TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOL LISTS

TEST SET, RECORDER-FILM MAGAZINE AN/AAM-32

This copy is a reprint which includes current pages from Changes 1 through 3. The title was changed by Change 3.

HEADQUARTERS, DEPARTMENT OF THE ARMY
JULY 1970

WARNING

DEATH or SERIOUS INJURY may result from hazards in this equipment. READ and OBSERVE the following warnings.

WARNING

DEATH or SERIOUS INJURY may result from contact with 115-VAC, 400-Hz, 3-PHASE power existing within this test set.

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 for the fumes to an open flame converts the fumes to highly toxic, dangerous gases.

WARNING

Be extremely careful with explosives and incendiary devices. Use these items only when the need is urgent.

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Be extremely careful with explosives and incendiary devices. Use these items only when the need is urgent.

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Two men are required to lift the recorder test set.

TECHNICAL MANUAL
No. 11-6625-1827-12

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *1 July 1970*

Operator and Organizational Maintenance Manual
Including Repair Parts and Special Tool Lists

TEST SET, RECORDER-FILM MAGAZINE AN/AAM-32
(NSN 6625-00-403-1065)

LIST OF ILLUSTRATIONS

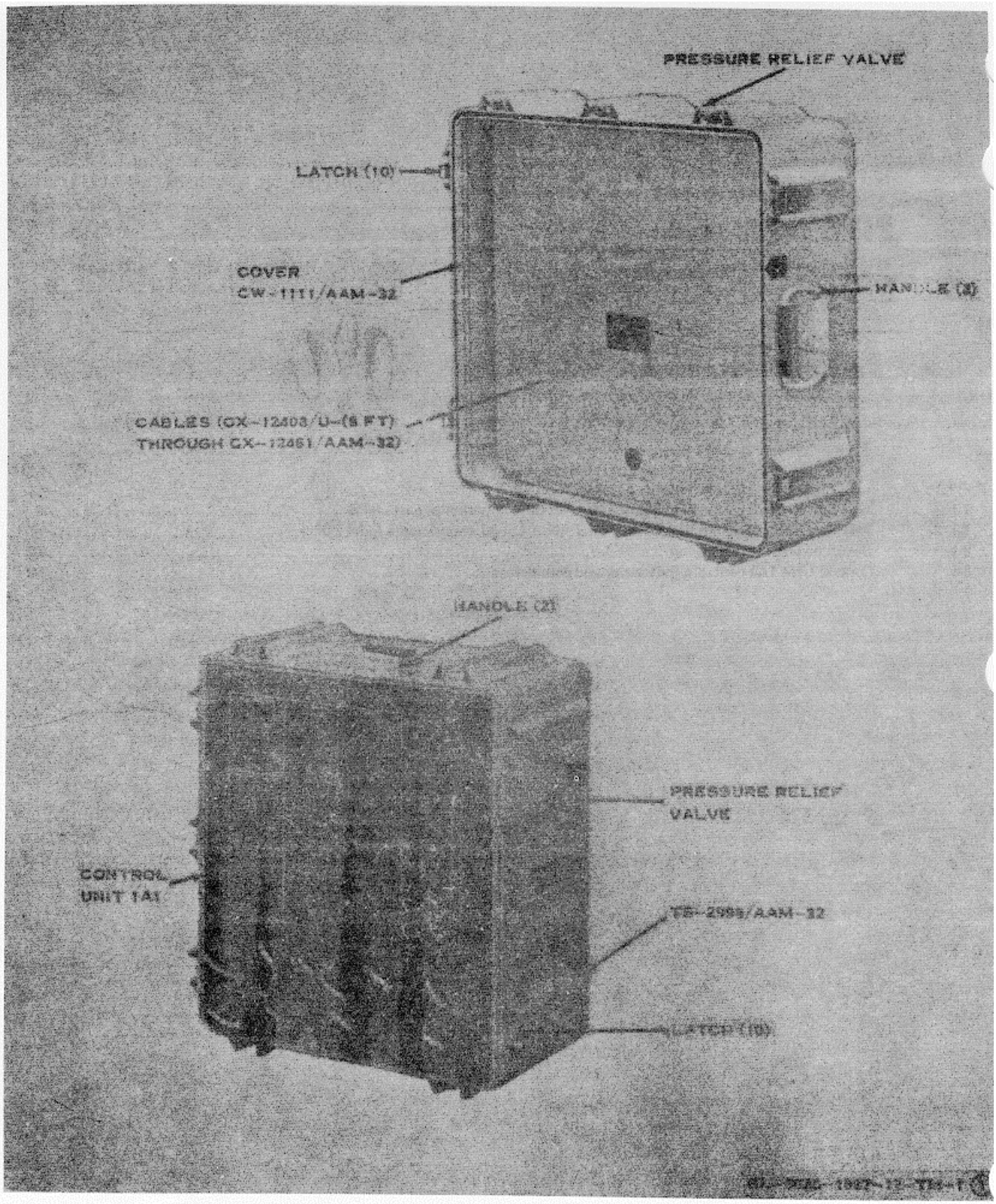


Figure 1-1 (1). Test Set, Recorder-Film Magazine AN/AAM-32, components (part 1 of 2)

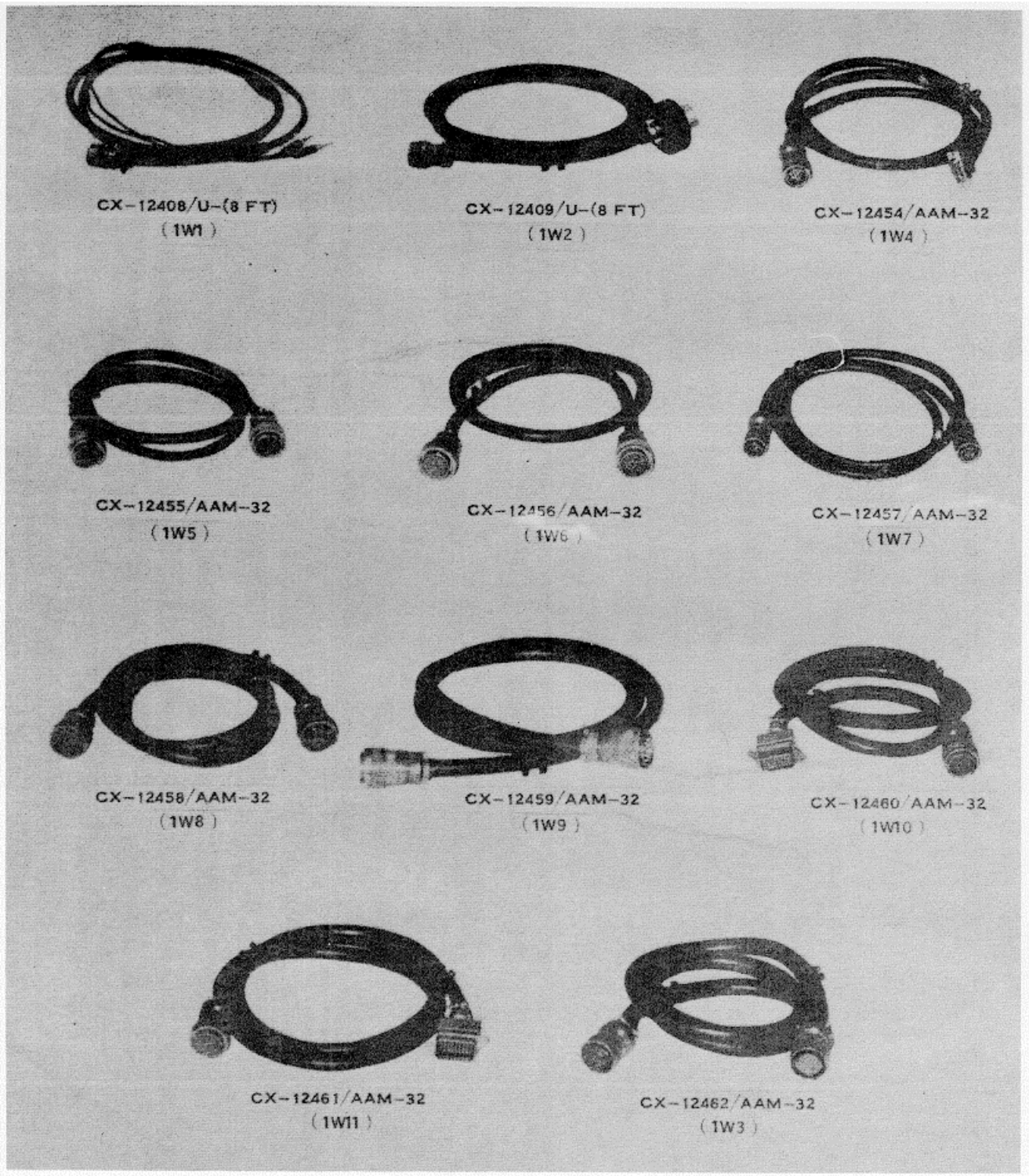


Figure 1-1 (2). Test set, recorder-film magazine AN/AAM-32, components (part 2 of 2).

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1-1. Scope of Manual

a. This manual describes Test Set, Recorder-Film Magazine AN/AAM-32 (recorder test set) and covers its installation, operation, and operator and organizational maintenance. It includes instructions for operation under usual and unusual conditions, preventive and periodic maintenance services, and replacement of parts available to the organizational repairmen.

b. Instructions for using Test Set, Recorder-Film Magazine AN/AAM-32 to test components of Infrared Detecting Set, AN/AAS-24 are contained in TM 11-5850-241-34/1 and (C)TM 11-5820-241-34/2.

c. Appendix A contains references; appendix B contains the basic issue items list and items troop installed or authorized list; appendix C contains the maintenance allocations chart; and appendix D contains the organizational repair parts and special tools list.

NOTE

The AN/AAM-32 is unit 1A1. All reference designations should be prefixed with 1A1 for completeness.

1-2. Indexes 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 DLAR 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 4610.33B/AFR 75-18/MCO P4610.19C and DLAR 4500.15.

1-3.1. Reporting of Errors

Report 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'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 direct to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, NJ 07703. A reply will be furnished direct to you.

1-3.3. Administrative Storage

Administrative storage of equipment issued to and used by Army activities shall be in accordance with TM 740-90-1.

1-3.4. Destruction of Army Electronics Materiel

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

Section II. DESCRIPTION AND DATA

1-4. Purpose and Use

a. Test Set, Recorder-Film Magazine AN/AAM-32 provides facilities for bench testing Recorder, Subassembly MX-8356/AAS-24 (recorder) and Magazine, Film MA-26/AAS-24 (film magazine), components of Detecting Set, Infrared AN/AAS-24. When used with additional test equipment (para 1-10) the recorder test set facilitates the following tests:

(*1*) *Recorder, Subassembly MYX-8356/AAS-24.*

(*a*) Recorder drive.
1. Normal test.
2. Dynamic drive test.
3. Auxiliary drive test.
4. Alignment test.
(*b*) Gate generator test.
(*c*) Velocity/height (v/h) mask test.
(*d*) Film drive amplifier test.
(*e*) Video test.
1. Resolution test.
2. Light emitting diode test.
3. Built-in-test (bit).
(*2*) *Magazine, Film MA-,6/AAS-24.*
(*a*) Off test.
(*b*) Run test.
(*c*) Marker test.

b. The recorder test set is used to satisfy special test requirements for the unit under test. These requirements include electronically monitored power sources, specialized test signals, control functions, and accessible test points. Control functions of the recorder test set select the test specified in a above. During tests, control functions are used to adjust signal parameters and select signal paths in the unit under test and the recorder test set. In addition, the recorder test set includes accessible test points for monitoring purposes.

1-5. Technical Characteristics

a. Input Power.

(1) 115 ± 11.5 volts alternating current (vac), 400 ±20 Hertz (Hz), 3-plhase, 4-wire, 4.5 amperes (amp) maximum (max.) for 5 to 15 seconds (sec) then 2.5 amps max.

(2) +27 ± 2.0 volts direct current (vdc); line drop, 2 volts max., 1.3 amp max.

b. Power Output.

(1) 115 ± 11.5 vac, 400 ±20 Hz, 3-phase, 4-wire, 300 milliamperes (ma)/phase max.

(2) 26 ± 2.6 vac, 400 ±20 Hz, single phase, 0.1 amp max.

(3) 6.3 ± 0.6, 400 ±20 Hz, single phase, 0.1 amp max.

(4) +58 ± 8.7 vdc, 4.5 amp max.

(5) +28 ± 2.0 vdc, 4 amp max.

(6) +28 ± 2.8 vac rectified, 0.5 amp max.

(7) +13 ± 0.1 vdc, 2.0 amp max.

(8) -13 ± 0.1 vdc, 2.0 amp max.

(9) +6 0 ± 0.1 vdc, 2.0 amp max.

(10) + 19.5 ± 2.0 vac, rectified, 2.0 amp max.

c. Signal Outputs.

(1) *Recorder test set signals to Recorder, Subassembly MX-8356/AAS-24.*

(*a*) Calibration indicator select number 1.
(*b*) Calibration indicator select number 2.
(c) Calibration indicator select number 3.
(*d*) Calibration indicator select number 4.
(*e*) Calibration indicator select number 5.
(*f*) Calibration indicator select number 6.
(*g*) Calibration indicator select number 7.
(*h*) Calibration indicator select number 8.
(*i*) Auxiliary recorder drive.
(*j*) Fine source number 1.
(*k*) Fine source number 2.
(*l*) Coarse source.

***U.S. GOVERNMENT PRINTING OFFICE: 1977-765-096/515**

(*m*) Film drive on command.
(*n*) Film drive off command.
(*o*) Manual v/h command.
(*p*) V/h manual signal.
(*q*) Auto v/h.
(*r*) Led supply.
(*s*) Coarse sync reference.
(*t*) Fine sync reference.
(*u*) Film fail drive.
(*v*) Video signal out (channels 1 through 8)
(*w*) Hot target signal.
(*x*) Auxiliary recorder drive.

(2) *Recorder test set signals to Magazine, Film MA-26/AAS-24.*
(*a*) Film fail bias.
(*b*) 28 vac rectified.
(*c*) Film drive number 1.
(*d*) Film drive number 2.

1-6. Items Comprising an Operable Equipment

FSN	QTY	Nomenclature, part No., and mfr code	Weight (lb)	Dimensions (in.)			Fig. No.
				Height	Depth	Width	
6625-403-1065		Test Set Recorder-Film Magazine AN/AAM-32 Consisting of'					1-1
6625-196-2844	1	Cable Assembly, Power, Electrical CX-12408/U-(8 ft) (1W1)	.5	96 (lg)			1-1
6625-470-4315	1	Cable Assembly, Power, Electrical CX-12409/U-(8 ft) (1W2)	1.0	96 (lg)			1-1
6625-489-2667	1	Cable Assembly, Special Purpose, Electrical CX-12464/AAM-32 (1W4)	1.0	60 (lg)			1-1
6625-403-1039	1	Cable Assembly, Special Purpose, Electrical CX-12455/AAM-32 (1W5)	1.0	60 (lg)			1-1
6625-489-6101	1	Cable Assembly, Special Purpose, Electrical CX-12456/AAM-32 (1W6)	1.0	60 (lg)			1-1
6625-489-2668	1	Cable Assembly, Special Purpose, Electrical CX-12457/AAM-32	1.0	60 (Ig)			1-1
6625-408-5086	1	Cable Assembly, Special Purpose, Electrical CX-12458/AAM-32 (1W8)	2.0	60 (lg)			1-1
6625-489-0451	1	Cable Assembly, Special Purpose, Electrical CX-12459/AAM-32 (1W9)	2.0	60 (Ig)			1-1
6625-489-0459	1	Cable Assembly, Special Purpose, Electrical CX-12460/AAM-32 (1W10)	2.0	60 (Ig)			1-1
6625-489-0460	1	Cable Assembly, Special Purpose, Electrical CX-12461/AAM-32 (1W11)	2.0	60 (Ig)			1-1
6625-409-1000	1	Cable Assembly, Special Purpose, Electrical CX-1242/AAM-32 (1W3)	3.0	60 (lg)			1-1
6625-403-1069	1	Test Set, Record-Film Magazine TS-2998/AAM-32 (1MP4)	100.0	23.8	12	22.2	1-1

1-6.1. Expendable Consumable Supplies and Materials

Expendable Consumable Supplies and Materials are listed in table 1-1.

Table 1-1. Expendable Consumable Supplies and Materials

The supplies and materials listed in this table are required for operation of this equipment and are authorized to be requisitioned by SB 700-50. The FSN for the applicable unit of issue required can be found in appropriate supply catalogs The FSCM is used as an element in item identification to designate manufacturer or distributor or Government agency, etc., and is identified in SB 708-42.

Item	*Description*	*Ref. No. and FSCM*	*FSC*
1	Cleaning Compound		6810
2	Lubricating Oil, General Purpose, Preservative (PL-Special)		
3	Insulation Tape, Electrical, (Pressure Sensitive Adhesive Plastic Tape)		5970
4	Fine Sandpaper		5350

1-7. Common Names

The common names are listed in table 1-2.

1-8. Reference Designators

The reference designators are listed in table 1-3.

NOTE

Cover, Test Set CW-1111/AAM-32, used with Test Set, Recorder Film Magazine AN/AAM-32 is listed in appendix B.

Table 1-2. Common Names

Nomenclature	*Common name*
Recorder, Subassembly MX8356/AAS-24.	Recorder
Magazine, Film Infrared MA-26/AAS-24.	Film magazine
Detecting Set, Infrared AN/AAS-24.	Detecting set
Cover, Test Set CW-1111/AAM-32.	Cover
Test Set, Recorder-Film Magazine AN/AAM-32.	Recorder test set
Electronic control unit	Control unit

1-9. Description of Test Set Recorder-Film Magazine AN/AAM-32

(fig. 1-1)

The recorder test set is contained in a portable metal transit case. The transit case has a removable cover held in place by 10 clamp-type latches. Two pressure relief valves located on the recorder test set equalize atmospheric pressure in the transit case when unscrewed. Four handles are provided on the transit case to facilitate carrying the recorder test set. The cables are stored in the cover of the transit case. The recorder test set provides operating controls, switches, connectors, and indicators required to interconnect, control, and observe the recorder and film magazine of the Detecting Set, Infrared AN/AAS-24 under test. The connectors on the control unit accept plugs from various power and test cables to connect power to the recorder test set and to the unit under test. Connectors and test points on the control unit permit various signals to be monitored during testing. An elapsed time meter and a ground jack are also provided on the control unit.

Table 1-3. Reference Designators

Reference designator	*Nomenclature*	*Manufacturer's part No.*
1	Test Set, Recorder-Film Magazine AN/AAM-32.	692538-1
1A1	Electronic control unit	692554-1
1A1A1	Heat sink assembly	692231-1
1A1A2	Heat sink assembly	692231-1
1A1A3	Heat sink assembly	692231-1
1A1A4	+ 13 and -13 vdc regulator.	692364-1
1A1A5	+6 vdc regulator	692361-1
1A1A6	Power control	692388-1
1A1A7	Sync generator	692397-1
1A1A8	Film drive amplifier and bit logic circuit	692370-1
1A1A9	V/h generator and hot target marker.	692373-1
1A1A10	Rectifier filter	695908-1
1A1A11	Video oscillator and film fail amplifier.	692391-1
1A1A12	Filter assembly	694753-1

1-10. Additional Equipment Required

The additional equipment listed in table 1-4 is used with the recorder test set, to test the recorder and film magazine of Detecting Set, Infrared, AN/AAS-24.

Table 1-4. Additional Equipment Required

Equipment	*Applicable publication*
Digital voltmeter (nonlinear systems modelX-2)with dual function converter and ac converter.	Commercial manual
Oscilloscope AN/USM-281A (HP model 180A).	TM 11-6625-1703-15

CHAPTER 2

INSTALLATION

2-1. General

This chapter contains instructions for unpacking, checking upon receipt, power connections, and pre-operational checks of the recorder test set.

2-2. Packaging Data

(fig. 2-1)

The recorder test set is shipped in a single plywood shipping container. The interconnecting cables are packed in the recorder test set cover. The recorder test set including the shipping container, measures approximately 29 by 28 by 25 inches, weighs approximately 170.0 pounds and occupies a volume of approximately 14 cubic feet.

2-3. Unpacking the Equipment

To remove the recorder test set from the shipping container, proceed as follows:

a. Place the shipping container on a suitable, clean work area, making certain that the top is up.

b. Using a crowbar, carefully remove the top and one side and slide the recorder test set from the container.

WARNING

Two men are required to lift the recorder test set.

c. Place the recorder test set on a workbench.

d. Unscrew the pressure relief valves to equalize pressure.

e. Open the cover and remove all cables; place these items on the workbench (fig. 1-1).

f. Replace the cover and one side on the shipping container and retain the container for further use (ground storage or reshipment).

2-4. Checking Unpacked Equipment

a. Inspect the equipment for physical damage that may have occurred during shipment. If the equip- ment has been damaged, fill out and forward DD Form 6 (para 1-3*b*).

b. Check to see that the equipment is complete as listed on the packing slip. If packing slip is not available, check the equipment against the basic issue items list (app. B). Report all discrepancies in accordance with paragraph 1-3*c*. The equipment should be placed in service even though a minor assembly or part that does not affect proper functioning is missing.

c. Check to see whether the equipment has been modified. If the equipment has been modified, the MWO number will appear on the front panel near the nomenclature plate. Check also to see whether all MWO's current at the time the equipment is placed in use have been applied (DA Pam 310-7).

d. Check the latest issue of DA Pam 310-4 and its latest changes to see if you have the latest editions of all applicable maintenance literature.

2-5. Installation Instructions

Initial installation of the recorder test set requires the connection of two power cables between the recorder test set and the proper input power sources.

a. Set the 28 VDC and the 115 VAC 3Ø circuit breakers on the control unit to OFF. Turn power mode switch to OFF (fig. 3-1).

b. Connect cable W1 between control unit connector 1A1J1 (fig. 3-2) and the 28 vdc source

c. Connect cable W2 between control unit connector 1A1J2 and the 115 vac, 400-Hz, 3-phase power source.

NOTE

Connection of cables W3 through W11 between control unit 1A1 and the unit under test are covered in TM 11-5850-241-34.

2-6. Initial Checking of Equipment

Upon completion of installation, the recorder-film magazine test set will be given an initial checkout by performing the preliminary starting procedure (para 3-6) and the stopping procedure (para 3-7).

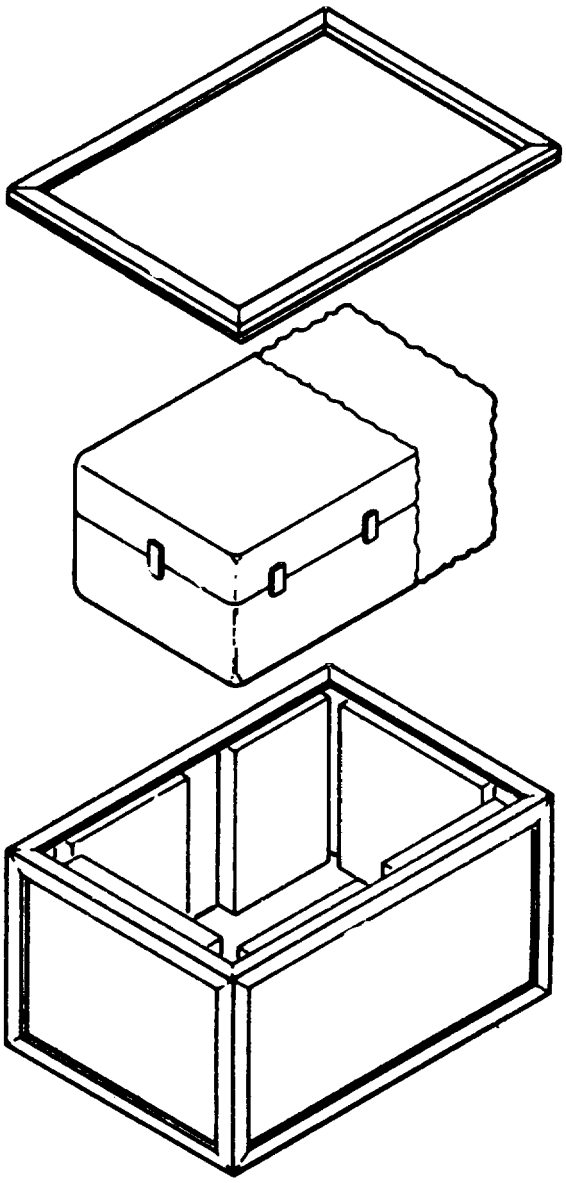


Figure 2-1. Recorder test set packaging.

CHAPTER 3

OPERATION

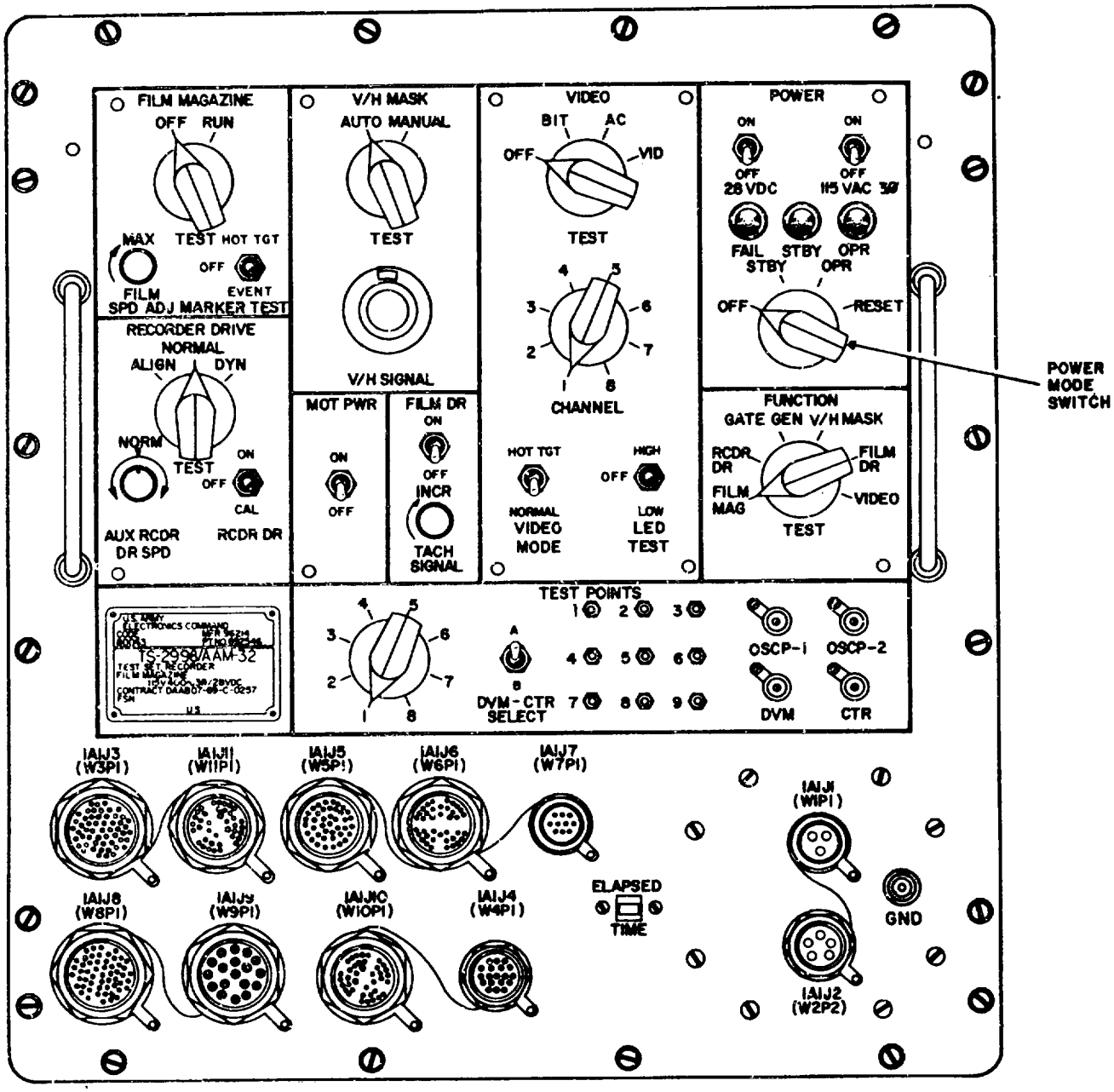
Section I. OPERATOR'S CONTROLS, INDICATORS, AND CONNECTORS

3-1. Control Unit 1A1 Controls and Indicators
(fig. 3-1)

Recorder test set controls and indicators are described in table 3-1.

3-2. Control Unit 1A1 Connectors
(fig. 3-1)

Recorder test set connectors are described in table 3-2.



EL 6625-1827-12-TM-3

Figure 3-1. Control Unit 1A1 controls, indicators and connectors.

Table 3-1. Control Unit 1A1 Controls and Indicators

Control or indicator	Function
FILM MAGAZINE:	
TEST switch (2-poition rotary switch).	Set the FUNCTION TEST switch to the FILM MAG position. This selects signals as determined by the FILM MAGAZINE TEST switch. *Sw Pos* — *Action* OFF ..... Selects test supply loop signal for monitoring at OSCP-1. Connects takeup loop signal to OSCP-2. RUN..... Actuates 1A1K2 to apply 115 vac, 3-phasem 400-Hz, and 28 vac rectified to the film magazine. Selects tach high signal for monitoring as determined by DVM-CTR SELECT in position B. Connects film drive No. 1 to OSCP-1 and film drive No. 2 to OSCP-2.
FILM SPD ADJ (potentiometer).	Supplies 0-24 vac v/h signal to film drive amplifier in the recorder film magazine test set for adjusting film speed. When FUNCTION TEST switch is in FILM MAG position, and the DVM-CTR SELECT switch is in position A. Voltage can be monitored on an external digital voltmeter.
MARKER TEST (3-psoition toggle switch).	*Sw Pos* — *Action* HOT TARGET ..... Applies hot target signal function to the film magazine. OFF ..... No signals are applied. The hot target marker signal function can be monitored at TEST POINTS. Event ..... Applies ground to the event marker function in the film magazine.
V/H MASK:	*Sw Pos* — *Action*
V/H MASK TEST switch (2-position rotary switch).	AUTO ..... Selects auto v/h (0 to 26 vdc), v/h mask Nos. 1 and 2 for monitoring on digital voltmeter and OSCP-1 and 2 when FUNCTION TEST switch is in V/H MASK position. MANUAL..... Selects led drive signal supplied to the recorder for monitoring with DVM-CTR SLECT switch in position A. Applies the v/h limit bit signal to test points OSCP-1 and OSCP-2. Supplies ground to manual v/h command from recorder.
V/H SIGNAL (potentiometer) -	Adjusts automatic and manual v/h outputs of recorder-film magazine test set. Automatic v/h variable from 0 to +26 vdc and can be monitored on an external digital voltmeter when V/H MASK TEST switch is in the AUTO position and the FUNCTION TEST switch is in the V/H MASK position. Manual v/h is variable from -10 to 0 vdc and can be monitored at control unit 1A1 test points.
VIDEO: VIDEO TEST switch (4-position rotary switch).	*Sw Pos* — *Action* OFF ..... In the off position no signals are applied to the light emitting diode drivers.

Table 3-1. Control Unit 1A1 Controls and Indicators-Continued

Control or indicator	Function
	Sw Pos — *Action* BIT ..... Selects +28 vdc ground return for the calibration scope relays in the recorder. Select and monitor coarse sync signal to the recorder. Selects ± 18 vdc applied to the recorder. AC..... Applies +28 vdc return to the calibration select relays in the recorder. Connects the coarse sync signal to the recorder, which can be monitored by external test points. Selects pedestal output from recorder, an determined by the FUNCTION TEST switch in the VIDEO position. Applies ± 13 vdc to the recorder. VID..... Selects +28 vdc ground return for the calibration scope relays in the recorder. Monitors coarse sync signal from the sync generator board. Applies ± 18 vdc to the recorder.
CHANNEL (8-position rotary switch).	*Sw Pos* — *Action* 1 through 8 ..... If the VIDEO TEST switch is in the AC or VID switch). position: The calibration scope relay on the light emitting diode drivers is operated. Each calibration scope relay can be monitored separately, by the control unit 1A1 test point 5 as determined by the TEST POINTS switch. If the VIDEO TEST switch is in the BIT position, positions 1 through 8 of the CHANNEL switch each apply a de return to a combination of calibration scope relays. Each relay control can be monitored separately by the control unit 1A1 test points. For all positions of the VIDEO TEST switch except OFF, the CHANNEL switch applies dc return to the calibration scope relays corresponding to the switch setting 1 through 8.
VIDEO MODE (2-postion toggle switch).	*Sw Pos* — *Action* HOT TGT ..... Applies a dc return to the pedestal generator in the recorder. NORMAL ..... Applies +13 vdc to the pedestal generator in the recorder.
LED TEST (3-positlon toggle switch).	*Sw Pos* — *Action* HIGH ..... Applies video oscillator high signal to the led driver amplifier in the recorder. OFF ..... Removes video oscillator high signals from the recorder. LOW ..... Applies video oscillator low frequency signal to the recorder.
POWER: 28 VDC (2-position cirucit breaker).	*Sw Pos* — *Action* ON ..... Applies 28 vdc to the recorder test set. OFF ..... Removes 28 vdc from the recorder test set.

Table 3-1. Control Unit 1A1 Controls and Indicators-Continued

Control or indicator	Function
115 VAC 30 (2-position circuit breaker).	*Sw Pos* — *Action* ON ..... Applies 115 vac, 400-Hz, 3-phase power to the recorder test set. OFF ..... Removes 115 vac, 400-Hz, 3-phase power from the recorder test set.
FAIL, (press-to-test lamp assembly).	Lights when a fail condition occurs; extinguished by RESET position of power mode switch.
STBY (press-to-test lamp assembly).	Lights when power mode switch is set to STBY, Lights when fail indication occurs to indicate standby condition is present.
OPR (press-to-test lamp assembly).	Lights when power mode switch is set to OPR. Lamp is extinguished when fail condition occurs, lights when power switch is momentarily set to RESET.
Power Mode Switch (4-position rotary switch).	*Sw Pos* — *Action* OFF ..... Removes filtered 115 vac, 400-Hz; 3-phase power and filtered 28-volt dc power from the recorder test set and unit under test and extinguishes all lamps. STBY ..... Applies ac and dc power to the recorder test set only and illuminates STBY lamp. OPR ..... Applies ac and dc power to the recorder test set and unit under test and illuminates OPR lamp. RESET (momentarily position). Restores ac and dc power to the recorder test set and unit under test and extinguishes FAIL lamp, after a fail condition occurs.
RECORDER DRIVE:	
RECORDER DRIVE TEST switch (3-position rotary switch).	Set the FUNCTION TEST switch to RCDR DR. The following signals may be monitored as determined by the RECORDER DRIVE TEST switch. *Sw Pos* — *Action* ALIGN ..... Monitors coarse sync signal supplied to recorder on external digital voltmeter. Selects fine sync Nos. 1 and 2 for monitoring at test point on OSCP-1. Connects +6 vdc to 1A1A11 in the recorder-film magazine test set. NORMAL ..... Selects coarse sync bit signal for monitoring on digital voltmeter. Permits monitoring of fine age 1 and 2 from recorder at test points OSCP-1 and OSCP-2. Selects the dc return for the recorder-film magazine test set sync generator. DYN ..... Selects coarse sync bit signal for monitor on digital voltmeter. Monitors coarse and rate error from recorder on OSCP-1 and OSCP-2. Removes dc return from recorder-film magazine test sync generator.

Table 3-1. Control Unit 1A1 Controls and Indicators-Continued

Control or indicator	Function
AUX RCDR DR SPD (potentiometer).	Adjusts motor speed control voltage applied to recorder and available for monitoring at the test points.
RCDR DR (3-position toggle switch).	*Sw Pos* — *Action* ON — Applies +58 vdc to the recorder motor. Connects AUX RCDR DR SPD control to recorder. OFF — Power is not applied to recorder motor. CAL — Applies 58 vdc to recorder drive motor; applies ground for motor speed calibration.
MOT PWR: MOT PWR (2-position toggle switch).	*Sw Pos* — *Action* ON — Applies 115 vac, 400-Hz, 3-phase power and 28 vac rectified to drive motor for rotating optics in recorder. Voltages can be monitored at test points. OFF — Removes recorder motor power.
FILM DR: FILM DR switch (2-position toggle switch).	*Sw Pos* — *Action* ON — Applies ground to the film drive on command line in the recorder. Selects film drive on bit for monitoring by external digital voltmeter. OFF — Applies ground to film drive off command line in the recorder. Selects film drive on bit for monitoring by external digital voltmeter.
TACH SIGNAL (potentiometer).	Varies the feedback signal to the film drive amplifier in the recorder.
FUNCTION: FUNCTION TEST (6-position rotary switch).	*Sw Pos* — *Action* FILM MAG — Selects for monitoring, as determined by FILM MAGAZINE TEST switch, either supply or takeup loop signal. Selects the FILM SPD ADJ and film footage signals. Selects counter output of film fail amplifier for monitoring on external counter. Selects film drive Nos. 1 and 2 on tach high feedback signal for monitoring on the digital voltmeter. RCDR DR — Selects for monitoring as determined by the RECORDER DRIVE TEST switch, either fine sync Nos. 1 or 2 or coarse sync and fine sync bit. Monitors fine age Nos. 1 and 2 from recorder. Selects coarse or rate error and fine sync bit for external monitoring. GATE GEN — Selects pedestal test signal and cosine test signal for monitoring on external counter. Selects the pedestal signal from the recorder for external monitoring on the digital voltmeter. Monitors sync gate signal from the recorder on the oscilloscope. V/H MASK — Selects one of the following signals from the recorder for monitoring on the external oscilloscope as determined by the V/H MASK TEST switch.

Table 3-1. Control Unit 1A1 Controls and Indicators-Continued

Control or indicator	Function	
	FILM DR	Selects signals for monitoring on external digital voltmeter, oscilloscope or counter. As determined by the position of the FILM DR switch.
	VIDEO	Selects signals for monitoring on external digital voltmeter, oscilloscope, and counter. The signals monitored are determined by the VIDEO TEST switch.
TEST POINTS:	*Sw Pos*	*Action*
Test Points switch (8-position rotary switch).	1 through 8	Selects signal functions for external monitoring as determined by the control unit 1A1 switch positions.
	Sw Pos	*Action*
DVM/CTR SELECT (2-position toggle switch).	A and B.....	Selects signals for monitoring as determined by the FUNCTION TEST switch position.

3-3. Test Points

(fig. 3-1)

Recorder test set signal functions available at control unit test points are listed in table 3-3.

Table 3-2. Control Unit 1A1 Connectors

Control unit connector	Connects cable assembly	To-
1A1J1	W1.....	+28 vdc power source.
1A1J2	W2.....	115 vac, 400-Hz. 3-phase power source.
1A1J3	W3.....	Recorder.
1A1J4	W4.....	Recorder.

Table 3-2. Control Unit 1A1 Connectors-Continued

Control unit connector	Connects cable assembly	To-
A1AJ5	W5	Recorder.
1A1J6	W6	Recorder.
1A1J7	W7	Photo detector.
1A1J8	W8	Recorder.
1A1J9	W9	Recorder.
1A1J10	W10	Film magazine.
1A1J11	W11	Recorder.

Table 3-3. Test Point Functions

Functions applied to test points 1 through 6 are selected by the TEST POINTS test point switch when at the position indicated.

Test points	Function	
1.....	*Sw Pos*	*Selects*
	1	Fine sync signal test.
	2	Coarse sync signal test.
	3	Film fall signal test.

Table 3-3. Test Point Functions-Continued

Test points	Function	
	Sw Pos	*Selects*
	4	Video signal test.
	5	Light emitting diode bit.
	6	Gate test.
	7	Film fail bias.
	8	Fine error.
2.....	*Sw Pos*	*Selects*
	1	V/h manual signal test.
	2	Aux recorder drive test.
	3	V/h auto bit.
	4	V/h auto signal test.
	5	System led bit.
	6	Recorder motor drive.
	7	Current limit.
	8	Control signal output test.
3.....	*Sw Pos*	*Selects*
	1	12 vac rectified (high).
	2	115 vac phase A.
	3	115 vac phase B.
	4	115 vac phase C.
	5	+13 vdc test.
	6	-13 vdc test.
	7	+6 vdc test.
	8	+33 vdc test.
4.....	*Sw Pos*	*Selects*
	1	12 vac rectified (low).
	2	+58 vdc test.
	3	+28 vdc test.
	4	28 vac rectified.

Table 3-3. Test Point Functions-Continued

Test points	Function	
	Sw Pos	*Selects*
	5	115 vac phase A.
	6	115 vac phase B.
	7	115 vac phase C.
	8	6.3 vac test.
5.....	*Sw Pos*	*Selects*
	1	Channel 1 calibration scope relay test.
	2	Channel 2 calibration scope relay test.
	3	Channel 3 calibration scope relay test.
	4	Channel 4 calibration scope relay test.
	5	Channel 5 calibration scope relay test.
	6	Channel 6 calibration scope relay test.
	7	Channel 7 calibration scope relay test.
	8	Channel 8 calibration scope relay test.
6.....	*Sw Pos*	*Selects*
	1	Hot target signal test.
	2	26 vac test.
	3	Ac - v/h signal.
	4	Supply loop test.
	5	Takeout loop test.
	6	Adas trigger signal.
	7	28 vac rectified to film drive motor.
	8	Adjustable tack signal.
7.....	400-Hz, 3-phase neutral.	
8.....	+28 vdc return.	
9.....	Signal return.	
OSCP-1	Signals monitored as determined by the DVM-CTR SELECT and FUNCTION TEST switch	
OSCP-2	Signals monitored as determined by the DVM-CTR SELECT and FUNCTION TEST switch	
DVM.....	Signals monitored as determined by the DVM-CTR SELECT and FUNCTION TEST switch	
CTR ?	Signals monitored as determined by the DVM-CTR SELECT and FUNCTION TEST switch	

Section II. OPERATION UNDER USUAL CONDITIONS

3-4. Operating Procedures

To operate the recorder test set, perform the following procedures:

a. Preparation for use (para 3-5).
b. Preliminary starting procedure (para 3-6).
c. Test procedure for unit under test (TM 11-5850-241-34/1 and TM 11-5850-241-34/2.)
d. Stopping procedure (para 3-7).

3-5. Preparation for Use

a. Place the recorder test set on the bench where it is to be used.
b. Remove the cover from the recorder test set. Remove the cables from the cover (fig. 1-1).
c. Set 28 VDC, 115 VAC 3Ø, and power mode switches to OFF.
d. Connect cable W1 between control unit connector 1A1J1 (fig. 3-1) and the 28 vdc source.
e. Connect cable W2 between control unit connector 1A1J2 and the 115 vac, 400-Hz, 3-phase, 4-wire source.

3-6. Preliminary Starting Procedure

(fig. 3-1)
a Set the 115 VAC 3Ø circuit breaker to ON.
b. Set the 28 VDC circuit breaker to ON.
c. Set the power mode switch to STBY and verify that STBY lamp lights.

3-7. Stopping Procedure

(fig. 3-1)
a. Set the power mode switch to OFF.
b. Set the 28 VDC circuit breaker to OFF.
c. Set the 115 VAC 80 circuit breaker to OFF.
d. Replace all cables in the cover of the recorder test set (fig. 1-1).
e. Replace the cover on the recorder test set and secure with the latches provided.

Section III. OPERATION UNDER UNUSUAL CONDITIONS

3-8. Operation at Low Temperatures

Freezing or subfreezing temperatures affect the efficient use of the receiver test set. Extreme changes from cold to warm areas such as movement of the recorder test set into a heated area will cause condensation. To maintain operating efficiency under these conditions, exercise the following precautions:

a. Operate the recorder test set in a heated area.
b. When cold equipment is brought into a warm area, allow the equipment to reach room temperature. Wipe condensation off with a clean, dry cloth before putting the recorder test set into operation.

3-9. Operation in Tropical Climates

In tropical climates, moisture conditions are more acute than normal. Ventilation in closed areas is usually very poor, and the high relative humidity causes condensation of moisture on the equipment. Wipe the recorder test set with a clean, dry cloth, and turn the recorder test set on once a day to eliminate moisture.

3-10. Operation in Desert Climates

a. When operated in desert climate, sand, dust, or dirt will reach the moving parts of the recorder test set, causing binding of controls and switches. Foreign particles in connectors may cause faulty operation and test results. Make the operating area as dustproof as possible with available materials. If the recorder test set is installed in a tent, secure the side walls of the tent with sand to prevent their flapping in the wind. When the recorder test set equipment is not in use, secure the cover.

b. A drastic fall in temperature at night often causes condensation. To prevent condensation, cover the test set with a tarpaulin or similar covering material.

c. Wipe off accumulated sand, dust, dirt, or condensation with a clean, dry cloth. Inspect connectors and clean as necessary before making test connections.

CHAPTER 4

MAINTENANCE INSTRUCTIONS

Section I. OPERATOR'S MAINTENANCE

4-1. Scope of Operator's Maintenance

The maintenance duties assigned to the operator of the recorder-film magazine test set are listed below, together with a reference to the paragraphs covering the specific maintenance functions. The materials required for operator's maintenance are listed in paragraph 4-2.

a. Operator's daily preventive maintenance checks and services (para 4-5).
b. Cleaning (para 4-6).
c. Operator's weekly preventive maintenance checks and services (para 4-7).

4-2. Materials Required for Operator's Maintenance

The following materials are required to perform operator's maintenance of the recorder test set.

a. Cleaning compound trichloroethane, refer to (app. B).
b. Cleaning cloth.
c. Cleaning brush.

4-3. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to insure that the equipment is serviceable.

a. Systematic Care. The procedures given in paragraphs 4-5, 4-6, and 4-7 cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

b. Preventive Maintenance Checks and Services. The preventive maintenance checks and services charts (para 4-5 and 4-7) outline functions to be performed at specific intervals. These checks and services are to maintain Army equipment in a serviceable condition; that is, in good physical condition, and in good operating condition. To assist operators in maintaining serviceability, the charts indicate what to check, how to check, and the nor- mal conditions; the *Reference* column lists the paragraph that contains additional information. If the defect cannot be remedied by the operator, higher category of maintenance is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38-750.

4-4. Preventive Maintenance Checks and Services Periods

Preventive maintenance checks and services of the recorder test set are required on a daily and weekly basis.

a. Paragraph 4-5 specifies the checks and services that must be accomplished daily and under the following conditions:

(1) When the equipment is initially installed.

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

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

b. Paragraph 4-7 specifies additional checks and services that must be performed weekly.

4-5. Operator's Daily Preventive Maintenance Checks and Services

The operator daily checks and services to be performed, are listed -below.

Sequence No.	Item	Procedure	Reference
1	Exterior surfaces	Clean exterior surfaces, including control unit 1A1. Clean inside storage area of removable cover.	Para 4-6.
2	Connectors.....	Check connectors on equipment and cables for security of attachment, proper fit and cleanliness.	Para 4-6*c*.
3	Controls and indicators.....	During operation of equipment (sequence No. 4), observe that each control and indicator functions properly. Mechanical action of each knob, dial, and switch should be smooth and free of external or internal binding. Tighten loose controls as required.	None.
4	Operation.....	When operating equipment (para 3-4 through 3-7), be alert for any unusual performance or condition.	None.

4-6. Cleaning

Inspect the exterior of the recorder test .set. The exterior surfaces should be free of dust, dirt, grease, and fungus.

a. Remove dust and loose dirt with a clean, soft cloth.

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.

b. Remove grease, fungus, and ground-in dirt from the transit case; use a cloth dampened (not wet) with cleaning compound.

c. Remove dust or dirt from plugs and connectors with a brush.

d. Clean control unit 1A1 and control knobs; use a soft, clean cloth. If dirt is difficult to remove, dampen the cloth with water; use mild soap if necessary.

4-7. Operator's Weekly Preventive Maintenance Checks and Services

The operator weekly checks and services to be performed, are listed below.

Sequence No.	Item	Procedure	Reference
1	Cables	Inspect cable assembly (fig. 1-1) for signs of mechanical damage, such as chafed, cracked, or frayed insulation. Refer damaged cables to higher category of maintenance for repair.	None.
2	Gaskets	Inspect gaskets of transit case for looseness, deterioration, or damage. If gaskets require replacement, refer to higher category of maintenance.	None.

Section II. ORGANIZATIONAL MAINTENANCE

4-8. Scope of Organizational Maintenance

a. This section contains instructions covering organizational maintenance of the recorder test set. It includes instructions for performing preventive and periodic maintenance services, troubleshooting, and repair functions to be accomplished by the organizational repairman.

b. Organizational maintenance of the test set includes-

(1) Organizational monthly preventive maintenance checks and services (para 4-12).

(2) Organizational quarterly preventive maintenance checks and services (para 4-14).

(3) Touchup painting (para 4-15).

(4) Troubleshooting (para 4-18).

(5) Replacement of defective lamps (para 4-19).

4-9. Tools and Materials Required

Authorized organizational maintenance repair parts are listed in appendix I). The tools and materials required for organizational maintenance are listed below.

a. Tools. Toolkit, Electronic Equipment, TK 101/G.

b. Materials. The materials required are listed in Table 4-1.

4-10. Organizational Preventive Maintenance

a. Preventive maintenance is the responsibility of all categories concerned with the equipment and includes the inspection, testing, and repair or replacement of parts, subassemblies, or units that inspection and tests indicated would probably fail before the next scheduled periodic service. Preventive maintenance checks and services of the recorder test set at the organizational category are made at monthly and quarterly intervals unless otherwise directed by the commanding officer.

Table 4-1. Materials Required

Material	*Federal stock No.*
Trichloroethane cleaning compound (1 pint).	6810-664-0273
Cleaning cloth.	
Lubricating oil, general purpose preventive (PL-Special).	9150-185-0629
Insulation tape, electrical (pressure sensitive adhesive plastic tape).	5970-644-2636
Paintbrush (1 inch).	
Fine sandpaper.	

b. Maintenance forms and records to be used and maintained on this equipment are specified in TM 38-750.

4-11. Organizational Monthly Maintenance

Perform the maintenance functions indicated in the monthly preventive maintenance checks and services chart (para 4-12) once each month. A month is de- fined as approximately 30-calendar days of 8-hour- per-day operation. If the equipment is used more often or under adverse conditions, the monthly preventive maintenance checks and services should be performed at 20- or 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual operating conditions. Equipment maintained in standby condition must have monthly preventive maintenance checks and services performed on it. Equipment in limited storage (requires service before operation) does not require monthly preventive maintenance.

4-12. Organizational Monthly Preventive Maintenance Checks and Services

The organizational monthly checks and services to be performed, are listed below.

Sequence No.	Item	Procedure	Reference
1	Cables	Inspect cable assembly (fig. 1-1) for cuts or other damage. Repair cut insulation by covering cut with plastic tape.	None.
2	Handles l a t c h e s, and screws.	Inspect handles, latches, hinges, screws, and other such hardware for looseness. Tighten or replace as required.	None.
3	Metal surfaces	Inspect exposed metal parts of equipment for rust and corrosion. Clean and touchup paint as required. If equipment is operated in tropical climate, dampen cloth with oil (PS Special) and apply light film of oil to metal parts and surfaces.	Para 4-15.

4-13. Organizational Quarterly Maintenance

Quarterly preventive maintenance checks and services on the recorder test set are required. Periodic weekly and monthly services constitute a part of the quarterly preventive maintenance checks and services (para 4-14) and must be performed concurrently. All deficiencies or shortcomings will be recorded in accordance with the requirements of TM 38-750.

4-14. Organizational Quarterly Preventive Maintenance Checks and Services

The quarterly checks and services to be performed, are listed below.

Sequence No.	Item	Procedure	Reference
1	Publications	Check to see that all pertinent publications are current, complete, and serviceable.	DA Pam 310-4 and app. A.
2	Modifications	Determine whether new applicable MWO's have been published. All URGENT MWO's must be applied. All NORMAL MWO's must be scheduled (TM 38750).	DA Pam 310-7.
3	Completeness	Check to see that equipment is complete.	App. B.
4	Paint	Inspect equipment for condition of paint. If surfaces bear only slight scratches, retouch these with paint. If surfaces bear many scratches, turn equipment in for higher category maintenance painting.	Para 4-15.
5	Operation.....	*a.* Prepare recorder test set for use	*a.* Para 3-3.
		b. Apply power to recorder test set	*b.* Para 3-4 and 3-4*b*.
		c. Press FAIL, STBY, and OPR lamps and verify each lights.	*c.* None.
		d. Set recorder test set to STBY	*d.* Para 3-4*c*.
		e. Perform stopping procedure	*e.* Para 3-5.

4-15. Touchup Painting

Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint (only on those parts meant to be painted) on the bare metal to protect it from further rust or corrosion. Refer to the applicable cleaning and refinishing practices specified in TB 746-10. Refer to SB 11-573 for paint to be used.

4-16. Lubrication

No lubrication is required.

Section III. TROUBLESHOOTING

4-17. Preliminary Troubleshooting

Troubleshooting of the recorder test set is based upon the operational check contained in the quarterly preventive maintenance checks and services chart. To troubleshoot the recorder test set, perform sequence number 5 in the organizational quarterly preventive maintenance checks and services chart (para 4-14) and proceed until an abnormal condition or result is observed. Perform the checks and corrective measures indicated in the troubleshooting chart (para 4-18). If the corrective measures indicated do not result in correction of the trouble, higher category of maintenance is required.

4-18. Troubleshooting

The troubleshooting procedures to be performed are listed below.

Item No.	Symptom	Probable trouble	Corrective measures
1	Individual indicator does not light when pressed.	Defective indicator lamp.....	Replace lamp (para 4-19).
2	All indicators do not light....	Defective power cables.....	Replace power cables.
3	STBY indicator does not light.	Defective recorder test set.....	Higher category of maintenance required.
4	PH ERROR lamp lights	Input ac power improperly connected.	Higher category of maintenance required.
5	FAIL lamp lights.....	An overvoltage or undervoltage condition has occurred in one or more power supplied	Set power selector switch to RESET. If symptom still exists, higher category of maintenance required.
6	ELAPSED TIME meter	Defective ELAPSED TIME meter fails to operate.	Higher category of maintenance required.

4-19. Lamp Removal and Replacement

a. Unscrew the metal lampholder counterclockwise until free.

b. Grasp the lamp base at its rim and pull from the lampholder.

c. If a new lamp is required, press it into the holder and screw the holder into its panel socket.

CHAPTER 5

SHIPMENT, LIMITED STORAGE, AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

5-1. Repackaging for Shipment and Limited Storage

a. Repackaging of equipment for shipment or extended storage normally will be performed at a packaging facility or by a repackaging team. Should emergency packaging be required, select the materials from those listed in SB 38-100. Package the equipment in accordance with the original packaging so far as possible, using available materials.

b. The exact procedure for repackaging depends upon the material available and the conditions under which the equipment is to be stored or shipped. In most cases, the original shipping container will be available, use the packaging procedures outlined in TM 38-230 and paragraph 5-2*b*.

c. The recorder test set may be stored for limited periods in the transit case with the cover closed.

5-2. Packaging Procedure

a. Original Container Available.

(1) Remove the cover and one side from the shipping container.

(2) Place the recorder test set in the container as shown in figure 2-1, making certain that polyurethane foam cushioning material is in place on the bottom of the container and along the sides.

(3) Place cushioning material (4 pieces) on top of the recorder test set, and replace and secure the container cover and one side.

b. Original Container not Available.

(1) Select a cleated plywood box, conforming to Military Specification MIL-601, of the approximate size of the original container (para 2-2). If a plywood container is not available, use a suitable wooden box.

(2) Cut 3-inch polyurethane foam cushioning material (MIL-P-26512) to proper size to provide cushioning for the top, bottom, and four sides of the container (fig. 2-1).

(3) Place foam inside the container on bottom and four sides, using adhesive MIL-A-140, if necessary, to hold in place.

NOTE

If container is slightly larger than original container, it may be necessary to provide additional cushioning material to insure proper fit of the recorder test set in the container.

(4) Place the recorder test set in the container making certain that the cushioning material is in place along the sides.

(5) Place the cushioning material on top of the recorder test set.

(6) Place the cover on the container and secure in place with nails, spaced sufficiently close together to insure that the cover is securely attached to the container.

Section II. DEMOLITION TO PREVENT ENEMY USE

5-3. Authority for Demolition

The demolition procedures given in paragraph 5-4 will be used to prevent the enemy from using or salvaging this equipment. Demolition of the equipment will be accomplished only upon the order of the commander. Use the destruction procedures outlined in paragraph5-4

to prevent further use of the equipment.

5-4. Methods of Destruction

Any or all of the methods of destruction given below may be used. The time available for destruction will be the major factor in determining the method to be used. The tactical situation will also determine the manner of destruction.

a. *Smash.* Use sledges, axes, hammers, crowbars, or any other heavy tools available to smash all components.

b. Cut. Cut cables, cording, and component wiring. Use any available sharp instruments.

c. Burn. Burn as much of the equipment as possible. Use gasoline, oil, or flamethrowers. Burn the instruction literature first. Pour gasoline on the cut cables and component wiring and ignite them. Use incendiary grenades to complete the destruction of unit interiors.

WARNING

Be extremely careful with explosives and incendiary devices. Use these items only when the need is urgent.

d. Explode. Use explosives to complete demolition, or to cause maximum damage, when time does not permit other means. Powder charges and grenades are usually most effective for destruction of small parts and wiring.

e. Dispose. Bury or scatter destroyed parts or throw them into nearby waters.

5-5. Priorities for Destruction

Destroy the equipment and documents in accordance with the priorities listed below when lack of time prevents complete destruction of the equipment.

a. Destroy confidential equipment and confidential documents before unclassified equipment and unclassified documents.

b. Destroy essential parts and the same parts on all like equipment before nonessential parts.

c. Apply the priorities for destruction of component parts of a major item also to destruction of similar components in repair parts storage areas.

d. Destroy the equipment types in accordance with table 5-1.

Table 5-1. Priorities for Destruction

Priority	*Equipment type*
1	The recorder test set maintenance manuals.
2	Control unit 1A1.
3	Cables.

APPENDIX A
REFERENCES

The following publications contain information applicable to the operation and maintenance of Test Set, Recorder-Film Magazine AN/AAM-32:

DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 7, 8, and 9), Supply Bulletins, and Lubrication Orders.
DA Pam 310-7	US Army Equipment Index of Modification Work Orders
TM 11-5850-241-34/1 and (C)TM 11-5850-241-34/2	Direct Support Maintenance Manual, Detecting Set, Infrared AN/AAS-24.
SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment
SB 38-100	Preservation, Packaging and Packing Materials, Supplies and Equipment Used by the Army.
TB 746-10	Field Instructions for Painting and Preserving Electronics Command Equipment.
TM 38-230-1 and TM 38-230-2	Preservation, Packaging, and Packing of Military Supplies and Equipment.
TM 38-750	The Army Maintenance Management System (TAAMS).
TM 11-6625-1703-15	Operator, Organizational, DS, GS, and Depot Maintenance Manual Including Repair Parts, and Special Tools Lists Oscilloscope AN/USM-281A.

APPENDIX B
BASIC ISSUE ITEMS LIST (BIIL) AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST (ITIAL)

Section I. INTRODUCTION

B-1. Scope
This appendix lists only basic issue items required by the crew/operator for installation, operation, and maintenance of the Test Set, Recorder-Film Magazine AN/AAM-32.

B-2. General
This Basic Issue Items and Items Troop Installed or Authorized List is divided into the following sections:

a. Basic Issue Items List-Section II. A list, in alphabetical sequence, of items which are furnished with, and which must be turned in with the end item.

b. Items Troop Installed or Authorized List-Section III. Not applicable.

B-3. Explanation of Columns
The following provides an explanation of columns found in the tabular listings:

a. Illustration. This column is divided as follows:

(1) *Figure Number.* Indicates the figure number of the illustration in which the item is shown.

(2) *Item Number.* The number used to identify each item called in the illustration.

b. Federal Stock Number. Indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

c. Description. Indicates the Federal item name and a minimum description required to identify the item.

(1) *Part Number.* Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards, and inspection requirements, to identify an item or range of items.

(2) *Federal Supply Code for Manufacturer (FSCM).* The FSCM is a 5-digit numeric code used to identify the manufacturer, distributor, or Government agency, etc., and is identified in SB 708-42.

d. Unit of Measure (UIM). Indicates the standard of basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation, (e.g., ea, in., pr, etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

e. Quantity Furnished with Equipment (Basic Issue Items Only). Indicates the quantity of the basic issue item furnished with the equipment.

(1) ILLUSTRATION (A) FIG. NO.	(1) ILLUSTRATION (B) ITEM NO.	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION PART NUMBER & FSCM / USABLE ON CODE	(4) QTY FURN WITH EQUIP
1-1	1MP1	6625-408-5067	COVER, TEST SET CW-1111/AAM-32	1

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PAGE #
B-2

APPENDIX C

MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C-1. General

This appendix provides a summary of the maintenance operations covered in the equipment literature for Test Set, Recorder-Film Magazine AN/AAM-32. It authorizes categories of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

C-2. Maintenance Functions

Maintenance functions will be limited to and defined as follows:

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

b. Test. To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment such as gages, meters, etc. This is accomplished with external test equipment and does not include operation of the equipment and operator type tests using internal meters or indicating devices.

c. Service. To clean, to preserve, to charge, and to add fuel, lubricants, cooling agents, and air. If it is desired that elements, such as painting and lubricating, be defined separately, they may be so listed.

d. Adjust. To rectify to the extent necessary to bring into proper operating range.

e. Align. To adjust two or more components or assemblies of an electrical or mechanical system so that their functions are properly synchronized. This does not include setting the frequency control knob of radio receivers or transmitters to the desired frequency.

f. Calibrate. To determine the corrections to be made in the readings of instruments of test equipment used in precise measurement. Consists of the comparison of two instruments, one which is a certified standard of known accuracy, to detect and adjust, any discrepancy in the accuracy of the instrument being compared with the certified standard.

g. Install. To set up for use in an operational environment such as an encampment, site, or vehicle.

h. Replace. To replace unserviceable items with serviceable like items.

i. Repair. To restore an item to serviceable condition through correction of specific failure or unserviceable condition. This function includes, but is not limited to welding, grinding, riveting, straightening, and replacement of parts other than by the trial and error replacement of running spare type, items such as fuses, lamps, or electron tubes.

j. Overhaul. Normally, the highest degree of maintenance performed by the Army to minimize time work in process and is consistent with quality and economy of operation. It consists of that maintenance necessary to restore an item to completely serviceable condition as prescribed by maintenance standards in technical publications for each item of equipment. Overhaul normally does not return an item to like new, zero mileage, or zero hour condition.

k. Rebuild. The highest degree of material maintenance. It consists of restoring equipment as nearly as possible to new condition in accordance with original manufacturing standards. Rebuild is performed only when required by operational considerations or other paramount factors and then only at the depot maintenance category. Rebuild reduces to zero the hours or miles the equipment, or component thereof, has been in use.

l. Symbols. The uppercase letter placed in the appropriate column indicates the lowest level at which that particular maintenance function is to be performed.

C-3. Explanation of Format

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, Functional Group. Column 2 lists the noun names of components, assemblies, subassemblies, and modules on which maintenance is authorized.

c. Column 3, Maintenance Functions. Column 3 lists the maintenance category at which performance of the specific maintenance functions is authorized. Authorization to perform a function at any category also includes authorization to perform that function at higher categories. The codes used represent the various maintenance categories as follows:

Code	*Maintenance category*
C	Operator/crew
O	Organizational maintenance
F	Direct support maintenance
H	General support maintenance
D	Depot maintenance

d. Column 4, Tools and Test Equipment. Column 4 specifies, by code, those tools and test equipment required to perform the designated function. The numbers appearing in this column refer to specific tools and test equipment which are identified in table 1.

e. Column 5, Remarks. Self-explanatory.

C-4. Explanation for Format of Table 1, Tool and Test Equipment Requirements

The columns in table 1 are as follows:

a. Tools or Test Equipment Reference Code. Not used.

b. Maintenance Category. The codes in this column indicate the maintenance category normally allocated the facility.

c. Nomenclature. This column lists tools, test, and maintenance equipment required to perform the maintenance functions.

d. Federal Stock Number. This column lists the federal stock number of the specific tool or test equipment.

e. Tool Number. The numbers in this column coincides with the numbers in the tools and equipment column of the maintenance allocation chart (sec. II).

SECTION II. MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS										TOOLS AND EQUIPMENT	REMARKS
		Inspect	Test	Service	Adjust	Align	Calibrate	Install	Replace	Repair	Overhaul	Rebuild		
1	Test Set, Recorder-Film	O		O				O	O				4	
	Magazine AN/AAM-32		H		H	H	*			H			1, 2, 3, 5, 10	*Calibration Team
											D	D	1, 2, 5, 6,	
1A1A1	Heatsink Assembly		H					H	H				2, 3	
										D	D		2, 3, 7, 8	
1A1A2	Heatsink Assembly		H					H	H				2, 3	
										D	D		2, 3, 7, 8	
1A1A3	Heatsink Assembly		H					H	H				2, 3	
										D	D		2, 3, 7, 8	
1A1A4	+13 and -13 Vdc Regulator		H		H			H	H				2, 3	
										D	D		2, 3, 7	
1A1A5	+6 Vdc Regulator		H		H			H	H				2, 3	
										D	D		2, 3, 7	

TEST SET, RECORDER-FILM MAGAZINE AN/AAM-32 (Continued)

MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS											TOOLS AND EQUIPMENT	REMARKS
		Inspect	Test	Service	Adjust	Align	Calibrate	Install	Replace	Repair	Overhaul	Rebuild		
1A1A6	Power Control		H		H			H	H				2, 3, 4, 5	
										D	D		2, 3, 4, 5, 7	
1A1A7	Sync Generator		H		H			H	H				1, 3, 4	
										D	D		1, 3, 4, 6, 7	
1A1A8	Film Drive Amplifier and Bit Logic Circuit		H					H	H				1, 2, 3, 4 6	
										D	D		1, 2, 3, 4 6, 7, 9	
1A1A9	V/h Generator and Hot Target Marker		H		H			H	H				1, 2, 3, 5	
										D	D		1, 3, 7	
1A1A10	Rectifier Filter		H					H	H				1, 2, 3, 4	
										D	D		1, 2, 3, 4, 7, 8	
1A1A11	Video Oscillator and Film Fail		H		H			H	H				1, 3	
	Amplifier									D	D		1, 3, 4, 6, 7	
1A1A12	Filter Assembly		H					H	H	H			4, 5	
											D		4, 5	

TEST SET, RECORDER-FILM MAGAZINE AN/AAM-32 (Continued)

MAINTENANCE ALLOCATION CHART

GROUP NUMBER	COMPONENT ASSEMBLY NOMENCLATURE	MAINTENANCE FUNCTIONS										TOOLS AND EQUIPMENT	REMARKS
		Inspect	Test	Service	Adjust	Align	Calibrate	Install	Replace	Repair	Overhaul	Rebuild	
W1	Cable Assemblies, Ac, Dc, Interconnecting	O							O				
thru			H							H			3, 5
W11											D		3, 5

TABLE 1. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOLS AND EQUIPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
	H, D	Oscilloscope AN/USM-281A	6625-053-3112	1
	H, D	Digital Voltmeter (Non-Linear Systems Model X-2) (two req'd) with dual function converter, part number 37-42, and AC converter, part number 37-45		2
	H, D	Tool Kit, Electronic Equipment TK-105/G	5180-605-0079	3
	O	Tool Kit, Electronic Equipment TK-101/G	5180-064-5178	4
	H, D	Multimeter TS-352B/U	6625-553-0142	5
	D	Digital Readout, Electronic Counter AN/USM-207	6625-911-6368	6
	D	Test Set, Electronic Circuit Plug-In Unit AN/AAM-39	6625-459-3403	7
	D	Pulse Generator (Hewlett-Packard Model 222A)	Commercial	8
	D	Generator, Signal SG-769/U (Wavetek)	Commercial	9
	H	Maintenance Kit, Electronic Equipment MK-1172/AAS-24	5850-434-5539	10

APPENDIX D

ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

D-1. Scope

This appendix lists repair parts and special tools required for the performance of organizational maintenance of the Test Set, Recorder-Film Magazine AN/AAM-32.

D-2. General

This repair parts and special tools list is divided into the following sections:

a. Prescribed Load Allowance (PLA)—Section II. A composite listing of the repair parts, special tools, test and support equipment having quantitative allowances for initial stockage at the organizational level.

b. Repair Parts—Section III. A list of Test Set, Recorder-Film Magazine AN/AAM-32 repair parts authorized for the performance of maintenance at the organizational level in figure and item number sequence.

c. Special Tools, Test and Support Equipment. Not applicable.

D-3. Explanation of Column

The following provides an explanation of columns.

a. Source, Maintenance, and Recoverability Codes (SMR), Column 1.

(1) Source codes indicate the selection status and source for the listed item. Source codes are-

Code	*Explanation*
P -	Repair parts which are stocked in or supplied from the GSA/DSA, or Army supply system and authorized for use at indicated maintenance categories.
M -	Repair parts which are not procured or stocked, but are to be manufactured in indicated maintenance levels.
A -	Assemblies which are not procured or stocked as such, but are made up of two or more units. Such component units carry individual stock numbers and descriptions, are procured and stocked separately and can be assembled to form the required assembly at indicated maintenance categories.
X1 -	Repair parts which are not procured or stocked. The requirement for such items will be filled by use of the next higher assembly or component.
X2 -	Repair parts which are not stocked. The indicated maintenance category requiring such repair parts will attempt to obtain same through cannibalization. Where such repair parts are not obtainable through cannibalization, requirements will be requisitioned, with accompanying justification, through normal supply channels.
G -	Major assemblies that are procured with PEMA funds for initial issue only as exchange assemblies at DSU and GSU level. These assemblies will not be stocked above DS and GS level or returned to depot supply level.

(2) Maintenance codes indicate the lowest category of maintenance authorized to install the listed item. The maintenance level codes are-

Code	*Explanation*
C	Crew or operator maintenance
O	Organizational maintenance
F	Direct support maintenance
H	General support maintenance.
D	Depot maintenance

(3) Recoverability codes, indicate whether unserviceable items should be returned for recovery or salvage. Items not coded are expendable. Recoverability codes are-

Code	*Explanation*
R -	Repair parts and assemblies which are economically reparable at DSU and GSU activities and are normally furnished by supply on an exchange basis
S -	Repair parts and assemblies which are economically reparable at DSU and GSU activities and which normally are furnished by supply on an exchange basis. When items are determined by a GSU to be uneconomically reparable, they will be evacuated to a depot for evaluation and analysis before final disposition.
T -	High-dollar value recoverable repair parts which are subject to special handling and are issued on an exchange basis. Such repair parts normally are repaired or overhauled at depot maintenance activities.
U -	Repair parts specifically selected for salvage by reclamation units because of precious metal content, critical materials, or high-dollar value reusable casings or castings.

b. Federal Stock Number, Column B. This column indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

c. Description, Column 3. This column indicate the Federal item name and any additional description of the item required. The abbreviation "w/e," when used as a part of the nomenclature, indicates the Federal stock number includes all armament, equipment, accessories, and repair parts issued with the item. A part number or other reference number is followed by the applicable five-digit Federal supply code for manufacturers in parentheses. Repair parts quantities included in the kits, sets, and assemblies are shown in front of the repair part name. Material required for manufacture or fabrication is identified.

d. Unit of Measure (U/AM), Column 4. A two-character alphabetic abbreviation indicating the amount of quantity of the item upon which the allowances are based, e.g., ft, ea, pr, etc.

e. Quantity Incorporated in Unit, Column 5. This column indicates the quantity of the item used in the unit. A "V' appearing in this column in lieu of a quantity indicates that a definite quantity cannot be indicated (e.g., shims, spacers, etc.).

f. 15-Day Organizational Maintenance Allowance, Column 3.

(1) The allowance columns are divided into four subcolumns. Indicated in each subcolumn opposite the first appearance of each item is the total quantity of items authorized for the number of equipments supported. Subsequent appearances of the same item will have the letters "REF" in the allowance columns. Items authorized for use as required but not for initial stockage are identified with an asterisk in the allowance column.

(2) The quantitative allowances for organizational level of maintenance represents one initial prescribed load for a 15-day period for the number of equipments supported. Units and organizations authorized additional prescribed loads will multiply the number of prescribed loads authorized by the quantity of repair parts reflected in the density column applicable to the number of items supported to obtain the total quantity of repair parts authorized.

(3) Organizational units providing maintenance for more than 100 of these equipments shall determine the total quantity of parts required by converting the equipment quantity to a decimal factor by placing a decimal point before the next to last digit of the number to indicate hundredths, and multiplying the decimal factor by the parts quantity authorized in the 51-100 allowance column. *Example,* authorized allowance for 51-100 equipments is 40; for 150 equipments multiply 40 by 1.50 or 60 parts required.

(4) Subsequent changes to allowances will be limited as follows: No change in the range of items is authorized. If additional items are considered necessary, recommendation should be forwarded to the Maintenance Directorate, AMSEL-MA-SS, Fort Monmouth, N.J., for exception or revision to the allowance list. Revisions to the range of items authorized will be made by the Maintenance Engineering Directorate based upon engineering experience, demand data, or TAERS information.

g. Illustration, Column 7. This column is divided as follows:

(1) *Figure number, column 7a.* Indicates the figure number of the illustration in which the item is shown.

(2) *Item number, column 7b.* Indicates the callout number used to reference the item in the illustration.

D-4. Special Information

a. Parts which require manufacture or assembly at a category higher than that authorized for installation will indicate in the source column the higher category.

b. For end items authorized mandatory stockage of repair parts by the Department of the Army, on a case by case basis, the mandatory stockage items are indicated by a plus "+" sign as the first character in the end item density columns of both the repair parts list and the prescribed load allowance for each such authorized allowance quantity.

D-5. How to Locate Repair Parts

Locate the sequence number in the repair parts list sequence number/SMR code column which is in ascending alphanumeric order, to find the repair part.

D-6. Abbreviations

Not applicable.

D-7. Federal Supply Codes for Manufacturers

Code	*Manufacturer*
96906	Military Standards

(1) FEDERAL STOCK NUMBER	(2) DESCRIPTION USABLE ON CODE	(3) 15-DAY ORGANIZATIONAL MAINTENANCE ALLOWANCE (a) 1-5	(b) 6-20	(c) 21-50	(d) 51-100
5355-985-6888	KNOB, CONTROL: MS91528-2M2B (96906)	*	*	2	2
6240-155-7836	LAMP, INCANDESCENT: MS25237-327 (96906)	*	*	2	2

(1) SEQ NO./ SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REFERENCE NUMBER & MFR CODE / USABLE ON CODE	(4) UNIT OF MEAS	(5) QTY INC IN UNIT	(6) 15-DAY ORGANIZATIONAL MAINTENANCE ALW (A) 1 - 5	(B) 6 - 20	(C) 21 - 50	(D) 51-100	(7) ILLUSTRATIONS (A) FIG. NO.	(B) ITEM NO. OR REFERENCE DESIGNATION
A002 P--O-S	6625-196-2844	CABLE ASSEMBLY, P0WER, ELECTRICAL CX-12408/U-(8 FT)	EA	1	*	*	*	2	1-1	1W1
A009 P--O-S	6625-470-4315	CABLE ASSEMBLY POWER, ELECTRICAL CX-12409/U-(8 FT)	EA	1	*	*	*	2	1-1	1W2
A015 P--O--	6625-489-2667	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-12454/AAM-32	EA	1	*	*	*	2	1-1	1W4
A026 P--0-S	6625-403-1039	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-12455/AAM-32	EA	1	*	*	*	2	1-1	1W5
A034 P--O-S	6625-489-6101	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRCAL CX-12456/AAM-32	EA	1	*	*	*	2	1-1	1W6
A043 P--O-S	6625-489-2668	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-12457/AAM-32	EA	1	*	*	*	2	1-1	1W7
A052 P--O-S	6625-408-5086	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-12458/AAM-32	EA	1	*	*	*	2	1-1	1W8
A060 P--O-S	6625-489-0451	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-12459/AAM-32	EA	1	*	*	*	2	1-1	1W9
A068 P--O-S	6625-489-0459	CABLE ASSEMBLY, SEPCIAL PURPOSE, ELECTRICAL CX-12460/AAM-32	EA	1	*	*	*	2	1-1	1W10
A081 P--0-S	6625-489-0460	CABLE ASSEMBLY, SEPCIAL PURPOSE, ELECTRICAL CX-12461/AAM-32	EA	1	*	*	*	2	1-1	1W11
A094 P--0-S	6625-409-1000	CABLE ASSEMBLY, SEPCIAL PURPOSE, ELECTRICAL CX-12462/AAM-32	EA	1	*	*	*	2	1-1	1W3
A809 P--O--	5355-616-7669	KNOB, CONTROL: MS91528-2D2B (96906)	EA	1	*	*	*	*	1-1	1A1MP11MP22
A810 P--O--	5355-616-7669	KNOB, CONTROL: MS91528-2D2B (96906)	EA	REF	REF	REF	REF	REF	1-1	1A1MP11MP23
A811 P--O--	5355-958-9982	KNOB, CONTROL: MS91528-2E2B (96906)	EA	1	*	*	*	*	1-1	1A1MP11MP24
A812 P--O--	5355-985-6888	KNOB, CONTROL: MS91528-2W2B (96906)	EA	8	*	*	2	2	1-1	1A1MP11MP25
A813 P--O--	5355-985-6888	KNOB, CONTROL: MS91528-2M2B (96906)	EA	REF	REF	REF	REF	REF	1-1	1A1MP11MP26
A814 P--O--	5355-985-6888	KNOB, CONTROL: MS91528-2M2B (96906)	EA	REF	REF	REF	REF	REF	1-1	1A1MP11MP27
A815 P--O--	5355-985-6888	KNOB, CONTROL: MS91528-2M2B (96906)	EA	REF	REF	REF	REF	REF	1-1	1A1MP11MP28
A816 P--O--	5355-985-6888	KNOB, CONTROL: MS91528-2M2B (96906)	EA	REF	REF	REF	REF	REF	1-1	1A1MP11MP29
A817 P--O--	5355-985-6888	KNOB, CONTROL: MS91528-2M2B (96906)	EA	REF	REF	REF	REF	REF	1-1	1A1MP11MP30
A818 P--O--	5355-985-6888	KNOB, CONTROL: MS91528-2M2B (96906)	EA	REF	REF	REF	REF	REF	1-1	1A1MP11MP31
A819 P--O--	5355-985-6888	KNOB, CONTROL: MS91528-2M2B (96906)	EA	REF	REF	REF	REF	REF	1-1	1A1MP11MP32
A823 P--O--	6240-155-7836	LAMP, INCANDESCENT: MS25237-327 (96906)	EA	3	*	*	2	2	1-1	1A1DS1
A824 P--O--	6240-155-7836	LAMP, INCANDESCENT: MS25237-327 (96906)	EA	REF	REF	REF	REF	REF	1-1	1A1DS2
A825 P--O--	6240-155-7836	LAMP, INCANDESCENT: MS25237-327 (96906)	EA	REF	REF	REF	REF	REF	1-1	1A1DS3

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