TM 11-6625-1832-12

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL

TEST SET GROUP, PROCESSOR RADAR, OQ-61 APS-94D

HEADQUARTERS, DEPARTMENT OF THE ARMY

NOVEMBER 1970

WARNING

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Be careful when working around the 115-volt ac line-to-neutral connections.

DON'T TAKE CHANCES

WARNING

The fumes of trichloroethane are toxic. Provide thorough ventilation whenever used. DO Not use near an open flame. Trichloroethane is not flammable, but exposure of the fumes to an open flame converts the fumes to highly toxic, dangerous gases.

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *29 July 1977*

Operator's and Organizational Maintenance Manual
TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D
(NSN 6625-00-938-0233)

TM 11-6625-1832-12, 25 November 1970, is changed as follows:

1. The title of the manual is changed as shown above.

2. New or changed material is indicated by a vertical bar in the margin.

3. Remove the old pages and insert new pages as indicated below.

Remove pages	Insert pages
1-1 and 1-2	1-1 and 1-2
B-1 through B-5/(B-2 Blank)	B-1 through B-12

4. File this change sheet in front of the publication for reference purposes.

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To be distributed in accordance with DA Form 12-36, Organizational Maintenance requirements for AN/APS-94.

TECHNICAL MANUAL
No. 11-6625-1832-12

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *25 November 1970*

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL

FOR

TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D

LIST OF ILLUSTRATIONS

LIST OF TABLES

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1-1. Scope

a. General. This manual describes Test Set Group, Processor, Radar OQ-61/APS-94D and provides instructions for installation, operation, maintenance, and demolition. Also included are instructions for cleaning and inspection of the equipment and replacement of parts available to the operator and organizational repairman.

b. Maintenance Allocation Chart. The Maintenance Allocation Chart (MAC) appears in appendix B.

1-2. Index of Publications

a. DA PAM 310-4. Refer to the latest issue of DA PAM 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

b. DA PAM 310-7. Refer to DA PAM 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

1-3. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Packaging Improvement Report) as prescribed in AR 700-58/NAVSUPINST 4030.29/AFR 71-13/MCO P4030.29A, and DSAR 4145.8.

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/NAVSUPINST 4610.33A/AFR 75-18/MCO P4610.19B and DSAR 4500.15.

1-3.1. Reporting of Errors

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded direct to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, NJ 07703

1-3.2. Reporting Equipment Improvement Recommendations (EIR)

EIR's will be prepared using DA Form 2407 (Maintenance Request). Instructions for preparing EIR's are provided in TM 38-750, The Army Maintenance Management System. EIR's should be mailed directly to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, NJ 07703. A reply will be furnished directly to you.

Section II. DESCRIPTION AND DATA

1-4. Purpose and Use

The Test Set Group, Processor, Radar OQ-61/APS-94D is comprised of four separate test sets housed in five combination cases that are identified in table l-l. The test equipment listed in table l-l is for use in testing and maintenance of Processor, Radar Signal CM-374/APS-94D, a part of Radar Surveillance Set AN/APS-94D. Detailed procedures for the use of the test equipment are included in technical manuals TM 11-5895-578-34 and TM 11-5895-578-50. (When published)

a. Interface Test, Processor, Radar TS-2973/APS-94D. This test set (fig. l-l) enables direct and general support maintenance personnel to isolate faults to the subassembly (module) level, and to troubleshoot faults in the wiring harness or miscellaneous chassis-mounted components in a defective Processor, Radar Signal CM-374/APS-94D. The test set provides simulated receiver video and all other input signals and control voltages required to operate the unit under test. Provision is made to cycle the built-in test equipment (BITE) circuits and to monitor the interlock circuits of the unit under test.

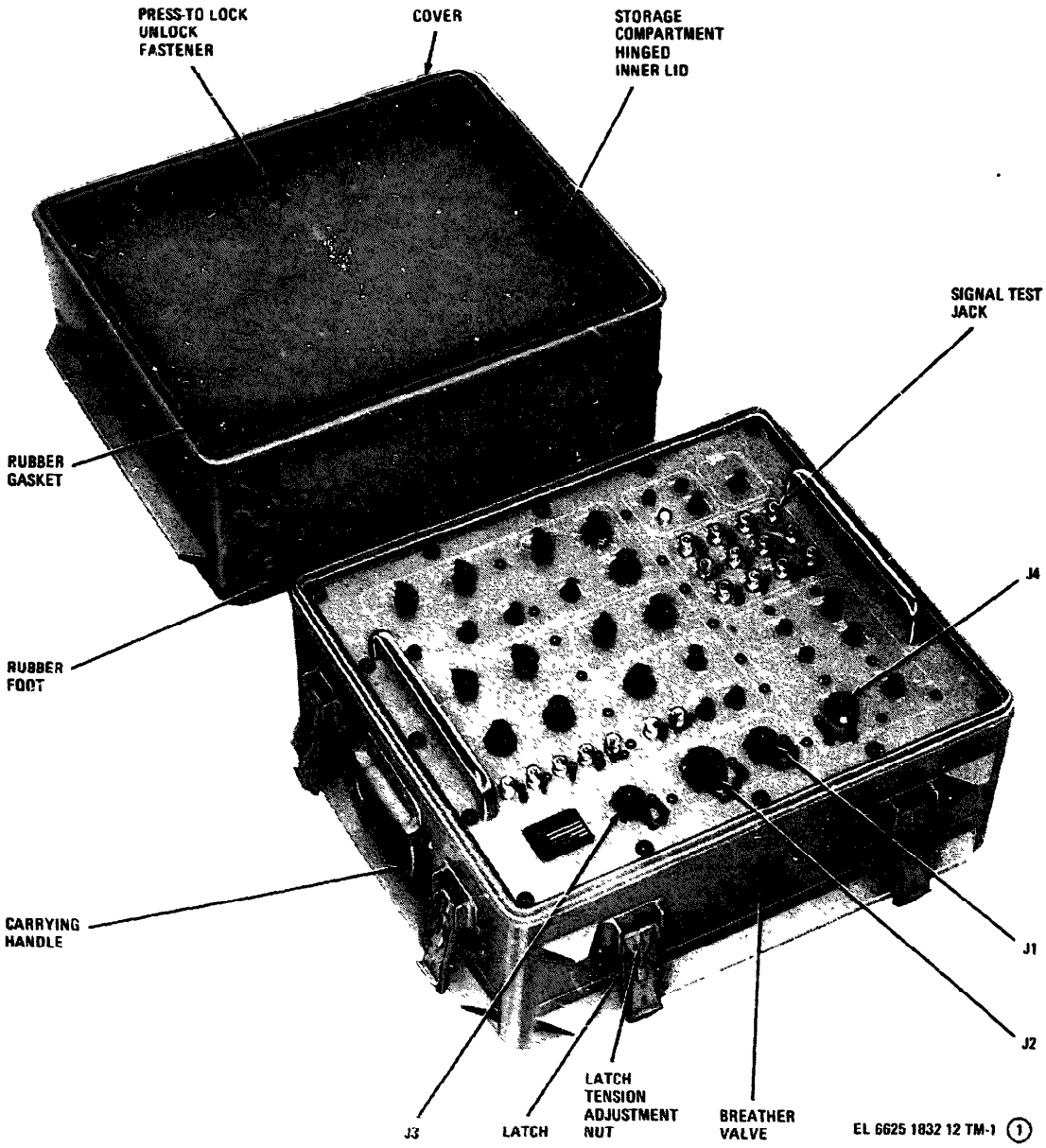

Figure 1-1(1). Interface Test, Processor Radar TS-2973/APS-94D

Table 1-1. Components and Dimensions of Test Set Group, Processor, Radar OQ-61/APS-94D

FSN	Quantity	Item	Dimensions			Unit weight (lb)	Figure
			Height	Depth	Width		
6625-938-0233	1	Test Set Group, Processor, Radar OQ-61/APS-94D.					
	1	Interface Test, Processor, Radar TS-2973/APS-94D.	19.25	24.25	21.13	60	1-1
		For minor components of TS-2973/APS-94D, see tables 1-4 and 1-5.					
6625-936-9984	1	Interface Test, Electronic Circuit Plug-In Unit TS-2972/APS-94D including:	19.25	24.25	21.13	75	1-1 (2)
6625-194-2856	1	Adapter test MX-8630/APS-94D					1-2 (2)
	1	Cable assembly, Power, Electrical CX-12240/U (6 ft).					1-2 (2)
6625-938-0118	1	Interface Test, Power Supply TS-2971/APS-94D including:	19.25	24.25	21.13	100	1-3
6625-194-2856	1	Adapter, test MX-8630/APS-94D.					
	1	Cable assembly, Power, Electrical CX-12240/U.					1-3
	1	Cable assembly, Special purpose, Electrical CX-12320/U.					1-3
	1	Cable Assembly, Special Purpose, Electrical CX-12321.					1-3
	1	Cable Assembly, Special Purpose Electrical CX-12294/U.					1-3
6625-938-0088	1	Interface Test, Synchronizer, Radar TS-2970/APS-94D consisting of:					
6625-938-0280	1	Interface Test Subassembly MX-8679/APS-94D including:	19.25	24.25	21.13	85	
6625-194-2856	1	Adapter, test MX-8630/APS-94D.					
	1	Cable assembly, Power, Electrical CX-12240/U (6 ft).					
6625-938-0022	1	Interface Test Subassembly MX-8680/APS-94D including:	19.25	30.38	22.75	90	
6625-194-2802	1	Adapter, test MX-8615/APS-94D.					
6625-492-6135	1	Adapter, test MX-8616/APS-94D.					
6625-762-4891	1	Adapter, test MX-8629/APS-94D.					
6625-492-6136	1	Adapter, test MX-8617/APS-94D.					
6625-493-3056	1	Adapter, test MX-8618/APS-94D.					
6625-492-6137	1	Adapter, test MX-8619/APS-94D.					
6625-493-3057	1	Adapter, test MX-8620/APS-94D.					
6625-493-3069	1	Adapter, test MX-8621/APS-94D.					
6626-499-7480	1	Adapter, test MX-8622/APS-94D.					
6625-439-3062	1	Adapter, test MX-8623/APS-94D.					
6625-493-3066	1	Adapter, test MX-8624/APS-94D.					
6625-493-7481	1	Adapter, test MX-8625/APS-94D.					
6625-493-3058	1	Adapter, test MX-8626/APS-94D.					
6625-493-3059	1	Adapter, test MX-8627/APS-94D.					
6625-493-3060	1	Adapter, test MX-8628/APS-94D.					

b. Interface Test, Electronic Circuit Plug-in Unit TS-2972/APS-94D. This test set (fig. 1-2) is used to test the 84-element range gated filter modules 3A1 through 3A20 of the CM-374/APS-94D. The test set displays the X and Y coordinates of defective filter elements for the module under test. The test set is also used to test individual filter elements removed from the module. The testing can be run automatically or by manual means, at the option of the operator. When in automatic, tests are performed, by commutative action, on each filter element in the module under test. Further tests are halted if a no-go condition occurs. When in manual, the operator selects the individual filter element to be tested.

c. Interface Test, Power Supply TS-2971/APS -94D. This test set (fig. 1-3) is used to test and maintain the power supply circuits of the CM-374/APS-94D, namely the complete power supply module 3A47 or its subassembly board

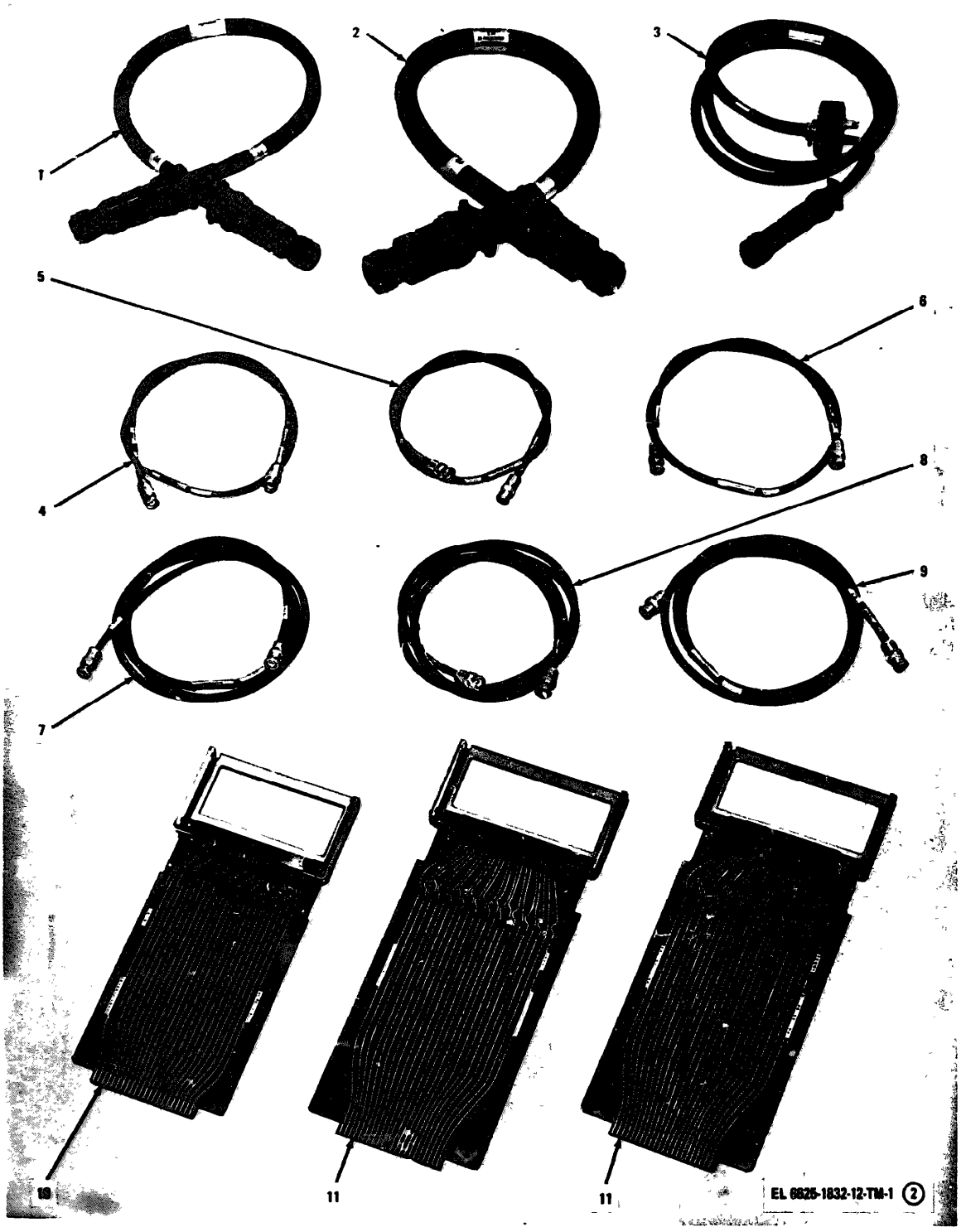

Figure 1-1(2). Interface Test, Processor RADAR TS-2973/APS94D, minor components.

1 Cable Assembly, Special Purpose, Electrical CX-12307/U (3 ft) (cable W1)
2 Cable Assembly, Special Purpose, Electrical CX-12306/U (3 ft) (cable W2)
3 Cable Assembly, Power, Electrical CX-12308/U (6 ft) (cable W3)
4 Cable Assembly, Radio Frequency CG-3618/U (3 ft) (cable W4)
5 Cable Assembly, Radio Frequency CG-3618/U (3 ft) (cable W5)
6 Cable Assembly, Radio Frequency CG-3618/U (3 ft) (cable W6)
7 Cable Assembly, Radio Frequency CG-3618/U (6 ft) (cable W7)
8 Cable Assembly, Radio Frequency CG-3618/U (6 ft) (cable W8)
9 Cable Assembly, Radio Frequency CG-3618/U (6 ft) (cable W9)
10 Adapter, Test MX-8630/APS-94D
11 Adapter, Test

Figure 1-1(2)--Continued.

3A47A1. The test set is operated manually and measures each dc output voltage and ac ripple under several combinations of load and ac input. In addition, operation of the overload and overvoltage protection circuits of the module is also tested. Jacks are available on the test set panel to permit monitoring each module output, as desired, for troubleshooting purposes.

d. Interface Test, Synchronizer, Radar TS-2970/APS-94D. The TS-2970/APS-94D is comprised of two test subassemblies as follows.

(1) Interface Test, Subassembly MX-8679/AUS-94D. This unit (fig. 1-4) tests modules 3A21 through 3A46 which are subassemblies of the CM-374/APS-94D. The test set contains the displays, controls, end basic pulse generating circuits. A series of test adapters 4A1 through 4A15 (fig. 1-5) are required to match the test set to the module under test. The adapters form the test signals required by the module under test and supply the output signals to the basic test set. Any of the test sequences may be conducted in the automatic, semiautomatic, or manual mode at the option of the operator.

(2) Interface Test, Subassembly MX-8680/APS-94D. This unit is a storage case for the 15 test adapters 4A1 through 4A15 mentioned in (1 above). Table 1-2 gives reference designation and nomenclature of the test adapters, and also the reference designation of the CM-374/APS-94D module with which they interface.

Table 1-2. Test Adapters Supplied with Interface Test, Synchronized, Radar TS-2970/APS-94D

FSN	Ref des	Nomenclature	Used to test CM-374/APS-94D module
6625-194-2806	4A1	Adapter, Test MX-8615/APS-94D	3A21 through 3A30
6625-492-6135	4A2	Adapter, Test MX-8616/APS-94D	3A31, 3A32
6625-762-4891	4A3	Adapter, Test MX-8629/APS-94D	3A33
6625-492-6136	4A4	Adapter, Test MX-8617/APS-94D	3A34
6625-493-3056	4A5	Adapter, Test MX-8618/APS-94D	3A35
6625-492-6137	4A6	Adapter, Test MX-8619/APS-94D	3A36
6625-493-3057	4A7	Adapter, Test MX-8620/APS-94D	3A37
6625-493-3069	4A8	Adapter, Test MX-8621/APS-94D	3A38
6625-493-7480	4A9	Adapter, Test MX-8622/APS-94D	3A39
6625-439-3062	4A10	Adapter, Test MX-8623/APS-94D	3A40, 3A41
6625-493-3066	4A11	Adapter, Test MX-8624/APS-94D	3A42
6625-493-7481	4A12	Adapter, Test MX-8625/APS-94D	3A43
6625-493-3058	4A13	Adapter, Test MX-8626/APS-94D	3A44
6625-493-3059	4A14	Adapter, Test MX-8627/APS-94D	3A45
6625-493-3060	4A15	Adapter, Test MX-8628/APS-94D	3A46

1-5. Technical Characteristics, Interface Test, Processor, Radar TS-2973/APS-94D

Test capability ... Tests CM-374/APS-94D to locate defective module, faulty wiring harness, or chassis-mounted electrical parts.

Fault indicator ... Separate counter or oscilloscope.

Mode of operation ... Manual

Required inputs

A-c power ... Three-phase 108-118 volt line-to-neutral (4-wire) 400 ± 20 Hz .5 amperes per phase, or 1.7 amperes per phase when using Processor.

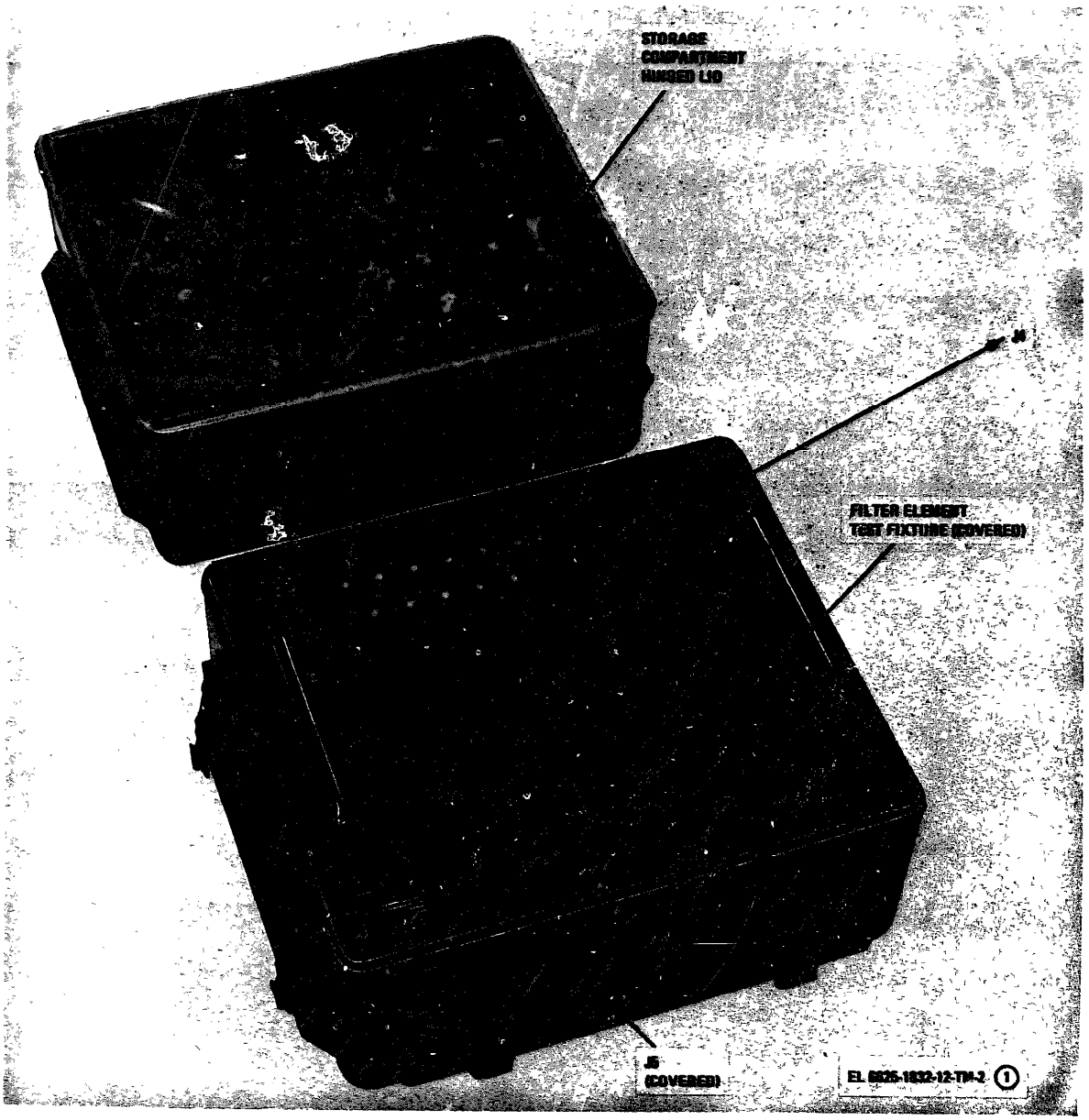

Figure 1-2(1). Interface Teat, Electronic Plug-in Unit TS-2972/APS-94D.

Clock (from unit under test)	
Frequency	**4.9933 to 5.0067 MHz**
Pulse period	**0.2 μsec**
Pulse amplitude	**4.00 ± 0.75 volts to peak**
Sweep Gate Signal	
Amplitude	**4.00 ± 0.75 volts peak**
Sweep	**25 Km, 166 μsec; 50 Km, 334 μsec; 100 Km, 669.6 μsec.**
Signal outputs	
Simulated receiver video test signal (MT VIDEO OUT)	
Pulse width	**10 range segments (2 μsec, 25 km or 50 km) (4 μsec, 100km)**

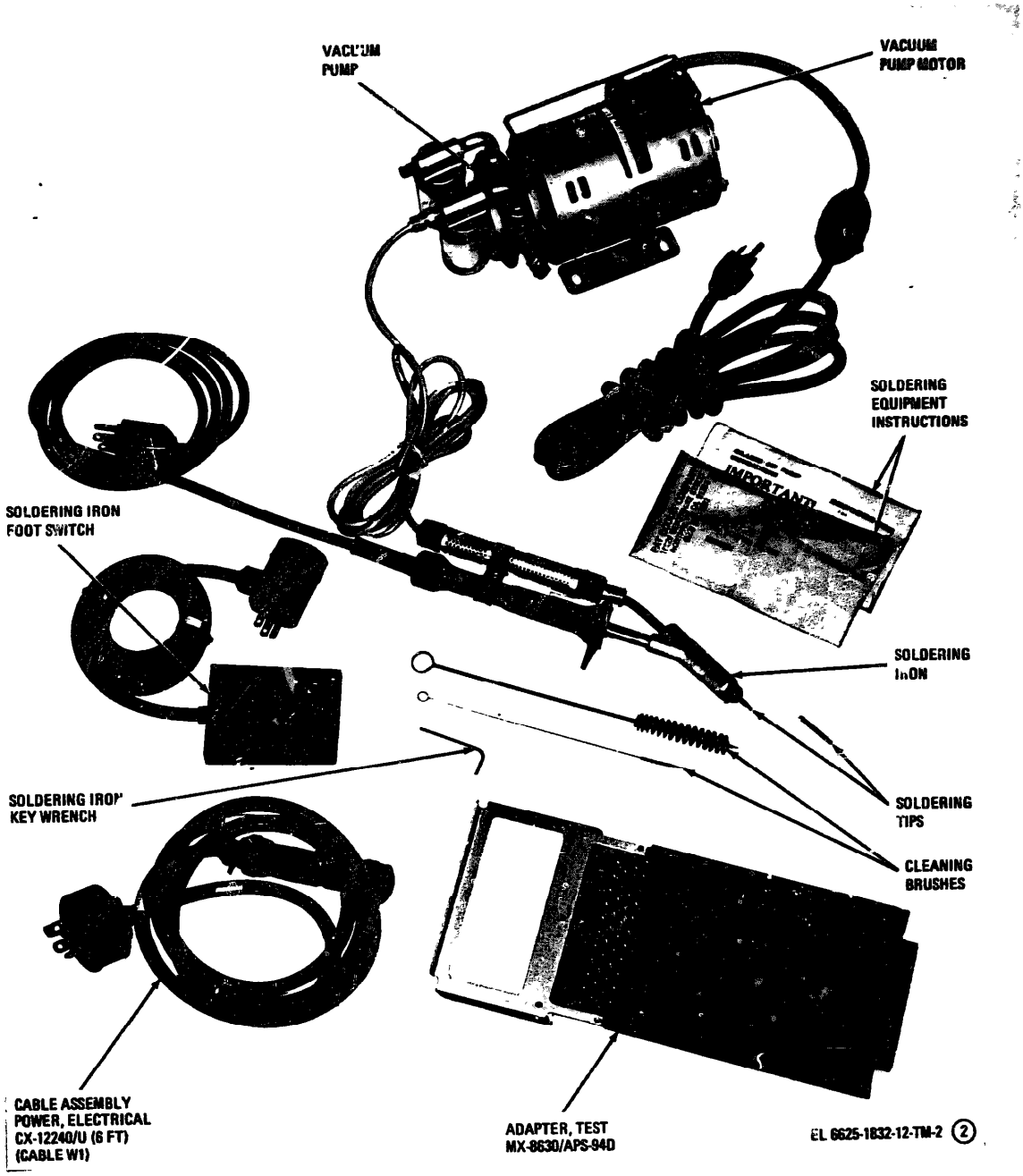

Figure 1-2(2). Interface Test Electronic Plug-in Unit TS-2972/APS-94D, minor components.

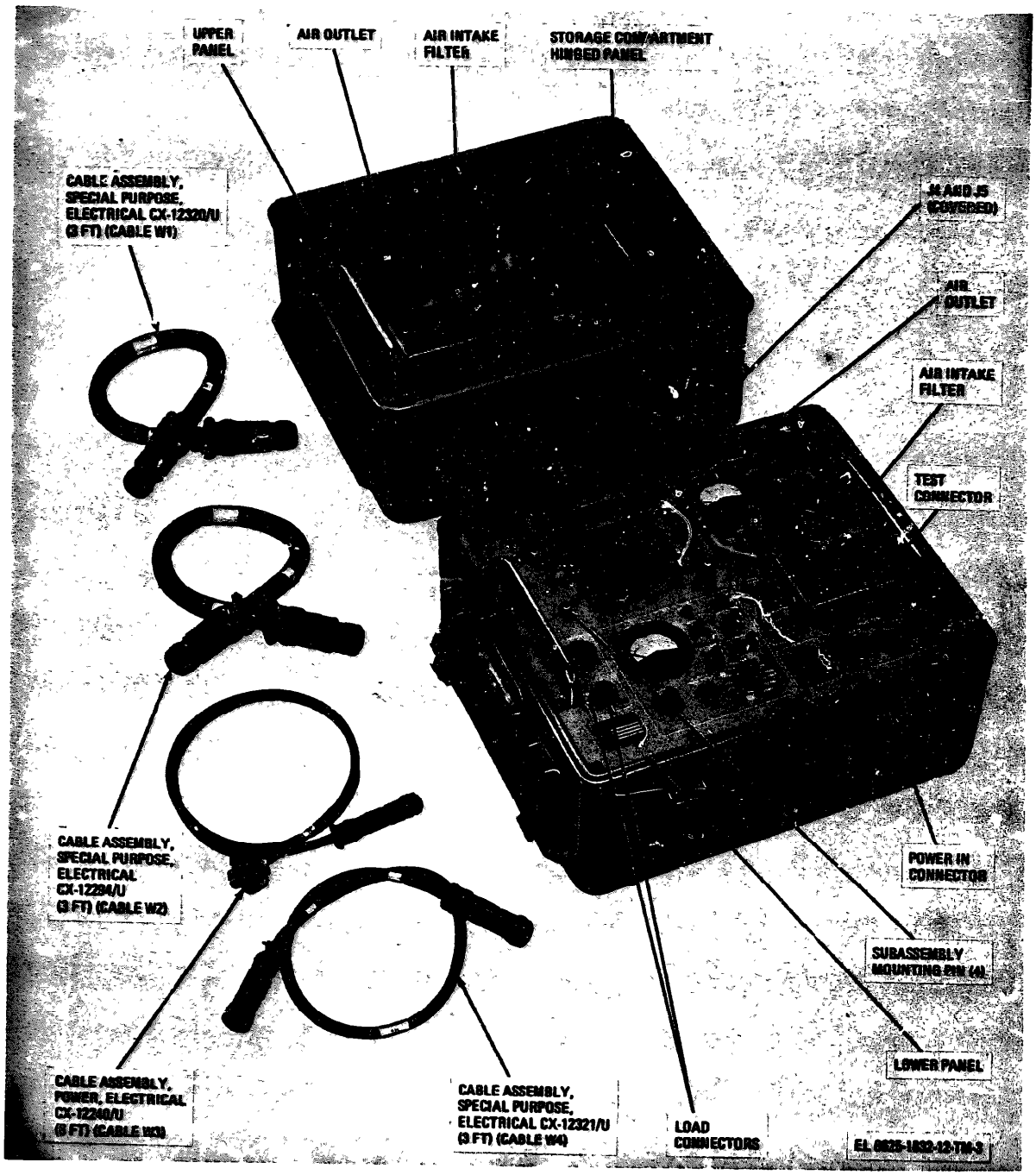

Figure 1-3. Interface Test, Power Supply TS-2971/APS-94D.

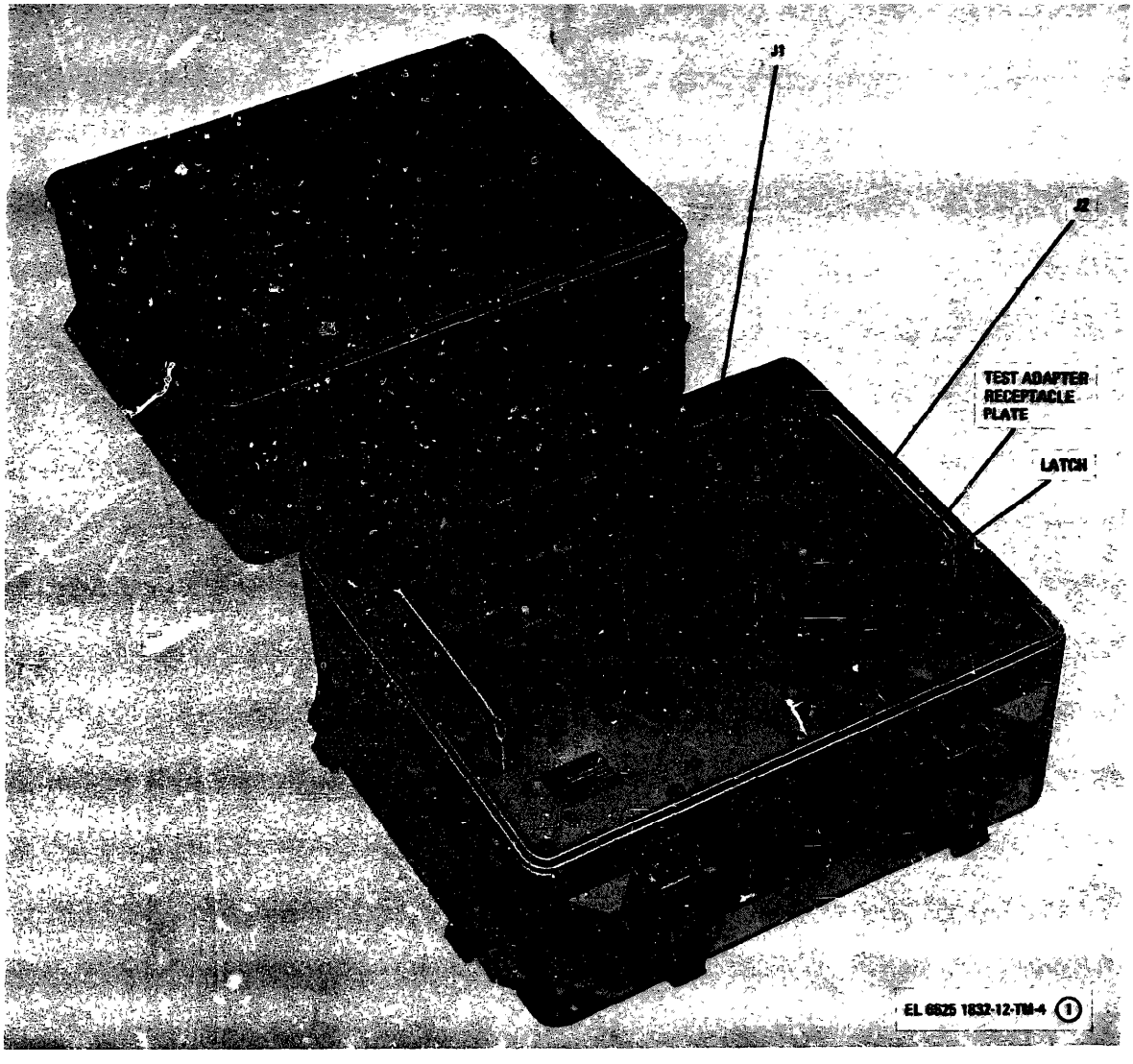

Figure 1-4(1). Interface Teat Subassembly MX-8679/APS-94D.

	140 range segments (28 μsec, 25 km or 50 km) (56 μsec, 100 km)
Doppler component	10 to 1000 Hz 0–0.5 ± 0.2 v p–p
Baseline clutter	10 Hz, 0–0.6 ± 0.2 v p–p
Target clutter	0.3 ± 0.3 to 1.5 ± 0.5 volts
Trigger out	6.0 ± 3 volts peak (width equal to MT VIDEO OUT)
Secant out (DRIFT TEST)	Substitute for radar control unit voltage. Adjustable dc voltage to enable movement of range mark relative to system trigger pulse.
MT threshold signal	Substitute for radar control unit voltage. Adjustable dc voltage to vary gain of fixed target video (clutter) relative to moving target video in CM-374/APS-94D.
Control voltage outputs to unit under test	

Figure 1-4(2). Interface Test Subassembly MX-8679/APS-94D. minor components.

Range delay signal	20 vdc supplied by seven-position switch for selection of radar delay increments of 0, 10, 20, 30, 40, 50, and 60 km.
Range signal	20 vdc supplied by three-position switch for selection of radar range increments of 25, 50 or 100 km.
Antenna signal	20 vdc applied by three-position switch to select radar antenna for radiation in desired direction-left, right, or both sides of aircraft.
PRF signal	20 vdc supplied by two-position switch in FIXED position, 0 volts in RANDOM position.
Filter corner signal	20 vdc supplied by two-position switch in HI position, 0 volts in LO post1on. Shifts processor filter corner frequency at low side of bandpass.
Date mark signal	20 vdc supplied in MARK position for generation of fiducial marks by unit under test.
BITE signal	20 vdc supplied by BITE TEST switch to initiate self-test cycle in unit under test.

1-6. Technical Characteristics Interface Test, Electronic Circuit Plug-in Unit TS-2972/APS-94D

Test capability	Tests CM-374/APS-94D to locate defective range-gated filter elements in modules 3A1 through 3A20. Tests faulty elements removed from module.
Fault indicator	Panel display
Mode of operation	Automatic or manual, at option of operator
Required a-c power input	Three-phase 108-118 volt line-to-neutral (4-wire) 400 ±20 Hz .5 amperes per phase.
Signals supplied to unit under test	
Simulated video pulse width	2 usec
Prf	740 pps
Amplitude	5 volts peak
Simulated video, sine	40, 62.5, 74, 111, 370, or 740 Hz
Basic clock	5 MHz
Dump	Normally low; high between 232.4 msec and 259.8 usec after to

1-7. Technical Characteristics, Interface Test, Power Supply TS-2971/APS-94D

Test capability	Tests CM-374/APS-94D modules 3A47 or its subassembly 3A47A1. Checks output voltage and ripple; tests overload and overvoltage circuits.
Measurement accuracy	
DC output voltage	To ±5 percent
Ac ripple	To ±10 percent for average values of 100 millivolts
Fault indicator	Front panel overvoltage meter or overvoltage indicator light.
Mode of operation	Manual
Required a-c power input	Three-phase 108-118 volt line-to-neutral (4-wire) 400 ±20 Hz .5 amperes per phase.

1-8. Technical Characteristics, Interface Test Subassembly MX-8679/APS-94D

Test capability	Tests CM-374/APS-94D modules 3A21 through 3A46 to locate defective circuitry.
Fault Indicator	Panel display, external oscilloscope, or counter
Mode of operation	Manual, automatic, or semi-automatic at option of operator
Required a-c power input	Three-phase 108-118 volt line-to-neutral (4-wire) 400 ±20 Hz .5 amperes per phase.

1-9. Components of Test Set Group, Processor, Radar OQ-61/APS-94D

The complete official listing weights and dimensions of the components of the OQ-61/APS-94D are listed in table 1-1.

1-10. Description of Interface Test, Processor, Radar TS-2973/APS-94D

a. Test Set Case. The test set is contained in a portable, aluminum case (fig. l-l) equipped with two spring-loaded handles for lifting. A pressure relief valve in the case wall enables equalization of inside-to-outside air pressure. The valve operates automatically in either direction when the pressure differential exceeds 2 pounds. The pressure differential can be manually relieved at any time by depressing a red button at the center of the pressure relief valve. This must be accomplished before opening the case cover. Four rubber feet on the bottom of the case body correspond to indentation locations in the case cover, and together facilitate stacking for trans-

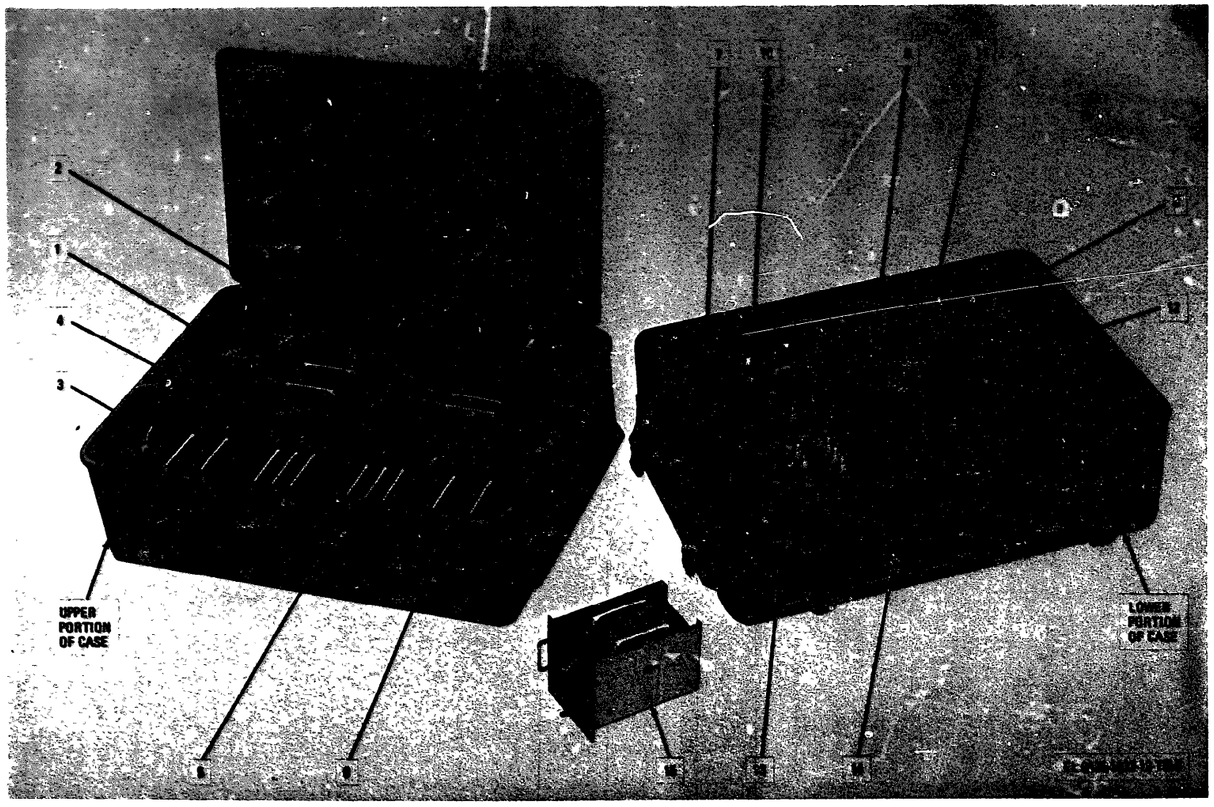

Figure 1-5. Interface Test Subassembly MX-8680/APS-94D.

1 Adapter, Test MX-8615/APS-94D (4A1)
2 Adapter, Test MX-8616/APS-APS-94D (4A2)
3 Adapter, Test MX-8629/APS-94D (4A3)
4 Adapter, Test MX-8617/APS-94D (4A4)
5 Adapter, Test MX-8618/APS-94D (4A5)
6 Adapter, Test MX-8619/APS-94D (4A6)
7 Adapter, Test MX-8620/APS-94D (4A7)
8 Adapter, Test MX-8621/APS-94D (4A8)
9 Adapter, Test MX-8622/APS-94D (4A9)
10 Adapter, Test MX-8623/APS-94D (4A10)
11 Adapter, Test MX-8624/APS-94D (4A11)
12 Adapter, Test MX-8625/APS-94D (4A12)
13 Adapter, Test MX-8626/APS-94D (4A13)
14 Adapter, Test MX-8627/APS-94D (4A14)
15 Adapter, Test MX-8628/APS-94D (4A15)

Figure 1-5 -- Continued

Table 1-3. Weights and Dimensions of Major Components

FSN	Quantity	Item	Dimensions (Inches)			Weight (lbs)
			Height	Width	Depth	
6625-938-0232	1	Interface Test, Processor, Radar TS-2973/APS-94D.	19.25	24.25	21.13	60
6625-936-9984	1	Interface Test, Electronic Plug-in Unit TS-2972/APS-94D.	19.25	24.25	21.13	75
6625-938-0118	1	Interface Test, Power Supply TS-2971/APS-94D.	19.25	24.25	21.13	100
6625-938-0280	1	Interface Test Subassembly MX-8679/APS-94D.	19.25	24.25	21.13	85
6625-938-0022	1	Interface Test Subassembly MX-8680/APS-94D.	19.25	30.38	22.75	90

portation or storage. The case cover is secured to the case body by eight latches, and is made airtight and watertight by a rubbergasket. Underneath a hinged lid within the cover is a storage area for the nine interconnecting cables, and the three test adapters (extenders) furnished with the test set. The lid is locked by three press-to-release fasteners. A bracket around the inside of the case body forms a shelf for attachment of the test set control panel and chassis in the case. The panel is secured to the shelf by 16 screws, and is rfi tight.

b. Control Panel. All operating controls, indicators, and connectors are mounted on the test set front panel (fig. 2-2). A-c operating power is brought into the set to the POWER IN connector J4. Signal and power connections to the CM-374/APS-94D under test are made at the SIGNAL PROCESSOR connectors SIGNAL J2 and POWER J1. Test voltages from the test set circuitry are brought out to the TEST SET connector TEST J3. Test voltages and signals from the unit under test are brought out directly to the SIGNAL TEST jack field. All connectors have a protective cover that is fastened to the front panel by a beaded chain.

Table 1-4. Cables for Interface Test, Processor, Radar TS-2793/APS-94D

Ref des	Nomenclature and description	P1 destination	P2 destination
W1	Cable Assembly, Special Purpose, Electrical CX-12307/U (6 FT) (19-conductor cable).	Connector 3J1 on CM-374/APS-94D.	POWER connector J1 on test set.
W2	Cable Assembly, Special Purpose, Electrical CX-12306/U (6 FT) (41-conductor cable).	Connector 3J2 on CM-374/APS-94D.	SIGNAL connector J2 on test set.
W3	Cable Assembly, Power, Electrical CX-12308/U (6 FT) (6-conductor cable).	To 3-phase 115-volt line-to-neutral 400 Hz power source.	POWER IN connector J4 on test set.
W4	Cable Assembly, Radio Frequency CG-3618/U (3 FT) (coaxial, 50-ohm cable).	CLOCK (TEST) connector 3J14 on CM-374/APS-94D.	5 MHZ IN connector J5 on test set.
W5	Cable Assembly, Radio Frequency CG-3618/U (3 FT) (coaxial, 50-ohm cable).	RCVR VIDEO 3J9 on CM-374/APS-94D.	MT OUT connector J7 on test set.
W6	Cable Assembly, Radio Frequency CG-3618/U (3 FT) (coaxial, 50-ohm cable).	SWEEP GATE 3J5 on CM-374/APS-94D.	SWEEP GATE IN J9 connector on test set.
*W7	Cable Assembly, Radio Frequency CG-3618/U (6 FT) (coaxial, 50-ohm cable).		
*W8	Cable Assembly, Radio Frequency CG-3618/U (6-FT) (coaxial, 50-ohm cable).	As needed	As needed.
*W9	Cable Assembly Radio Frequency CG-3618/U (6-FT) (coaxial, 50-ohm cable).	As needed	As needed.

*For optional test use.

NOTE

Cables are supplied to supplement test cables normally supplied with test equipment.

C. Minor Components (fig. 1-1). Nine cables and two module extenders (fig. 1-1) comprise the minor components of the test set.

(1) Cables. The cable number and the cable connectors are identified as follows: the cable designator (W1, W2, etc) is stenciled on the cable midpoint between the cable connectors. The cable connector designations are imprinted on metal bands around the cable ends, and the nomenclature of the cable and manufacturers part number is imprint& on another metal band encircling the cable. Table 1-4 lists the cables by reference designation and nomenclature, and also gives mating connector information.

(2) Test adapters. Three module test adapters (extenders) are furnished with the TS-2793/APS-94D and are kept with the cables in the storage compartment under the cover of the test set. The extenders provide a means of positioning the module under test in an accessible position while it remains connected to its associated circuitry. The extenders are printed circuit boards with connectors at either end, and straight through wiring from connector pin to connector pin. In practice, the module under test is removed from its mating chassis receptacle and the extender placed in the receptacle. The module is then plugged atop the extender. Table 1-5 lists the extenders as to quantity, nomenclature, and the associated equipment serviced.

1-11. Description of Interface Vest, Electronic Circuit Plug-in Unit TS-2972/APS-94D

a. Test Set Case. The TS-2972/APS-94D (fig. 1-2) is contained in a case identical to that described in paragraph 1-10. The power cable, vacuum solder equipment, and module extenders are kept in the storage compartment under the hinged lid of the cover.

Table 1-5. Test Adapters Kept With Interface Test, Processor, Radar TS-2973/APS-94D

Nomenclature	Used with
Adapter, Test MX-8630/ APS-94D.	Modules 1A1, 1A2, and 1A3 of the TS-2793/ APS-94D.
No nomenclature assigned. Module extender (Motorola P/N 01-P03067B001).	Modules 3A1 through 3A46 of Processor, Radar Signal CM-374/ APS-94D.

b. Control Panel. All operating controls and indicators are mounted on the front panel. The power input receptacle POWER IN J4 is at the upper right side of the panel. The module (3A1 through 3A20) to be tested is plugged into the 3A1 3A20 connector J5 at the lower left side of the panel. A filter element mounting fixture MODULE TESTER, at the center and bottom side of the panel, is the means of connecting individual filter elements to the test set for test.

c. Minor Components (fig. 1-2).

(1) Cables and extenders. The power cable for the test set is the Cable Assembly, Power, Electrical CX-12240/U (6 FT) designated W1. The cable end banded P2 plugs into the POWER IN J4 receptacle. The end banded P1 goes to the ac power source. A test adapter (module extender), similar to those described in paragraph 1-10c(2), is used with the test set. The adapter is described as Adapter, Test MX-8630/ APS-94D and is used as a module extender.

(2) Vacuum soldering equipment (fig. 1-6). The vacuum soldering equipment consists of a vacuum pump, 3-foot cord and foot switch. and a special 70-watt soldering iron. The electric oil-less vacuum pump produces up to 24 inches of Hg vacuum and a 1.5 cfm vacuum flow. The pump has a 1/10 horsepower motor and includes an inlet filter and a relief valve set for 18-inch Hg vacuum The vacuum unit is coupled by hose to a hollow soldering iron. The soldering tip is held in the iron by collar-and-locking screw. Melted solder is drawn through the hollow tip of the iron, through the iron, and deposited in the heat-resistant glass tube atop the iron handle.

1-12. Description of Interface Test, Power Supply TS-2971/APS-94D

a. Test Set Case. The TS-2971/APS-94D (fig. 1-3) is contained in a case identical to that described in paragraph 1-10. The cables are stored under the hinged panel in the case cover (upper). Both upper and lower portions of the case contain circuitry.

b. Lower Panel. All operational controls and indicators are mounted on the test set lower panel. The POWER IN J3 receptacle is located at the lower right side of the panel. Above J3 is the blower intake filter. The filter is a permanent metallic filter that can be removed and cleaned (para 3-5b). It is held in place by a metal bracket secured to the panel by four phillips head screws. The air is exhausted through the removable louvered plate held by eight phillips head screws to the upper left side of the panel. Above the louvered plate are two receptacles J4 and J5 labeled 3A47A1. At either side of the louvered plate are two male pins. The CM-374/ APS-94D power supply regulator board 3A47A1 (p/o power supply 3A47) to be tested has four holes in the subassembly board which mate with

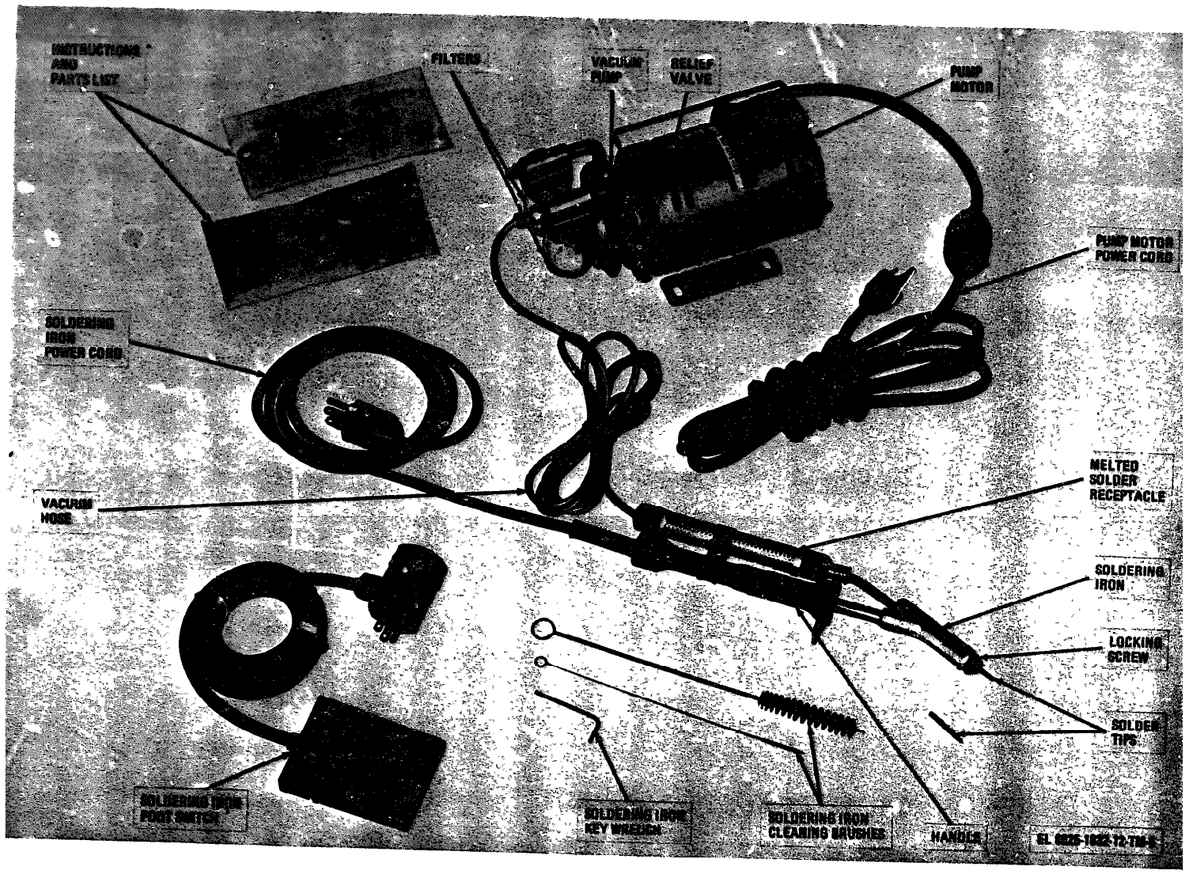

Figure 1-6. Vacuum Soldering Equipment.

the male pins on the panel. In practice, the subassembly holes (female) are mated to the male pins on the panel and the subassembly cable connectors mated to receptacles J4 and J5. At the lower center of the panel is the TEST connector J1, used for self-test purposes. At the left side of the panel are two LOAD connectors J1 and J2 which are interconnected by cable to the resistive loads in the case cover (upper). as required.

c. Upper Panel. Circuit connections to the lower pane1 are made through LOAD receptacles J1 and J2. When power supply 3A47 of the CM-374/APS-94D is being tested, the supply is connected to the 3A47 connector J3 at the lower left side of the panel. Above the LOADS connectors is the air intake filter. Cooling air is drawn through the filter and exhausted through the louvered plate above the filter. The filter is a permanent metallic type, and the filter, filter bracket, and louvered plate are identical to those elements in the lower panel, and are removed in the same manner.

d. Minor Components (fig. 1-3). Four cables comprise the minor components of the test set. The cables are banded and stencilled in the same manner as those described in paragraph 1-10 C(1). Table 1-6 lists the cables by reference designation and nomenclature, and also gives mating connector information.

1-13. Description of Interface Test, Synchronizer, Radar TS-2970/APS-94D

The Interface Test, Synchronizer, Radar TS-2970/APS-94D is comprised of two cases, the Interface Test Subassembly MX-8679/APS-94D and the Interface Test Subassembly MX-8680/APS-94D, as functionally described in paragraph 1-4d. The MX-8679/APS-94D contains test set circuitry, the MX-8680/APS-94D is a storage case for 15 test adapters used with the MX-8679/APS-94D. Both units are contained in identical cases described in paragraph 1-10a.

a. Interface Test Subassembly MX-8679/APS-94D (fig. 1-4). All operating controls and indicators are located on the front panel in this test set case. The ac power input receptacle POWER IN J1 is located at the upper right side of the panel. Selected voltages from internal circuitry are brought out to the panel TEST connector J2. A plate covers an opening at the lower right side of the panel. The plate is held to the panel by a screw-type latch, and is removed by turning the knob on the plate counterclockwise. When the plate is removed, a test adapter may be inserted into the opening and its connector mated to the connector at the back of the opening. The CM-374/APS-94D synchronizer module under test (table 1-2) is plugged into the test adapter.

Table 1-6. Cables for Interface Test, Power Supply TS-2971/APS-9/D

Ref des	Nomenclature and description	P1 destination	P2 destination
W1	Cable Assembly, Special Purpose, Electrical CX-12320/U (3 FT) (55-conductor cable).	LOADS connector J1 on lower portion of test set.	LOADS connector J1 on upper portion of test set.
W2	Cable Assembly, Special Purpose, Electrical CX-12294/U (3 FT) (11-conductor cable).	LOADS connector J2 on lower portion of test set.	LOADS connector J2 on upper portion of test set.
W3	Cable Assembly, Power, Electrical CX-12240/U (6 FT) (5-conductor cable).	115-volt line-to-neutral 3-phase, 400 Hz power.	POWER IN connector J3 on lower portion of test set.
W4	Cable Assembly, Special Purpose, Electrical CX-12321/U (3 FT) (55-conductor cable).	3A47 connector J3 on upper portion of test set.	CM-347/APS-94D power supply module 3A47 connector A2J1.

b. Minor Components (fig. 1-4). Minor components of the test set include cable, module extender, and vacuum soldering equipment.

(1) Cables and extenders. The set is connected to the ac power source through Cable Assembly, Power, Electrical CX-12240/U (6 FT), which is designated cable W1. A test adapter, similar to those described in paragraph 1-10c(2), IS provided for maintenance of the test set. The test adapter is Adapter, Test MX-8630/APS-94D and is used as a module extender.

(2) Vacuum soldering equipment. The vacuum soldering equipment is identical to that described in paragraph 1-11c(2).

1-14. Interface Test Subassembly MX-8680/APS-94D

The Interface Test Subassembly, MS-8680/APS-94D (fig 1-5) consists of a single case that is similar to but larger than that previously described (para 1-10). The case serves to store the 15 plug-in test adapters (table 1-2) that are used with Interface Test Subassembly, MX-8679/APS-94D.

1-15. Common Names

The common names of components which comprise the test set and referred to frequently throughout this manual are listed in table 1-7 following.

Table 1-7. Common Names

Nomenclature	Common name
Test Set Group, Processor, Radar OQ-61/APS-94D.	Test set group.
Interface Test, Processor, Radar TS-2973/APS-94D.	Component test set.
Interface Test, Electronic Circuit Plug-in Unit TS-2972/APS-94D.	Filter test set.
Interface Test, Power Supply TS-2971/APS-94D.	Power supply test set.
Interface Test Subassembly MX-8679/APS-94D.	Synchronizer test set.
Interface Test Subassembly MX-8680/APS-94D.	Adapter storage case.
Processor, Radar Signal CM-374/APS-94D.	Signal processor.

CHAPTER 2

INSTALLATION AND OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

2-1. Unpacking

a. Packaging Data. Each unit of the test set group is individually packed for shipment, or limited storage, **in** a cleated plywood box reinforced with metal strapping (fig. 2-1). The box dimensions, volume, and shipping weight for each test set are given in table 2-1.

b. Unpacking instructions (fig. 2-1).

(1) Remove staples from top of plywood box and cut the two metal straps.

CAUTION

Do not attempt to pry off the top of the box; equipment damage may result.

(2) Using a nail puller, remove the nails from the cover of the box and remove the cover.

(3) Remove the nails from the front and back sides of the box and spread the sides to provide access to the test set unit.

(4) Remove the foam corner blocks and remove the corrugated fiberboard liners from the top and sides of the unit.

(5) Obtain assistance and lift the unit from the box.

(6) Place the unit on a flat, dry, clean surface in the repair facility.

CAUTION

Before opening the case, press the red core of the pressure relief valve (fig. 1-1) to equalize the pressures on the case wall.

(7) Unfasten the eight cover latches and carefully remove the cover. Set it down on its **top.**

(8) Save the plywood box and other packing materials for repackaging.

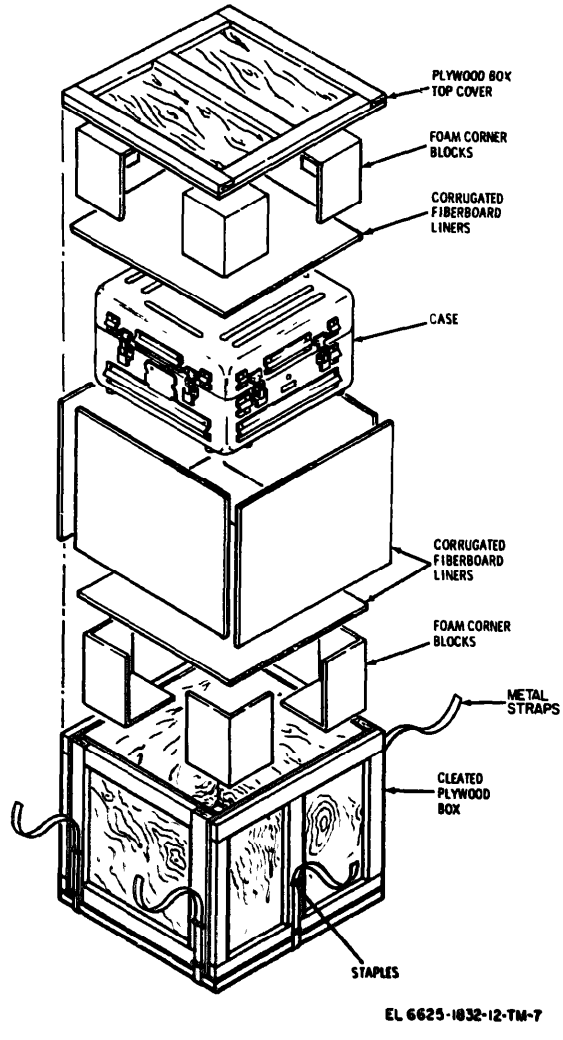

Figure 2-1. Packaging of typical unit of Test Set Group, Processor, Radar OQ-61/APS-94D

2-2. Checking Unpacked Equipment

a. Checking Equipment for Completeness. **See that the equipment is complete as listed on the packing slip. If a packing slip is not available,**

Table 2-1. Packaging Data

Unit No	Name	Box dimensions (inches)			Volume (cu ft)	Shipping weight (lb)
		Height	Width	Depth		
1	Interface Test, Processor Radar TS-2973/APS-94D	26	31	28	13.1	109
2	Interface Test, Electronic Circuit Plug-in Unit TS-2972/APS-94D	26	31	28	13.1	124
3	Interface Test, Power Supply TS-2970 APS-94D	26	31	28	13.1	149
4	Interface Test Subassembly MX-8679 APS-94D	26	31	28	13.1	134
5	Interface Test Subassembly MX-8680, APS-94D	26	37	29.5	16.4	145

check the equipment against the Basic Issue Items List (app B). Report all discrepancies (para 1-3c)

NOTE

Shortage of a minor assembly or part that does not affect proper functioning of the equipment should not prevent use of the equipment.

b. Checking Equipment for Damage. Inspect the equipment for damage incurred during shipment If the equipment was improperly packaged, or damaged, report the difficulty on DD Form 6 (Reporting of Packaging and Handling Deficiencies) or DISREP (SF 361), as pertinent.

c. Checking Equipment for Modifications. If the equipment has been used or reconditioned, see whether it has been changed by a modification work order (MWO) If the equipment has been modified, the MWO number(s) will appeal on the unit near the nomenclature plate Check to see whether the modified equipment is covered in the manual.

2-3. Installation of Interface Test, Processor Radar TS-2973/APS-94D

Install the component test set as follows:

a. Press pressure relief valve button on front of test set case (fig. l-l).

b. Pull up on each of the eight cover latches, and free latches.

c. Remove cover.

d. Check that PWR switch on test set front panel is in OFF position (fig. 2-2). Remove protective cover from POWER IN connector J4.

e. Open storage compartment lid on cover and remove cable W3.

f. Connect P2 of cable W3 to test set POWER IN connector J4. Connect P1 of cable W3 to 115-volt line-to-neutral, 3-phase, 400-Hz prime power.

2-4. Installation of Interface Test, Electronic Circuit Plug-in Unit TS-2972/APS-94D

Install the filter test set as follows:

a. Press pressure relief valve button on front of test set case (fig l-l).

b. Pull up on each of the eight cover latches. Free latches from cover.

c. Remove cover.

d. Check that POWER switch on front panel of test set is in OFF position (fig. 2-3).

e. Open storage compartment lid on case cover and remove cable W1.

f. Connect P2 of cable W1 to test set POWER IN connector J4 Connect P1 of cable W1 to 115-volt line-to-neutral, 3-phase, 400-Hz prime power.

2-5. Installation of Interface Test, Power Supply TS-2971/APS-94D

Install the power supply tests set as follows:

a. Press pressure relief valve button on front of test set case (fig. l-l).

b. Pull up on each of the eight cover latches. Free latches from cover.

c. Remove cover.

d. Check that POWER switch on front panel of test set is in OFF position (fig. 2-4). Remove protective covers from all connectors on upper and lower portions of test set.

e. Using a screwdriver, loosen the nine knurled latches that secure the storage compartment door in cover (upper portion) of test set (fig. 2-5).

f. Open the door and remove cables W1, W2, and W3.

g. Connect P2 of cable W3 to test set POWER IN connector J3 (dig. 2-4). Connect P1 of cable W3 to 115-volt line-to-neutral, 3-phase, 400-Hz prime power.

h Connect P2 of cable W1 to LOADS connector J1 on lower portion of test set. Connect P1 to W1 to LOADS connector J1 on upper portion of test set.

i. Connect P2 of cable W2 to LOADS connector J2 on lower portion of test set. Connect P1 of cable W2 to LOADS connector J2 on upper portion of test set.

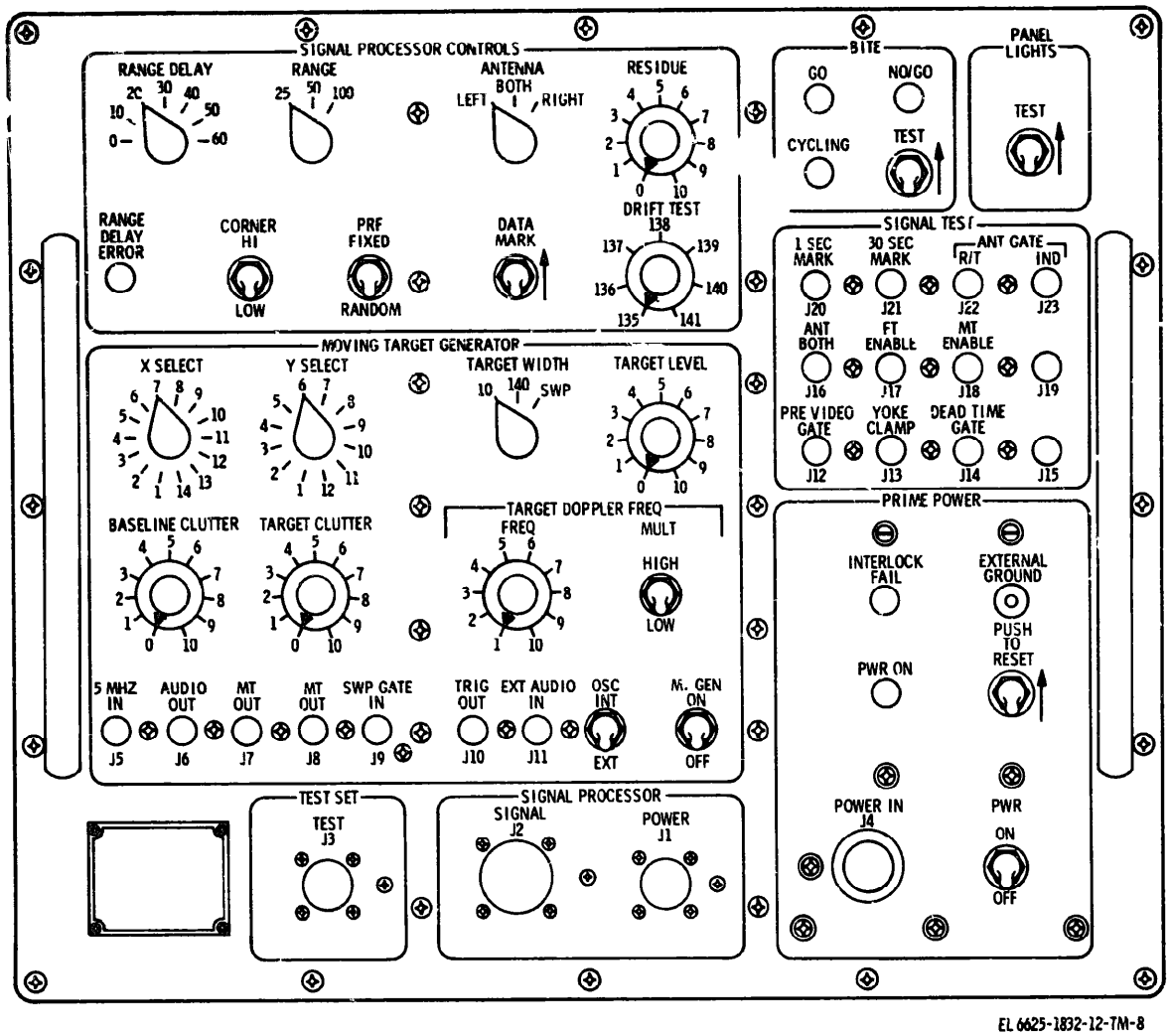

Figure 2-2. Interface Teat, Processor, Radar TS-2973/APS-94D, Controls, Indicators, and Connectors.

2-6. Installation Interface Test Subassembly MX-8679/APS-94D

Install the synchronizer test set as follows :

a. Press pressure relief valve button on front of test set case (fig. 1-1).

b. Pull up on each of the eight cover latches and free latches from cover.

c. Remove cover.

d. Check that PWR switch on front panel of test set is in OFF position (fig. 2-6). Remove protective cap from POWER IN connector J1.

e. Open storage compartment lid on case cover and remove cable W1.

f. Connect P2 of cable W1 to POWER IN connector J1. Connect P1 of cable W1 to 115-volt line-to-neutral, 3-phase, 400-Hz power.

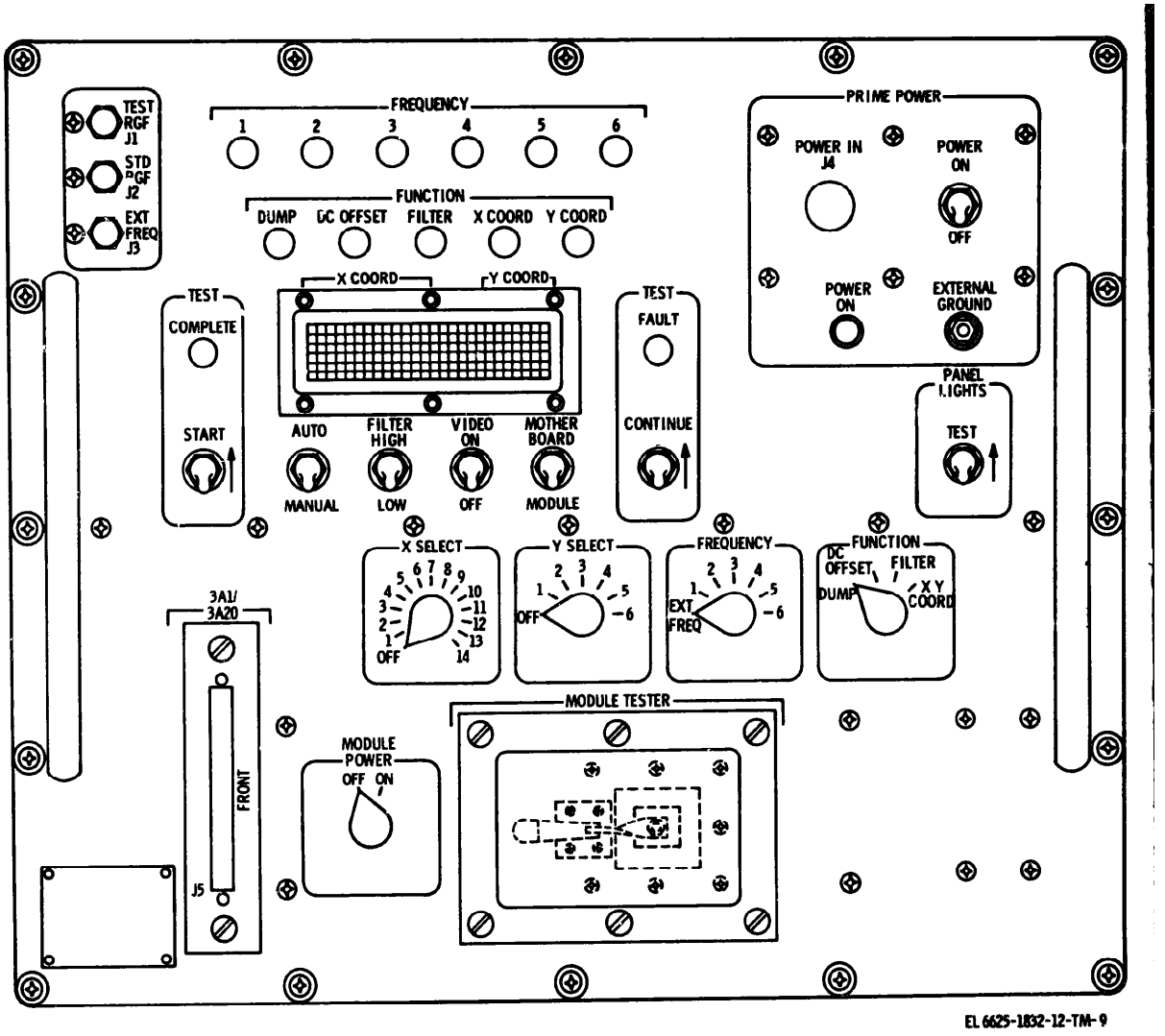

Figure 2-3. Interface Test, Electronic Circuit Plug-in Unit TS-2979/APS-94D, controls indicators, and connectors.

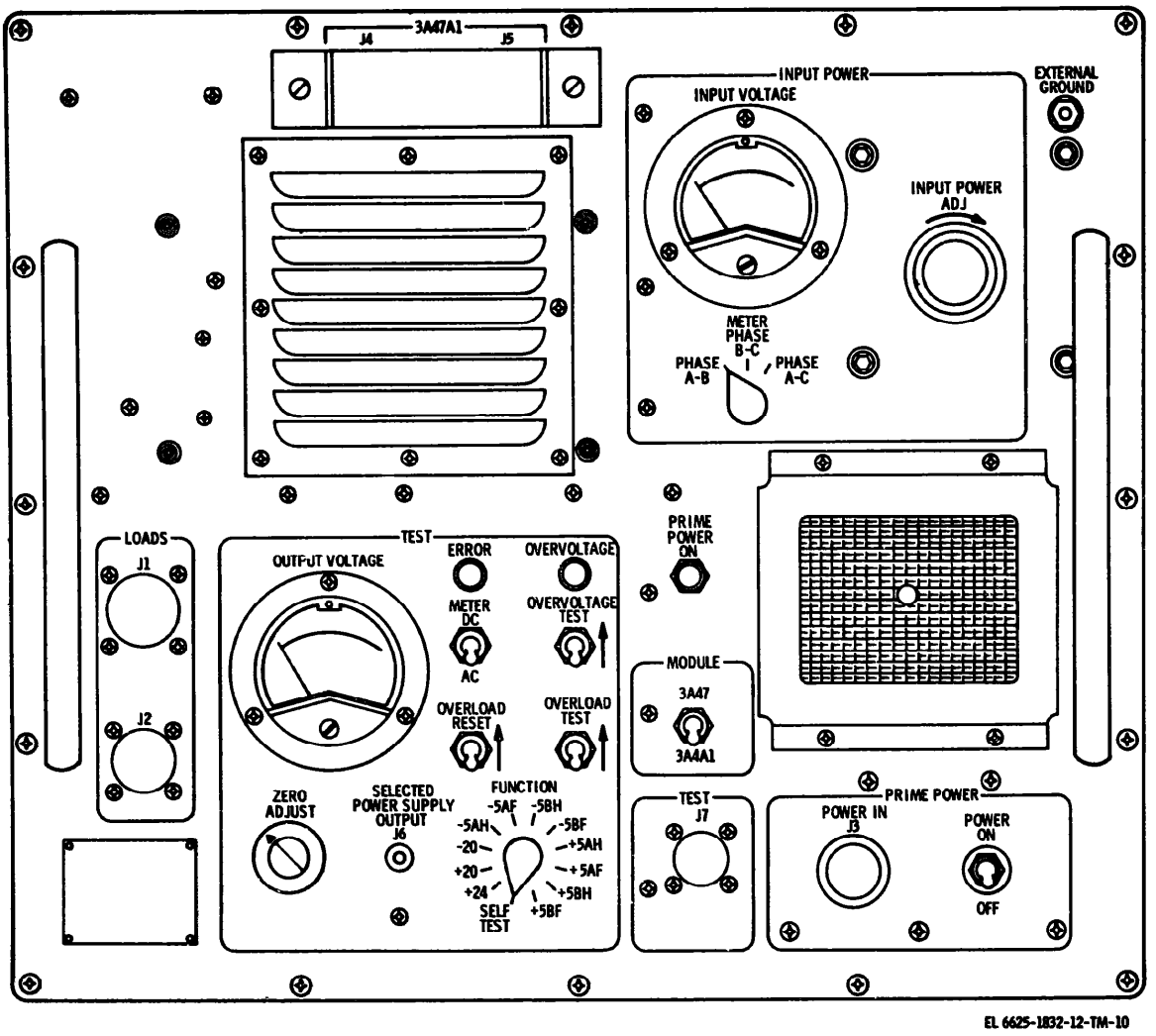

Figure 2-4. Interface Test, Power Supply TS-297l/APS-94D, controls indicators, and connectors on lower panel.

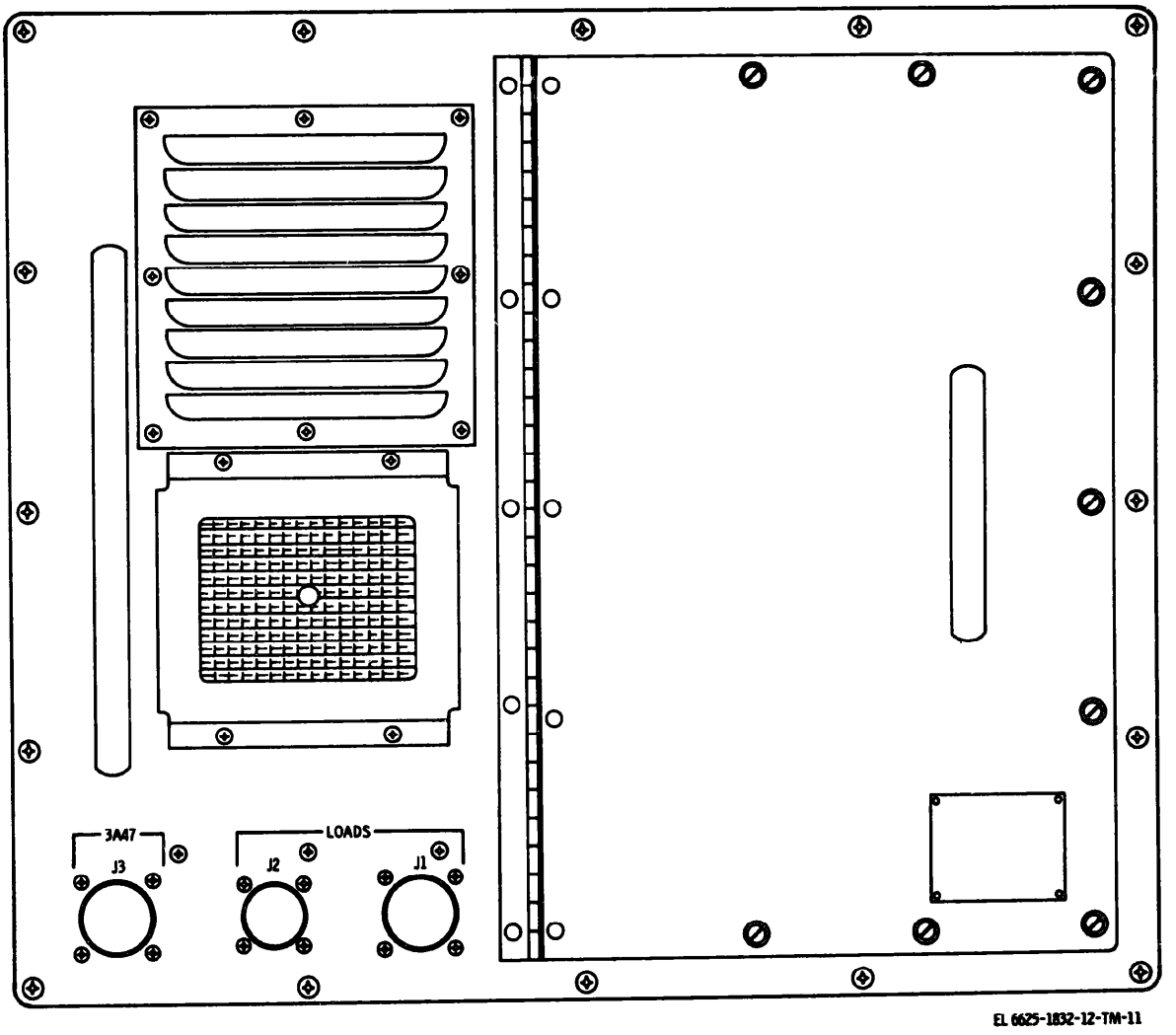

Figure 2-5. Interface Test, Power Supply TS-297l/APS-94D connectors on upper panel.

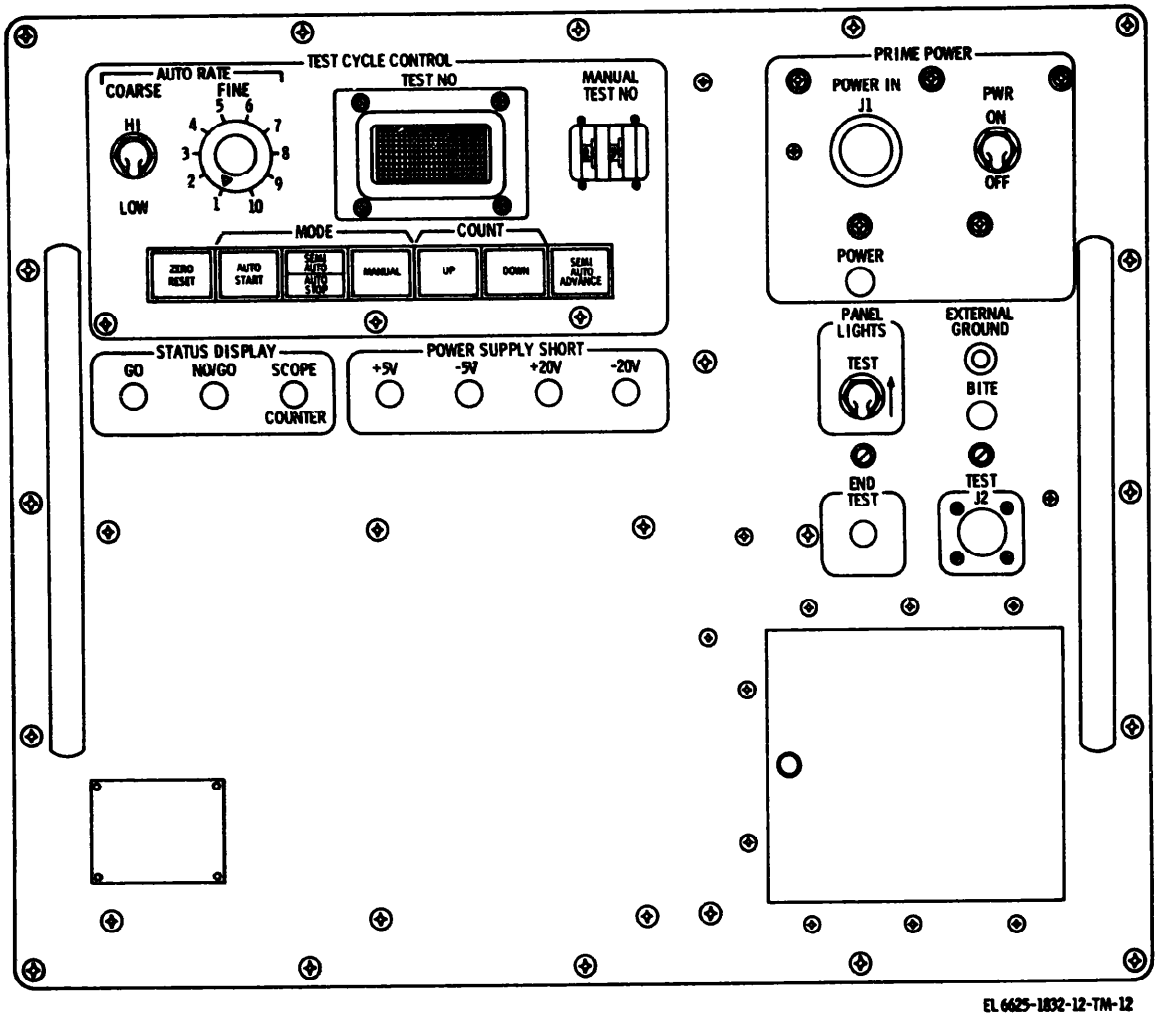

Figure 2-6. Interface Test Subassembly MX-8679/APS-94D. controls, indicators, and connectors.

Section II. OPERATOR'S CONTROLS, INDICATORS, AND CONNECTORS

2-7. Controls, Indicators, and Connectors for Interface Test, Processor, Radar TS-2973/APS-94D (fig. 2-2).

The component test set controls, indicators, connectors and their functions, are given in table **2–2.** The items on the component test set panel **(fig.** 2-2) are grouped in blocked areas designated by a name. The item descriptions in table 2-2 are **grouped** under the panel area name.

Table 2-2. Controls, Indicators, and Connectors for Interface Test, Processor, Radar TS-2973/APS-94D

Control, indicator. or connector	Function
SIGNAL PROCESSOR CONTROLS	
RANGE DELAY switch (seven-position rotary).	Selects amount of range delay in signal processor. Delay ranges from 0 to 60 km in 10 km steps.
RANGE switch (three-position rotary).	Selects 25, 50, or 100 km range in the signal processor.
ANTENNA switch (three-position rotary).	Selects either LEFT, RIGHT, or BOTH antennas.
RESIDUE control (potentiometer).	Changes level of fixed target clutter relative to moving target video in signal processor.
RANGE/DELAY ERROR indicator (red).	When lit indicates that combined setting of: RANGE DELAY and RANGE controls exceed 100 km limit of signal processor range capability or setting of RANGE DELAY control exceeds setting of RANGE control.
CORNER switch (two-position toggle).	Moving the CORNER switch from LO to HI position shifts the LO CORNER frequency at the range gated filter elements in the signal processor to a higher frequency.
PRF FIXED-RANDOM switch (two-position toggle).	Selects either fixed or psuedo random prf operation of signal processor.
DATA MARK switch (two-position toggle, momentary).	Signal processor generates fiducial marks when switch is held at DATA MARK position.
DRIFT TEST control (potentiometer).	Varies distance of first range mark relative to system trigger pulse. Dial markings from 135 through 141 represent microseconds. With control set at center (138 on the potentiometer dial) the adjustment range is ± 3 microseconds.
BITE	
GO indicator (green)	When lit, indicates BITE circuitry in signal processor is functioning properly.
CYCLING indicator (white).	When lit, indicates that BITE test is in process.
NO/GO indicator (red).	When lit, indicates a malfunction exists in BITE circuitry in signal processor.
TEST switch (two-position toggle momentary).	Initiates signal processor BITE test cycle.

Table 2-2. Controls, Indicators, and Connectors for Interface Test, Processor, Radar TS-2973/APS-94D-Continued

Control, indicator, or connector	Function
PANEL LIGHTS	
TEST switch (two-position toggle, momentary).	When momentarily set at TEST, front panel indicator lamps on test set light.
SIGNAL TEST (coaxial connectors).	
1 SEC MARK J20 ___	Test jack for monitoring 1 sec. mark signal from signal processor.
30 SEC MARK J21	Test Jack for monitoring 30 sec. mark signal from signal processor.
ANT GATE R/T J22	Test jack for monitoring receiver/transmitter unit antenna gate signal generated in signal processor.
ANT GATE IND J23	Test jack for monitoring indicator unit antenna gate signal generated in signal processor.
ANT BOTH J16	Test jack for monitoring signal representing two antenna mode of operation.
FT ENABLE J17	Test jack for monitoring fixed target enable signal from signal processor.
MT ENABLE J18	Test jack for monitoring moving target enable signal from signal processor.
J19	Spare.
PRE VIDEO- GATE J12.	Test jack for monitoring prevideo gate signal from signal processor.
YOKE CLAMP J13	Test Jack for monitoring yoke clamp signal from signal processor.
DEAD TIME GATE	Test Jack for monitoring dead time gate signal from signal processor
J15	Spare.
PRIME POWER	
EXTERNAL GROUND connector.	Provides ground connection.
PUSH TO RESET switch (two-position toggle, momentary).	Reapplies ac power to signal processor after thermal or overvoltage failure (if signal processor interlock is closed).
INTERLOCK FAIL indicator (red).	When lit, indicates power removal due to thermal or overvoltage failure in signal processor.
PWR ON indicator (green).	When lit, indicates power is applied to test set.
PWR ON—OFF switch (circuit breaker, five-ampere).	Controls application of prime operating power for test set and signal processor.

Table 2-2. Controls, Indicators, and Connectors for Interface Test, Processor, Radar TS-2973/APS-94D--Continued

Control, indicator, or connector	Function
POWER IN connector J4 (multipin).	Connector for 115-volt, 3-phase, 400-Hz prime power input.
SIGNAL PROCESSOR POWER connector J1	Provides power for operating signal processor and routes test signals.
SIGNAL connector J2 (multipin).	Routes signals to and from signal processor.
TEST SET TEST connector J3 (multipin).	Provides various signals for use by test set maintenance personnel.
MOVING TARGET GENERATOR	
X SELECT switch (14-position rotary)	Breaks (divide) the Y segments into 14 increments of a position selected on the Y select switch. (used only with TARGET WIDTH switch in position 10).
Y SELECT switch (12-position rotary)	Selects target video for analysis within any of 12 selected Y sweep segments (used only with TARGET WIDTH switch in position 10 or 140).
TARGET WIDTH switch (three-position rotary).	Varies width of simulated target video pulse. With RANGE switch in 25 or 50 position, width varies from 10 range segments (2 usec) to 140 range segments (28 usec) or to full sweep gate width. With RANGE switch in 100 km position, the above pulse widths are doubled.
TARGET LEVEL control (potentiometer).	Adjusts amplitude of simulated moving target video.
BASELINE CLUTTER control (potentiometer).	Varies amplitude of baseline clutter video signal.
TARGET CLUTTER control (potentiometer).	Varies the de zero-reference level of baseline clutter video signal.
TARGET DOPPLER FREQ control (potentiometer).	Varies frequency of simulated moving target video.
MULT switch (two-position toggle).	Varies frequency range of MT video. HIGH position provides 100 to 1000 Hz range. LOW position provides 10 to 100 Hz range.
5 MHz IN connector J5 (coaxial).	Clock signal Input.
AUDIO OUT connector J6 coaxial).	Provides simulated moving target signal.
MT OUT connectors J7, J8 (coaxial).	Simulated moving target video output.
SWP GATE IN connector J9 (coaxial).	Sweep gate signal input.
TRIG OUT connector J10 (coaxial).	Provides trigger pulses to oscilloscope connected to test set for monitoring signal processor operation.
EXT AUDIO IN connector J11 (coaxial).	Provides for connection of external audio generator for simulating moving target video doppler.
OSC switch (two-position toggle).	In INT position, built-in test set oscillator is used to generate moving target video doppler. In EXT position, test set oscillator is disabled (external oscillator connected to EXT AUDIO IN jack is used to generate moving target video doppler).
MT GEN switch (two-position toggle).	In ON position, enables generation of simulated receiver video signal.

2-8. Controls, Indicators, and Connectors for Interface Test, Electronic Circuit Plug-in Unit TS-2972/APS-94D (fig. 2-3)

The filter test set controls, indicators, connectors and their functions are given in table 2-3 and shown in figure 2-3.

2-9. Controls, Indicators, and Connectors for Interface Test, Power Supply TS-3971/APS-94D (fig. 2-4 and 2-5)

The power supply test set controls, indicators, connectors and their functions are given in table 2-4 and shown in figures 2-4 and 2-5. Table 2-4 has two parts, the first describing the lower control panel, the second part describing the upper control panel.

2-10. Controls, Indicators, and Connectors for Interface Test Subassembly MX-8679/APS-94D (fig. 2-6)

The synchronizer test set controls, indicators, connectors, and their functions, are given in table 2-5 and shown in figure 2-6. When a synchronizer test set module is tested, one of the test adapters, listed in table 1-2, is coupled into

the test set circuitry and the module under test plugged into the test adapter. On the panels of the 15 difficult test adapters are controls, indicators jacks, as required, to modify the test functions to work with the specific unit under test. The adapter controls, indicators, and connector functions are given in table 2-6 and the various panels pictured in figures 2-7 through 2-18. The common name test adapter and the reference designator of the adapter will be used in table 2-6.

Table 2-3. Control, Indicators, and Connectors for Interface Test, Electronic Circuit Plug-in Unit TS-2972/APS-94D

Control, indicator, or connector	Function
TEST RGF J1 connector (coaxial).	Provides for connection of test equipment for monitoring output of range gated filter module.
STD RGF J2 connector (coaxial).	Provides for connection to output of range gated filter standard module. Used at discretion of operator for troubleshooting.
EXT FREQ J3 connector (coaxial).	Provides for connection of external audio (doppler) generator to inputs of range gated filter modules which can be used if FREQUENCY switch is placed in EXT FREQ position.
FREQUENCY 1, 2, 3, 4, 5, 6 indicator lights (yellow).	Indicates frequency at which range gated filter module failed during filter test.
FUNCTION	
DUMP indicator light (yellow).	Lights if range gated filter module fails DUMP test.
DC OFFSET indicator light (yellow).	Lights if range gated filter module fails DC OFFSET test.
FILTER indicator light (yellow).	Lights if range gated Alter module fails FILTER teat.
X COORD indicator light (yellow).	Lights if range gated filter module fails X COORD test.
Y COORD indicator light (yellow).	Lights if range gated filter module fails Y COORD teat.
TEST	
COMPLETE indicator light (green).	When lit, indicates completion tests.
START switch (two-position toggle, momentary).	Initiates tests.
X COORD display (numerical).	Displays X coordinate being tested.
Y COORD display (numerical).	Displays Y coordinate being tested.

Table 2-3. Controls, Indicators, and Connectors for Interface Test, Electronic Circuit Plug-in Unit TS-2972/APS-94D--Continued

Control, indicator, or connector	Function
TEST	
FAULT indicator light (red)	When lit, indicatea range gated filter module test failure and further testing is inhibited.
CONTINUE switch (two-position toggle, momentary).	When pushed in direction of arrow, allows testing to continue after a fault is detected.
AUTO/MANUAL switch (two-position toggle).	Selects manual or automatic test mode.
FILTER HIGH-LOW switch (two-position toggle).	Increases or decreases range gated filter module bandpass on low end of bandpass frequency.
VIDEO ON-OFF switch (two-position toggle).	Inhibits or enabler, video to range gated filter module. Used in manual mode only.
MOTHER BOARD-MODULE switch (two-position toggle).	Selects test configuration for either a mother board test or a micromodule (single filter element) test
PRIME POWER	
POWER IN connector J4 (multipin).	200-volt, 3-phase, 400-Hz prime operating power input.
PRIME POWER	
POWER ON-OFF switch (two-position toggle).	Controls application of prime power test set.
POWER ON indicator light (green).	When lit, indicates application of prime power when POWER switch is placed to ON position.
EXTERNAL GROUND connector.	Provides ground connection.
PANEL LIGHTS	
TEST switch (two-position toggle, momentary).	When pushed in direction of arrow, lights all front panel indicator lamps.
FUNCTION switch (six-position rotary).	Selects test function to be performed. Used in manual mode only.
Position	Action
DUMP	Enables performance of dump test to measure dump parameter.
DC OFF-SET	Enables performance of dc offset test to measure dc offset parameter.

Table 2-3. Controls, Indicators, and Connectors for Interface Test, Electronic Circuit Plug-in Unit TS-2972/APS-94D--Continued

Control, indicator, or connector	Function	
	Position	*Action*
	FILTER	Enables performance of corner frequency test to measure frequency response of Alter.
	X Y COORD	Enables performance of X and Y coordinate test to locate defective filter elements on range gated filter board.
FREQUENCY switch (seven-position rotary).	Selects any one of six doppler frequencies or externally applied frequency for application to filter under test. Used in manual mode only.	
X SELECT switch (15-position rotary).	Selects any one of 14 filter elements within a group selected with the Y select switch for individual testing. Used in manual mode only.	
Y SELECT switch (seven-position rotary).	Selects any one of six groups of 14 filter elements for individual testing. Used in manual mode only.	
MODULE TESTER receptacle (multipin).	Test receptacle for testing filter micromodules (single filter element from range gated filter module).	
MODULE POWER OFF-ON switch (two-position rotary).	Controls application operating power to module under test.	
3A1/3A20 receptacle J5 (multipin).	Test receptacle to plug in mother board to be tested.	

Table 2-4. Controls, Indicators, and Connectors for Interface Test Power Supply TS-297l/APS-94D

Control, indicator, instrument, or connector	Function
LOWER PORTION (fig. 2-4)	
3A47A1 connectors J4 and J5 (multipin).	Test receptacles for power supply module subassembly 3A47A1 under teat.
INPUT POWER INPUT VOLTAGE indicator (meter).	Measures 200 volt line-to-line, 3-phase prime input voltage as selected with METER switch.

Table 2-4. Controls, Indicators, and Connectors for Interface Test, Power Supply TS-2971/APS-94D--Continued

Control, indicator, instrument, or connector	Function
METER switch (three-position rotary).	Selects any of three phases of input voltage for individual measurement on INPUT VOLTAGE meter.
INPUT POWER ADJ (variable transformer).	Adjusts prime input voltage applied to module under test as indicated on INPUT VOLTAGE meter.
PRIME POWER ON indicator light (green).	When lit, indicates prime power is applied to test set.
MODULE 3A47-3A47A1 switch.	Selects test configuration according to reference designation of module to be tested.
PRIME POWER POWER IN connector J3 (multipin).	Prime input power connector.
POWER ON-OFF switch (circuit-breaker).	Controls application of prime power to test set.
TEST connector J7 (multipin).	Test set test points. Used by higher category maintenance personnel when troubleshooting test set.
TEST ERROR indicator light (red).	When lit, indicates improper test sequence.
OVERVOLTAGE indicator light (green).	When lit, indicates satisfactory operation of power supply overvoltage circuitry.
METER AC-DC switch (two-position toggle).	Selects ac ripple or dc voltage for readout on OUTPUT VOLTAGE meter.
OVERVOLTAGE TEST switch (two-position toggle, momentary).	Initiates overvoltage test Of power supply module or subassembly under test.
OVERLOAD RESET switch (two-position toggle, momentary).	Resets module under test after being subjected to an overcurrent condition.
OVERLOAD TEST switch two-position toggle, momentary).	Initiates overload test of module under test.
FUNCTION switch (12-position rotary).	In SELF TEST position, provides for test of indicator lamps. In all other positions, selects voltage test (except overvoltage test) to be performed on module under test.
SELECTED POWER SUPPLY OUTPUT connector (coaxial).	Provides for connection of external measuring equipment for monitoring the functions selected with the FUNCTION switch.
ZERO ADJUST control (potentiometer).	Used to electrically zero-adjust OUTPUT VOLT-

Table 2-4. Controls, Indicators, and Connectors for Interface Test, Power Supply TS-2971/APS-94D-- Continued

ontrol, indicator, instrument, or connector	Function
	AGE meter (ac) with FUNCTION switch in SELF TEST position.
OUTPUT VOLTAGE indicator (meter).	Indicates ac ripple and dc output voltages as selected with METER switch.
LOADS	
Upper connector (multipin).	Provides for connection of cable to supply inputs to dummy load when testing 3A47A1 subassembly.
Lower connector (multipin).	Provides for connection of cables to receive output from dummy loads.
UPPER PORTION (fig. 2-5)	
3A47 connector J1 (multipin).	Provides connection for cable W4 to interconnect test set and power supply module under test.
LOADS connector J1 and J2.	Provides connection for cable W1 and W2 mterconnect upper and lower portion of test set.

Table 2-5. Controls, Indicators, and Connectors for Interface Test Subassembly MX-8679/APS-94D

Control, indicator, or connector	Function
TEST CYCLE CONTROL	
AUTO RATE COARSE switch (two-position (toggle).	In HI rate position, automatic test cycle rate is 16 times faster than when in LO rate position.
AUTO RATE-FINE switch (lo-position rotary).	Fine control of automatic test cycle rate.
TEST NO digital readout.	Displays test cycle number in process or last completed cycle.
MANUAL TEST NO switches (two-position, rotary, thumbwheel).	Used to select desired test cycle when operating in MANUAL mode.
ZERO RESET switch (pushbutton).	Resets test No. counter to zero (Initial) state.
AUTO START switch (pushbutton).	Initiates automatic mode of operation.
SEMI AUTO-AUTO STOP switch (two-position pushbutton).	a. In SEMI Auto position, digital readout advances as in automatic mode, then stops.

Table 2-5. Controls, Indicators, and Connectors for Interface Test Subassembly MX-8679/APS-94D-- Continued

Control, indicator, or connector	Function
	SEMI AUTO ADVANCE switch must then be pressed to initiate each test. b. Stops automatic mode of operation.
MANUAL switch (pushbutton).	Initiates test selected by MANUAL TEST NO. thumbwheel switches.
UP switch (pushbutton)	Initiates increasing count.
DOWN switch (pushbutton).	Initiates decreasing count.
SEMI-AUTO ADVANCE switch (pushbutton).	Advances test number when operating in the semi-automatic mode.
PRIME POWER	
POWER IN connector J1 (multipin).	Provides for connection of 200-volt, 400-Hz, 3-phase prime power cable W1.
PWR ON-OFF switch (circuit breaker).	Applies prime power to test set when in ON position.
POWER light (green)	When lit, Indicates that prime power is applied to test set when PWR circuit breaker is placed in ON position.
EXT GROUND connector	Provides ground connection.
BITE indicator light (red)	When lit, indicates failure of counter.
PANEL LIGHTS switch two-position, toggle, momentary).	When pushed to TEST (in direction of arrow), all functioning indicator lights are lit, enabling operator to detect defective lights.
TEST connector J2 (multipin).	Test set test points used for troubleshooting.
END TEST light (white)	Lights when test sequence (cycle) is completed.
STATUS DISPLAY	
GO light (green)	Lights to indicate test without a failure.
NO/GO indicator light (red).	When lit, indicates test is a failure.
SCOPE-COUNTER indicator light (white).	When lit, indicates that oscilloscope or counter display is pertinent to particular test.
POWER SUPPLY SHORT +5v, -5v, +20v, -20v indicator lights (red).	When lit, indicates that respective power supply has been short circuited.

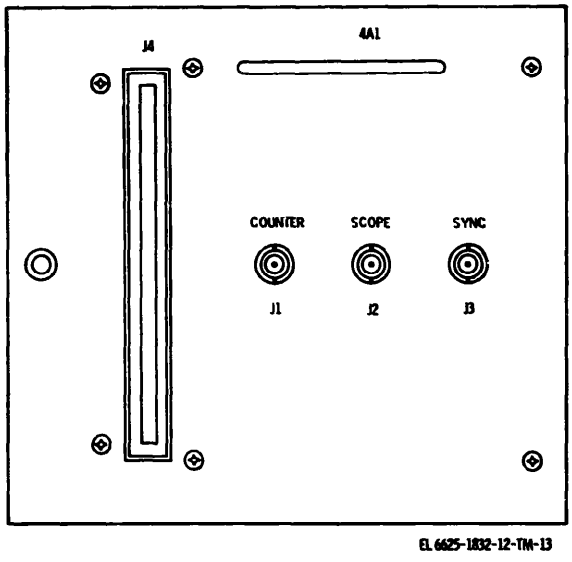

Figure 2-7. Front panel of Adapter, Test MX-8615/APS-94D and MX-8629/APS-94D, designated 4A1 and 4A3.

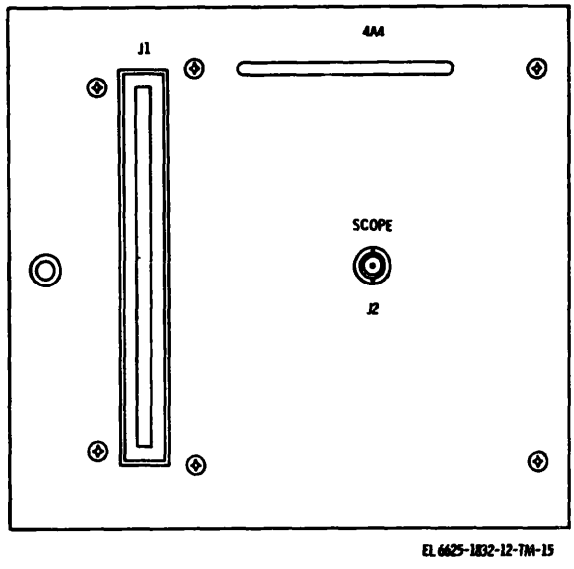

Figure 2-9. Front panel of Adapter, Test MX-8617/APS-94D and MX-8625/APS-94D, designated 4A4 and 4A12.

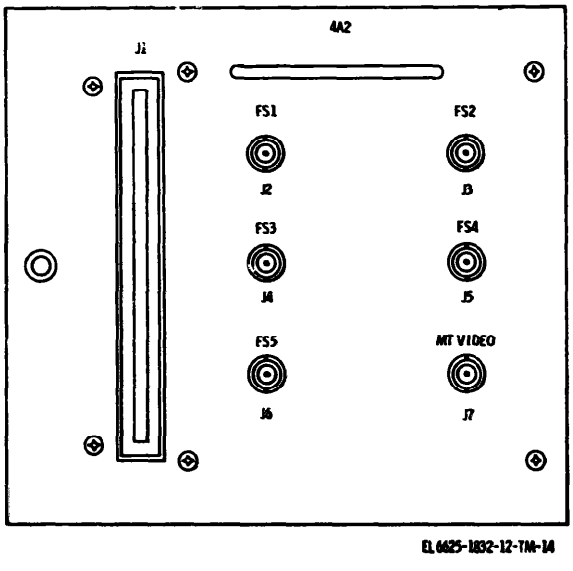

Figure 2-8. Front panel of Adapter, Test MX-1816/APS-94D, designated 4A2.

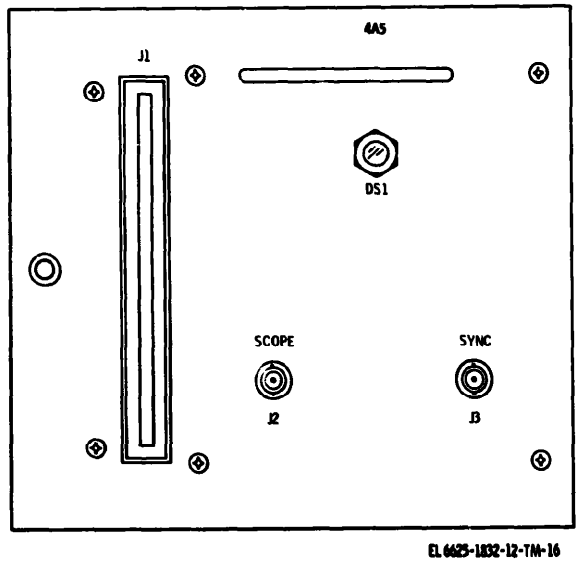

Figure 2-10. Front panel of Adapter, Test MX-8618/APS-94D, designated 4A5.

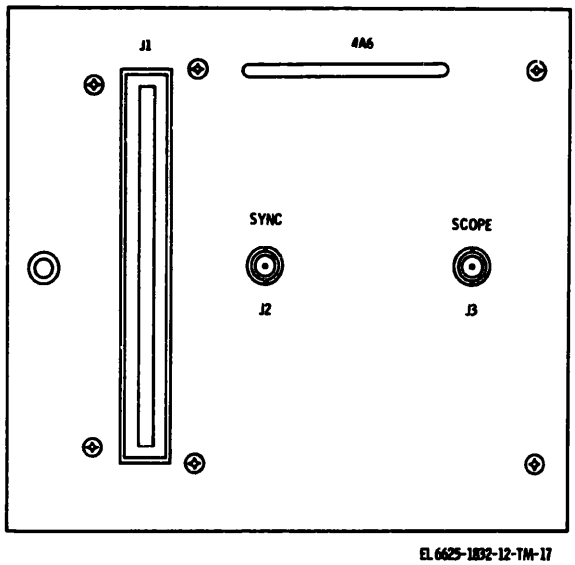

Figure 2-11. Front Panel of Adapter, Teat MX-8619/ APS-94D and MX-8627/APS-94D, designated 4A6 and 4A14.

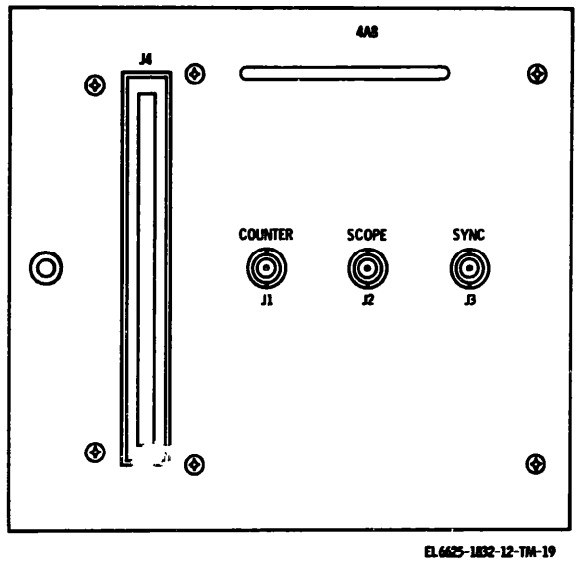

Figure 2-13. Front Panel of Adapter, Test MX-8621/ APS-94D, designated 4A8.

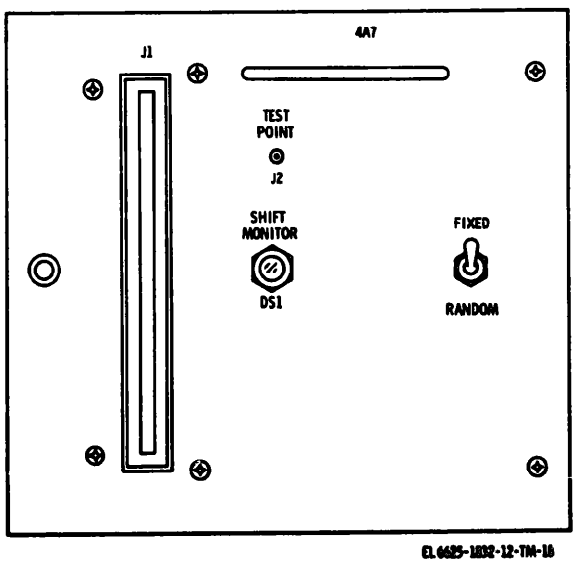

Figure 2-12. Front Panel of Adapter, Test MX-8620/ APS-94D, designated 4A7.

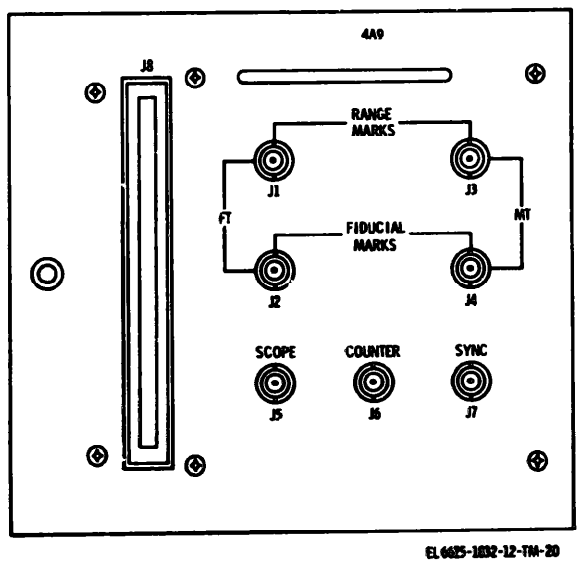

Figure 2-14. Front Panel of Adapter, Test MX-8622/ APS-94D, designated 4A9.

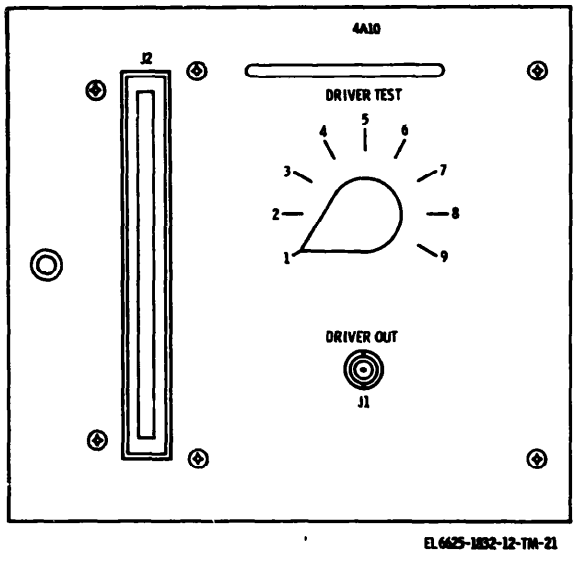

Figure 2-15. Front Panel of Adapter, Test MX-8623/ APS-94D. designated 4A10.

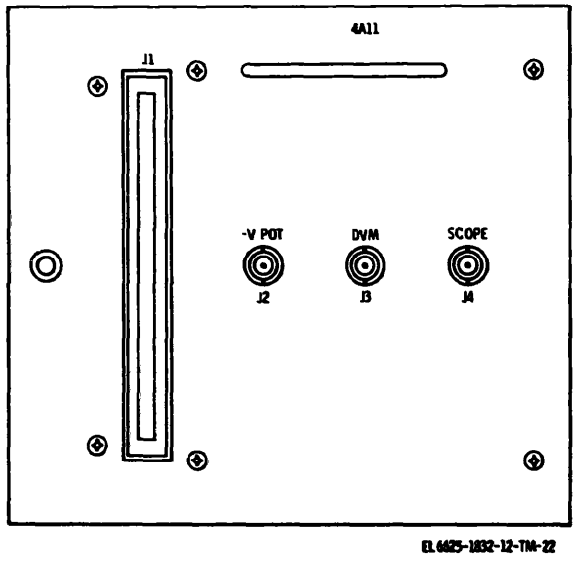

Figure 2-16. Front Panel of Adapter, Test MX-8624/ APS-94D, designated 4A11.

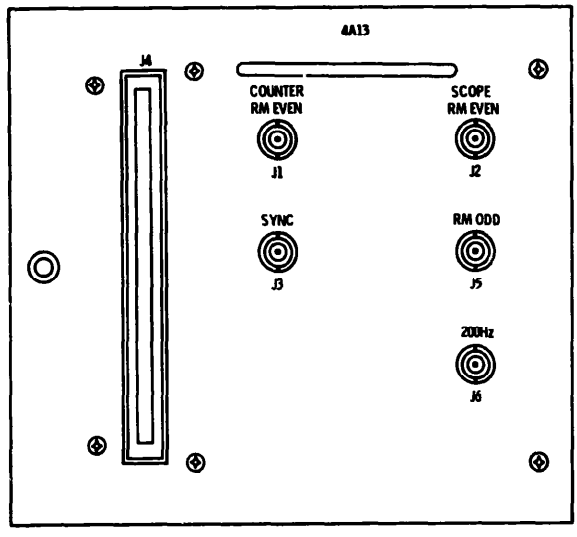

Figure 2-17. Front Panel of Adapter, Teat MX-8626/ APS-94D, designated 4A13.

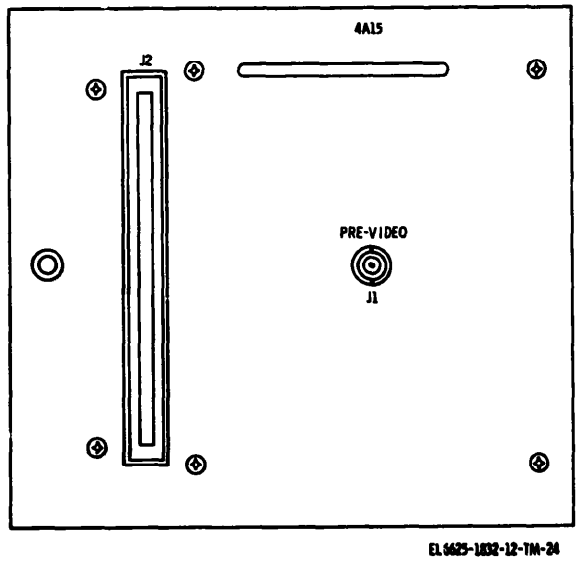

Figure 2-18. Front Panel of Adapter, Test MX-8628/ APS-94D, designated 4A15.

Table 2-6. Controls, Indicators, and Connectors for Test Adapters

Control, indicator, or connector	Function
TEST ADAPTERS 4A1 AND 4A3 (fig. 2-7)	
Test receptacle J4 (multipin).	Test receptacle for insertion of signal processor module to be tested. Adapter 4A1 is used to test modules 3A21 through 3A30. Adapter 4A3 is used to test module 3A33.
COUNTER connector J1 coaxial).	Provides for connection of counter for monitoring test results.
SCOPE connector J2 (coaxial).	Provides for connection of oscilloscope for monitoring test results.
SYNC connector J3 (coaxial).	Provides synchronizing signal for oscilloscope.
TEST ADAPTER 4A2 (fig. 2-8)	
Test receptacle J1 (multipin).	Test receptacle for insertion of signal processor modules 3A31 or 3A32.
FS1, FS2, FS3, FS4, FS5 connectors J3 through J6 (coaxial).	Provides for monitoring fast switch video signals 1 through 5.
MT VIDEO connector J7 (coaxial).	Provides for monitoring moving target video signal.
TEST ADAPTERS 4A4 AND 4A12 (fig. 2-9)	
Connector J1 (multipin)	Test receptacle for insertion of signal processor to be tested. Adapter 4A4 is used to test module 3A34. Adapter 4A12 is used to test module 3A43.
SCOPE connector J2 (coaxial).	Provides for connection of oscilloscope for monitoring test signals.
TEST ADAPTER 4A5 (fig. 2-10)	
Connector J1 (multipin)	Test receptacle for insertion of signal processor module 3A35 to be tested.
24V SHORT light DS1	When lit, indicates short in 24-volt circuit of module under test.
SCOPE connector J2 (coaxial).	Provides for connection of oscilloscope for monitoring teat signals.
SYNC connector J3 **(coaxial).**	Provides synchronization **signal for oscilloscope.**
TEST ADAPTERS 4A6 AND 4A14 (fig. 2-11)	
Connector J1 (multipin)	**Test receptacle for insertion of signal processor module to be tested. Adapter 4A6 is used to test module 3A36.**

Table 2-6. Controls, Indicators, and Connectore for Test Adapters-Continued

Control, indicator, or connector	Function
	Adapter 4A14 is used to test module 3A45.
SYNC connector J2 (coaxial).	Provides synchronization signal for oscilloscope.
SCOPE connector J3 (coaxial).	Provides for connection of oscilloscope for monitoring test signals.
TEST ADAPTER 4A7 (fig. 2-12)	
Connector J1 (multipin)	Test receptacle for insertion of signal processor module 3A37 to be tested.
TEST POINT J2 (jack)	Enables SHIFT MONITOR indicator when jumper is connected from TEST POINT jack to TPJ4 on module under test.
SHIFT MONITOR indicator DSI.	Blinks to indicate operation of random number generator in module under test when jumper is connected to TEST POINT as described above.
FIXED/RANDOM switch (2-position toggle).	Selects fixed or random PRF test operation.
TEST ADAPTER 4A8 (fig. 2-13)	
Connector J4 (multipin)	Test receptacle for insertion of signal processor module 3A38 to be tested.
COUNTER connector J1 (coaxial).	Provides for connection of counter for monitoring test results.
SCOPE connector J2 (coaxial).	Provides for connection of oscilloscope for monitoring test results.
SYNC connector J3 (coaxial).	Provides synchronization signal for oscilloscope.
TEST ADAPTER 4A9 (fig. 2-14)	
Connector J8 (multipin)	Test receptacle for insertion of signal processor module 3A39 to be tested.
RANGE MARKS/FT connector J1 (coaxial).	Fixed target range marks.
FIDUCIAL MARKS-FT connector J2 (coaxial).	Fixed target fiducial marks.
RANGE MARKS-MT connector J3 (coaxial).	Moving target range marks.
FIDUCIAL MARKS-MT connector J4 (coaxial).	**Moving target fiducial marks.**
SCOPE connector J5 **(coaxial).**	**Provides for connection of oscilloscope for monitoring test results.**
COUNTER connector J6 (coaxial).	**Provides for connection of counter for monitoring test results.**
SYNC connector J7 (coaxial).	**Provides synchronization signal for oscilloscope.**

Table 2-6. Controls, Indicators. and Connectors for Test Adapters-Continued

Control, indicator, or connector	Function
TEST ADAPTER 4A10 (fig. 2-15)	
Connector J2 (multipin)	Test receptacle for insertion of signal processor modules 3A49 or 3A41 to be tested.
DRIVER TEST switch (9-position rotary).	Selects outputs from module under test for application to DRIVER OUT test connector.
DRIVER OUT connector J1 (coaxial).	Provides for connection of oscilloscope to monitor test results.
TEST ADAPTER 4A11 (fig. 2-16)	
Connector J1 (multipin)	Test receptacle for insertion of signal processor module 3A42 to be tested.
-V POT connector J2 (coaxial)	Provides oscilloscope for monitoring secant voltage from module under test.
DVM connector J3 (coaxial).	Provides for connection of digital voltmeter for monitoring test results.
SCOPE connector J4 (coaxial).	Provides for connection of oscilloscope for monitoring test results.
TEST ADAPTER 4A13 (fig. 2-17)	
Connector J4 (multipin)	Test receptacle for insertion of signal processor module 3A44 to be tested.
COUNTER RM EVEN connector J1 (coaxial).	Provides counter connection for monitoring even range marks from module under test.
SCOPE RM EVEN connector J2 (coaxial).	Provides oscilloscope connection for monitoring even range marks for module under test.
SYNC connector J3 (coaxial).	Provides synchronization signal for test oscilloscope.
RM ODD connector J5 (coaxial).	Provides oscilloscope connection for monitoring odd range marks from module under test.
200 Hz connector J6 (coaxial).	Provides oscilloscope connection for monitoring 200 Hz output from module under test.
TEST ADAPTER 4A15 (fig. 2-18)	
Connector J2 (multipin)	Test receptacle for insertion of signal processor module 3A46 to be tested.
PRE-VIDEO connector J1 (coaxial).	Provides for monitoring prevideo signal.

Section III. OPERATION

2-11. Component Test Set Operation

a. Preliminary. To prepare the component test set for testing the radar signal processor, after the component test set has been installed (para 2-3), perform the following:

(1) Remove the eight remaining cables stored in cover of test set.

(2) Connect the cables as shown in figure 2-19.

b. Starting. Perform the following:

(1) Place test set PWR switch to ON position (fig. 2-2). Observe that PWR ON indicator illuminates.

(2) Push the PANEL LIGHTS switch to the TEST position and observe that all panel indicator lamps light. Release the switch.

c. Operation. After performing the starting procedure, the test set is ready to operate. For detailed operating procedures, refer to TM 11-5895-578-34 or TM 11-5895-578-50.

d. Stopping. To stop the test set, place PWR switch to OFF positron

2-12. Filter Test Set Operation

a. Preliminary. To use the test set for testing radar signal processor modules 3A1 through 3A20, after the test set has been installed (para 2-4), proceed to b. following.

b. Starting. Perform the following :

(1) Place filter test set POWER switch (fig. 2-3) to ON position. Observe that POWER ON indicator lights.

(2) Actuate PANEL LIGHTS TEST switch and observe that all indicator lamps light.

c. Operation. After performing the starting procedure, the test set is ready for use. For detailed operating instructions, refer to TM 11-5895-378-50.

d. Stopping. To stop the test set, place POWER switch to OFF position.

2-13. Power Supply Test Set Operation

a. Preliminary. To prepare the test set for testing radar signal processor module 3A47, after

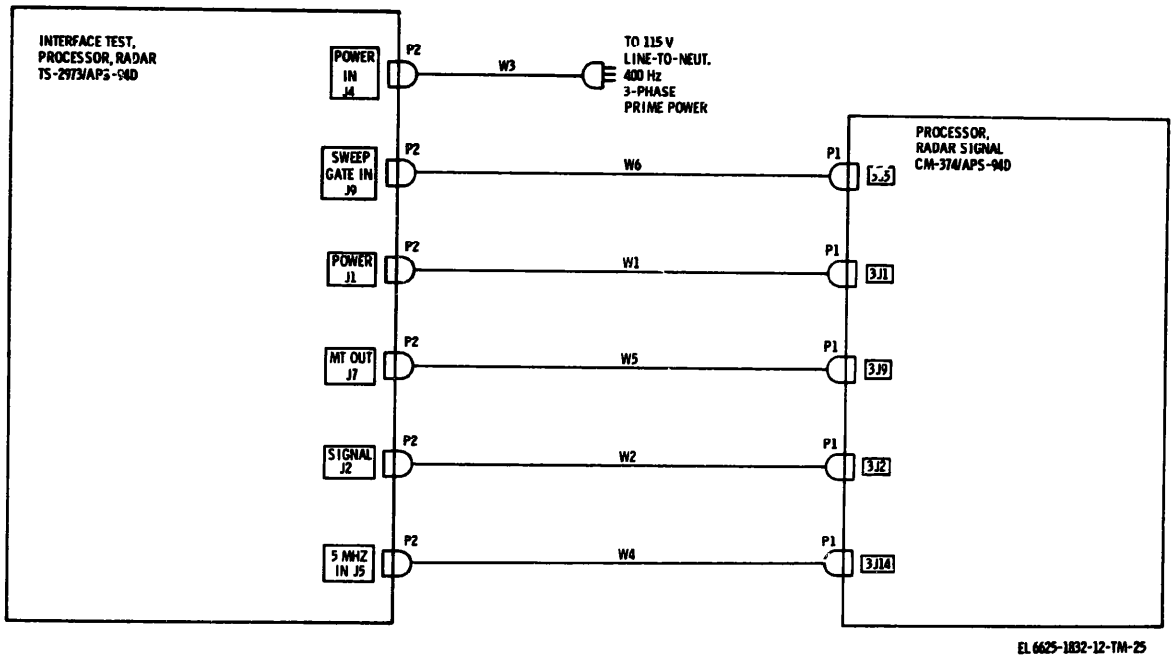

Figure 2-19. Test Setup for Interface Test Processor, Radar TS-2973/APS-94D.

the test set has been installed (para 2-5), perform the following :

(1) Remove cable W4 stored in cover of test set.

(2) Connect P2 of cable W4 to module 3A47 connector J3 on upper portion of test set (fig. 2-5).

(3) Check that all other cables have been properly connected as shown in figure 2-20.

(4) Check that INPUT VOLTAGE meter pointer (fig. 2-4) is resting on 80 of the meter scale and that the OUTPUT VOLTAGE meter pointer is resting on 0. If necessary, turn the mechanical zero adjustment on each meter to properly position each pointer.

(5) To test module 3A47, connect P1 of cable W4 to mating connector on module. To test subassembly 3A47A1, separate (pull) 3A47A1 from 3A47. Remove plate 3A47A1 J4/J5 on panel of lower portion (fig. 2-4) of test set by loosening the two knurled thumbscrews. Place subassembly over louvered panel on test set and mate connectors J4 and J5 and four posts with like connectors and posts on test set panels

b. Starting. Perform the following :

(1) Place test set POWER switch to ON position (fig. 2-4); observe that PRIME POWER ON indicator lights.

(2) With METER switch in PHASE A-B position, turn INPUT POWER ADJ control so that INPUT VOLTAGE meter indicates 200 volts.

(3) Repeat step (2) with switch in PHASE B-C and PHASE A-C positions.

(4) Turn FUNCTION switch to SELF TEST position; all indicators should light.

c. Operation. After performing the starting procedure, the power supply test set is ready to operate. For detailed operating procedures, refer to TM 11-5895-573-50 (when published).

d. Stopping. To stop the power supply test set, place POWER switch to OFF position.

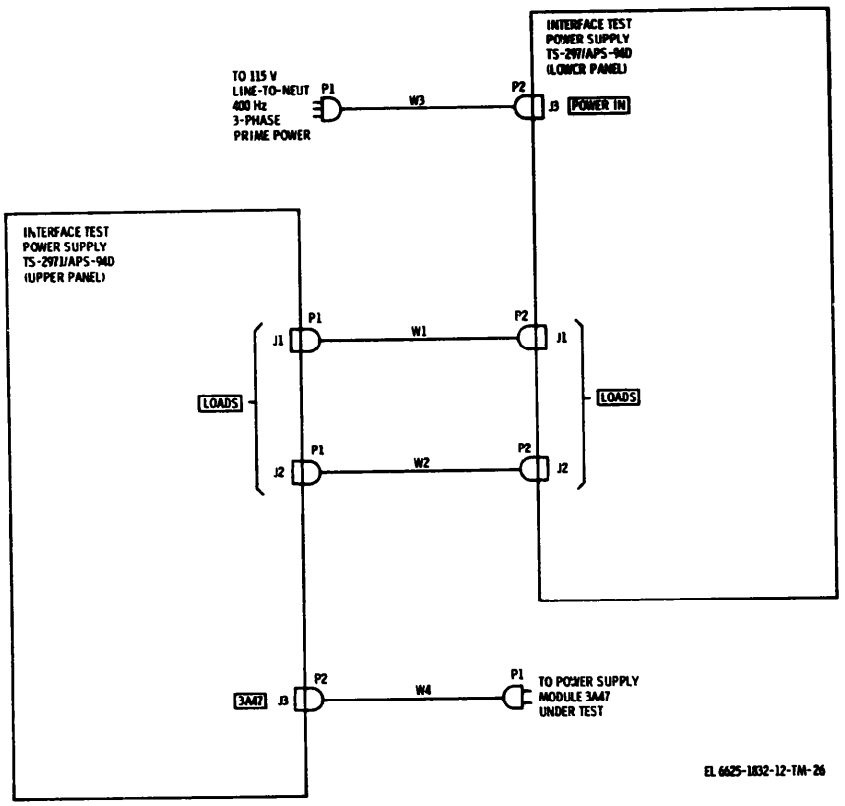

Figure 2-20. Teat Setup for Interface Test, Power Supply TS-2971/APS-94D.

2-14. Synchronizer Test Set Operation

a. Preliminary. To use the synchronizer test set after the test set has been installed (para 2-6). proceed to b following.

b. Starting. Perform the following :

(1) Place synchronizer test set PWR switch to ON position (fig. 2-6), observe that the POWER and SCOPE-COUNTER indicators light.

(2) Actuate PANEL LIGHTS TEST switch and observe that all indicator lamps light.

c. Operating. After performing the starting procedure, the synchronizer test set is ready for use. Remove panel from lower right-hand corner of test set front panel by turning knurled latch knob. Refer to table 1-2 to determine the proper plug-in test adapter (fig. 1-5) for use with the signal processor module to be tested. For de tailed operating instructions, refer to TM-5895-578-50 (when published).

d. Stopping. To stop the test set, place PWR switch to OFF position.

CHAPTER 3

OPERATIONS MAINTENANCE

Section I. SCOPE, TOOLS, AND EQUIPMENT

3-1. Scope of Maintenance

The maintenance duties assigned to the operator of Test Set Group, Processor, Radar OQ-61/APS-94D are listed below with references to the paragraphs covering specific maintenance functions.

a. Daily preventive maintenance checks and services (para 3-4b).

b. Weekly preventive maintenance checks and services (para 3-4c).

c. Cleaning (para 3-5).

d. Troubleshooting (para 3-7, 3-8).

3-2. Tools, Test Equipment, and Materials Required for Maintenance

The Maintenance Allocation Chart (app B) lists the maintenance functions for operator's maintenance. Tool kits and common tools are listed in the applicable TOE and TA.

3-3. Special Tools and Devices

No special tools or devices are required to maintain the test set group. However, trichloroethane is required for cleaning equipment electrical contacts, and air filters.

Section II. PREVENTIVE MAINTENANCE

3-4. Preventive Maintenance Checks and Service Periods

a. General Instructions. Preventive maintenance checks and services (PMCS) of the test set group are required on a daily and weekly basis. References in the Procedure column of the operator's daily PMCS chart of b below, and operator's weekly PMCS chart of subparagraph c below, are to checking and service procedures that are too lengthy to be included in the tables; references in the table Paragraph reference column are to corrective measures that can be taken when an abnormal condition is found. The operator's daily PMCS chart specifies checks and services that must be accomplished daily and under the special conditions listed below.

(1) When the equipment is initially installed.

(2) When the equipment is reinstalled after removal for any reason.

(3) At least once each week if the equipment is maintained in standby condition.

The operator's weekly PMCS chart specifies additional checks and services that must be performed once each week.

b. Operator's Daily PMCS Chart.

Interval and sequence No.			Item to be inspected	Procedure	Reference
Before operation	During operation	After operation			
1	.....	.....	All test set cases and panels	Inspect for signs of deterioration (dirt, corrosion, fungus, etc.) of external surfaces.	Para 3-5.
2	.....	.....	Electrical cabling	Check for broken or cut cables.	Para 3-8.
3	.....	.....	All test set front panels	Check for proper mechanical operation of each control or switch as used during operation.	Para 3-8.

Interval and sequence No.			Item to be inspected	Procedure	Reference
Before operation	During operation	After operation			
4	----------	----------	Test set front panel ----------	Check for loose or cracked indicator lamp lenses. Replace as necessary.	Para 3–6.
5	5	5	All test set front panels ----	Check that protective caps for electrical connectors are in place and fit properly. Replace as necessary.	
6	----------	----------	All test set front panels ---	Check that all indicator lamps light when PANEL LIGHTS TEST switch is pressed.	Para 3–8.

c. Operator's Weekly PMCS Chart.

Interval and sequence No.			Item to be inspected	Procedure	Reference
Before operation	During operation	After operation			
1	----------	----------	Cables, jacks, and plugs ----	Inspect cable connectors for corrosion, bent pins, or thread damage.	Refer to higher category maintenance.
2	----------	----------	All cases, front panels -----	Inspect handles, latches, hinges, and other exterior items for looseness. Tighten as necessary.	
3	----------	----------	Air Filters on power supply test set (fig. 1–3).	Inspect and clean ----------	Para 3–5b.

3-5. Cleaning

WARNING

The fumes of trichloroethane are toxic. Provide thorough ventilation whenever used. DO NOT use near an open flame. Trichloroethane is not flammable, but exposure of the fumes to an open flame converts the fumes to highly toxic, dangerous gases.

CAUTION

Da not use trichloroethane on plastic materials such as lamp lenses, meter lenses, or cabling.

a. General.

(1) Remove accumulated dust and loose dirt with a clean, soft cloth.

(2) Remove grease, fungus, and ground-in dirt from the **equipment exterior with a cloth dampened (not wet) with trichloroethane. Wipe the component dry with a clean, lint-free cheesecloth.**

(3) Clean meter lenses and plastic parts with a cleansing tissue.

b. Air Filter Cleaning Procedure. (fig. 1-3).

(1) Remove four screws from the air intake filter bracket.

(2) Remove bracket and the metallic filter. (fig. 2-4).

(3) Clean the air filter with trichloroethane.

(4) Remove excess trichloroethane from the air filter and allow to dry.

(5) Replace the air filter and bracket and fasten the bracket to the panel with the four retaining screws. (fig. 2-5).

3-6. Removal and Replacement of Lamps

a. Removal and Replacement of Incandescent Lamps.

(1) Remove the lamp lens by unscrewing (turn counterclockwise). For pushbutton indicators, pull the lens from the pushbutton and turn lens counterclockwise one-quarter turn. Pull lens and lamp assembly from panel.

(2) Pull the lamp out of the lamp lens or p**ushbutto**n lamp assembly (not necessary to turn).

(3) Insert the replacement lamp; push in **to seat.**

(4) Screw the lamp lens into the lamp socket (turn clockwise). For pushbutton switches, insert lamp assembly, turn lens one-quarter turn clockwise, then push in fully to secure.

Section III. OPERATOR'S TROUBLESHOOTING AND REPAIR

3-7. General Troubleshooting Information

The troubleshooting information presented in the unit troubleshooting charts of paragraph 3-8 is primarily based on symptoms that may be observed during normal operation of the test set group units. The corrective action column of the troubleshooting charts provides specific information or references to information that will aid in remedying the malfunction. Higher category maintenance is required if the trouble cannot be corrected.

3-8. Troubleshooting Charts

a. Operator's Troubleshooting Chart for *In*terface Test, Processor, Radar TS-2973/APS-94D.

Item No	Malfunction	Probable cause	Corrective action
1	PWR ON indicator does not light when PWR switch is in ON position.	a. Defective indicator lamp	a. Replace indicator lamp (para 3-6).
		b. Defective power cable W4	b. Refer to higher category maintenance.
2	Indicator lamp(s) does not light when PANEL LIGHTS switch is pushed to TEST position.	a. Defective indicator lamp(s)	a. Replace any indicator lamp that does not light (para 3-6).
		b. Defective internal circuitry	b. Refer to higher category maintenance.
3	Control or switch does not operate properly (mechanically).	a. If control or rotary switch, knob may be loose.	b. Tighten setscrew in knob.
		b. Control or switch defective	b. Refer to higher category maintenance.
4	Desired test results cannot be obtained.	a. Cable connection loose	a. Tighten cable connection.
		b. Defective interconnecting cable(s).	b. Refer to higher category maintenance.

b. Operator's Troubleshooting Chart for Interface Test, Electronic Plug-in Unit TS-2972/APS-94D.

Item No.	Malfunction	Probable cause	Corrective fiction
1	POWER ON indicator does not light when POWER switch is placed in ON position.	a. Defective indicator lamp	a. Replace indicator lamp (para 3-6).
		b. Defective power cable W1	b. Refer to higher category maintenance.
2	Indicator lamp(s) does not light when PANEL LIGHTS switch is pushed to TEST position.	a. Defective indicator lamp(s)	a. Replace any indicator lamp that does not light (para 3-6).
		b. Defective internal circuitry	b. Refer to higher category maintenance.
3	Control or switch does not operate properly (mechanical).	a. If control or rotary switch, knob may be loose.	a. Tighten setscrew in knob.
		b. Control or switch defective	b. Refer to higher category maintenance.
4	Proper teat results cannot be obtained.	Defective internal circuitry	Refer to higher category maintenance.

c. Operator's Troubleshooting Chart for Interface Test, Power Supply TS-2971/APS-94D.

Item No.	Malfunction	Probable cause	Corrective action
1	**PRIME POWER ON indicator does not light but INPUT VOLTAGE meter indicates that power is applied.**	**a. Defective lamp**	**a. Replace lamp (para 3–6).**
		b. Defective internal circuitry	**b. Refer to higher category maintenance.**
2	**POWER ON indicator does not light and INPUT VOLTAGE meter indicates zero voltage.**	**Defective power cable W3**	**Refer to higher category maintenance.**

Item No.	Malfunction	Probable cause	Corrective action
3	Indicator lamp(s) does not light when FUNCTION switch is turned to SELF TEST position.	a. Defective indicator lamp(s) b. Defective internal circuitry	a. Replace any indicator lamp that does not illuminate (para 3-6). b. Refer to higher category maintenance.
4	Control or switch does not operate properly (mechanical).	a. If control or rotary switch, knob may be loose. b. Control or switch defective	a. Tighten setscrew in knob. b. Refer to higher category maintenance.
5	Proper test results cannot be obtained.	a. Loose cable connections b. Defective internal circuitry	a. Tighten cable connections. b. Refer to higher category maintenance.

d. Operator's Troubleshooting Chart for Interface Test, Subassembly MX-8679/APS-94D.

Item No.	Malfunction	Probable cause	Corrective action
1	POWER indicator does not light when PWR switch is in ON position.	a. Defective indicator lamp b. Defective power cable W1	a. Replace indicator lamp (para 3-6). b. Refer to higher category maintenance.
2	Indicator lamp(s) does not light when PANEL LIGHTS switch is pushed to TEST position.	a. Defective indicator lamp(s) b. Defective internal circuitry	a. Replace any indicator lamp that does not light (para 3-6). b. Refer to higher category maintenance.
3	Control or switch does not operate properly (mechanical).	a. If control or rotary switch, knob may be loose. b. Defective control or switch	a. Tighten setscrew in knob. b. Refer to higher category maintenance.
4	Proper test results cannot be obtained.	Defective internal circuitry	Refer to higher category maintenance.

CHAPTER 4

ORGANIZATIONAL MAINTENANCE

Section I. GENERAL

4-1. scope

Maintenance duties assigned to organizational maintenance personnel are listed below together with references to paragraphs covering specific maintenance functions.

***a.* Preventive maintenance checks and services (para 4–3).**

b. Cable continuity checks (para 4-4).

c. Touchup painting (para 4-5).
Cover replacement (para 4-7).

d. Adjustment of case latch tension (para 4-6).

e. Performance check (para 4-7).
Troubleshooting (para 4-10, 4-11).

4-2. Tools, Test Equipment, and Materials Required

All tools and test equipment required for organizational maintenance and maintenance functions are listed in the Maintenance Allocation Chart (app B) and authorized by the Repair Parts and Special Tools List in this appendix.

a. Additional Took Required. None.

b. Additional Test Equipment Required. Multimeter AN/URM-105.

c. Materials Required.
Sandpaper No. 000.
Primer, color Y per MIL-P-8585.
Enamel, light gray type III, class 2 per MIL-E-15090.

Section II. PREVENTIVE MAINTENANCE

4-3. Organizational Preventive Maintenance Checks and Service Periods and Charts

Perform the maintenance functions indicated in the monthly (or quarterly) preventive maintenance checks and services tables of a and b, below. A month is defined as approximately 30 calendar days of 8-hour per day operation. If the equipment is operated 16 hours a day, the monthly preventive maintenance checks and services should be performed at 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual operating conditions. The requirement for monthly and/or quarterly preventive maintenance checks and services is not limited to equipment in every day use. These preventive maintenance checks and services must also be performed on equipment maintained in a standby (ready for **immediate operation) condition. Equipment in limited storage, which requires servicing before operation, does not require monthly and/or quarterly maintenance. Weekly and monthly preventive maintenance checks and services constitute checks and services and must be performed at the same time. All deficiencies will be recorded** in accordance with the requirements of TM 38-750.

4-4. Cable Continuity Checks

a. Multiconductor Cables.

Set the ohmmeter for the lowest resistance range. Connect the ohmmeter common probe to a pin in the connector at one end of the cable. Touch the corresponding pin in the connector at the other end of the cable with the ohmmeter ohms probe. The ohmmeter should indicate zero resistance. Continue the procedure until the continuity of each conductor in the cable under test has been checked.

b. Coaxial Cables.

(1) Set the ohmmeter for the highest resistance range. Connect the ohmmeter common **probe to the stationary part of one of the cable connectors. Touch the ohmmeter ohms probe to the connector center conductor pin. The ohmmeter should not indicate continuity.**

(2) Set the ohmmeter for the lowest resistance range. Connect the ohmmeter common probe to the center conductor pin in a connector

at one end of the cable. Touch the center conductor pin in the connector at the other end of the cable with the ohmmeter probe. The ohmmeter should indicate zero resistance.

a. Monthly Organizational PMCS Chart.

Sequence No.	Item to be inspected	Procedures	Reference
1	Cables and connectors	*a.* Replace if damaged. *b.* Perform continuity checks	*b.* Refer to paragraph 4–4. If defective, replace.
2	Component panels	Touchup (paint) damaged surfaces	Refer to paragraph 4–5 for touchup painting instructions.
3	Combination case cover and latches	Check for loose cover or latches	Refer to paragraph 4–6 for adjustment information.
4	Control and switch knobs	Check for tightness on shaft	Tighten setscrew in knob.
5	All components	Check for normal operation	Refer to paragraph 4–7 for operational check.
6	Externally mounted panel parts	Replace if damaged.	
7	All components	Check that equipment is complete	Refer to appendix B.

b. Quarterly Organizational PMCS Chart.

Sequence No.	Item to be inspected	Procedures	Reference
1	Publications	Check that all publications are complete, serviceable, and current.	DA PAM 310–4.
2	Modifications	Check DA PAM 310–7 to determine if new applicable MWO's have been published. All urgent MWO's must be perfomed immediately. All normal MWO's must be scheduled.	TM 38–750 and DA PAM 310–7.

4-5. Touchup Painting

WARNING

The primer and enamel used for touchup painting are flammable. Perform the touchup in an approved area that is away from fire or flame.

a. Use the primer and enamel specified in paragraph 4-2.

b. Refer to the applicable cleaning and refinishing instructions contained in TB 746-10, Field Instructions for Painting and Preserving Electronic Command Equipment.

4-6. Adjustment of Case Latch Tension

a. Position the cover on the case body.

b. Engage the latches on the case cover.

c. Exert upward pressure on each of the case latches, in turn, to secure the cover to the case body.

d. Check latch tension. Tension is adequate when cover is firmly secured to case body and all latches are tight. Perform instructions e through h below, if cover or any latch is louse!.

e. Exert downward pressure on the latch to permit disengagement. Disengage the latch from the case cover.

f. Using a 3/8-inch open-end wrench, hold the latch nut in position while turning the latch in the direction that will secure the cover to case body or tighten any loose latch when clamped to cover.

g. Engage the latch on the case cover. Then exert upward pressure on the latch to secure.

h. Check the latch for sufficient tension as defined in d above.

i. Repeat instructions e through h, above, until the desired latch tension is obtained.

4-7. Organizational Performance Check

A performance check of the test set group units must be made monthly, or as required, by organizational maintenance personnel. Check out the component test set, filter test set, power supply test set, and the synchronizer test set, as directed in paragraphs 2-11, 2-12, 2-13, and 2-14, respectively.

Section III. ORGANIZATIONAL TROUBLESHOOTING

4-8. General Troubleshooting Information

Organizational troubleshooting is based on trouble symptoms that may be observed while making the performance check referenced in paragraph 4-9 and trouble symptoms noted by the operator during operation and listed in the operator's troubleshooting charts. Troubleshooting to be performed by organizational maintenance personnel is developed from the corrective actions listed **in** the operator's troubleshooting charts that are beyond the scope of operator's maintenance.

4-9. Organizational Troubleshooting Charts

Organizational troubleshooting information for the component test set, filter test set, power supply test set, and synchronizer test set is given in the charts which follow. Refer to the appropriate chart for organizational troubleshooting information concerning a specific unit of the circuit test set.

a. Organizational Troubleshooting Chart for Interface Test, Processor, Radar, TS-2973/APS-94D.

Item No.	Malfunction	Probable cause	Corrective action
1	PWR ON indicator does not light when PWR switch is in ON position.	*a* Defective power cable W3	*a* Check cable continuity (para 4–4).
		b. Defective internal circuitry	*b* If defective, refer to higher category maintenance
2	Manipulation of controls or switches as used during test does not provide proper test results.	*a* Defective interconnecting cables	*a.* Check all continuity (para 4–4). Replace any defective cable or refer to higher category maintenance.
		b. Defective internal circuitry	*b.* Refer to higher category maintenance.

b. Organizational Troubleshooting Chart for Interface Test, Electronic Plug-in Unit TS-2972/APS-94D

Item No.	Malfunction	Probable cause	Corrective action
1	POWER ON indicator does not light when POWER switch is placed to ON position.	*a.* Defective power cable W1	*a.* Perform continuity check (para 4-4).
		b. Defective internal circuitry	*b.* Refer to higher category maintenance.
2	Manipulation of controls or switches as used during test does not provide proper test results.	Defective internal circuitry	Refer to higher category maintenance.

c. Organizational Troubleshooting Chart for Interface Test, Power Supply TS-2971/APS-94D.

Item No.	Malfunction	Probable cause	Corrective action
1	PRIME POWER ON indicator does not light and INPUT VOLTAGE meter indicates zero voltage.	*a.* Defective power cable	*a.* Perform continuity check (para 4–4). Replace cable if defective.
		b. Defective internal circuitry	*b.* Refer to higher category maintenance.
2	Manipulation of controls or switches as used during test does not provide proper test results.	*a.* Defective interconnecting cables	*a.* Check cable continuity (para 4–4). Replace any defective cable or refer to higher category maintenance.
		b. Defective internal circuitry	*b.* Refer to higher category maintenance.

d. Organizational Troubleshooting Chart for Interface Test, Subassembly MX-8679/APS-94D.

Item No.	Malfunction	Probable cause	Corrective action
1	POWER indicator lamp does not light when PWR switch is in ON position.	*a.* Defective power cable	*a.* Perform continuity check (para 4-4). If cable defective refer to higher category maintenance.
		b. Defective internal circuitry	*b.* Refer to a higher category maintenance.
2	Proper test results cannot be obtained.	Defective internal circuitry	Refer to higher category maintenance.

CHAPTER 5
SHIPMENT, LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT

5-1. Disassembly of Equipment

Prepare units of the test set group for shipment and administrative storage as follows :

a. Disconnect all test set cabling, coil the interconnecting cables.

b. Using the Basic Issue Items List (app B) as a guide, place all listed minor component items in storage area of case.

c. Use dry, soft neutral material to fill all voids and cushion any vibration.

d. Secure the hinged inner lid in case cover by pressing the press-to-lock-unlock fasteners.

e. Place cover on test set unit. Close and secure the cover of each case by fastening the eight latches.

5-2. Repackaging the Equipment

Each test set can be repackaged as indicated in figure 2-1. Use the original packaging materials if available. Refer to table 5-1 if it becomes necessary to fabricate new packaging materials for the component test set, filter test set, power supply test set, or synchronizer test set. Refer to table 5-2 if it becomes necessary to fabricate a new shipping box for the adapter storage case. Package each unit of the test set group as described below. Refer to figure 2-1.

Table 5-1. Materials for Fabrication of Test Set Shipping Box

Quantity	Materials
2 min	Fiberboard liners (PPP-F-320, CF, DOM, SW, 200), top and bottom, 24 by 21.5 inches.
2 min	Fiberboard liners (PPP-F-320, CF, DOM, SW, 200), sides, 24.5 by 19.5 inches.
2 min	Fiberboard liners (PPP-F-320, CF, DOM, SW, 200), ends, 21.5 by 19.5 inches.
8	Foam corner blocks (unicellular, polyethylene foam, MIL-C-46842), 7 by 7 by 7 inches with 2-inch thick walls.
As required	Steel strapping, flat (QQ-S-7B1, Type 1, Class B, Grade 2) 0.75 inches wide by 0.023 inches thick.
As required	Cleated plywood box (PPP-B-601, Style A, Domestic Type) inside dimensions 24 by 29 by 26 inches.

a. Place two corrugated fiberboard liners in bottom of cleated-plywood box. Place test set (unit) in box.

b. Place at least two corrugated fiberboard liners between each side of case and cleated-plywood box.

c. Place at least two liners on top of case.

d. Secure plywood top to cleated-plywood box.

e. Install two steel straps (QQ-S-781) around box, using staples (FF-N-105).

Section II. DEMOLITION TO PREVENT ENEMY USE

5-3. Authority for Demolition

Demolition of the equipment will be accomplished only upon order of the commander. Use the destruction procedure outlined in paragraph 5-5 to prevent further use of the equipment.

5-4. Methods of Destruction

a. Smash. Remove the test set from the case. Use sledges, axes, hammers, crowbars, and any other heavy tools to smash the equipment and case.

b. Cut. **Use axes, handaxes, machetes, and similar tools to cut the electrical able in a number of places.**

WARNING

Be extremely careful with explosives and incendiary devices. Use these items

Table 5-2. Materials for Fabrication of Adapter Storage Case Shipping Box

Quantity	Materials
2 min	Fiberboard liners (PPP-F-320, CF, DOM, SW, 200), top and bottom 23 by 30.5 inches.
2 min	Fiberboard liners (PPP-F-320, CF, DOM, SW, 200), sides 30.5 by 18.5 inches.
2 min	Fiberboard liners (PPP-F-320, CF, DOM, SW, 200), sides 30.5 by 18.5 inches.
8	Foam corner blocks (unicellular, polyethylene foam, MIL-C-46842), 9 by 9 by 9 inches with 2-inch thick walls.
As required	Steel strapping, flat (QQ-S-781, Type 1, Class B, Grade 2) 0.75 inch wide by 0.023 inch thick.
As required	Cleated plywood box (PPP-B-601, Style A, Domestic Type), inside dimensions 23 by 35 by 27.5 inches.

only when the need is urgent, and only when all personnel concerned are thoroughly familiar with demolition procedures. See FM 5-25.

c. Burn. Burn the technical manuals first. Burn as much of the equipment as is flammable; use gasoline, oil, flamethrowers, and similar materials.

d. Dispose. Bury or scatter the destroyed parts or throw them into nearby waterways.

APPENDIX A

REFERENCES

The following publications contain information applicable to the operation and organizational maintenance of Test Set Group, Processor, Radar OQ-61/APS-94D.

DA PAM 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 4, 6, 7, 8, and 9), Supply Bulletins, Lubrication Orders.
DA PAM 310-7	Modification Work Orders.
FM 5-25	Explosives and Demolitions.
SB 38-100	Preservation, Packaging, Packing, and Marking Materials, Supplies, and Equipment used by the Army.
TB 746-10	Field Instructions for Painting and Preserving Electronics Command Equipment.
TM 38-750	The Army Maintenance Management System (TAMMS).
TM 11-5895-578-34	Direct and General Support Maintenance Manual, Radar Surveillance Set AN/APS-94D.
TM 11-5895-578-50	Depot Maintenance Manual for Radar Surveillance Set AN/APS-94D.
TM 11-6625-203-12	Operator and Organizational Maintenance, Multimeter AN/URM-105, Including Multimeter ME-77/U.

APPENDIX B
MAINTENANCE ALLOCATION

SECTION I. INTRODUCTION

B-1. General

This appendix provides a summary of the maintenance operations for Test Set Group, Processor, Radar OQ-61/APS-94D. It authorizes categories of maintenance for specific maintenance functions on repairable items and components, and the tools and equipment required to perform each function.

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 failure 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, preserve, drain, paint, or to replenish fuel/ lubricants/hydraulic fluids or compressed air supplies.

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

e. Align. To adjust specified variable elements of an item to 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 equipment used in precision measurement. Consists of the comparison 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, module (component or assembly) in a manner to allow the proper functioning of the equipment/system

A Replace. The act of substituting a serviceable like-type part, subassembly, 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, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module/component/ assembly, end item or system.

j. Overhaul. That periodic maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (e.g., 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 materiel 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 equipment/components.

B-3. Column Entries

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 lists the functions to be performed on the item listed in column 2.

d. Column 4, Maintenance Category. Column 4 specifies, by the listing of a "worktime" 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 "worktime" figures will be shown for each category. The number of man-hours specified by the "worktime" 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 main-

tenance functions authorized in the maintenance **allocation chart.**

Subcolumns of Column 4 are as follows:

C - Qperator/Crew
O - Organizational
F-Directsupport
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.

B-4. Tool and Test Equipment Requirements (Table 1)

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 followed parenthetically by the digit Federal Supply Code for that manufacturer.

SECTION II. MAINTENANCE ALLOCATION CHART
FOR
TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT
			C	O	F	H	D	
00	TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D	Test[1]		0.5				2
		Calibrate[2]				1.5		
		Replace		0.1				
		Repair[3]				1.0		3, 4
		Overhaul					65.0	32
		Rebuild					100.0	32
01	Interface Test, Processor, Radar TS-2973/APS-94D	Inspect	0.6					
		Inspect		0.5				
		Inspect				0.3		
		Service	0.8					
		Service		1.0				
		Replace		0.1				
		Repair					2.0	32
0101	Panel, Test, Electrical	Test				1.8		4-9, 15, 17
		Adjust				0.3		4, 6, 11, 17
		Replace				0.3		4
		Repair[4]				0.5		4-9, 15, 17
010101	Clock and Counter Module 1A1	Test					0.7	4, 8, 9, 11, 25
		Replace				0.3		4
		Repair					0.5	4, 5, 6, 8, 9, 11, 25
010102	Oscillator and Switch Module 1A2	Test					0.7	4-9, 11, 26
		Replace				0.3		4
		Repair					0.8	4-9, 11, 26
010103	Power Supply Regulator Module 1A3	Test					0.3	4, 6, 27
		Replace				0.3		4
		Repair					0.4	4, 5, 6, 27
010104	Electronic Component Assembly 1TBL	Replace				0.3		4
		Repair				0.5		4, 5, 6, 22
02	Interface Test, Electronic Circuit Plug-in Unit TS-2972/APS-94D	Inspect	0.3					
		Inspect		0.3				
		Inspect				0.3		
		Test				2.5		4, 5, 6, 8, 19
		Service	0.5					
		Service		0.7				
		Adjust				1.8		4, 6, 8
		Repair					2.0	32
		Replace		0.1				
0201	Panel, Test, Electrical	Test				1.8		4-9, 15, 17
		Adjust				0.3		4-6, 11, 17
		Replace				0.3		4
		Repair[5]				1.3		4-9, 15, 17, 18, 19
020101	Comparator 2A1	Test					0.7	4, 5, 6, 8, 18, 19
		Adjust					0.3	6
		Replace				0.3		4
		Repair					0.8	4, 5, 6, 8, 18, 19
020102	Frequency Filters and Control Gates 2A2	Test					0.5	4, 5, 6, 8, 9, 11
		Adjust					0.3	8
		Replace				0.3		4
		Repair					0.5	4, 5, 6, 8, 9, 11

(1) Continuity of interconnecting cables.
(2) Refer to TB 43-180, Calibration Requirements for the Maintenance of Army Materiel.
(3) By replacement of cable and/or connectors.
(4) By replacement of modules 1A1, 1A2, 1A3 and/or 1TBL.
(5) By replacement of modules 2A1, 2A2, 2A3, 2A4, 2A5, 2A6, 2A7, 2A11, 2A12, 2A13 and/or 2A14.

SECTION II. MAINTENANCE ALLOCATION CHART
FOR

TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT
			C	O	F	H	D	
020103	Frequency Synthesizer 2A3	Test					0.5	4, 5, 6, 8, 9, 11
		Replace				0.3		4
		Repair					0.6	4, 5, 6, 8, 11
020104	Control Logic 2A4	Test					0.7	4, 5, 6, 8, 9, 11, 18
		Replace				0.3		4
		Repair					1.4	4, 5, 6, 8, 9, 11, 18
020105	Fault Detector 2A5	Test					0.6	4, 5, 6, 8, 11, 18
		Replace				0.3		4
		Repair					1.7	4, 5, 6, 8, 11, 18
020106	X-select Control 2A6	Test					0.5	4, 5, 6, 8, 11, 18
		Replace				0.3		4
		Repair					1.5	4, 5, 6, 8, 9, 11, 18, 19
020107	Y-coordinate Select 2A7	Test					0.4	4, 5, 6, 8, 11, 18, 19
		Replace				0.3		4
		Repair					1.5	4, 5, 6, 8, 9, 11, 18, 19
020108	Plus and Minus 5-Volt Post Regulator 2A11	Test					0.3	4, 5, 6, 8, 11, 18, 19
		Adjust					0.3	6
		Replace				0.3		4
		Repair					0.3	4, 5, 6, 8, 11, 18, 19
020109	Plus and Minus 5-Volt 2-Ampere Regulator 2A12	Test					0.7	4, 5, 6, 8, 11
		Replace				0.3		4
		Repair					0.6	4, 5, 6, 8, 11
020110	Regulator 2A13	Test					0.6	4, 5, 6, 8, 11
		Adjust					0.3	6
		Replace				0.3		4
		Repair					0.4	4, 5, 6, 7, 8, 11
020111	Power Supply 2A14	Test				0.5		4, 5, 6, 7, 8, 11
		Replace				0.3		4
		Repair				0.5		4, 5, 6, 7, 8, 11
03	Interface Test, Power Supply TS-2971/APS-94D	Inspect	0.3					
		Inspect		0.3				
		Inspect				0.3		
		Test				3.0		3-6, 8, 10, 12
		Service	0.5					
		Service		0.7				
		Adjust				1.5		3-6, 8, 10, 20
		Replace		0.1				
		Repair					2.0	32
0301	Power Supply Control	Test				0.5		5
		Repair[6]				1.0		3-6, 8, 10, 12

(6) By replacement of modules 3A1A1, 3A1A2, 3A2A1, and/or 3A2A2.

SECTION II. MAINTENANCE ALLOCATION CHART
FOR
TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT
			C	O	F	H	D	
030101	Function Control Module 3A1A1	Test					0.7	4, 6, 8, 10, 11 12, 28
		Adjust					0.3	4, 6, 8, 10, 11, 12, 28
		Replace				0.3		4
		Repair					0.8	4, 6, 8, 10, 11, 12, 28
030102	Power Supply Module 3A1A2	Test					0.5	4, 5, 6, 8, 10, 29
		Adjust					0.3	4, 5, 6, 10, 29
		Replace				0.3		4
		Repair					0.6	4, 5, 6, 8, 10, 29
030103	Heat Exchanger Assembly	Test				0.3		4, 5, 6, 8, 10, 29
		Replace				0.3		4
		Repair				0.6		4, 5, 6, 8, 10, 29
0302	Power Supply, Dummyload,	Test				0.5		5
		Replace				0.3		4
		Repair				0.6		4, 5, 22
030201	Positive Load Control Module 3A2A1	Test					0.5	4, 5, 6, 11, 30
		Adjust					0.3	4, 6, 11, 30
		Replace				0.3		4
		Repair					0.5	4, 5, 6, 11, 30
030202	Negative Load Control Module 3A2A2	Test					0.7	4, 5, 6, 11, 31
		Adjust					0.3	4, 6, 11, 31
		Replace				0.3		4
		Repair					0.4	4, 5, 6, 11, 31
030203	Switching Module 3A2A3	Test					0.5	4, 5
		Replace				0.3		4
		Repair					0.7	32
030204	Electronic Components Assembly	Test				0.5		4, 5, 6, 11
		Replace				0.3		
		Repair				0.8		5, 6, 11, 22
04	Interface Test, Synchronizer, Radar TS-2970/APS-94D	Inspect	0.2					
		Replace		0.1				
		Repair					2.0	32
0401	Interface Test Subassembly MX-8679/APS-94D	Inspect		0.2				
		Service		0.4				
		Replace		0.1				
040101	Panel, Test, Electrical	Test				2.5		4, 5, 6, 8, 11, 21
		Replace				0.3		4
		Repair				3.0		2, 4, 5, 6, 8, 11, 21, 24
04010101	BCD Up-Down Counter and Thumbwheel Multiplexer Module 4A16	Test					0.3	4, 5, 6, 8, 11 21
		Replace				0.3		4
		Repair					0.4	4, 5, 6, 8, 11, 21
04010102	BCD to Decimal Lamp Driver Modules 4A17 and 4A18	Test					0.2	4, 5, 6, 8,11,21
		Replace				0.3		4
		Repair					0.2	4, 5, 6, 8,11,21

SECTION II. MAINTENANCE ALLOCATION CHART
FOR
TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT
			C	O	F	H	D	
04010103	BCD to Binary Converter Module 4A19	Test					0.3	4, 5, 6, 8, 11, 21
		Replace				0.3		4
		Repair					0.4	4, 5, 6, 8, 11, 21
04010104	Mode Control Module 4A20	Test					0.5	4, 5, 6, 8, 11, 21
		Replace				0.3		4
		Repair					0.7	4, 5, 6, 8, 11, 21
04010105	PRF and Antenna Counter Module 4A21	Test					0.4	4, 5, 6, 8, 11, 21
		Replace				0.3		4
		Repair					0.5	4, 5, 6, 8, 11, 21
04010106	Plus and Minus 5-Volt, 2-Ampere Regulator Module 4A22	Test					0.4	4, 5, 6, 8, 11, 21
		Replace				0.3		4
		Repair					0.7	4, 5, 6, 8, 11, 21
04010107	Regulator 4A23	Test					0.3	4, 5, 6, 8, 11, 21
		Adjust					0.3	4, 6
		Replace				0.3		4
		Repair					0.6	4, 5, 6, 8, 11, 21
04010108	Bite Module 4A24	Test					0.3	4, 5, 6, 8, 11, 21
		Replace				0.3		4
		Repair					0.5	4, 5, 6, 8, 11, 21
04010109	Power Supply	Test				0.5		4, 5, 6, 7, 8, 11
		Replace				0.3		4
		Repair				0.8		4, 5, 6, 7, 8, 11, 22
0402	Interface Test Subassembly MX-8680/APS-94D	Inspect	0.2					
		Service		0.8				
		Repair[7]		0.1				
040201	Test Adapter MX-8619/APS-94D, 4A1	Test				0.5		4, 6, 8,
		Replace		0.1				4
		Repair				1.0		4-8, 11, 13, 21, 22
04020101	32 Channel Multiplexer 4A1A1	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04020102	Buffer Driver 4A1A2	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04020103	Interconnecting Printed Wiring Board	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22

(7) By replacement of adapters.

SECTION II. MAINTENANCE ALLOCATION CHART
FOR
TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT
			C	O	F	H	D	
040202	Test Adapter MX-8618/APS-94D, 4A2	Test				0.5		4, 6, 8
		Replace		0.1				4
		Repair				1.0		4-8, 11, 13, 21, 22
04020201	Fast Switch Driver 4A2A1	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04020202	Audio Oscillator 4A2A2	Test					0.6	4, 6, 8,
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04020203	Interconnecting Printed Wiring Board	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
040203	Test Adapter MX-8629/APS-94D, 4A3	Test				0.5		4, 6, 8
		Replace		0.1				4
		Repair				1.0		4-8, 11, 13, 21, 22
04020301	32 Channel Multiplexer 4A3A1	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04020302	Buffer Driver 4A3A2	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04020303	Interconnecting Printed Wiring Board	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
040204	Test Adapter MX-8617/APS-94D, 4A4	Test				0.5		4, 6, 8
		Replace		0.1				4
		Repair				1.0		4-8, 11, 13, 21, 22
04020401	Bite Counter Checker 4A4A1	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04020402	Bite Sequencer Negative 4A4A2	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0,8	4-8, 11, 13, 21, 22
04020403	Level Translator 4A4A3	Test					0.6	4, 6, 8
		Replace				0.3		4,
		Repair					0,8	4-8, 11, 13, 21, 22
04020404	Interconnecting Printed Wiring Board	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22

SECTION II. MAINTENANCE ALLOCATION CHART
FOR
TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D -Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT
			C	O	F	H	D	
040205	Test Adapter MX-8618/APS-94D, 4A5	Test Replace Repair		0.1		0.5 1.0		4, 6, 8 4 4-8, 11, 13, 21, 22
04020501	Video Signal Generator 4A5A1	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04020502	Analog Multiplexer 4A5A2	Test Replace Repair				0 3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04020503	Video Generator 4A5A3	Test Replace Repair				0 3	0.6 0 8	4, 6, 8 4 4-8, 11, 13, 21, 22
04020504	Interconnecting Printed Wiring Board	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
040206	Test Adapter MX-8619/APS-94D, 4A6	Test Replace Repair		0.1		0.5 1.0		4, 6, 8 4 4-8, 11, 13, 21, 22
04020601	Test Signal Generator 4A6A1	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04020602	Digital Multiplexer 4A6A2	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04020603	Interconnecting Printed Wiring Board	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21,22
040207	Test Adapter MX-8620/APS-94D, 4A7	Test Replace Repair		0.1		0.5 1.0		4, 6, 8 4 4-8, 11, 13, 21, 22
04020701	Random Number Generator 4A7A1	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04020702	Interconnecting Printed Wiring Board	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22

SECTION II. MAINTENANCE ALLOCATION CHART
FOR

TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT
			C	O	F	H	D	
040208	Test Adapter MX-8621/APS-94D, 4A8	Test				0.5		4, 6, 8
		Replace		0.1				4
		Repair				1.0		4-8, 11, 13, 21, 2'
04020801	32 Channel Multiplexers 4A8A1, 4A8A2	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04020802	Module 4A8A3	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04020803	Interconnecting Printed Wiring Board	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
040209	Test Adapter MX-8622/APS-94D, 4A9	Test				0.5		4, 6, 8
		Replace		0.1				4
		Repair				1.0		4-8, 11, 13, 21, 22
04020901	32 Channel Multiplexer 4A9A1	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04020902	Buffer Driver 4A9A2	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04020903	Interconnecting Printed Wiring Board	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
040210	Test Adapter MX-8623/APS-94D, 4A 0	Test				0.5		4, 6, 8
		Replace		0.1				4
		Repair				1.0		4-8, 11, 13, 21, 22
04021001	32 Channel Multiplexer 4A10A1	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04021002	Buffer Driver 4A10A2	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04021003	Interface Driver 4A10A3	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22
04021004	Interconnecting Printed Wiring Board	Test					0.6	4, 6, 8
		Replace				0.3		4
		Repair					0.8	4-8, 11, 13, 21, 22

SECTION II. MAINTENANCE ALLOCATION CHART
FOR
TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT
			C	O	F	H	D	
040211	Test Adapter MX-8624/APS-94D, 4A11	Test Replace Repair		0.1		0.5 1.0		4, 6, 8 4 4-8, 11, 13, 21, 22
04021101	Bit Adder 4A11A1	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04021102	Analog/Digital Multiplexer 4A11A2	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04021103	Interconnecting Printed Wiring Board	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
040212	Test Adapter MX-8625/APS-94D, 4A12	Test Replace Repair		0.1		0.5 1.0		4, 6, 8 4 4-8, 11, 13, 21, 22
04021201	Ladder Sequencer Storage 4A12A1	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04021202	Bite Sequencer 4A12A2	Test Replace Repair				0.3	0.6 0.8	4. 6, 8 4 4-8, 11, 13, 21, 22
04021203	Interconnecting Printed Wiring Board	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
040213	Test Adapter MX-8626/APS-94D, 4A13	Test Replace Repair		0.1		0.5 1.0		4, 6, 8 4 4-8, 11, 13, 21, 22
04021301	Buffer Driver 4A13A1	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04021302	Interconnecting Printed Wiring Board	Test Replace Repair				0.3	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22

SECTION II. MAINTENANCE ALLOCATION CHART
FOR
TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D - Continued

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY					(5) TOOLS AND EQUIPMENT
			C	O	F	H	D	
040214	Test Adapter MX-8627/APS-94D, 4A14	Test Replace Repair		0.1		0.5 1.0		4, 6, 8 4 4-8, 11, 13, 21, 22
04021401	Bite Synchronizer 4A14A1	Test Replace Repair				 0.3 	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04021402	Mode Control 4A14A2	Test Replace Repair				 0.3 	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04021403	Digital Multiplexer 4A14A3	Test Replace Repair				 0 3 	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04021404	Interconnecting Printed Wiring Board	Test Replace Repair				 0 3 	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
040215	Test Adapter MX-8628/APS-94D, 4A15	Test Replace Repair		0.1		0.5 1.0		4, 6, 8 4 4-8, 11, 13, 21, 22
04021501	32 Channel Multiplexer 4A15A1	Test Replace Repair				 0.3 	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04021502	Buffer Inverter 4A15A2	Test Replace Repair				 0.3 	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22
04021503	Interconnecting Printed Wiring Board	Test Replace Repair				 0.3 	0.6 0.8	4, 6, 8 4 4-8, 11, 13, 21, 22

TABLE I. TOOL AND TEST EQUIPMENT REQUIREMENTS
FOR
TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	O	TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G	5180-00-064-5178	
2	O	MULTIMETER AN/USM-105	6625-00-581-2036	
3	H, D	MULTIMETER ME-87A/U	6625-00-223-5248	
4	H, D	TOOL KIT, ELECTRONIC EQUIPMENT TK-105/G	5180-00-610-8177	
5	H, D	MULTIMETER TS-352B/U, r/b AN/USM-223 (6625-00-999-7465)	6625-00-553-0142	
6	H, D	VOLTMETER, DIGITAL AN/GSM-64B including Ac plug-in module Module cover	6625-00-022-7894 6625-00-137-8360 6625-00-137-8348	
7	H, D	COUNTER, ELECTRONIC DIGITAL READOUT AN/USM-207	6625-00-911-6368	
8	H, D	OSCILLOSCOPE AN/USM-281C	6625-00-106-9622	
9	H, D	GENERATOR. PULSE (2 required); HEWLETT PACKARD MODEL 222A	6625-00-930-8215	
10	H, D	OSCILLATOR, AUDIO TS-421/U	6625-00-669-0228	
11	H, D	POWER SUPPLY PP-3940/G (6 required)	6130-00-985-8136	
12	H, D	POWER SUPPLY, TRYGON ELECTRONICS MODEL M5C 36-30		
13	H, D	PROBE TIP, 100 OHM FEED THRU (3 required), HEWLETT PACKARD MODEL 10100B	6625-00-758-0138	
14	H, D	PRINTED WIRING ASSEMBLY	5841-00-449-7485	
15	H, D	TEST FIXTURE NO 1, PROCESSOR	fabricated	
16	H, D	TEST FIXTURE NO. 2, PROCESSOR	fabricated	
17	H, D	TEST FIXTURE NO. 3, PROCESSOR	fabricated	
18	H, D	TEST FIXTURE, THRESHOLD	fabricated	
19	H, D	REF BREAKOUT BOX	fabricated	
20	H, D	TEST FIXTURE POWER SUPPLY	fabricated	
21	H, D	TEST FIXTURE, SYNCHRONIZER	fabricated	
22	H, D	REPAIR KIT, PRINTED WIRING BOARD MX-772/U (Used with TK-105/G)	5999-00-757-7042	
23	D	PROBE TIP, 50 OHM FEED THRU, HEWLETT PACKARD MODEL 10100A	6625-00-880-3947	
24	D	STOPWATCH, CHRONOMETER	6645-00-250-4680	
25	D	TEST FIXTURE, CLOCK & COUNTER MODULE 1A1	fabricated	
26	D	TEST FIXTURE, OSCILLATOR & SWITCH MODULE 1A2	fabricated	
27	D	TEST FIXTURE, POWER SUPPLY REGULATOR MODULE 1A3	fabricated	
28	D	TEST FIXTURE, FUNCTION CONTROL MODULE 3A1A1	fabricated	
29	D	TEST FIXTURE, POWER SUPPLY MODULE 3A2A2	fabricated	
30	D	TEST FIXTURE, POSITIVE LOAD CONTROL MODULE 3A2A1	fabricated	
31	D	TEST FIXTURE, NEGATIVE LOAD CONTROL MODULE 3A2A2	fabricated	
32	D	DEPOT FACILITIES		

NOTE

Items 15, 16, and 17 are included in: TEST FACILITIES KIT for OQ-59/APS-94D, AN/GPM-61, OQ-61/APS-94D, OQ-64V(1)/APS-94D.

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
1A1	CLOCK AND COUNTER	H											23	
			D										3,6,7,8,18,25	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
1A2	OSCILLATOR AND SWITCH	H											23	
			D										1,3,6,7,8,19,25	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

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GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
1A3	POWER SUPPLY REGULATOR	H											23	
			D										6, 21, 25	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	INTERFACE TEST, ELECTRONIC CIRCUIT PLUG-IN UNIT ~ TS-2972/APS-94D	O											22	EXTERNAL
		H											23	INTERNAL
			O										4	CABLES
			H										6, 7, 15, 16, 25	
				O									22	EXTERNAL
				H									23	INTERNAL
					H								7, 15, 23, 25	
										H			23	MODULES
											D		23	DEPOT FACILITIES
												D	23	DEPOT FACILITIES
						H							7, 23, 25	

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
2A1	COMPARATOR	H											23	
			D										6, 7, 15, 25, 26	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES
					D								15, 23, 25, 26	

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
2A2	FREQUENCY FILTERS & CONTROL GATES	H											23	
			D										6, 7, 25, 26	
				H									23	PREVENTIVE MAINT
					D								7, 23, 26	
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
2A3	FREQUENCY SYNTHESIS	H											23	
			D										6,7,25,26	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
2A4	CONTROL LOGIC	H											23	
			D										6, 7, 15, 25, 26	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
2A5	FAULT DETECTOR	H											23	
			D										6, 7, 15, 25, 26	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
2A6	X-SELECT CONTROL	H											23	
			D										6, 7, 15, 16, 25, 26	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
2 A 7	Y-COORDINATE SELECT	H											23	
			D										6, 7, 15, 16, 25, 26	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
2A11	±5 VOLT REGULATOR	H											23	
			D										6, 7, 16, 25, 26	
				H									23	PREVENTIVE MAINT
					D								23, 25, 26	
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
2A12	+5 VOLT, 2 AMP REGULATORS	H											23	
			D										6,7,8,25,26	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
2A13	+28 VOLT, 2 AMP AND ADJUSTABLE +10 TO 22 VOLT, AND REGULATOR	H											23	
			D										6, 7, 25, 26	
				H									23	PREVENTIVE MAINT
					D								23, 25, 26	
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4	INTERFACE TEST, SUBASSEMBLY MX-8680/APS-94D	O											22	EXTERNAL
		H											23	INTERNAL
			O										4	CABLES
			H										6, 7, 8, 20, 25	
				O									22	EXTERNAL
				H									23	INTERNAL
					H								6, 7, 8, 20, 23, 25	
										H			23	REPLACE MODULES
											D		23	DEPOT FACILITIES
												D	23	DEPOT FACILITIES
			D										30	

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NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	INTERFACE TEST, SUBASSEMBLY MX-8679/APS-94D	H											23	
			D										1,6,7,11,25,28,29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
4A1	ADAPTER, TEST MX-8615/APS-94D									D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A2	ADAPTER, TEST MX-8616/APS-94D	H											23	
			D										6, 7, 11, 28, 29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A3	ADAPTER, TEST MX-8629/APS-94D	H											23	
			D										1,6,7,11,28,29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A4	ADAPTER, TEST MX-8617/APS-94D	H											23	
			D										6, 7, 28, 29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A5	ADAPTER, TEST MX-8618/APS-94D	H											23	
			D										6,7,28,29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4 A 6	ADAPTER, TEST MX-8619/APS-94D	H											23	
			D										6, 7, 28, 29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A7	ADAPTER, TEST MX-8620/APS-94D	H											23	
			D										6, 7, 28, 29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A8	ADAPTER, TEST MX-8621/APS-94D	H											23	
			D										1,6,7,11,28,29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A9	ADAPTER, TEST MX-8622/APS-94D	H											23	
			D										1,6,7,11,28,29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A10	ADAPTER, TEST MX-8623/APS-94D	H											23	
			D										6,7,11,28,29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A11	ADAPTER, TEST MX-8624/APS-94D	H											23	
			D										6,7,11,25,28,29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A12	ADAPTER, TEST MX-8625/APS-94D	H											23	
			D										6, 7, 28, 29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A13	ADAPTER, TEST MX-9626/APS-94D	H											23	
			D										1,6,7,11,28,29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A14	ADAPTER, TEST MX-8627/APS-94D	H											23	
			D										6,7,11,28,29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A15	ADAPTER, TEST MX-8628/APS-94D	H											23	
			D										6, 7, 11, 28, 29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A16	BCD UP/DOWN COUNTER AND THUMBWHEEL MULTIPLEXER	H											23	
			D										6, 7, 8, 20, 25, 28, 29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A17	BCD TO DECIMAL	H											23	
4A18	LAMP DRIVER		D										6, 7, 8, 20, 25, 28, 29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A19	BCD TO BINARY CONVERTER	H											23	
			D										6, 7, 8, 20, 25, 28, 29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A20	MODE CONTROL	H											23	
			D										6,7,8,20,25,28,29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A21	5 MHz OSCILLATOR, PRF COUNTER, AND ANTENNA COUNTER	H											23	
			D										6,7,8,20,25,28,29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A22	+5 VOLT, 2 AMP REGULATORS	H											23	
			D										6, 7, 8, 20, 25, 28, 29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES
					D								6, 8, 20, 23, 25, 28, 29	

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A23	+28 VOLT (2 AMP) AND ADJUSTABLE +10 TO 22 VOLT LAMP REGULATORS	H											23	
			D										6, 7, 8, 20, 25, 23, 29	
				H									23	PREVENTIVE MAINT
					D								6, 7, 8, 20, 23, 25, 28	
													29	
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
4A24	BITE	H											23	
			D										6, 7, 8, 20, 25, 28, 29	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
	INTERFACE TEST, POWER SUPPLY TS-2971/APS-94D	O											22	EXTERNAL
		H											23	INTERNAL
			O										4	CABLES
			H										5, 6, 7, 9, 17, 25, 27, 31	
				O									22	EXTERNAL
				H									23	INTERNAL
					H								5, 6, 7, 9, 17, 23, 25, 27	
									H				23	REPLACE MODULES
										D			23	EXTENSIVE
											D		23	DEPOT FACILITIES
												D	23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
3A1A1	FUNCTION CONTROL	H											23	
			D										6,7,8,9,25,27,32	
				H									23	PREVENTIVE MAINT
					D								7,8,9,23,25,27,32	
								H					23	IN UNIT
									H				23	IN UNIT
										D			23	DEPOT FACILITIES
											D		10,23	DEPOT FACILITIES
												D	10,23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION										TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD	
3A1A2	POWER SUPPLY	H											23	
			D										6, 7, 8, 25, 27, 33	
				H									23	PREVENTIVE MAINT
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES
					D								6, 25, 27, 33	

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
3A2A1	LOAD CONTROL, POSITIVE	H											23	
			D										6, 8, 25, 35	
				H									23	PREVENTIVE MAINT
					D								8, 23, 25, 35	
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

NOMENCLATURE OF END ITEM OR COMPONENT

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTION											TOOLS AND EQUIPMENT	REMARKS
		INSPECT	TEST	SERVICE	ADJUST	ALIGN	CALIBRATE	INSTALL	REPLACE	REPAIR	OVERHAUL	REBUILD		
3A2A2	LOAD CONTROL, NEGATIVE	H											23	
			D										6, 8, 25, 36	
				H									23	PREVENTIVE MAINT
					D								8, 23, 25, 36	
								H					23	
									H				23	
										D			23	DEPOT FACILITIES
											D		10, 23	DEPOT FACILITIES
												D	10, 23	DEPOT FACILITIES

TABLE I. TOOL AND TEST EQUIPMENT REQUIREMENTS FOR TEST SET GROUP, PROCESSOR, RADAR OQ-61/APS-94D

NOMENCLATURE OF END ITEM OR COMPONENT

SECTION III. - TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINTENANCE CATEGORY	NOMENCLATURE	FSN	TOOL NUMBER
1	H,D	COUNTER, ELECTRONIC DIGITAL READOUT AN/USM-207	6625-911-6368	
2	H,D	GENERATOR, SIGNAL SG-?21/U	6625-880-5791	
3	H,D	GENERATOR, PULSE HEWLETT-PACKARD MOD 222A	6625-930-8215	2 required
4	O	MULTIMETER AN/URM-105	6625-581-2036	
5 *	D	MULTIMETER ME-87A/U	6625-223-5248	
6	H,D	MULTIMETER TS-352B/U	6625-553-0142	
7	H,D	OSCILLOSCOPE AN/USM-281A	6625-228-2201	
8	D	POWER SUPPLY PP3940/G	6130-985-8136	6 required
9 *	D	POWER SUPPLY; TRYGON MOD. M36-30A	NFSN	
10	D	REPAIR KIT, PRINTED WIRING BOARD MK-772/U	5999-757-7042	
11	H,D	TERMINATION 100 OHM HEWLETT-PACKARD MOD 10100B	6625-758-0138	3 required
12	H,D	RGSP TEST FIXTURE NO. 2 PROCESSOR CABLE	NFSN	user-fabricated

NOMENCLATURE OF END ITEM OR COMPONENT

SECTION III. - TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINTENANCE CATEGORY	NOMENCLATURE	FSN	TOOL NUMBER
13	H,D	RGSP TEST FIXTURE NO. 3 PROCESSOR CABLE W2	NFSN	user-fabricated
14	H,D	RGSP TEST FIXTURE NO. 1 PROCESSOR CABLE W3	NFSN	user-fabricated
15 *	H,D	TEST FIXTURE THRESHOLD	NFSN	user-fabricated
16 *	H,D	TEST FIXTURE ELECT. CIRCUIT PLUG-IN UNIT CABLE W1	NFSN	user-fabricated
17 *	H,D	TEST FIXTURE POWER SUPPLY	NFSN	user-fabricated
18 *	D	TEST FIXTURE, 1A1	NFSN	user-fabricated
19 *	D	TEST FIXTURE, 1A2	NFSN	user-fabricated
20 *	H,D	TEST FIXTURE SYNCHRONIZER	NFSN	user-fabricated
21	D	TEST FIXTURE, 1A3	NFSN	user-fabricated
22	O	TOOL KIT,ELECT. EQUIP. TK-101/G	5180-064-5178	
23	H,D	TOOL KIT,ELECT. EQUIP. TK-105/G	5180-610-8177	
24 *	D	TERMINATION, 50 OHM;HEWLETT-PACKARD MODEL 10100A	6625-880-3947	

NOMENCLATURE OF END ITEM OR COMPONENT

SECTION III. - TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOL OR TEST EQUIPMENT REFERENCE CODE	MAINTENANCE CATEGORY	NOMENCLATURE	FSN	TOOL NUMBER
25	H, D	VOLTMETER, DIGITAI NONLINEAR SYSTEMS MOD. X-2	6625-068-0611	
26 *	D	INTERFACE TEST, ELECTRONIC CIRCUIT PLUG-IN UNIT TS-2972/APS-94D	6625-936-9984	SeeTM 11-6625-1832 -50
27 *	H, D	GENERATOR, AUDIO SIGNAL TS 421/U	6625-641-1568	
28 *	D	SYNCHRONIZER TEST SET TS-2970/APS-94D	6625-938-0088	See TM 11-6625-1832-50
29 *	D	CIRCUIT CARDS, PLUG-IN MOTOROLA PARTS		See TM 11-6625-1832-50
30 *	D	STOPWATCH, CHRONOMETER	6645-250-4680	
31 *	H, D	PRINTED WIRING ASSEMBLY 3A47A1	5841-449-7485	See TM 11-6625-1832-40
32 *	D	TEST FIXTURE, 3A1A1	NFSN	user-fabricated
33 *	D	TEST FIXTURE, 3A1A2	NFSN	user-fabricated
35 *	D	TEST FIXTURE, 3A2A1	NFSN	user-fabricated
36 *	D	TEST FIXTURE, 3A2A2	NFSN	user-fabricated

* Items 5,9,15 through 20, 24, 26 through 36, are mot required to support Interface Test, Processor, Radar TS-2973/APS-94D.

By Order of the Secretary of the Army:

W. C. WESTMORELAND,
General, United States Army,
Chief of Staff.

Official:
KENNETH G. WICKHAM,
Major General, United States Army,
The Adjutant General.

Distribution:
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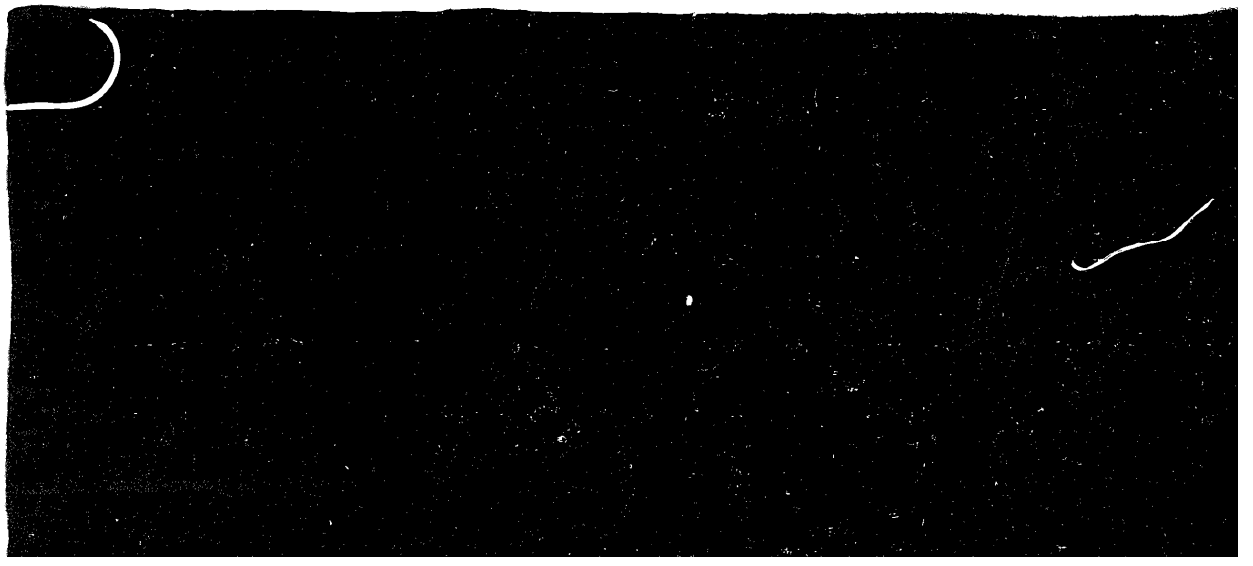

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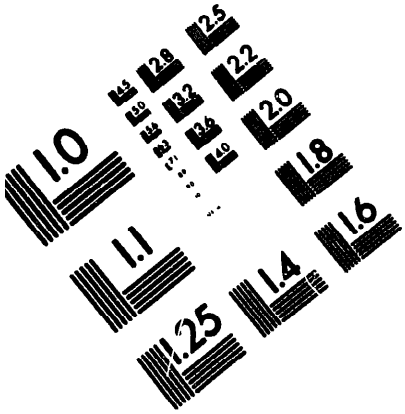
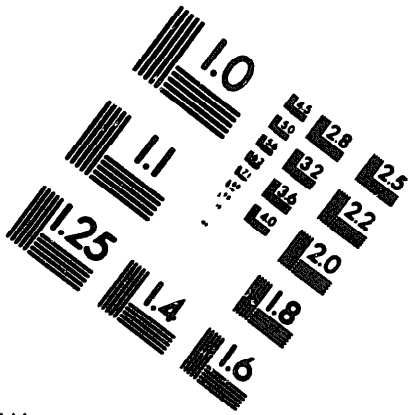
MICROFORM
TEST TARGET





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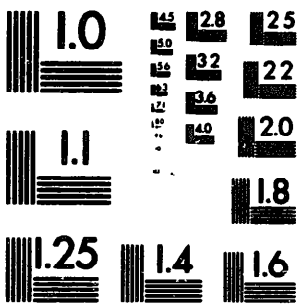

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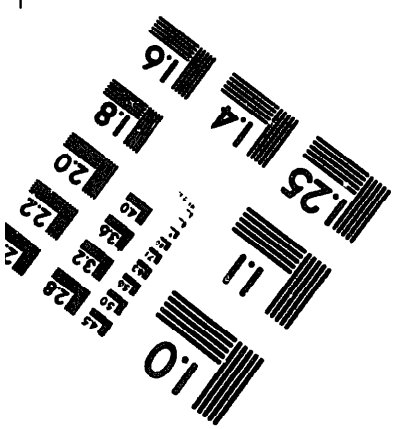

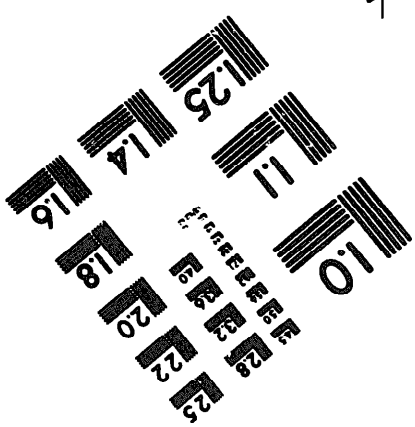

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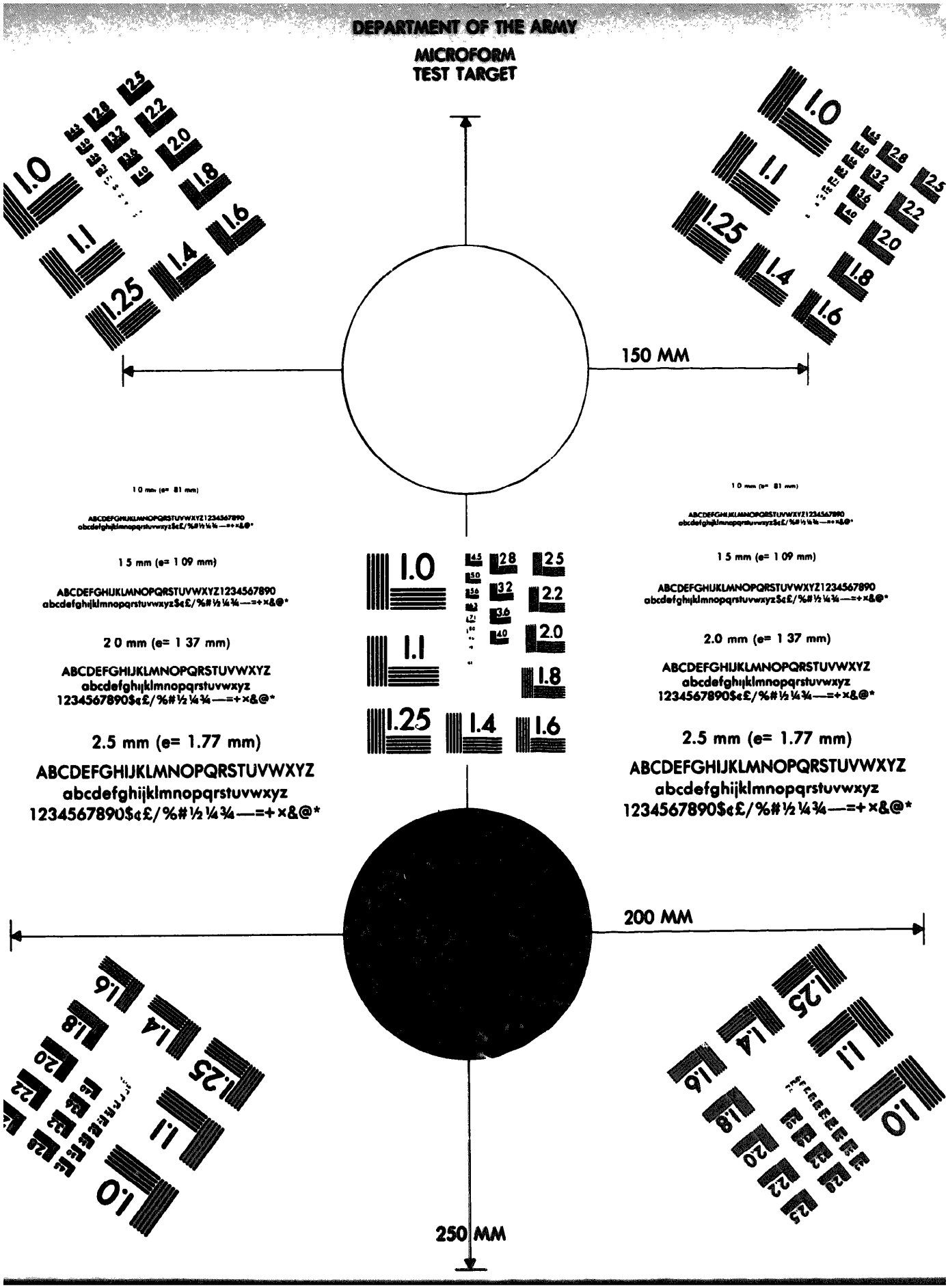
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TEST TARGET
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