in the sequence shown in the following locational diagram. All the cabinets should be inspected for the typical indicators. In addition, the specific checks listed in steps 3, 4, 5, 6, 7, and 12 should be performed.

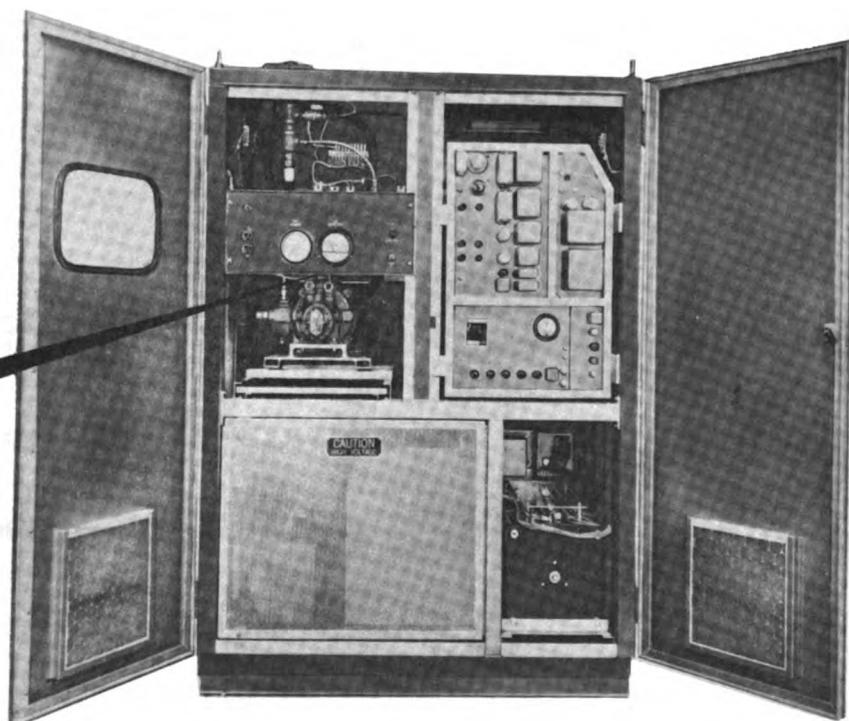


AMPLITRON POWER SUPPLY (3)

- 1 The liquid coolant in the sight glass should be at the level line.

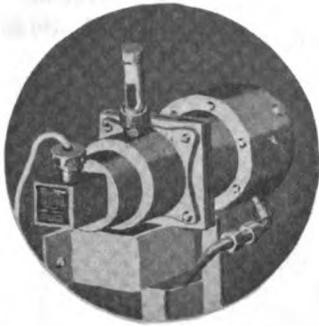


- 2 Have the coolant filter removed and checked for cleanliness. It should be clean.

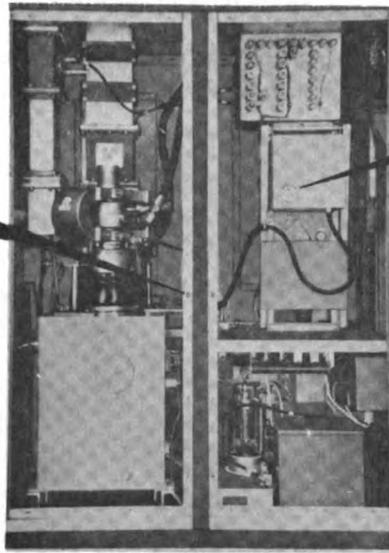


ORD G4446

AMPLIFIER MODULATOR (4)



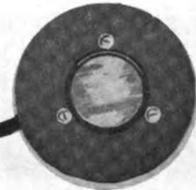
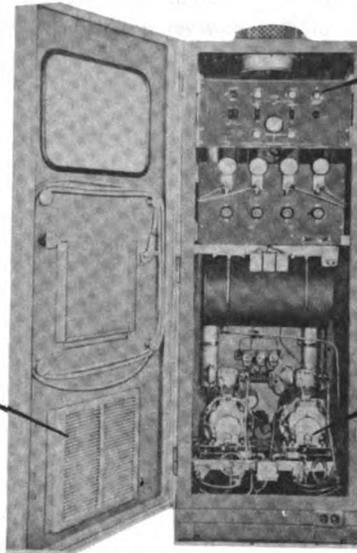
- ① Oil should be visible in the sight glass.



- ② Humidity indicator should be blue.

AIR COMPRESSOR (5)

- ③ Check intake air filters. Some dirt denotes air flow; however, it should not be excessive.

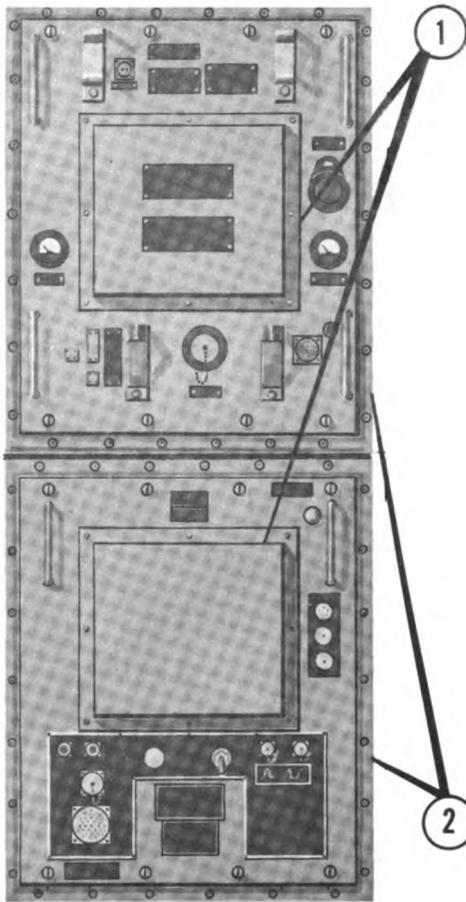


- ① The oil should be at the level line in the sight glass.

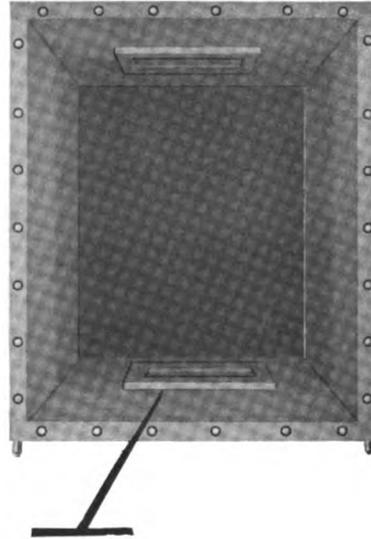


- ② Oil should be level with the lower edge of the filler opening.

TRANSMITTER (6) AND MODULATOR (7)



Check air intake filter (located under the cover). Some dirt denotes air flow; however, it should not be excessive.

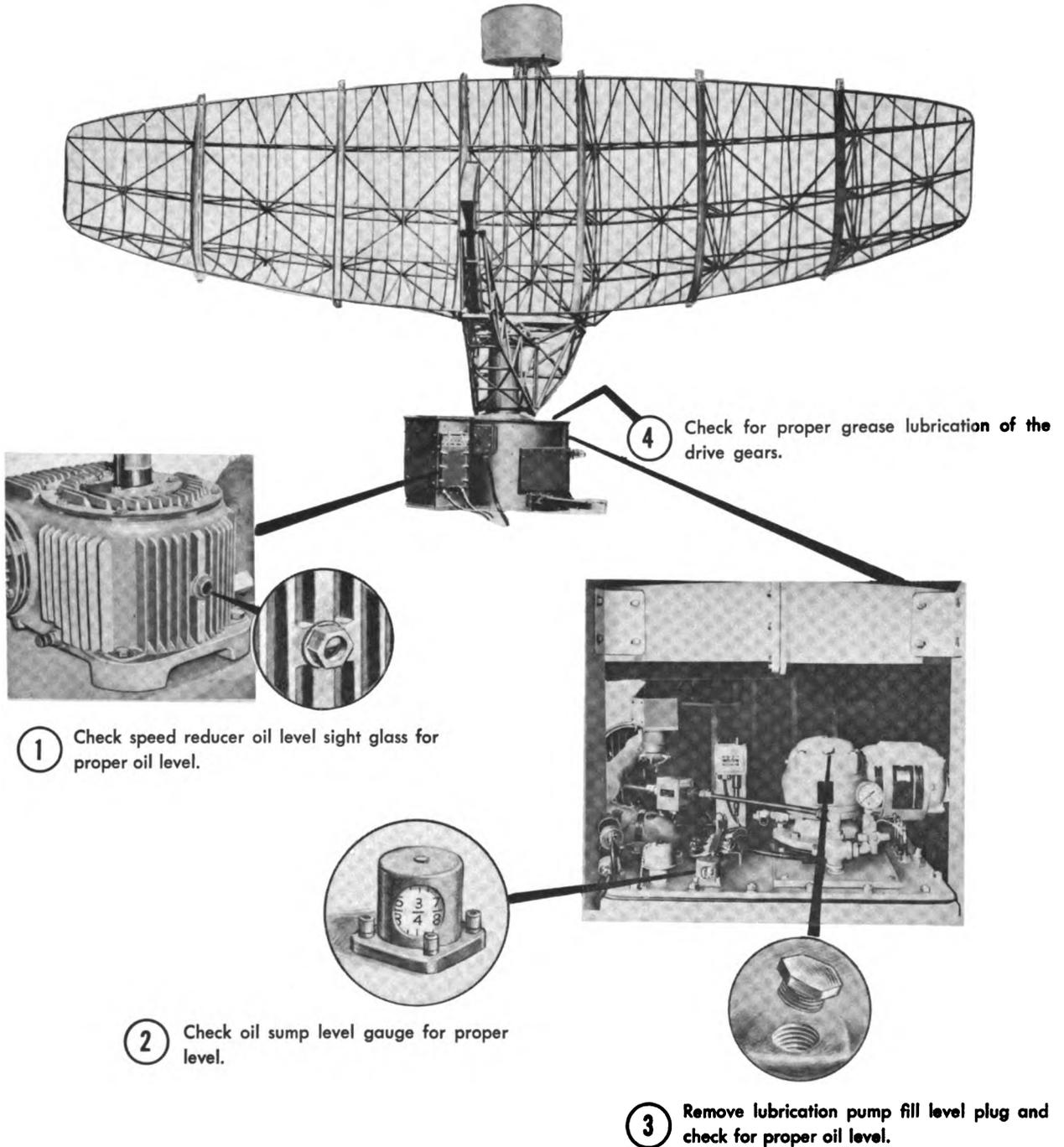


Check exhaust air filters (bottom and top). Some dirt denotes air flow; however, it should not be excessive.

ABAR ANTENNA (12)

Warning: While inspecting the antenna, be sure that the **RADIATE ON/OFF** switch is maintained in the **OFF** position, the **ANTENNA RUN/STOP** switch maintained in the **STOP** position, and the **OPERATING MODE** switch maintained in the **LOCAL** position (All switches located in the ABAR building).

In systems using grease for lubrication, skip steps (1) and (2). In systems using oil for lubrication, omit step (4). Access covers must be removed for the following checks:



ORD G4451

OPERATIONAL INDICATORS

The ABAR equipment can be expected to function properly if the transmitter power output is adequate and the indicated receiver checks are satisfactory. Direct the repairman to energize the system and perform the following measurements.

TRANSMITTER POWER OUTPUT

Perform the power amplifier group power output measurement. The procedure and rated output power are given in TM 11-5840-305-12.

RECEIVER CHECKS

The procedures and rated values for the following checks are given in TM 11-5840-305-12.

- ① Perform the minimum discernable signal measurement.
- ② Perform the cancellation ratio measurement.
- ③ Perform the subclutter visibility measurement.

CHAPTER 6
FIRE UNIT INTEGRATION FACILITY (FUIF)

The FUIF is a self operating equipment serving as an automatic data interchange subsystem between the fire unit and command post. Once the operational settings have been made, the FUIF requires periodic preventive maintenance only. Control settings on the equipment are critical and specific for each individual site.

NOTE: Do not attempt to change any control settings, especially the parallax switch positions on the coordinate data set unless the positions have been recorded.

Perform a general inspection of the FUIF shelter as outlined in the typical indicator chapter to insure cleanliness, completeness of equipment, and functional usability of controls, meters, and indicators. The following are additional inspections and operational checkout procedures which will determine the readiness of the equipment.

- ① Note that the temperature is within the specified range as posted in the shelter.
- ② Check that the air-conditioning system and heaters are functioning.
- ③ When the coordinate data set is operating, be sure to check that the cooling fans are operating.

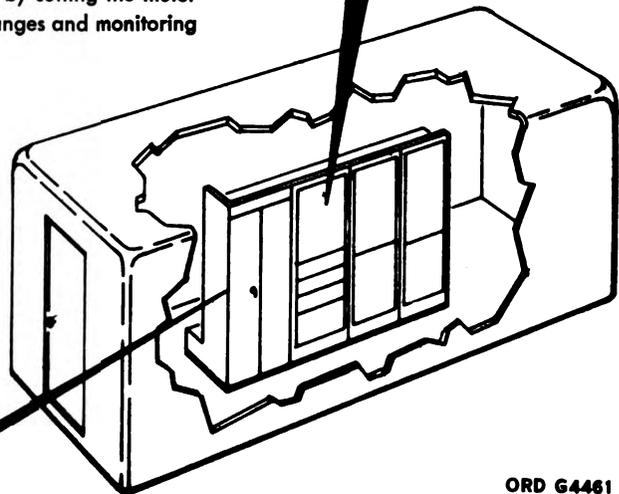


**CONVERTER-REGULATOR TEST GROUP
OA-3495/GSA-41
(REGULATOR RACK)**



- ④ Check the coordinate data set voltages by setting the meter switch on the test panel to the various ranges and monitoring the panel meter.
- ⑤ Check the air filters in the coordinate data set. They should be sufficiently clean to permit normal operation. The air filters should be changed at 4 to 6-month intervals.

**COORDINATE DATA SET GROUP
OA-3494A/GSA-41
(COORDINATE DATA SET RACK)**



ORD G4461

9 Check the telephone communications by contacting the battery and command post operators.

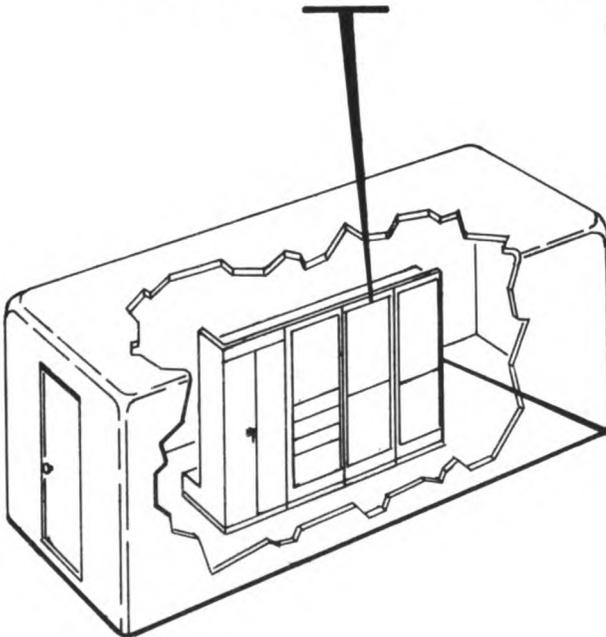
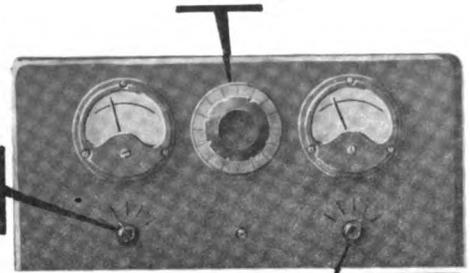
8 Check that FILAMENT ADJUST variac can be set for a reading of 117 volts ac on the A.C. VOLT meter when the A.C. VOLT SELECT switch is on FIL.

7 Check subsystem 3-phase power (para 4-1-3b, step 5, TM 11-5895-287-12). Select each power phase using A.C. VOLT SELECT switch on the power control panel and monitor the readings on the A.C. VOLT meter.

6 Check the FUIF dc voltages by setting the D.C. VOLT SELECT switch to the various ranges and monitoring the D.C. VOLT NULL meter on the power control panel.



GROUND/SLANT COMPUTER GROUP
OA-1426/FSG-1

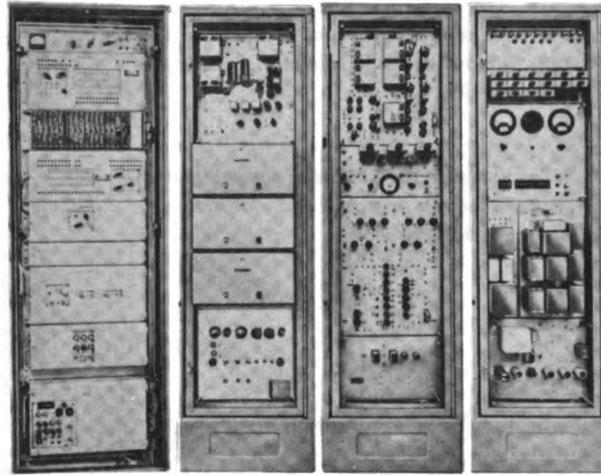


CONTROL-POWER SUPPLY GROUP
OA-3496/GSA-41
(STATUS AND POWER RACK)

ORD G4472

FIRE UNIT INTEGRATION FACILITY (FUIF) OPERATIONAL

INDICATORS

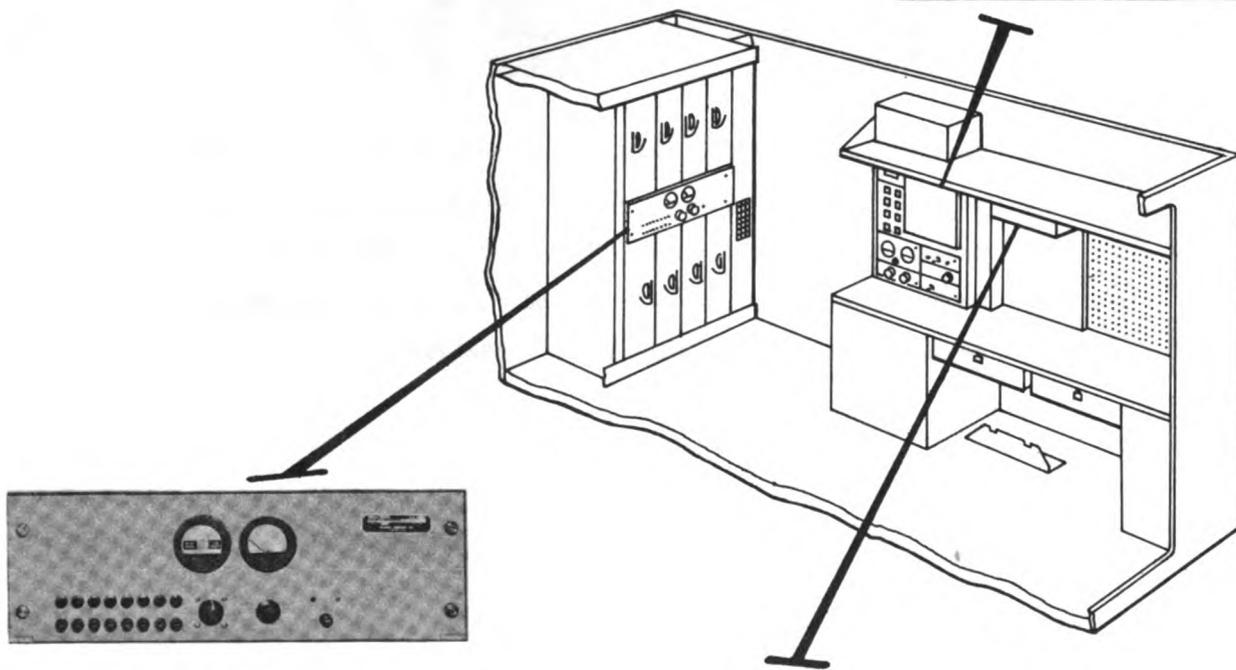


- ① Perform the FUIF-fire unit loop test (para 4-1-3d, steps 1 through 28, TM 11-5895-287-12).
- ② Perform the auxiliary data check (para 4-1-3d, steps 29 through 56, TM 11-5895-287-12).
- ③ Perform the height sensing circuit check (para 4-1-3d, step 57, TM 11-5895-287-12).
- ④ Perform the data switching check (para 4-1-3d, steps 58 through 64, TM 11-5895-287-12).
- ⑤ Perform the decoder check (para 4-1-3d, step 65, TM 11-5895-287-12).

CHAPTER 7 CODER-DECODER GROUP

Begin the inspection of the coder-decoder group (CDG) by performing a visual inspection as outlined in the typical indicator chapter. The following operational checks indicate the ability of the CDG to properly exchange command, coordinate and battery status information.

- 1 Air conditioner control panel controls operable and indicators display proper indications. Cool-system functions normally.
- 2 System line voltages and frequency correct. Master control panel controls operable and indicators display proper indications.

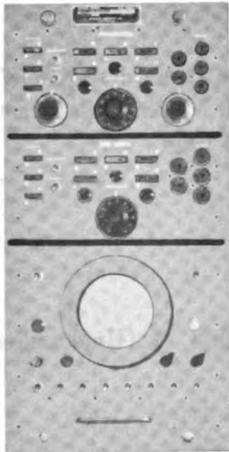


- 3 System DC voltages within tolerance. Total time meter functioning.

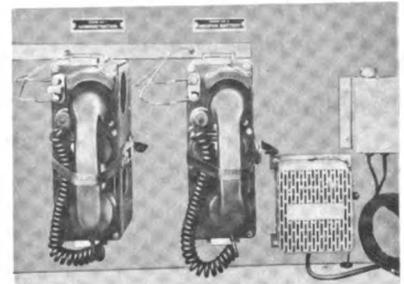


- 4 State of alert indicator panel controls operable and indicators display proper indications.

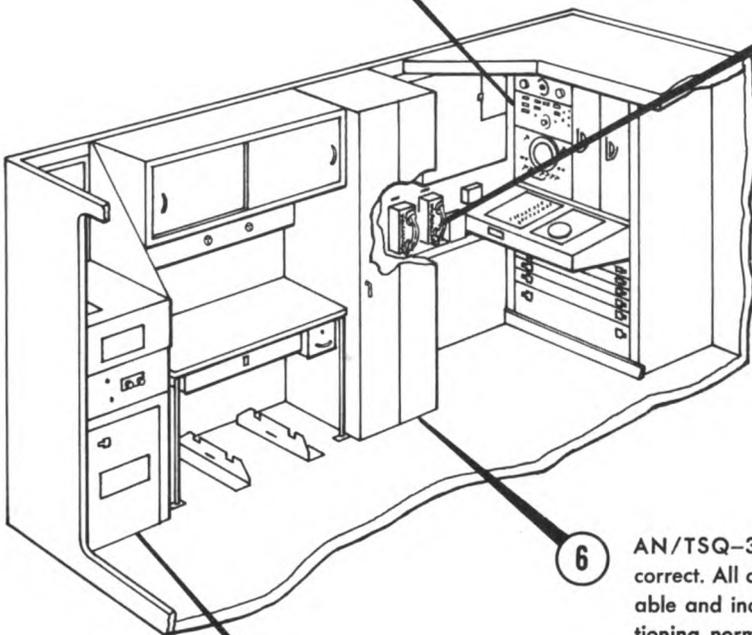
ORD G 4495



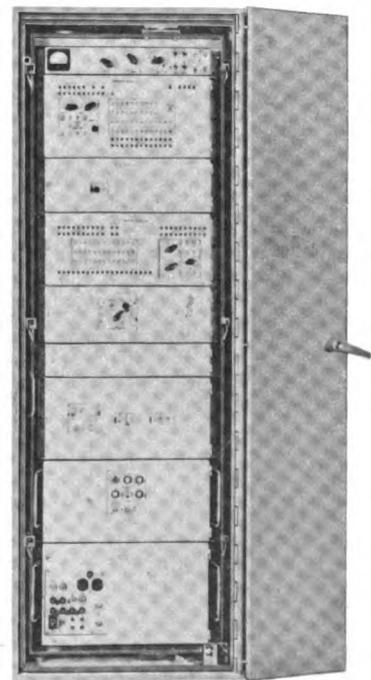
8 Perform the CDG-to-fire unit integration tests (TM 11-5895-291-25) and observe that the monitor panel controls are operable and indicators display proper indications.



7 Communications and maintenance phones operate properly.



6 AN/TSQ-36 voltages correct. All controls operable and indicators functioning normally.



ORD G 4496



5 Heater control panel controls operable and indicators display proper indications. Heating system functions normally.

By Order of the Secretary of the Army:

HAROLD K. JOHNSON,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

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