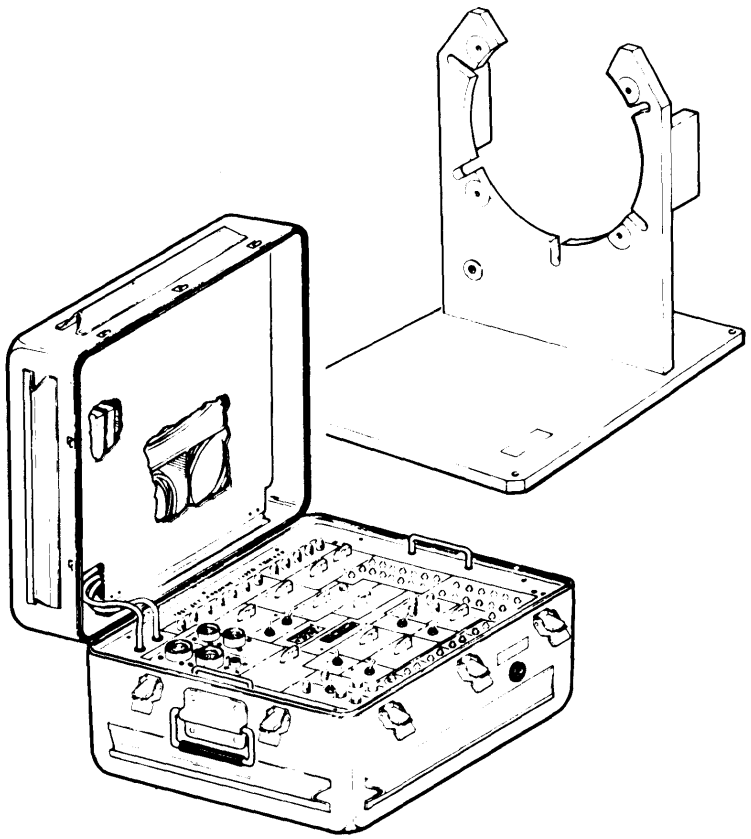
TM 11-6625-2638-12

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL



AIRBORNE LASER TRACKER TEST SET AN/AAM-55 (NSN 5860-01-070-3842)

HEADQUARTERS, DEPARTMENT OF THE ARMY

4 JUNE 1984

Technical Manual

No. 11-6625-2638-12

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 4 June 1984

Operator's and Organizational Maintenance Manual
AIRBORNE LASER TRACKER TEST SET
AN/AAM-55
(NSN 5860-01-070-3842)

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 Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, US Army Communications — Electronics Command and Fort Monmouth ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. A reply will be furnished to you.

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CHAPTER 1

INTRODUCTION

Section I. GENERAL INFORMATION

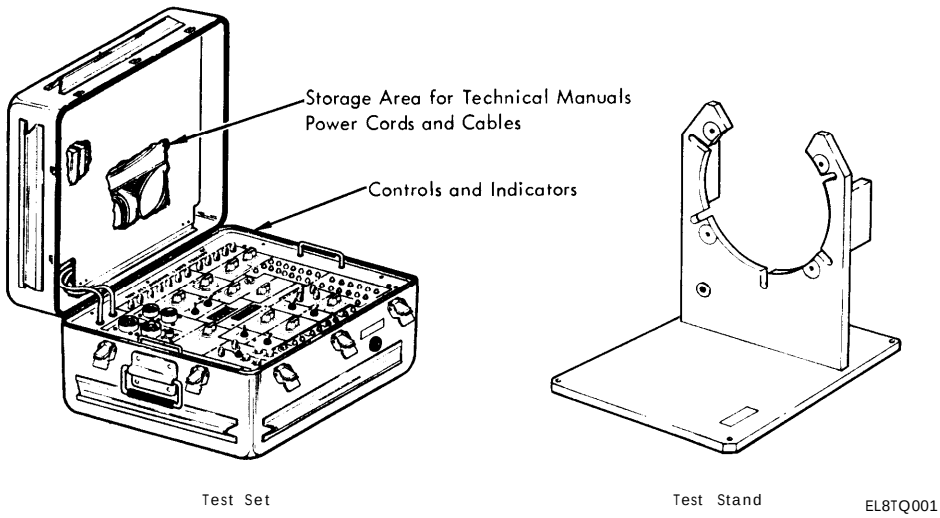

Figure 1-1. Airborne Laser Tracker Test Set AN/AAM-55.

1-1. Scope

a. The purpose of this manual is to tell you how to operate and maintain the Airborne Laser Tracker Test Set, AN/AAM-55.

b. The Test Set is used to troubleshoot the Receiver-Tracker, Laser R-1920/AAS-32 (receiver) and the Electronic Components Assembly MX-9623/ AAS-32 (electronic assembly).

1-2. Index of Technical Publications

Refer to the latest issue of DA Pam 310-1 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

1-3. Maintenance Forms, Records, and Reports

a. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750 as contained in Maintenance Management Update.

b. Report of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report of Discrepancy, ROD) as prescribed in AR 735-11-2/DLR 4140.55/ NAVMATINST 4355.73A/AFR 400-54/MCO 4430.3F.

c. Discrepancy in Shipment Report (DISREP) SF 361. Fill out and forward Discrepancy in Shipment Report (DISREP) SF 361 as prescribed in AR 55-38/NAVSUPlNST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

1-4. Destruction of Army Materiel to Prevent Enemy Use

The destruction of army materiel to prevent enemy use shall be in accordance with TM 750-244-2.

1-5. Preparation for Storage or Shipment

Prepare the ALT test set for storage or shipment as described in paragraphs 3-12, 3-13, and 3-14.

1-6. Reporting Equipment Improvement Recommendations (EIR)

If your ALT test set needs improvement, let us know. Send us a 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 or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to Commander, US Army Communications — Electronics Command and Fort Monmouth. ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703. We'll send you a reply.

1-7. Nomenclature Cross-Reference

Official nomenclature and common names are listed in table 1-1.

Table 1-1. Nomenclature Cross-Reference

Official Nomenclature	Common Name
Test Set, Airborne Laser Tracker AN/AAM-55	**ALT Test Set**
Test Set, Laser TS-3482/AAM-55	**Test Set**
Test Stand, Receiver Tracker MT-4669/AAM-55	**Test Stand**
Airborne Laser Tracker AN/AAS-32	**ALT**
Receiver-Tracker, Laser R-1920/AAS-32	**Receiver**
Electronic Components Assembly MX-96231AAS-32	**Electronics Assembly**
Control, Laser Tracker C-9641/AAS-32	**Control Panel**

Section II. EQUIPMENT DESCRIPTION AND DATA

1-8. Equipment Characteristics, Features and Capabilities

a. The characteristics and features of the test set are as follows:

(1) The ALT test set is portable and can be used when the environmental and power requirements are available (para 1-10).

(2) All operating controls are on the front panel. Cables and technical manual are stored inside top cover.

(3) No adjustments to the ALT test set are necessary.

(4) Calibration is not required.

b. Capabilities. The test set will fault isolate the ALT receiver and electronics assembly to the major subassembly level.

1-9. Location and Description of Major Components (fig. 1-2)

The major components of the test set are as follows:

a. Test Set Cover (1)	**Provides a place to store power cords, technical manual and test cables (W1, W2, and W3).**
b. Test Stand (2)	**Provides a mounting surface for the ALT receiver during trouble shooting and repair.**
c. Cable (3)	**Cable W3 connects the test set to the ALT receiver.**
d. Cable (4)	**Cable W2 connects the test set to the ALT electronics assembly.**
e. Cable (5)	**Cable W1 connects the test set to the ALT electronics assembly.**

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Figure 1-2. Test Set Major Components.

1-10. Equipment Data

	Test Set	Test Stand
WEIGHT (approximate)	**30 pounds**	**3.5 pounds**
DIMENSIONS		
Width	**22 inches**	**12 inches**
Height	**13 inches**	**13 inches**
Depth	**22 inches**	**12 inches**
ENVIRONMENTAL OPERATING RANGES		
Temperature	**–18 to + 55°C**	
Humidity	**0 to 98%**	
Altitude	**10,000 feet maximum**	

NOTE

No primary power connectors are supplied with the test set. Refer to paragraph 3-8 for power connections.

PRIMARY POWER REQUIREMENTS		
DC Power	**28 vdc**	**None**
AC Power	**115 vat, 400 Hz**	**None**
FUSES		
DC Power	**10 amp**	**None**
AC Power	**2 amp**	**None**

Section III. TECHNICAL PRINCIPLES OF OPERATION

The test set provides the unit under test (ALT receiver or electronic assembly) with power and simulated input signals. The outputs of the unit under test are monitored at the test jacks using test equipment. The operating instructions, description and use of operator's controls and indicators are in chapter 2.

CHAPTER 2

OPERATING INSTRUCTIONS

Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

All the controls and indicators of the test set (fig. 2-1) are on the front panel. The front panel controls (figures 2-2 thru 2-15 and tables 2-1 thru 2-14) identify and describe the test panel by functional groups.

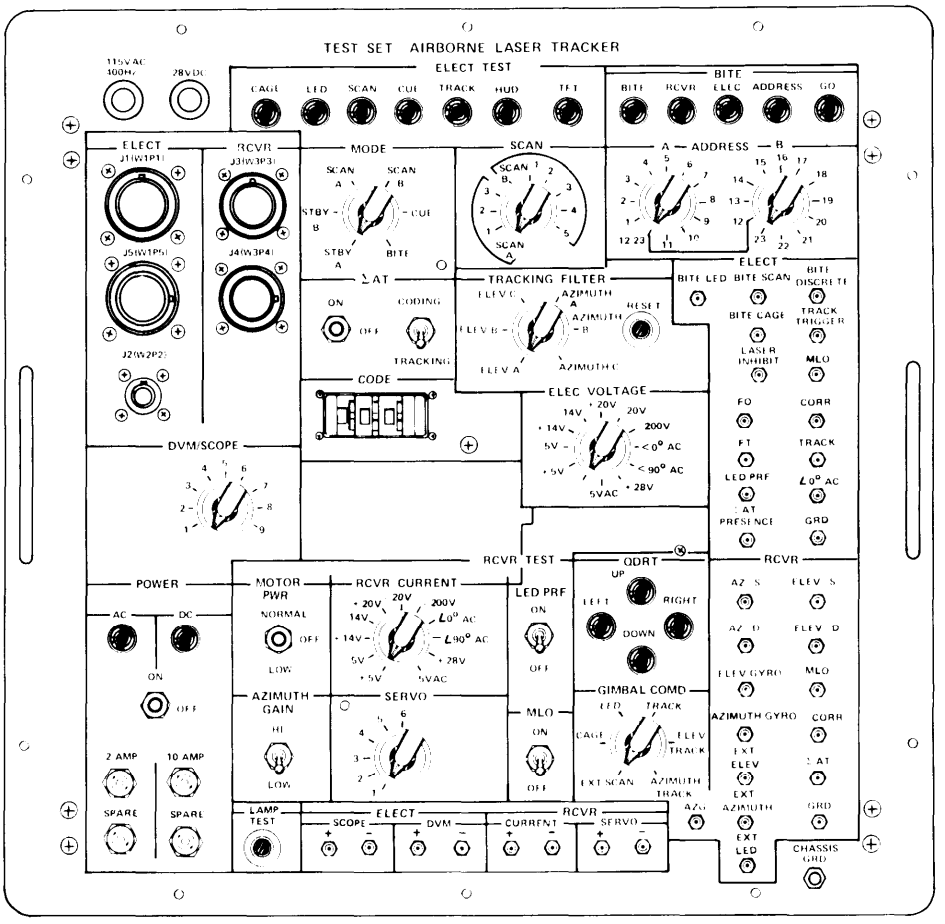

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Figure 2-1. Test Set Front Panel.

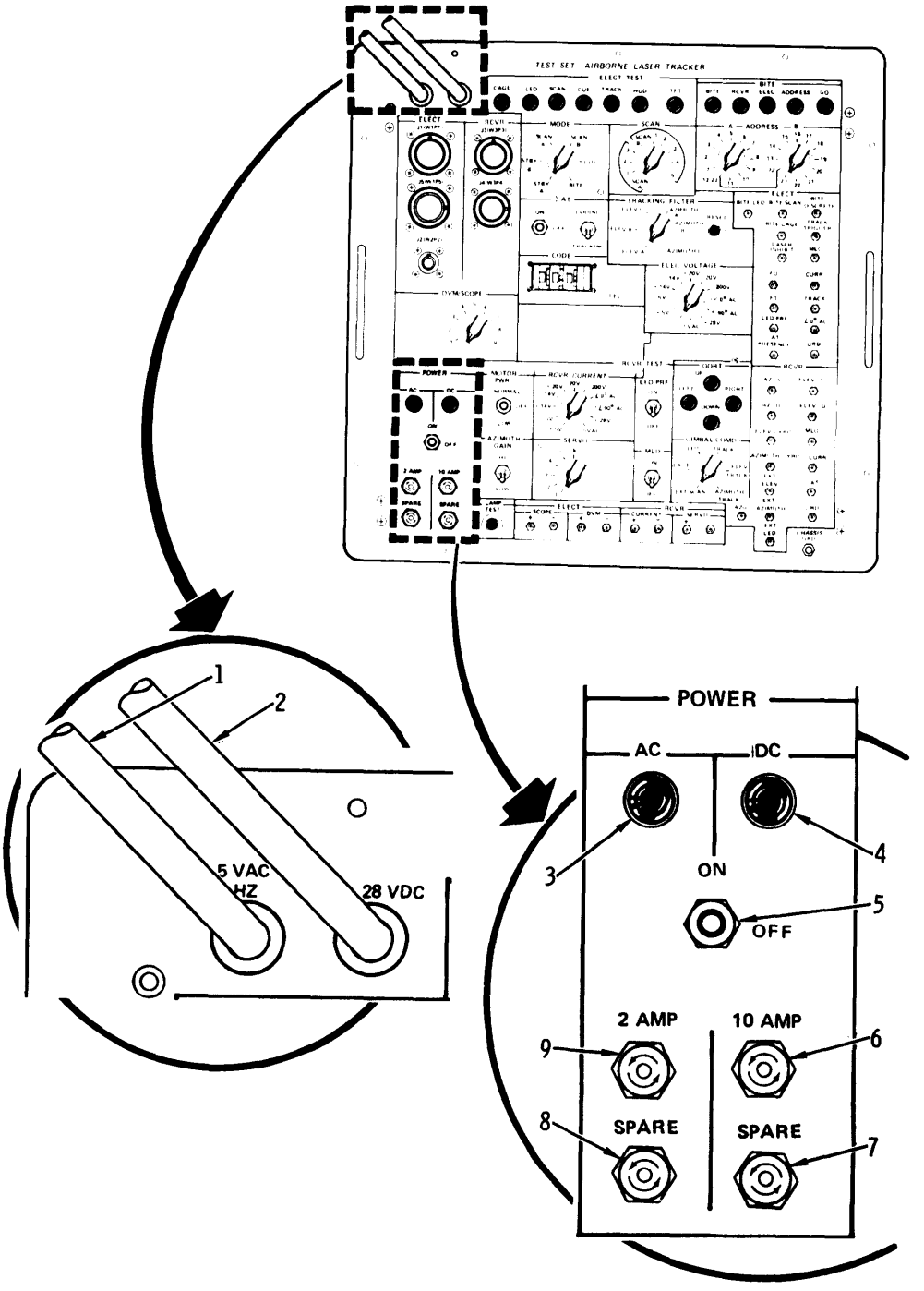

Figure 2-2. Power Group.

Table 2-1. Power Group

Key	Control Indicator	Function
1	115 VAC, 400 HZ power cord	Connects test set to 115 VAC, 400 HZ electrical power.
2	28 VDC power cord	Connects test set to 28 VDC electrical power.
3	AC lamp (DS2)	Lights when POWER switch is ON (115 VAC, 400 HZ power, is ON in test set).
4	DC lamp (DS1)	Lights when POWER switch is ON (28 VDC power is ON in test set).
5	POWER switch (S10)	Controls test set ac and dc power. Lights AC and DC lamps when ON.
6	10 AMP fuse (F1)	Protects 28 VDC circuit from overload.
7	SPARE fuse (F4)	Holds spare 10 AMP fuse.
8	SPARE fuse (F3)	Holds spare 2 AMP fuse.
9	2 AMP fuse (F2)	Protects 115 VAC circuit from overload.

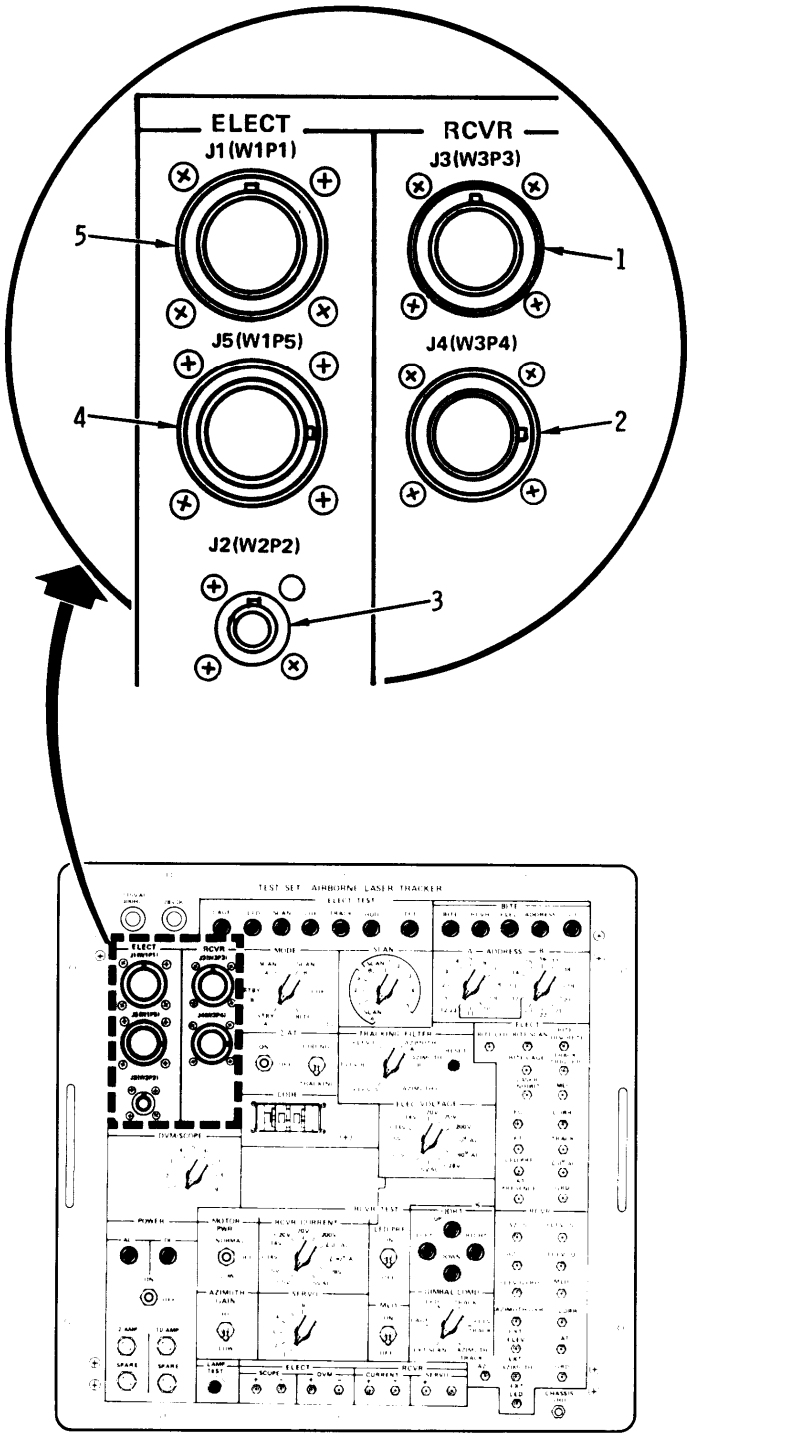

Figure 2-3. Elect and Rcvr Group.

Table 2-2. Elect and Rcvr Group

Key	Connector	Function
1,2	RCVR connector group	The RCVR connector group provides a connection between the test set and the interconnecting cables which interface with the receiver of the Airborne Laser Tracker.
1	J3 (W3P3)	Connects the test set to the branched electrical special purpose cable assembly, W3.
2	J4 (W3P4)	
3,4,5	ELECT connector group	The ELECT connectors group provides a connection between the test set and the interconnecting cables which interface with the electronics assembly of the Airborne Laser Tracker.
5	J1 (W1P1) connector and	Connect the test set to the branched electrical special purpose cable assembly, W1.
4	J5 (W1P5) connector	
3	J2 (W2P2) connector	Connects the test set to the electrical power cable assembly, W2.

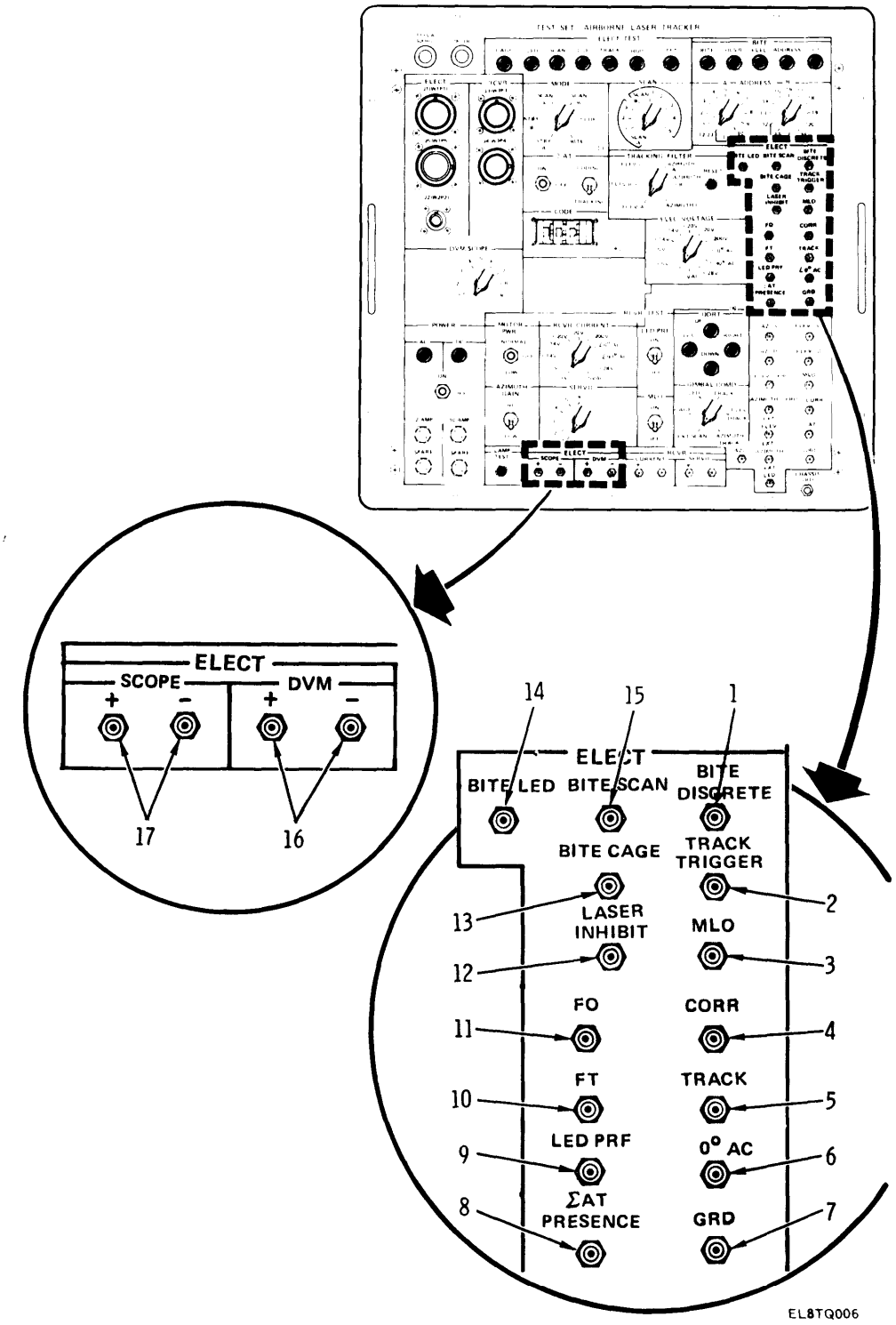

Figure 2-4. Elect Group Test Jacks.

Table 2-3. Elect Group Test Jacks

Key	Jack	Function
1	BITE DISCRETE jack (J21)	Test jack for BITE discrete signal.
2	TRACK TRIGGER jack (J22)	Test jack for track trigger signal.
3	MLO jack (J35)	Test jack for MLO clock signal.
4	CORR jack (J36)	Test jack for correlate signal.
5	TRACK jack (J37)	Test jack for track discrete signal.
6	< 0° AC jack (J43)	Test jack for electronics unit gyro excitation, zero degrees phase shift, 52/26 voltage.
7	GRD jack (J17)	Ground jack for electronics unit test jacks.
8	∑AT PRESENCE jack (J39)	Test jack for ∑AT presence signal
9	LED PRF jack (J40)	Test jack for LED PRF signal.
10	FT jack (J38)	Test jack for FT signal.
11	FO jack (J12)	Test jack for FO discrete signal.
12	LASER INHIBIT jack (J34)	Test jack for laser inhibit signal.
13	BITE CAGE jack (J33)	Test jack for BITE case discrete signal.
14	BITE LED jack (J19)	Not used.
15	BITE SCAN jack (J20)	Not used.
16	DVM + (J10) and - (J13) jacks	Jacks for connecting the DVM when testing the electronics assembly; the voltages are selected with the DVM/SCOPE switch.
17	SCOPE + (J15) and - (J14) jacks	Jacks for connecting the SCOPE when testing the electronics assembly; the signals are selected with the DVM/SCOPE switch.

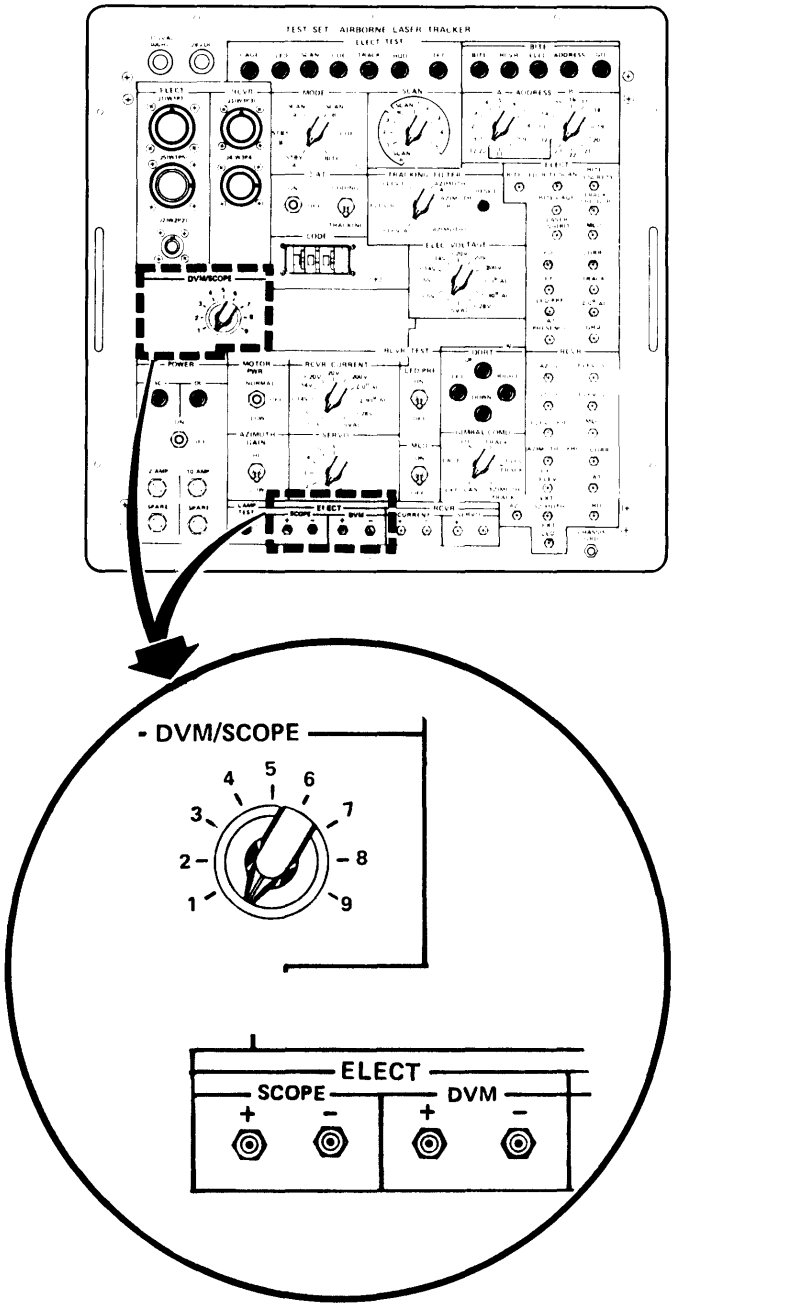

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Figure 2-5. DVM/Scope Switch and Elect Scope/DVM Jacks.

Table 2-4. DVM/Scope Switch and Elect Scope/DVM Jacks

Switch	Switch Position
DVM/SCOPE switch (S3)	The DVM/SCOPE switch selects the signals and voltages to be monitored at the SCOPE and DVM jacks during electronics assembly testing.

Test Pos	Signals/Voltages Monitored
1	Voltages from electronic assembly power supply.
2	Train (azimuth) gain discrete signal.
3	Elevation servo command signal.
4	Train (azimuth) servo command signal.
5	Elevation signal.
6	Train (azimuth) signal.
7	Elevation track command.
8	Train (azimuth) track command.
9	Track discrete signal.

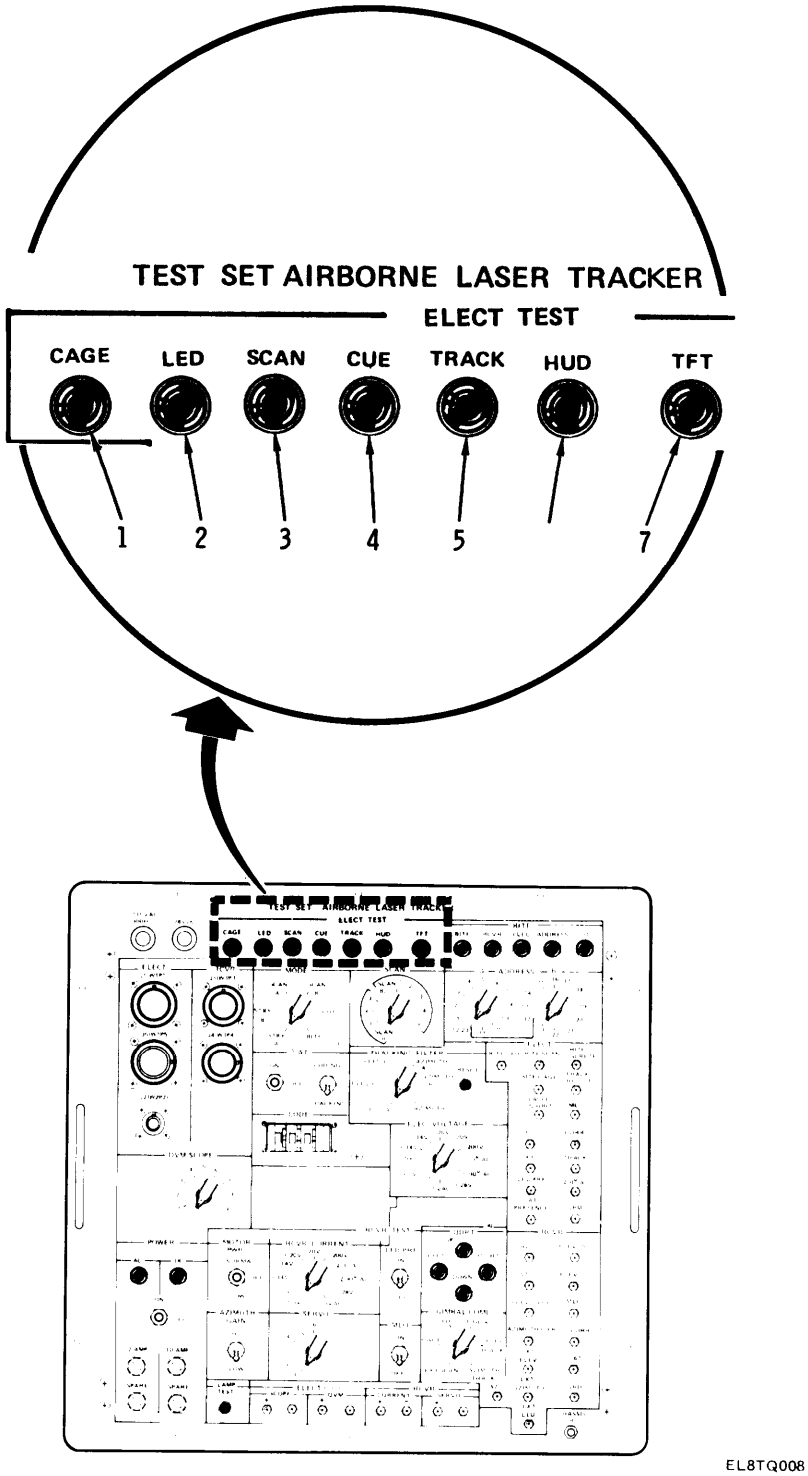

Figure 2-6. Elect Test Lamps.

Table 2-5. Elect Test Lamps

Item	Lamp	Function
1	CAGE lamp (DS3)	Indicates that electronics assembly logic is generating a cage signal.
2	LED lamp (DS4)	Indicates that electronics assembly logic is generating LED pulse commands.
3	SCAN lamp (DS5)	Indicates that electronics assembly logic is generating scan signals.
4	CUE lamp (DS6)	Indicates that electronics assembly logic is generating the CUE signal.
5	TRACK lamp (DS7)	Indicates that electronics assembly logic is generating the TRACK signal.
6	HUD lamp (DS8)	Indicates that electronics assembly logic is generating the HUD signal.
7	TFT lamp (DS9)	Indicates that electronics unit logic is generating the TFT signal (track test terminate).

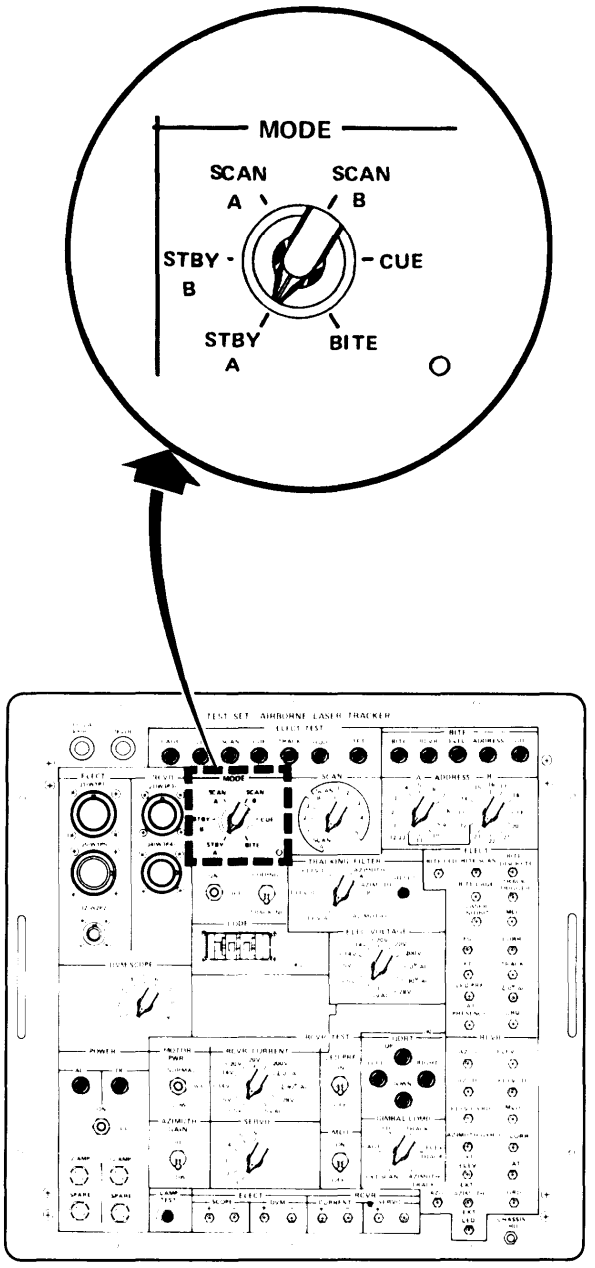

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Figure 2-7. Mode Switch.

Table 2-6. Mode Switch

MODE switch (S1) Position	Function
STBY A	Applies simulated 30 degree resolver signal to electronic assembly.
STBY B	Applies simulated 45 degree resolver signal to electronic assembly.
SCAN A	Applies SCAN 1 (two bar) command to electronic assembly.
SCAN B	Applies SCAN 2 (four bar) command to electronic assembly.
CUE	Applies CUE (track) signal to electronics assembly.
BITE	Applies BITE (test) signal to electronics assembly, and disables BITE clock circuitry.

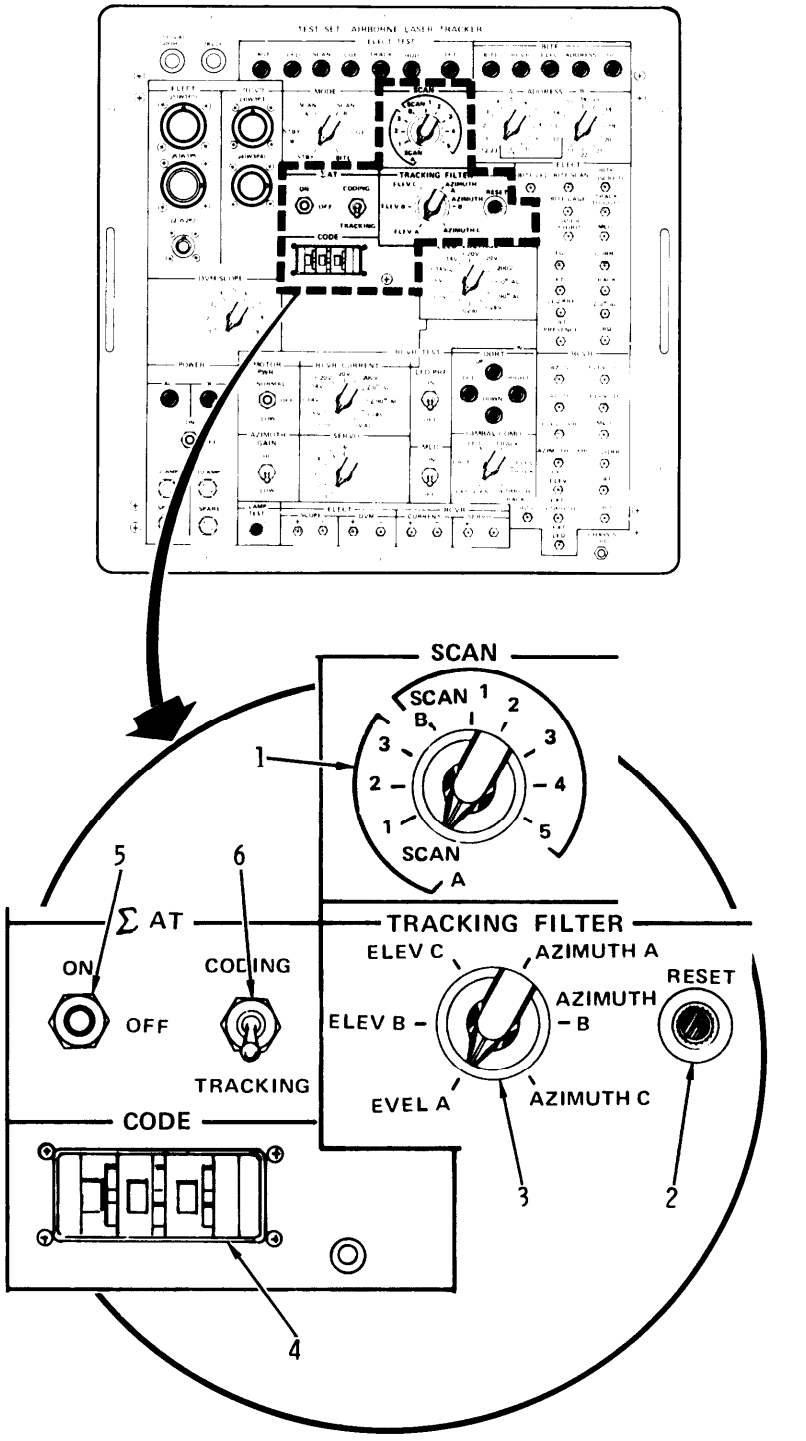

Figure 2-8. Scan, ΣAT, Code and Tracking Filter Switches.

Table 2-7. Scan, ∑AT, Code Tracking Filter Switches

Item	Switch	Function
1	SCAN switch (1 O-position rotary switch) (S4)	Provides 10 separate simulated resolver position signals to electronic assembly.
2	RESET switch (pushbutton switch) (S13)	Manually reset test set clock circuitry for BITE and tracking tests.
3	TRACKING FILTER switch (6-position rotary switch) (S15)	Selects simulated target position signals to electronic assembly tracking filter.
4	CODE switch (3-rotor, 8-position per rotor switch) (S2)	Selects desired code number to determine coding frequency.
5	ON/OFF switch (toggle switch) (S11)	Activates SAT signal from test set to electronic assembly.
6	CODING/ TRACKING switch (2-position toggle switch) (S12)	Selects ∑AT coding or ∑AT tracking inputs to electronic assembly.

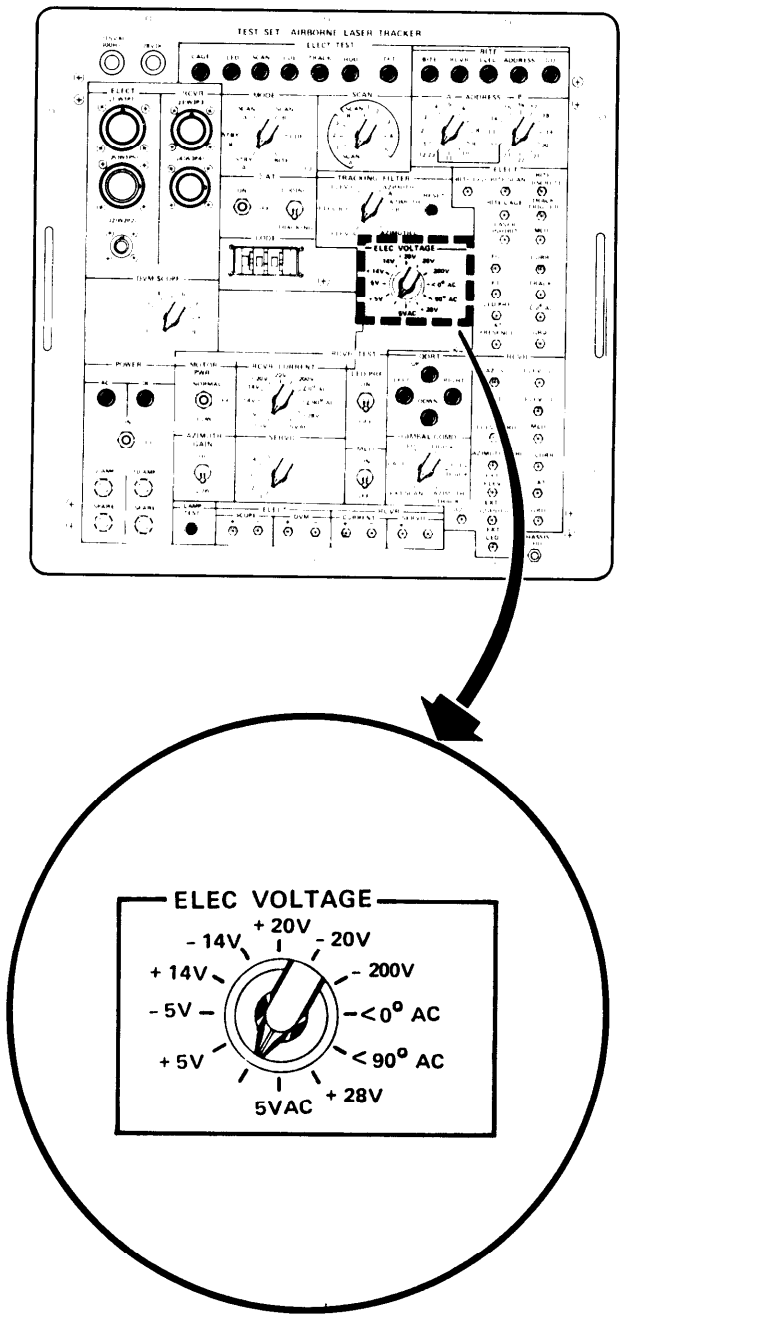

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Figure 2-9. Elec Voltage Switch.

Table 2-8. Elec Voltage Switch

Switch	Position	Function
ELEC VOLTAGE (S21)		Selects electronic assembly voltages to be monitored at the test set ELEC + and – DVM jacks when the DVM/SCOPE switch is in position 1.
		Electronic Unit Voltage Monitored
	+5V	+ 5 vdc
	-5 V	– 5 vdc
	+14V	+14vdc
	–14V	–14vdc
	+ 20V	+ 20 vdc
	– 20V	– 20 vdc
	-200V	– 200 vdc
	< 0° AC	52/26 vat, 400 Hz, 0° phase shift excitation
	< 90° AC	52/26 vat, 400 Hz, 90° phase shift excitation
	28V	28 vdc
	5VAC	5 vac

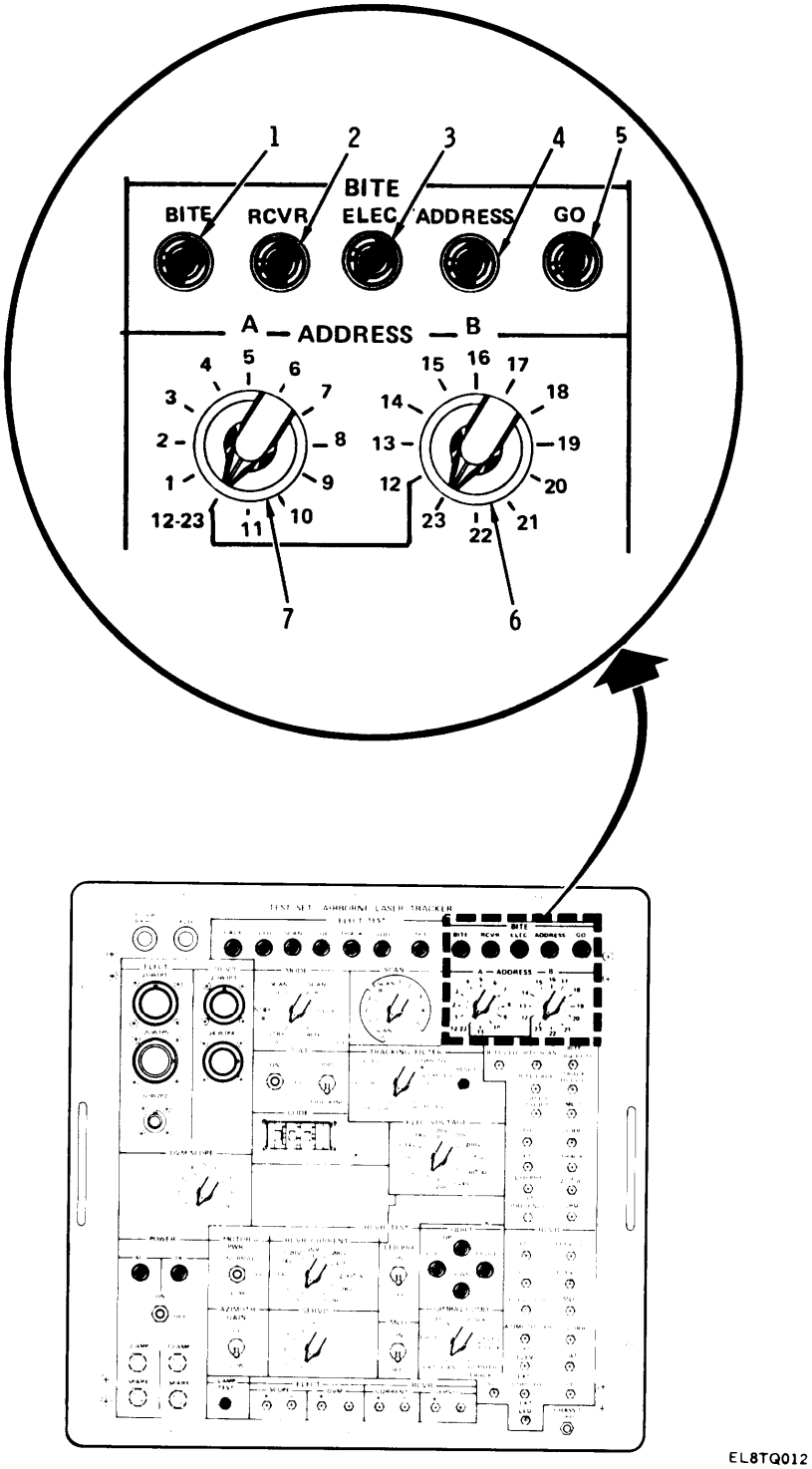


Figure 2-10. BITE/Address Group.

Table 2-9. BITE/Address Group

Item	Lamp or Switch	Function
1	BITE lamp (DS10)	Indicates that the electronics assembly is performing the BITE (self test).
2	RCVR lamp (DS18)	Indicates that a fault exists in the electronic assembly BITE circuit card.
3	ELECT lamp (DS17)	Indicates that a fault exists in the electronic assembly BITE circuit card.
4	ADDRESS lamp (DS16)	Indicates that the test of the selected address is complete.
5	GO lamp (S15)	Indicates that the electronics assembly has successfully completed the BITE test.
6	ADDRESS B (12-position rotary switch) (S18)	Manually selects last twelve test addresses.
7	ADDRESS A (12-position rotary switch) (S16)	Manually selects first eleven BITE test addresses.

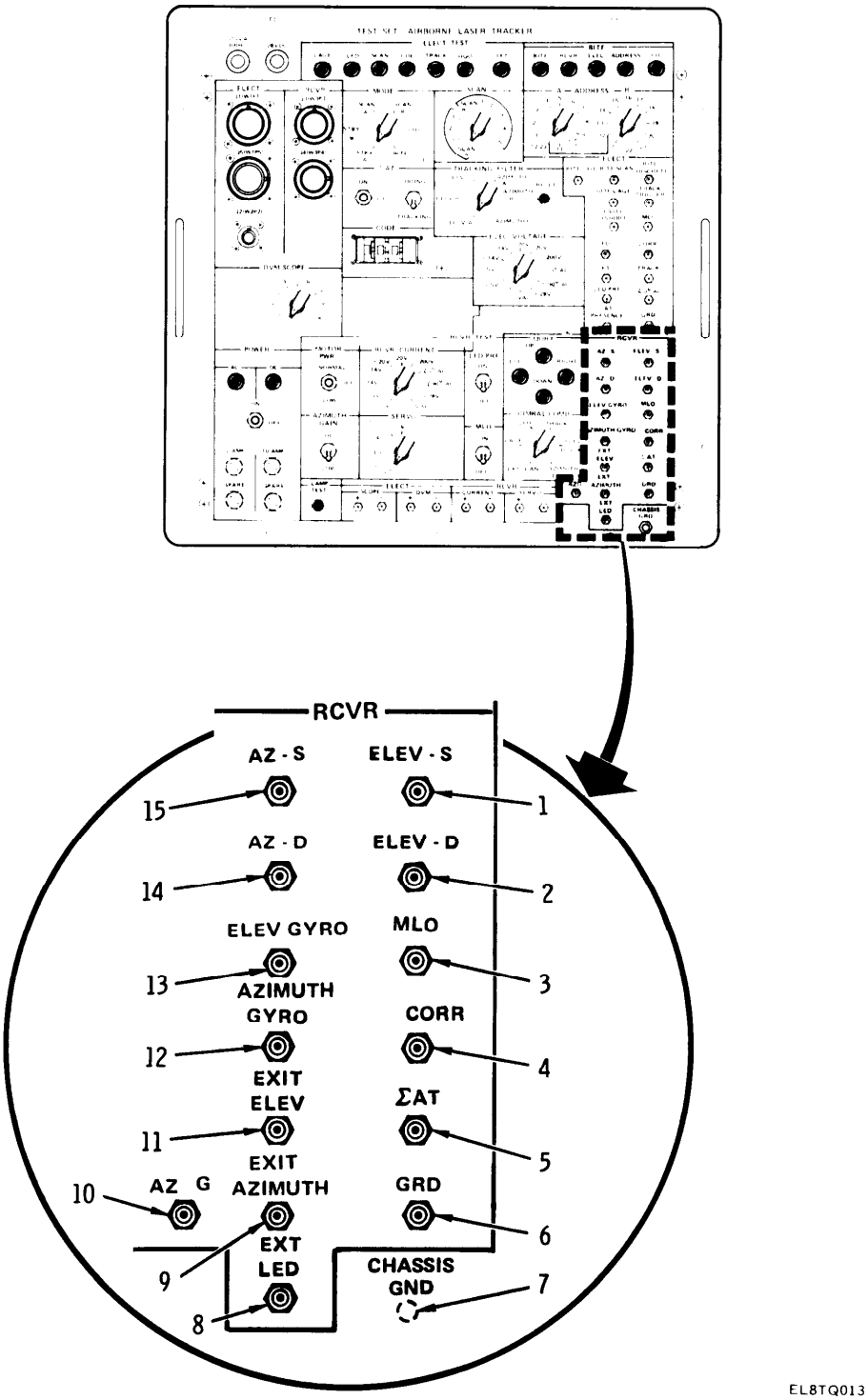


Figure 2-11. Rcvr Test Jacks.

Table 2-10. Rcvr Test Jacks

Item	Test Jack	Test Jack Signal
1	ELEV-S (J29)	Elevation servo torque signal
2	ELEV-D Jack (J31)	Elevation torque disturbance signal
3	MLO jack (J41)	MLO signal
4	CORR jack (J42)	Correlate signal
5	∑AT (J25)	Sum after threshold signal
6	GRD jack (J18)	Ground for receiver test jacks
7	Chassis GND	Chassis GND terminal
8	EXT LED jack (J11)	External LED signal
9	EXT AZIMUTH (J24)	External train input signal
10	AZ-G jack (J32)	Train resolvers
11	EXT ELEV jacks (J23)	External elevation input signal
12	AZIMUTH GYRO jack (J27)	Azimuth gyro pickoff AC monitor signal
13	ELEV GYRO jack (J26)	Elevation gyro pickoff AC monitor signal
14	AZ-D jack (J30)	Torque disturbance signal
15	AZ-S (J28)	Train resolver signal

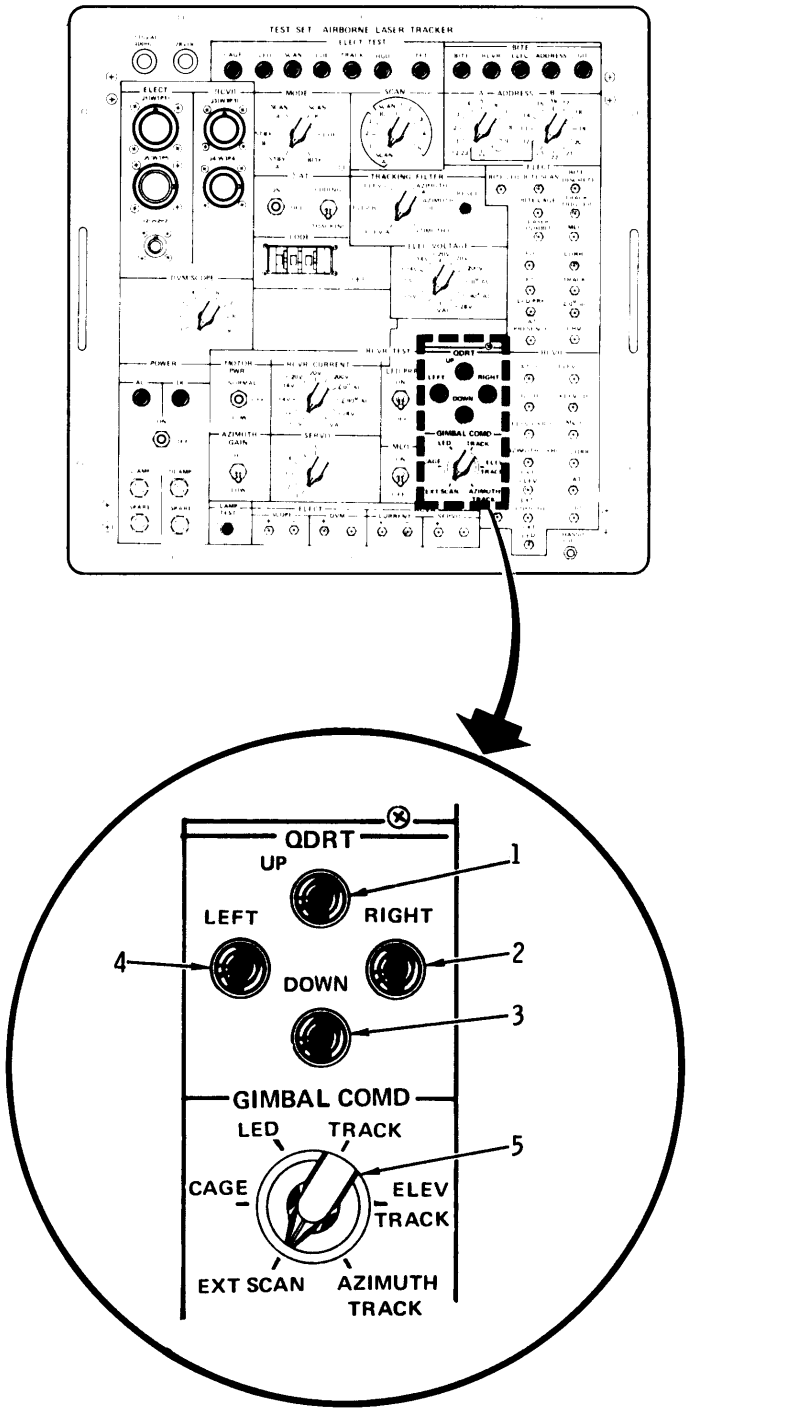
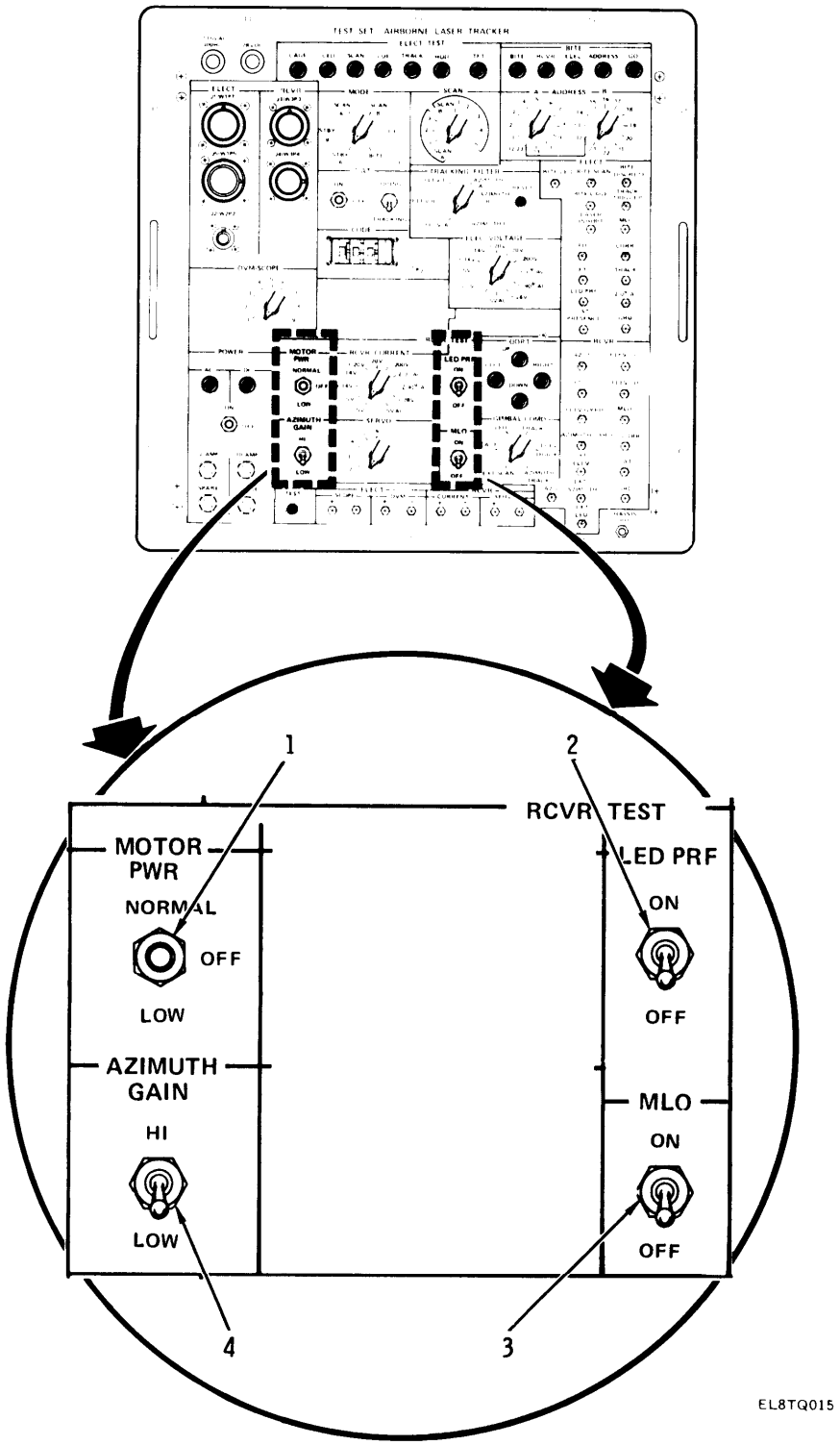


Figure 2-12. Qdrt and Gimbal Cored Group.

Table 2-11. Qdrt and Gimbal Cored Group

Item	QDRT Lamp	Indication
1	UP lamp (DS14)	The receiver optics line of sight is in the elevated position.
2	RIGHT lamp (DS11)	The receiver optics line of sight is in the right position.
3	DOWN lamp (DS13)	The receiver optics line of sight is in the down position.
4	LEFT lamp (DS12)	The receiver optics line of sight is in the left position.
5	GIMBAL COMD switch (S17)	

Switch Position	Function
EXT SCAN	Allows the receiver line of sight movements to be controlled by an external source at the EXT TRAIN and ELEV jacks.
CAGE	Positions the receiver line of sight in the CAGE position.
LED	Positions the receiver line of sight in the LED test position facing the LED.
TRACK	Activates the receiver line of sight through the track pattern of movement.
ELEV TRACK	Cause the receiver line of sight to move in an up and down pattern.
AZIMUTH TRACK	Cause the receiver line of sight to move in a left to right pattern.



Figrue 2-13. Motor Pwr, Azimuth Gain, LED PRF and MLO Switches.

Table 2-12. Motor Pwr, Azimuth Gain, LED PRF and MLO Switches

Item	Switch	Switch Position	Function
1	MOTOR PWR (S19)		Provides normal or low voltage to gyro motors.
		NORMAL	Provides normal gyro voltage.
		OFF	Gyro voltage off.
		LOW	Provides low gyro voltage.
2	LED PRF (S6)	ON	Turns on the LED PRF signal generated by the test set.
		OFF	Turns off the LED PRF signal generated by the test set.
3	MLO (S7)	ON	Causes the test set to generate the correlate signal.
		OFF	Turns off the correlate signal.
4	AZIMUTH GAIN (S5)		Provides a signal to control the azimuth servo gain.
		HI	Provides high azimuth servo gain.
		LOW	Provides low azimuth servo gain.

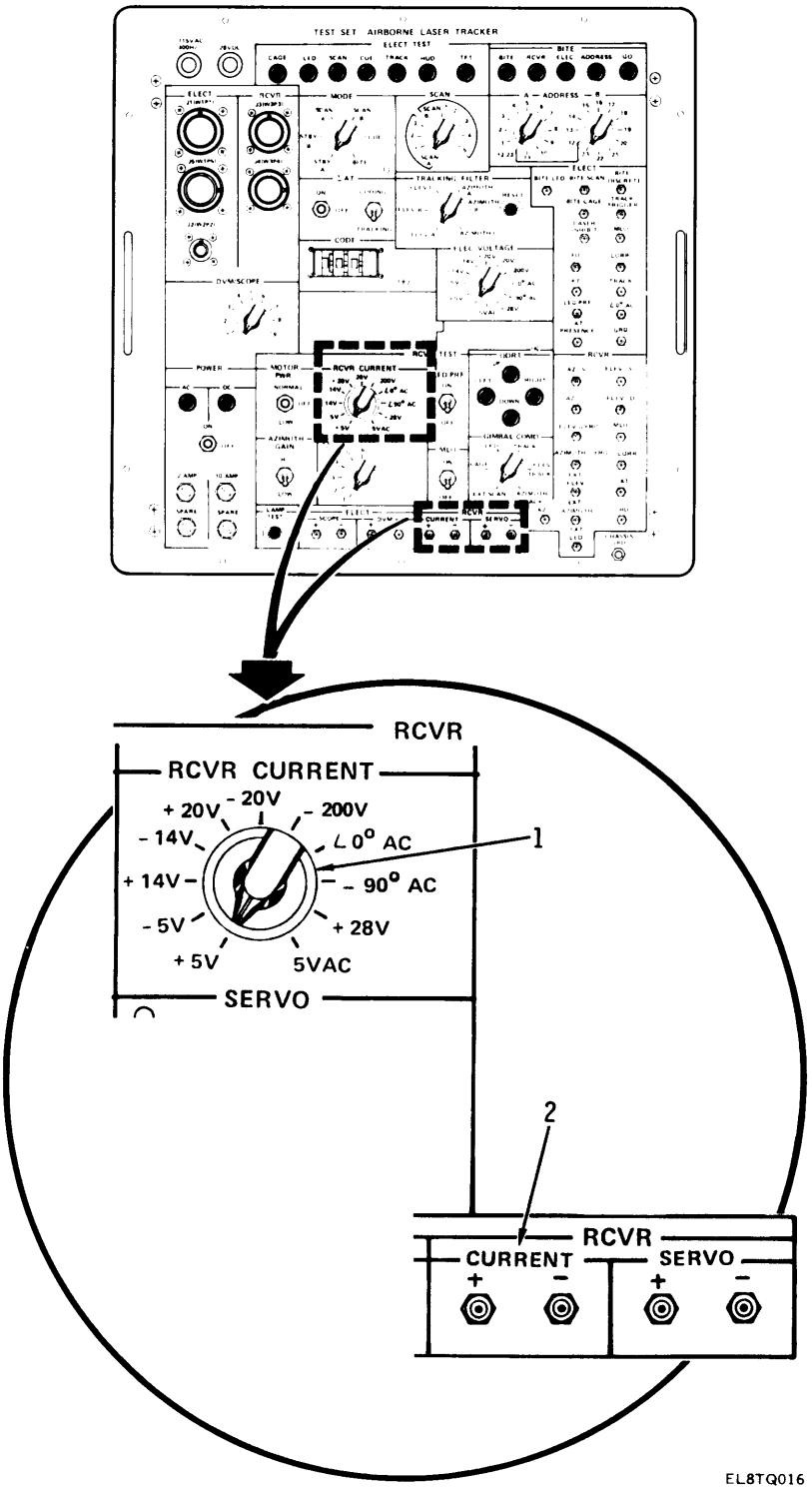


Figure 2-14. Rcvr Current Group.

Table 2-13. Rcvr Current Group

Item	Switch or Jack	Function
1,2	RCVR CURRENT (S20) RCVR CURRENT + and – Jacks	The switch selects the receiver currents to be monitored at the RCVR CURRENT jacks. Sw Pos — Current Monitored + 5V — + 5 vdc current – 5V — – 5 vdc current + 14V — +14 vdc current – 14V — -14 vdc current + 20V — +20 vdc current – 20V — – 20 vdc current -200V — – 200 vdc current < O°AC — 52/26 vat, 400 Hz zero degree phase shift excitation current. < 90°AC — 52/26 vat, 400 Hz 90 degree phase shift excitation current. +28 VDC — 28 vdc current 5 VAC — 5 vac current

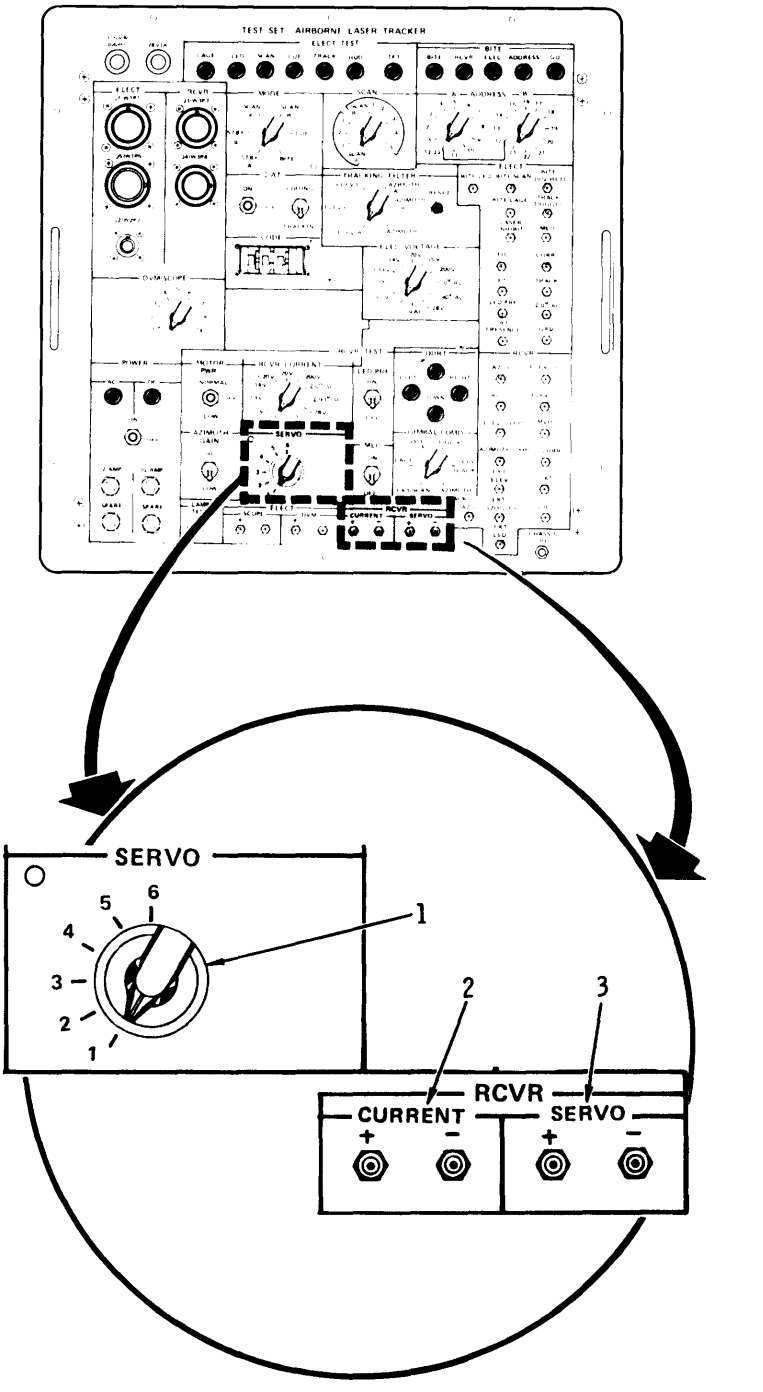


Figure 2-15. Servo Group.

Table 2-14. Servo Group

Item	Switch or Jack	Function
1	SERVO switch (S8)	The SERVO switch controls the signals available for monitoring at the RCVR CURRENT and RCVR SERVO + and – jacks.
2	RCVR CURRENT + and – jacks (J8 and J7)	Sw Pos / Signal Monitored
3	RCVR SERVO + and – jacks (J9 and J16)	1 — R1 SIN E_G+ 0 2 — R1 COS E_G+ 0 3 — –R1 COS E_GSIN T_G+ 0 4 — R1 COS E_G SIN T_G + 0 5 — A SIN E_G 6 — –A COS E_G SIN T_G

Section II. OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-1. General

To be sure that the test set is ready to operate. You must perform Preventive Maintenance Checks and Services (table 2-1 5).

a. Before you operate. Always keep in mind the CAUTIONS and WARNINGS. Perform your before (B) PMCS.

b. While you operate. Always keep in mind the CAUTIONS and WARNINGS. Perform your during (D) PMCS.

c. After you operate. Be sure to perform your after (A) PMCS.

d. If your equipment fails to operate, report any deficiencies in accordance with **DA Pam 738-750.**

If anything looks wrong when doing your PMCS and you can't correct it yourself, write it on your DA Form 2404, equipment inspection and maintenance worksheet. If you find something serious, notify organizational maintenance RIGHT NOW.

Table 2-15. Operator Preventive Maintenance Checks and Services (PMCS)

B -Before Operation D -During Operation

ITEM No.	INTERVAL B	INTERVAL D	ITEM TO BE INSPECTED	PROCEDURE	Equipment is NOT Ready/ Available if:
1	X		Power cords and cables	a. Check for cracks due to aging and exposed wires which could cause an electrical short. b. Check connectors for damage such as bent or recessed pins.	a. Power cords damaged. b. Cables W1, W2, or W3 are damaged.
2	X		Fuses	Check that the 28 vdc and 115 vac spare fuses are the correct value and that they are not defective.	Fuses are missing or defective.
3	X		Controls	Check for missing control knobs.	Knobs are missing.
4		X	AC and DC lamp indicators	Lamps light when POWER switch is ON.	AC or DC lamp indicators do not light.

Section III. OPERATION UNDER USUAL CONDITIONS

2-2. General

Operation of the ALT test set consists of performing indicator lamp and fuse checkout procedures (table 2-1 6).

Table 2-16. Lamp and Fuse Checkout

Step	Procedure	Normal Indication	Corrective Action
1	Ensure POWER switch is OFF.		
2	Connect 28 VDC power cord to 28 VDC power.	Green wire to ground. White wire to return. Black wire to 28 vdc.	
3	Connect 115 vac power cord to 115 VAC, 400 HZ power.	Green wire to ground. White wire to return. Black wire tol 15 vdc.	
4	Place POWER switch to ON.	AC lamp lights.	Check 2 amp fuse; replace if necessary. Check ac indicator lamp; replace if necessary per paragraph 3-9.
		DC lamp lights.	Check 10 amp fuse; replace if necessary per paragraph 3-10.
		NOTE The power supply has a built-in 10 sec (approx) delay.	
5	Press LAMP TEST.	All remaining lamps light (TFT lamp may stay on).	Replace lamps that do not light per paragraph 3-9.

2-3. Site and Shelter Requirements

Site and shelter requirements for the test set and test stand are determined by the power requirements, physical characteristics, and environmental operating ranges (para 1-10).

CHAPTER 3

ORGANIZATIONAL MAINTENANCE

Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE AND SUPPORT EQUIPMENT

3-1. Common Tools and Equipment

For authorized common tools and equipment refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

3-2. Special Tools, TMDE, and Support Equipment

Refer to the Maintenance Allocation Chart, Appendix B for special tools or equipment that are required for organizational and direct support maintenance.

3-3. Repair Parts

Repair parts are listed and illustrated in the repair parts and special tools list (RPSTL) TM 11-6625-2638-23P organizational and direct support maintenance for the Airborne Laser Tracker Test Set, AN/AAM55.

Section Il. SERVICE UPON RECEIPT

3-4. Unpacking

a. Remove the test set or test stand from its container.

b. Press the automatic valve core located on the side of the test set case.

c. Unhook latches securing lid and lift lid up,

3-5. Checking Unpacked Equipment

a. Inspect the equipment for damage. If the equipment has been damaged, report the damage on SF 364 (Report of Discrepancy (ROD)).

b. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with the instructions in DA Pam 738-750. The equipment should be placed in service even though a minor assembly or part that does not affect proper functioning is missing.

c. Check the equipment for modifications. (Equipment which has been modified will have the MWO number on the front panel near the name plate.)

d. Ensure that all currently applicable MWO'S have been applied. (Current MWO'S applicable to the equipment are listed in DA Pam 310-1.)

Section III. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

3-6. The preventive maintenance checks and services are unscheduled (table 3-1),

Table 3-1. Preventive Maintenance Checks and Services

Item No.	Item to be Inspected	Procedure
1	Fuses	Ensure that good 10 AMP, 2 AMP, and SPARE fuses are installed in proper locations.
2	Knobs	Ensure all control knobs are secured properly and are not broken.
3	Power Cords	Check 115 vac and 28 vdc power cords for damage.
4	Cables	Check cables and connectors for damage. Ensure that cables W1, W2, and W3 are stored in lid compartment.

Section IV. ORGANIZATIONAL TROUBLESHOOTING PROCEDURE

3-7. Test Set Troubleshooting Procedure

Organizational Maintenance troubleshooting is limited to replacing lamps and fuses. Table 3-2 lists the malfunctions and corrective action procedures.

Table 3-2. Test Set Troubleshooting Procedure

Malfunction	Test or Inspection	Corrective Action
AC POWER lamp not ON.	Check for blown AC POWER fuse.	Replace fuse (para 3-10).
	Check AC POWER lamp.	Replace lamp (para 3-9).
DC POWER lamp not ON.	Check for blown DC POWER fuse.	Replace fuse (para 3-1 0).
	Check DC POWER lamp.	Replace lamp (para 3-9).
One or more lamps off when LAMP TEST switch is pressed.		Replace lamp (para 3-9).
All other faults.		Notify higher category maintenance.

Section V. MAINTENANCE PROCEDURES

3-8. Power Connections

Power cords are not supplied with plugs. Connect 115 vac and 28 vdc power as follows:

NOTE

Plugs must be procured through local supply.

a. l15vac

Connect green wire to ground.
Connect white wire to return.
Connect black wire to 115 vat.

b. 28 vdc

Connect green wire to ground.
Connect white wire to return.
Connect black wire to 28 vdc.

3-9. Removal and Replacement of Lamps (fig. 3-1A)

NOTE

Lenses on RCVR and ELECT lamps are red. Lens on GO lamp is green. All other lamp lenses are white.

a. Ensure that test set POWER switch is OFF.

b. Remove lens by unscrewing to expose lamp.

c. Remove lamp from lens and install new lamp.

d. Replace lens on lamp holder.

e. Perform lamp and fuse checkout procedure (table 2-16).

3-10. Removal and Replacement of Fuses (fig. 3-1B)

a. Ensure that test set POWER switch is OFF.

b. Remove fuse holder cap to expose fuse.

NOTE

If a new fuse is not available, a spare fuse is provided in SPARE fuse holder. Ensure fuse is of the correct value, as indicated by panel marking.

c. Install new fuse in cap, and replace fuse holder cap.

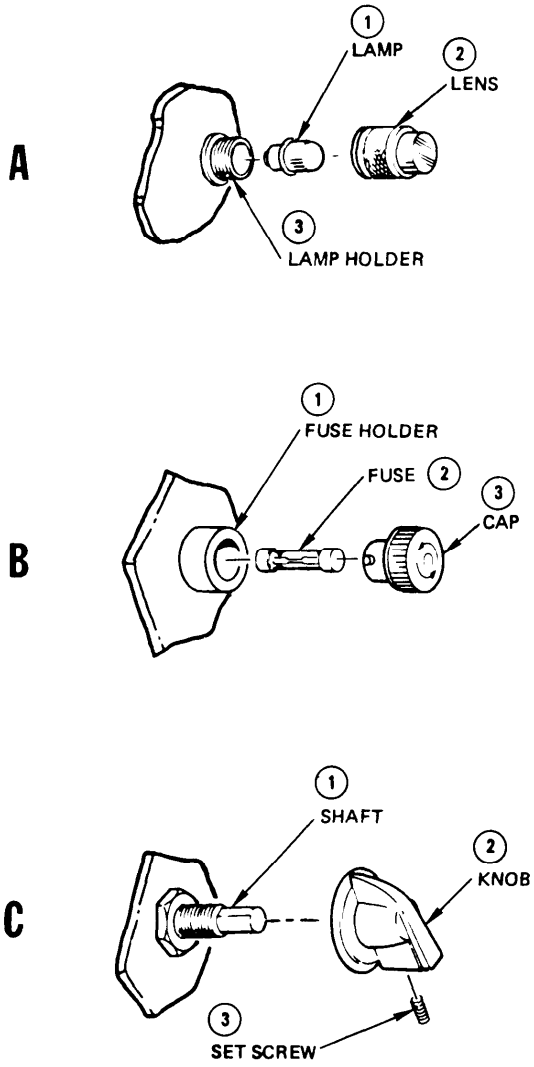
d. Perform lamp and fuse checkout procedure (table 2-16).

3-11. Replacing and Securing Knobs (fig. 3-1C).

a. Remove knob by loosening set screw.

b. Install knob by placing it on shaft with knob setscrew on flat side of shaft.

c. Secure knob by tightening setscrew against flat side of shaft.



EL8TQ018

Figure 3-1. Lamp Fuse Knob Replacement.

Section VI. PREPARATION FOR STORAGE OR SHIPMENT

3-12. Preparing Test Set for Storage or Shipment

a. Roll up power cords and stow inside lid storage compartment.

b. Be sure that W1, W2 and W3 are stowed in lid storage compartment.

c. Be sure that Operations and Organizational Maintenance Manual is stowed in lid storage compartment.

d. Close lid and secure all latches.

3-13. Packing the Test Set

a. Wrap test set in a minimum of one-half inch of resilient cushioning material.

b. Overpack in a container.

3-14. Packing the Test Stand

a. Wrap test stand in a minimum of one-half inch of resilient cushioning material.

b. Overpack in a container.

APPENDIX A
REFERENCES

A-1 . PUBLICATION INDEXES

Consult indexes for latest changes and revisions to the forms, records, and publications listed in this appendix.

Consolidated Index of Army Publications and Blank Forms . . . . . DA Pam 310-1

The Army Maintenance Management System (TAMMS) . . . . . DA Pam 738-750

A-2. FORMS AND RECORDS

Recommended Changes to Publications . . . . . DA Form 2028

Discrepancy in Shipment Report (DISREP) . . . . . SF 361

Report of Discrepancy . . . . . SF 364

Quality Deficiency Report . . . . . SF 368

A-3. GENERAL PUBLICATIONS

Destruction to Prevent Enemy Use . . . . . TM 750-244-2

The Army Maintenance Management System (TAMMS) . . . . . TM 38-750

Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment . . . . . SB 11-573

Federal Supply Codes for Manufacturers . . . . . SB 708-42

Field Instructions for Painting and Preserving Electronics Command Equipment . . . . . TB 746-10

Storage and Shipment of Supplies and Equipment, Administrative Storage of Equipment . . . . . TM 740-90-1

Painting Instructions for Field Use . . . . . TM 9-213

Organizational and Direct Support Maintenance Repair Parts and Special Tools List . . . . . TM 11-6625-2638-23P

Operator's Manual Army Model AH-1S
(Modernized Cobra) Helicopter . . . . . TM 55-1520-239-10

Direct Support Maintenance
Manual ..... TM 11-6625-2638-30

Operator's Manual Army Model AH-1 S
(PROD), AH-IS (ECAS), and AH-l S
(Modernized Cobra) Helicopters . . . . . TM 55-1520-236-10

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1 . GENERAL

This appendix provides a summary of the maintenance operations for Airborne Laser Tracker Test Set, AN/AAM-55. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

B-2. MAINTENANCE FUNCTIONS

Maintenance functions will be limited to and defined as follows:

a. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

b. Test. To verify serviceability and to detect incipient failures by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

d. Adjust. To maintain, within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to the specified parameters.

e. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. Install. The act of emplacing, seating, or fixing into position an item, part, or module (component assembly) in a manner to allow the proper functioning of the equipment or system.

h. Replace. The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

j. Overhaul That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours, miles, etc.) considered in classifying Army equipments/components.

B-3. EXPLANATION OF COLUMNS, Section II

a. Column 1, Group Number. Column 1 lists group numbers, the purpose of which is to identify components, assemblies, subassemblies, and modules with the next higher assembly.

b. Column 2, Component/Assembly. Column 2 contains the noun names of components, assemblies, subassemblies, and modules for which maintenance is authorized,

c. Column 3, Maintenance Functions. Column 3 list the functions to be performed on the item listed in Column 2.When items are listed without maintenance functions, it is solely the purpose of having the group numbers in the MAC and RPSTL coincide.

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "work time" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in Column 3.This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance categories, appropriate "work time" figures will be shown for each category. The number of task-hours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes preparation time, troubleshooting time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the maintenance allocation chart. Subcolumns of column 4 are as follows:

C Operator/Crew

O Organizational (AVUM)

F Direct Support (AVIM)

H General Support

D Depot

e. Column 5, Tools and Equipment. Column 5 specifies by code, those common tool sets, (not individual tools) and special tools, test, and support equipment required to perform the designated function.

f. Column 6, Remarks. Column 6 contains an alphabetic code which leads to the remark in Section IV, Remarks, which is pertinent to the item opposite the particular code.

B-4. TOOL AND TEST EQUIPMENT REQUIREMENTS, Section Ill

a. Tool or Test Equipment Reference Code. The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC. The numbers indicate the applicable tool or test equipment for the maintenance functions.

b. Maintenance Category. The codes in this column indicate the maintenance category allocated the tool or test equipment.

c. Nomenclature. This column lists the noun name and nomenclature of the tools and test equipment required to perform the maintenance functions.

d. National/NATO Stock Number. This column lists the National/NATO stock number of the specific tool or test equipment.

e. Tool Number. This column lists the manufacturer's part number of the tool followed by the Federal Supply Code for manufacturers (5-digit) in parentheses.

B-5. REMARKS, Section IV

a. Reference Code. This code refers to the appropriate item in Section 11, Column 6.

b. Remarks. This column provides the required explanatory information necessary to clarify items appearing in Section II.

Section II. MAINTENANCE ALLOCATION CHART FOR AIRBORNE LASER TRACKER TEST SET AN/AAM-55

(1) Group Number	(2) Component/ Assembly	(3) Maintenance Function	(4) Maintenance Category C	O	F	H	D	(5) Tools and Eqpt.	(6) Remarks
00	Airborne Laser Tracker Test Set, AN/AAM-55	Inspect Test		0.3 0.5					C
01	Test Set, Laser TS-3482/ AAM-55	Repair Test Repair Repair		0.5	 1.0 1.0		 6.0	2 3,4,5, 6,7,8 2,3,4, 5,6,7, 8 1,3,4 5,6,7 8,13	A B
0101	Cable Assy Special Purpose Electrical, CX- 13010/ AAM-55	Repair Replace Test			 0.2 0.5		1.0	1 1 8	
0102	Cable Assy Special Purpose Electrical CX- 13011/ AAM-55	Repair Replace Test			 0.2 0.5		1.0	1 1 8	
0103	Cable Assy Special Purpose Electrical CX- 13012/ AAM-55	Repair Replace Test			 0.2 0.5		1.0	1 1 8	
0104	Sub-Assy. Test Set	Repair			1.0		4.0	1,8	B
010401	Circuit Card Assy.	Replace Repair			0.5		 3.0	1 1,9, 10,12	
010402	Power Supply	Replace Repair			0.5		 2.5	1 1,9, 11,12	
02	Test Stand, Receiver MT-4699/AAM-55	Inspect			0.2				

Section III. TOOLS AND TEST EQUIPMENT REQUIREMENTS FOR AIRBORNE LASER TRACKER TEST SET, AN/AAM-55

TOOL OR TEST EQUIP REF CODE	MAINT. CAT.	NOMENCLATURE	NATIONAL/ NATO STOCK NO.	TOOL NO.
1	F, D	Tool Kit, Electronic EquipmentTK-105/Gor equivalent.	5180-00-610-8177	
2	0	Tool Kit, Electronic Equipment TK-101 /G or equivalent.	5180-00-064-5178	
3	F, D	Oscilloscope ANIUSM-281C	6625-00-106-9622	
4	F, D	Digital Voltmeter AN/GSM-64B	6625-00-022-7894	
5	F, D	Power Supply PP-3940/G	6130-00-953-7500	
6	F, D	Counter Electronic AN/USM-459	6625-01-133-6160	
7	F, D	Signal Generator SG-1171/U	6625-00-674-7097	
8	F, D	Multimeter ME-26B/U	6625-00-646-9409	
9	D	Automatic Test Station (TP1 01)		10725-707
10	D	Adapter T.S. Circuit Card (TA212)		13177-707
11	D	Adapter, Power Supply (TA208)		13130-707
12	D	Self Test Adapter (TA201)		10736-707
13	D	Test Position Test Set (TP1 12)		13192-707

Section IV. REMARKS

REFERENCE CODE	REMARKS
A	Replace lamps, fuses, knobs & lens.
B	Repair by replacement of the power supply, circuit card assembly, switches, lamp holders, fuse holders, and test point connectors. Replacement of rotary switches will be accomplished at the depot.
C	Lamp Test

APPENDIX C

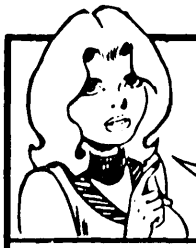
COMPONENTS OF END ITEM

National Stock Number	Description FSCM and Part Number	U/M	QTR rqr
	Test Stand, Receiver MT-4699/AAM-55 (54490) SM-D-703415	1	1

GLOSSARY
ABBREVIATIONS

AC	Alternating Current
ALT	Airborne Laser Tracker
Az	Azimuth
BITE	Built-in test equipment
COMD	Command
CORR	Correlate
DC	Direct Current
DIV	Division
DVM	Digital Volt Meter
EIR	Equipment Improvement Recommendation
ELECT or ELEC	Electronics Assembly
EXT	External
FO	Clock Signal from Decoder Circuit Card
FT	Clock Signal from BITE Circuit Card
Gyro	Gyroscope
HI	High
HUD	Heads Up Display
LED	Light Emitting Diode
MLO	Master Lock Out
MTOE	Modified Table of Organization and Equipment
MWO	Modified Work Order
PMCS	Preventive Maintenance Checks and Services
PRF	Pulse-Repetition Frequency
QDRT	Quadrant
GRD	Ground
RCVR	Receiver
TAMMS	The Army Maintenance Management System
TFT	Track Test Terminate
VAC	Voltage Alternating Current
VDC	Voltage Direct Current
ΣAT	Sum After Threshold

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



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10 July 1975

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 11-5840-340-12	23 Jan 74	Radar Set AN/PRC-76

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PAGE NO	PARA GRAPH	FIGURE NO	TABLE NO
2-25	2-28		
3-10	3-3		3-1
5-6	5-8		
		F03	

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Recommend that the installation antenna alignment procedure be changed throughout to specify a 2^{o} IFF antenna lag rather than 1^{o}.

REASON: Experience has shown that with only a 1^{o} lag, the antenna servo system is too sensitive to wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate as it hunts, causing strain to the drive train. Hunting is minimized by adjusting the lag to 2^{o} without degradation of operation.

Item 5, Function column. Change "2 db" to "3db."

REASON: The adjustment procedure for the TRANS POWER FAULT indicator calls for a 3 db (500 watts) adjustment to light the TRANS POWER FAULT indicator.

Add new step f.1 to read, "Replace cover plate removed in step e.1, above."

REASON: To replace the cover plate.

Zone C 3. On J1-2, change "+24 VDC to "+5 VDC."

REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.

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SSG I. M. DeSpiritof 999-1776

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I. M. DeSpiritof

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