DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

INCLUDING REPAIR PARTS AND SPECIAL TOOL LISTS

TEST SET, RECEIVING SET, RADAR DATA A/GKM-2A

This copy is a reprint which includes current pages from Changes 1 through 3.

HEADQUARTERS, DEPARTMENT OF THE ARMY

SEPTEMBER 1966

WARNING

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Be careful when working on the 115-volt ac line connections to POWR INPUT connector J1.

WARNING

DANGEROUS VOLTAGES EXIST IN THIS EQUIPMENT

Be careful when working on the 115-volt ac line connections to POWER INPUT connector J1.

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. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *27 July 1977*

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

TEST SETS, RECEIVING SET, RADAR DATA AN/GKM-2A
(NSN 6625-00-906-3325) and AN/GKM-2B (NSN 6625-00-926-4393)

TM 11-6625827-12, 28 September 1966, is changed as follows:

1. The title of the manual is changed to read as shown above.
2. New or changed material is indicated by a vertical bar in the margin.
3. Remove and insert pages as indicated in the page list below:

Remove	*Insert*
Warning, inside front cover	Warning, inside front cover
i and ii	i and ii
1-1, 1-1.1 and 1-2	1-1, 1-2 and 1-2.1
3-3 and 3-4	3-3 and 3-4
4-1 and 4-2	4-1 and 4-2
A-1/(A-2 Blank)	A-1
C-1/(C-2 Blank)	C-1 through C-6
None	E-1 through E-7

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

By Order of the Secretary of the Army:

BERNARD W. ROGERS
General, United States Army
Chief of Staff

Official:

PAUL T. SMITH
Major General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-36A, Organizational avionics test equipment literature requirements for AN/GKM-2.

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *20 November 1969*

Operator and Organizational Maintenance Manual
Including Repair Parts and Special Tool Lists
TEST, SET, RECEIVING SET, RADAR DATA AN/GKM-2A

TM 11-6625-827-12, 28 September 1966, is changed as follows:

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

2. Remove and insert pages as indicated in the page list below.

Remove pages —	*Insert pages—*
1-1 and 1-2	1-2 and 1-2
A-1 and A-2	A-1 and A-2
B-1 through B-4	B-1 through B-2
	D-1 through D-3

3. File this change sheet in the front of the manual fore future reference.

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:

To be distributed in accordance with DA Form 12-36. Organizational maintenance requirements for OV-1A OV-1B and OV-1C aircraft.

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*This change supersedes that portion of TM 11-6625-827-25P, 25 October 1966, as pertains to organizational maintenance.

TECHNICAL MANUAL
No. 11-6625827-12

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON DC, *28 September 1966*

OPERATOR'S AND ORGANIZATIONAL MAINTENANCE MANUAL INCLUDING REPAIR PARTS AND SPECIAL TOOL LISTS TEST SETS, RECEIVING SET, RADAR DATA AN/GKM-2A (NSN 6625-00-906-3325) AND AN/GKM-2B (NSN 6625-00-926-4393)

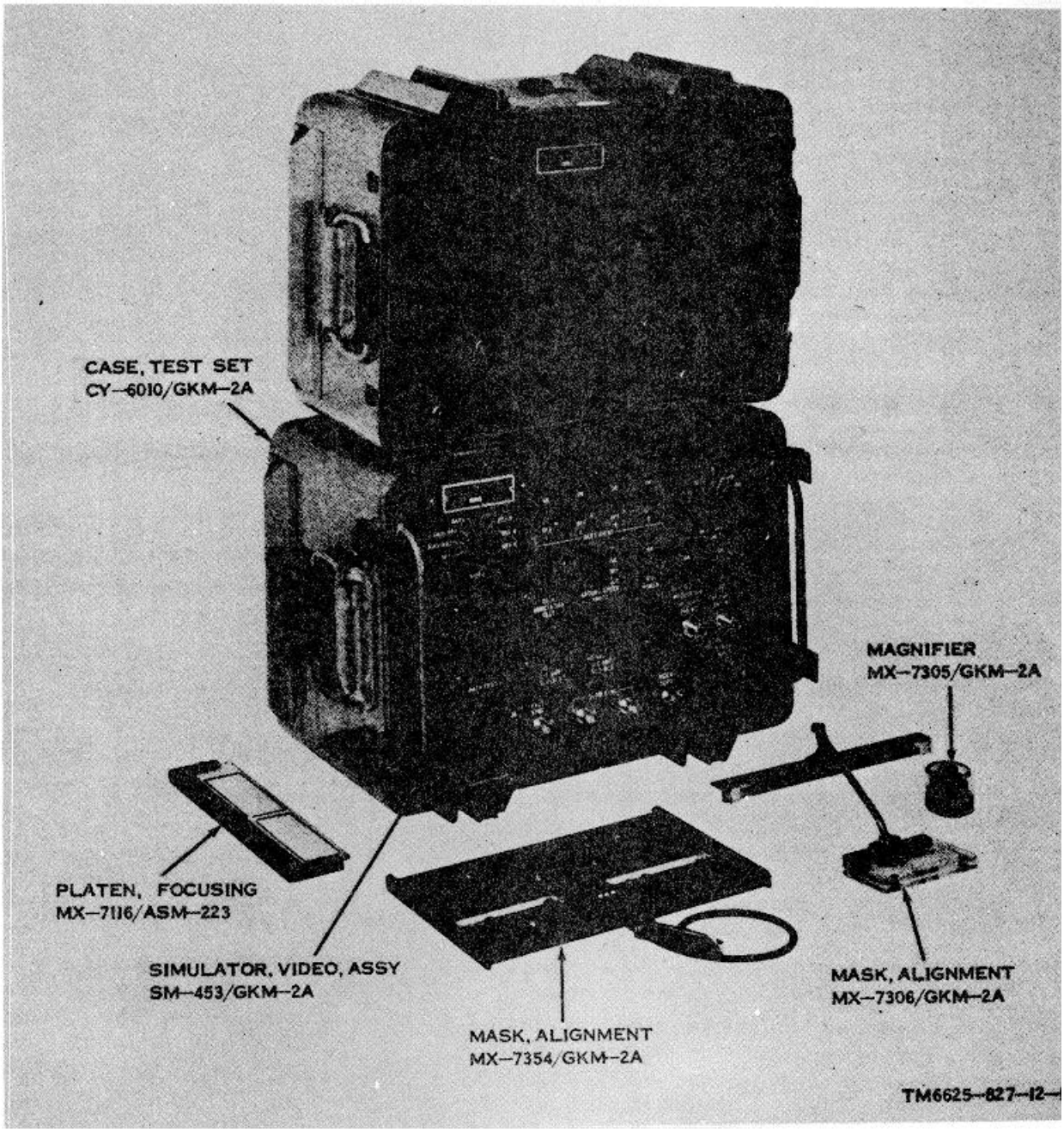

Figure 1-1. Test Set, Receiving Set, Radar Data AN/GKM-2A, less minor components and running spares.

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1-1. Scope

This manual describes Test Set, Receiving Set, Radar Data AN/GKM-2A (fig. 1-1) and provides instructions for installation, operation, operator and organizational maintenance, and demolition. It includes instructions for cleaning and inspection of the equipment and replacement of parts available to the operator and organizational repair technician. This manual applies equally to the AN/GKM-2B, except where indicated. Refer to appendix E for detailed differences.

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 4030.29AFR 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 5538/NAVSUPINST 4610./ AFR 76-18/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, New Jersey 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 direct to Commander, US Army Electronics Command, ATTN: DRSEL-MA-Q, Fort Monmouth, New Jersey 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, Receiving Set, Radar Data AN/GKM-2A provides a means for testing, aligning, and adjusting Receiving Sets, Radar Data AN/TKQ-1 and AN/TKQ-2. Simulator, Video, Assembly SM-453/GKM-2A generates signals to simulate those composite signals normally received by Receiving Sets, Radar Data AN/ TKQ-1 and AN/TKQ-2, thus permitting these equipments to be checked for operational accuracy. Mask, Alignment MX-7354/GKM-2A; Mask, Alignment MX-7306/GKM-2A; Platen, Focusing MX-7116/ASM-223; and Magnifier

MX-7305/GKM-2A provide means for accurately aligning or adjusting the video display components of Receiving Sets, Radar Data AN/TKQ-1 and AN/TKQ-2.

b. When the use, the SM-4531GKM-2A video simulator is connected to components of AN/ TKQ-1 or the AN/TKQ-2. The video simulator generates signals used to align components of the AN/TKQ-1 and AN/TKQ-2 as well as variable drift angle signals, groundspeed signals, data annotation signals (AN/TKQ-2 only), aircraft identification signals, and video signals normally received by the particular equipment under test. In response to these signals, the AN/TKQ-1 or the AN/TKQ-2 produces a test film that shows its performance characteristics. The test film enables the operator to determine any need for equipment adjustment or alignment. The video simulator also provides rf outputs that are used for confidence testing of the Receiver, Radio R-1335/G unit.

c. The MX-7354/GKM-2A alignment mask and the MX-7305/GKM-2A magnifier are used for adjusting the cathode-ray tube (crt) traces of Indicator, Radar Target IP-541/TKQ-1 or Indicator, Radar Target IP-795/TKQ-2. The MX-7306/GKM-2A accessory mask provides a means of adjusting the video display on the film used in Recorder-Processor-viewer, Radar Mapping RO-1661UP. It is also used for adjusting the travel speed of the film. The MX-7116/ASM-223 focusing platen provides a means of observing the RO-166/UP present position display (ppd) readout when the AN/TKQ-2 is being tested or aligned.

1-5. Technical Characteristics

a. Simulator, Video, Assembly, SM-453/GKM-2A.

Input voltage requirements...115 volts alternating current, 50-420 cycles per second.
Power consumption .....Approximately 40 watts.
Output signals:
(1) video signal .....A recurring video signal consisting of different combinations of the following:

(a) Groundspeed tone burst (sine wave):

Frequency.....14.5 kc.
Width.....2.5 ms (150 kn), 6,875 ms (225 kn), 11.25ms (300kn)
Amplitude .....13 volts pp.

(b) Drift angle tone burst (sine wave):

Frequency.....10.5 kc.
Width.....2.5 ms (-15°), 4 ms (-10°), 6,875 ms (0°), 9.75 ms (+10°), 11.25 ms (+15°).
Amplitude .....13 volts pp.

(c) Aircraft identification tone burst (sine wave):

Frequency.....1,125 cps.
Width.....6,875 ms.
Amplitude .....7 volts pp.

(d) Data annotation tone burst (sine wave):

Frequency .....8 kc.
Width.....1 ms.
Amplitude .....20 volts pp.

(e) Data annotation data word:

Pulses .....16-bit digital word.

(f) Bars signal (square wave):

Period.....8Ms.
Width.....4 ms.
Amplitude .....1 volt pp (1-volt baseline), 5 volts pp (-10-volt baseline).

(g) Video gate (pedestal):

Width.....52 ms.
Amplitude .....2.5 volts.
Baseline.....-10 volts.

(h) Sweep markers (pulses):

Amplitude .....5 volts.
(2) RF signals .....Frequency modulated (with a 1-kc square wave) or unmodulated frequency. 240 mc, 360 mc.
(3) Slow sync (square wave):
Amplitude .....10 volts.
Risetime .....27 isec (max).
Period.....277 ms (nominal).
(4) Fast sync:
Amplitude .....10 volts
Width.....1 ms.

b. Mask, Alignment MX-7306/GKM-2A.

Mask marks .....Target marks on mask windows provide a means of checking or adjusting angle and video display on the film and travel speed of the film in Recorder-Processor- Viewer, Radar Mapping RO166/UP.

c. Magnifier MX-7305/GKM-2A.

Magnification .....18 times.

d. Mask, Alignment MX-7354/GKM-2A.

Input voltage req.....10 vdc.
Power consumption .....2 watts.
Mask marks.....Markings on the mask provide a means of determining when the sweep length, horizontal and vertical position, and drift angle of the Indicator, Radar Target IP-795/TKQ2 or IP-541/TKQ1 crt traces are properly adjusted.

e. Platen, Focusing MX-7116/ASM-223. The framed plexiglass provides a means for observing the present position display (ppd) readout.

1-6. Dimensions and Weights of Test Set, Receiving Set, Radar Data AN/GKM-2A

The weights and dimensions of the major components are given below.

Qty	*Item*	*Dimensions (in.)*			*Unit Weight*	
		Height	*Depth*	*Width*	*(lb)*	*Fig. No.*
1	Simulator, Video, Assembly SM-453/GKM-2A.	10.88	11.25	16.88	25.00	1-2
1	Mask, Alignment MX-7354/ GKM-2A.	6.50	0.75	11.00	4.00	1-3
1	Magnifier MX-7305/GKM-2A.	1.32 (closed)		1.65 (dia)	1.00	1-4
1	Mask, Alignment MK-7306/ GKM-2A.	11.00	1.75	10.00	2.00	1-5
1	Platen, Focusing MX-7116/ ASM-223.	0.375	2.50	10.25	2.00	1-6
1	Case, Test Set CY-6010/GKM-2A.	18.75	13.56	19.62	28.50	1-2

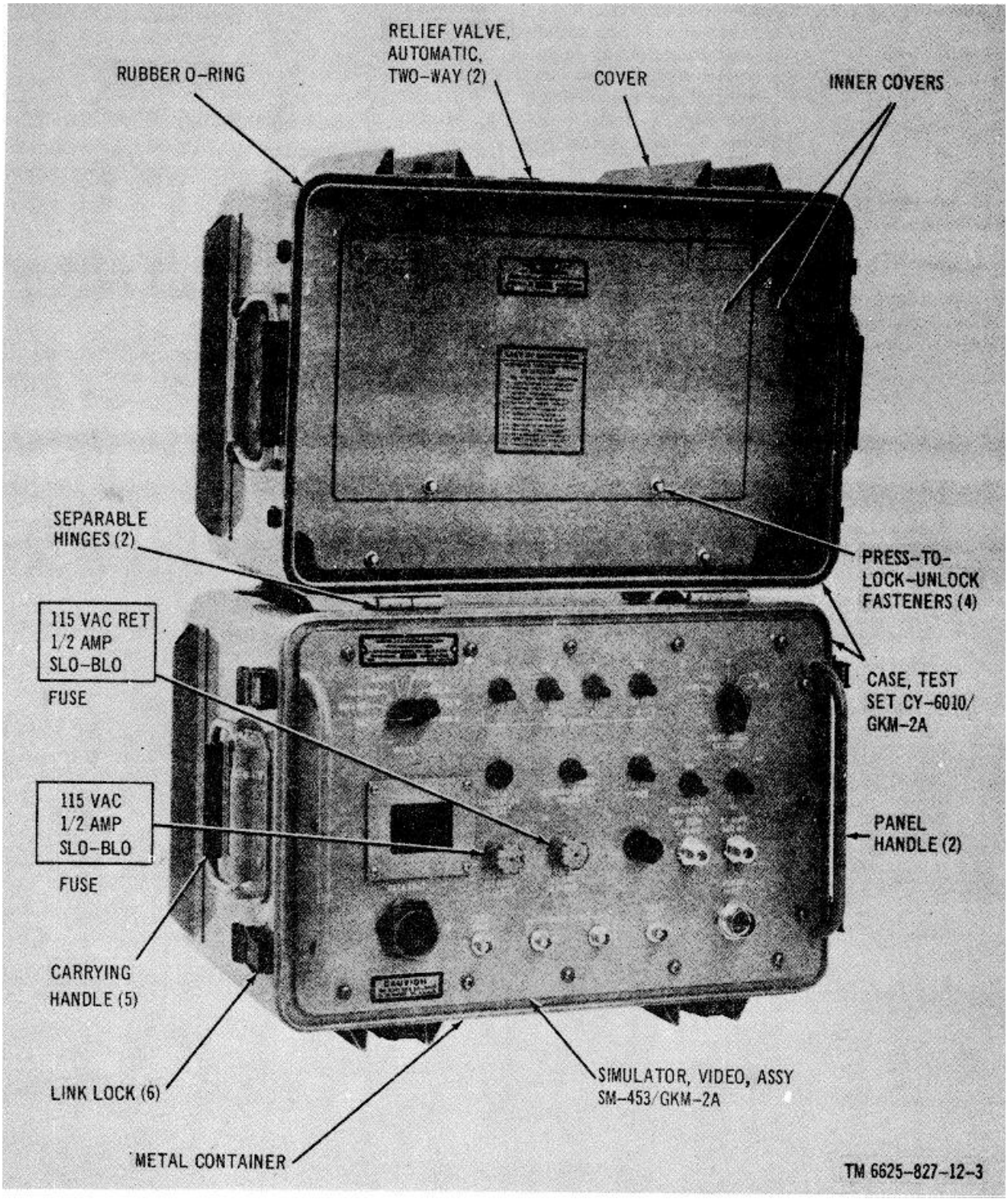

Figure 1-2. Simulator, Video, Assembly SM-453/GKM-2A and Case, Test Set CY-6010/GKM-2A.

1-6.1. Items Comprising an Operable Equipment

FSN	*Qty*	*Nomenclature, part No., and mfr code*	*Fig. No.*

NOTE

The part number is followed by the applicable 5-digit Federal supply code for manufacturers (FSCM) identified in SB 708-42 and used to identify manufacturer, distributor, or Government agency, etc.

6625-926-4393		Test Set, Receiving Set, Data AN/GKM-2A consisting of:	
5935-280-1454	1	Connector, Adapter UG914/U	1-7
6625-926-7834	1	Cable Assembly, Power, Electrical CX-11643/U (8 ft)(W1)	1-7
5995-820-4286	2	Cable Assembly, Radio Frequency CG-530C/U (6 ft)(W3, W4)	1-7
5995-926-8298	1	Cable Assembly, Radio Frequency CC-2625A/U (6 ft) (W5)	1-7
6625-906-3316	1	Cable Assembly, Special Purpose, Electrical CX-11644/U (4 ft)(W2)	1-7
6650-930-4707	1	Magnifier: MX-7305/GKM-2A	1-4
6625-950-1478	1	Mask, Alignment MX-7306/GKM-2A.....	1-5
6625-950-1480	1	Mask, Alignment MX-7354/GKM-2A-.....	1-3
6625-911-9980	1	Platen, Focusing MX-7116/ASM-223.....	1-6
6625-950-1481	1	Simulator, Video, Assembly SM-453/GKM-2A.....	1-2
6625-906-4342	1	Wiring Harness CX-11645/U (1 ft 3 in.)(W6).....	1-7

1-7. Description of Simulator, Video, Assembly SM 53/GKM-2A

(fig. 1-2)

The SM453/GKM-2A video simulator consists of a front panel and chassis assembly that is secured in Case, Test Set CY6010/GKM-2A by 16 screws. Two panel handles simplify handling of the unit during maintenance procedures. Two 250-volt, 12-ampere fuses are located on the front panel to provide overload protection in the 115-volt alternating current (ac) input line.

1-8. Description of Case, Test Set CY-6010/GKM-2A

(fig. 1-2)

Case, Test Set CY-6010.'GKM-2A consists of a metal container with a detachable cover. The cover is secured to the metal container by two separable hinges. A rubber 0ring provides a watertight, airtight seal between the cover and the metal container when the cover is fastened in the closed position by six link locks. Five carrying handles, two on each side and one on top, simplify handling of the case. One automatic two-way relief valve is located on the front of the cover and another is located on the metal container to provide a means of equalizing inside and outside atmospheric pressures. Two resilient-material-lined compartments located behind hinged inner covers provide storage space within the cover. Two press-to-lock-unlock fasteners secure each inner cover in the closed position. The MX-7354/GKM-2A alignment mask, the MX-7306/GKM-2A accessory mask, the MX- 7305, GKM-2A magnifier, and the MX-7116/ ASM-223 focusing platen are stored in the larger compartment. Cable assemblies W1 through W5, Connector, Adapter UG-914/U, running spares, and wiring harness W6 are stored in the smaller compartment.

1-9. Description of Mask, Alignment MX-7354/GKM-2A

(fig. 1-3)

Mask, Alignment MX-7354/GKM-2A consists of a rectangular plate containing two clear plastic windows, a power cord, and eight pilot lamps. Each of the clear plastic windows has six precisely located target (A through F). Each target has an outer ring, an inner ring, and a center hole. These patterns are used to determine when the crt traces of Indicator, Radar Target IP-541/ TKQ-1 or Indicator, Radar Target IP-795/ TKQ-2 are within the proper tolerance. One end of the power cord is permanently attached to the MX-7354/GKM-2A alignment mask, and the other end terminates in a cinch-type (DC 37PC-26) connector. This connector mates with connectors J5 or J6 of the IP-541/TKQ-1 or IP-795/TKQ-2, where power is obtained for the eight pilot lamps located on the alignment mask. Two mounting holes in the alignment mask mate with guide pins on the front of the IP-541/TKQ-1 or IP-795/TKQ-2 to assure correct positioning.

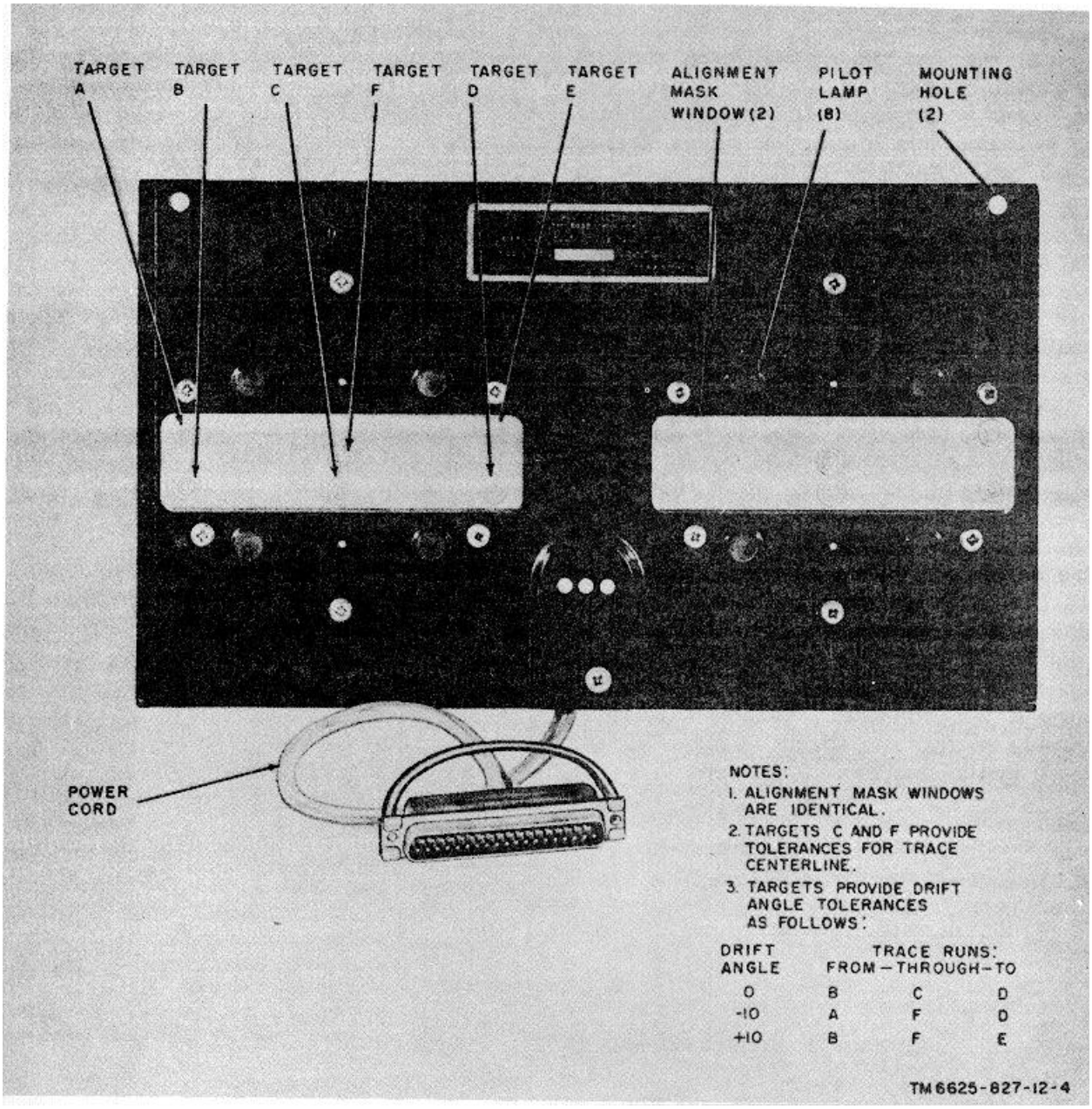

Figure 1-3. Mask, Alignment MX-7354/GKM-2A.

1-10. Description of Magnifier MX-7305/GKM-2A (fig. 1-4)

The MX-7305 GKM-2A magnifier is an adjustable eye loupe (magnifying glass). It provides a means of electrically focusing the traces on the IP-541/TKQ-1 or IP-795/TKQ 2 crt.

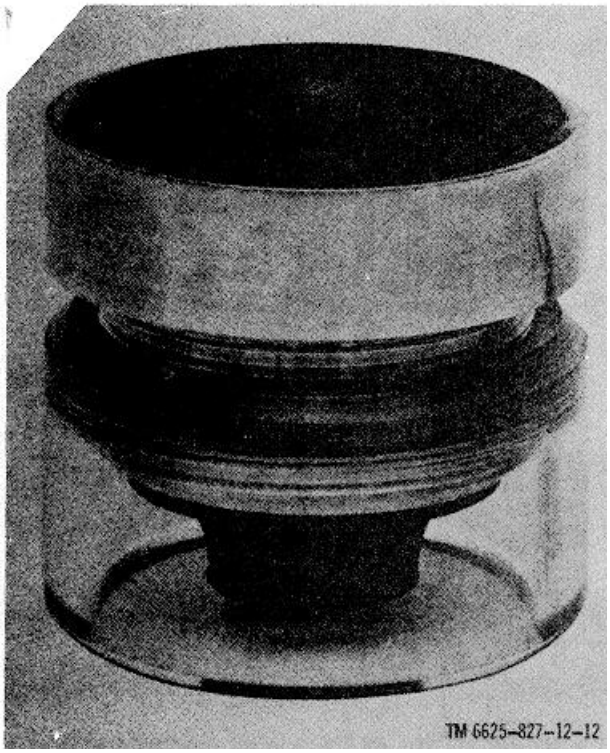

Figure 1-4. Magnifier MX-7305/GKM-2A.

1-11. Description of Mask, Alignment MX-7306/GKM-2A
(fig. 1-5)

Mask, Alignment MX-7306/GKM-2A consists of a mechanical support, a pivot arm, and a mask. One end of the pivot arm is attached to a swivel connector mounted in the center of the mechanical support. The mask is mounted on the other end of the pivot arm. Two spring clips located on the mechanical support are used for attaching the mask to the front of Recorder-Processor-Viewer, Radar Mapping RO-166/UP. When the MX-7306/ GKM-2A accessory mask is installed for operation, the mask can be moved over the entire face of the RO-166/UP by adjusting the pivot arm vertically and laterally. Markings on the mask enable the operator to determine when the video display on the film in the RO-166/UP and the film speed are properly adjusted.

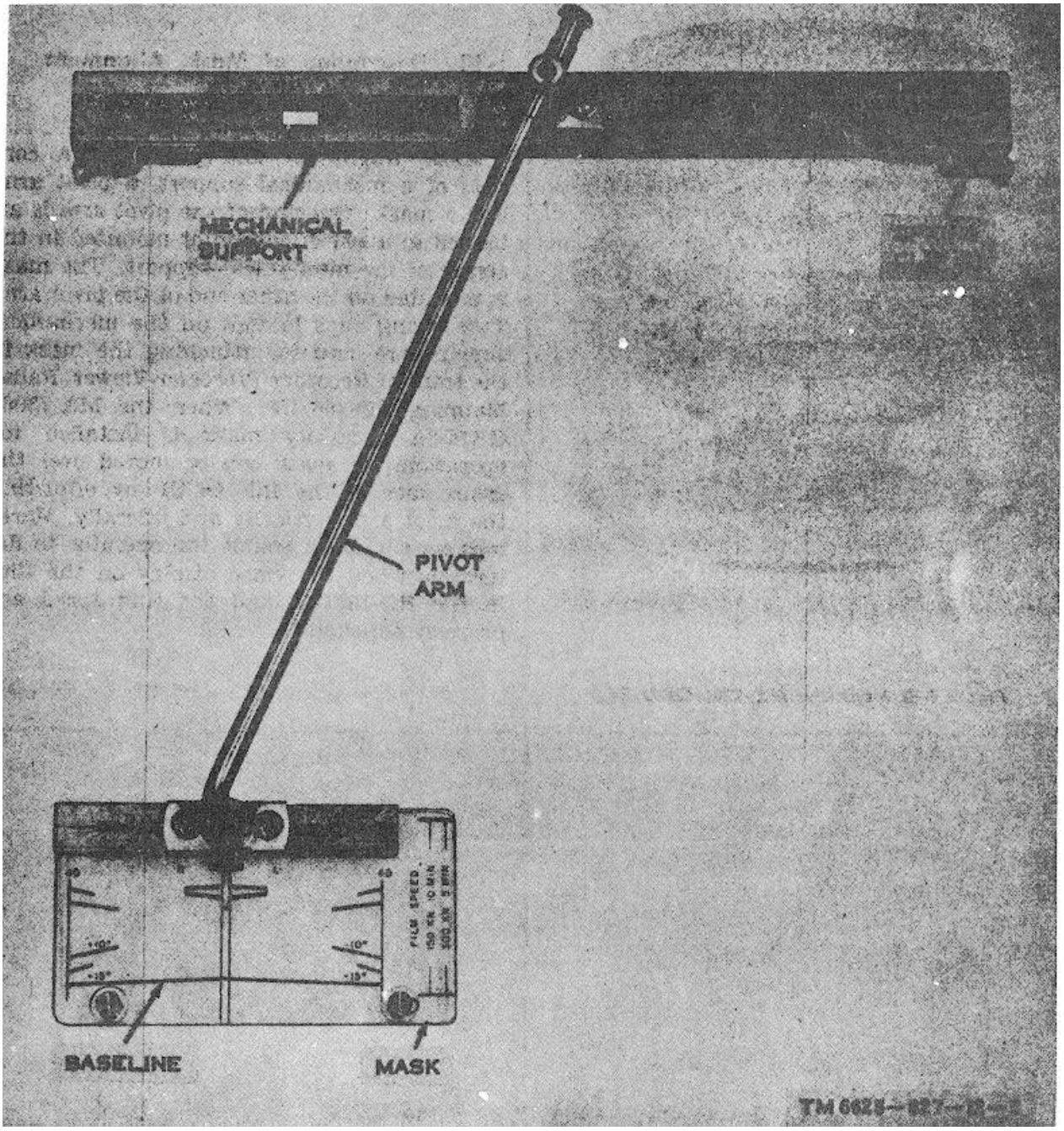

Figure 1-5. Mask, Alignment MX-7306/GKM-2A.

1-12. Description of Platen, Focusing MX-7116/ASM-223

(fig. 1-6)

The MX-7116/ASM-223 focusing platen is a rectangular piece of ground plexiglass mounted in a metal frame with three spring clips. It is used for observing the RO166/UP ppd readout when the AN/TKQ2 is being tested or aligned.

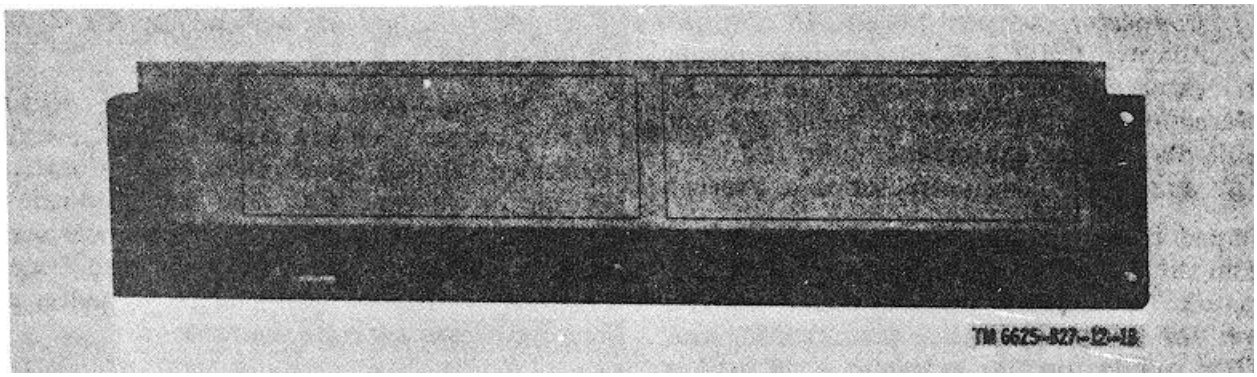

Figure 1-6. Platen, Focusing MX-7116/ASM-223.

1-13. Description of Minor Components

Minor components of the AN/GKM-2A test set are shown in figure 1-7. These components are described below.

a. Cable Assembly, Power, Electrical CX-11643/U (8 ft 0 in.) (W1). Cable assembly W1 is an 8-foot, three-conductor cable with a type MS91185-1 connector on one end (W1P2) and a type MS3137E-194S connector on the other end (WIP1). The cable is marked W1 OF AN/GKM-2A, MFR: 94990, PART NO. 30-22262G02 near the center. In addition, it is marked W1P1 (J1) near connector W1P1 and W1P2 (PRIMARY POWER) near connector W1P2. Cable W1 connects power to AN/GKM-2A POWER INPUT connector J1 from one of the shelter 115-volt ac outlets.

b. Cable Assembly, Special Purpose, Electrical CX-11644/U (4 ft 0 in. (W2). Cable assembly W2 is a 4-foot, 54-conductor cable with a type MS3116E-22-55S connector on one end (W2P2) and a type MS3116E-22-55P connector on the other end (W2P1) The cable is marked W2 OF AN/GKM-2A, MFR: 94990, PART NO. 30-21178G01 near the center. In addition, it is marked W2P1 (11J4) near connector W2P1 and W2P2 (J6GKM) near connector W2P2. Cable W2 connects data to AN/ GKM-2A DATA TEST connector J6 from Converter-Storer, Signal Data CV-2093/TKQ-2 connector J4.

c. Cable Assembly, Radio Frequency CG-530C/U (6 ft 0 in. (W3). Cable assembly W3 is a 6-foot length of Cable, Radio Frequency RG-62B/U with a Connector Plug, Electrical UG-260B/U on each end. The cable is marked W3P2 near one end (W3P2) and VIDEO OUPT near the other end (W3-P1) Cable W3 connects AN/GKM-2A VIDEO OUPT connector J2, through Connector, Adapter UG-914/U and cable 5W6, to connector 3J4 of Decoder, Video CV-918/TKQ1 or to the VIDEO IN connector (J2) of Converter-Storer, Signal Data CV-2093/TKQ2.

d. Cable Assembly, Radio Frequency CG-530C/U (6 ft 0 in. (W4). Cable assembly W4 is a 6-foot length of Cable, Radio Frequency RG62B/U with a Connector Plug, Electrical UG-260B/U on each end. The cable is marked SYNC near each end. Cable W4 connects AN/GKM-2A SLOW SYNC connector J3 or J4 to an external oscilloscope (not supplied) for test purposes.

e. Cable Assembly, Radio Frequency CG 2625A/U (6 ft 0 in. (W5). Cable assembly W5 is a 6-foot length of Cable, Radio Frequency RG-58C/U with a Connector Plug, Electrical UG-536B/U on each end. The cable is marked RF OUTPUT near one end and R-1335/G near the other end. Cable W5 connects AN/GKM-2A RF OUPT connector J7 or J8 to ANTENNA connector 9A1J2 of Receiver, Radio R-1335/G.

f. Connector, Adapter UG-914/U. Connector, Adapter UG-914/U is a radio frequency (rf) cable adapter connector. It is used for interconnecting AN/GKM-2A cable W3 and cable 5W6 of the equipment under test.

g. Extractor. The extractor is a tweezer-shaped tool for removing the micromodules from their sockets on the subassembly module boards. The interior of the tweezer end fits over the periphery of the micromodule can. When not in use, the extractor is secured in a clip-type holder located in the CY-6010/GKM-2A case.

h. Wiring Harness CX-11645/U (W6). Wiring harness W6 is a power supply module extender. It is a 20-conductor cable with a connector on each end. The wiring harness is used to electrically connect the power supply module to the SM-453/GKM-2A video simulator when the power supply module is removed from the video simulator.

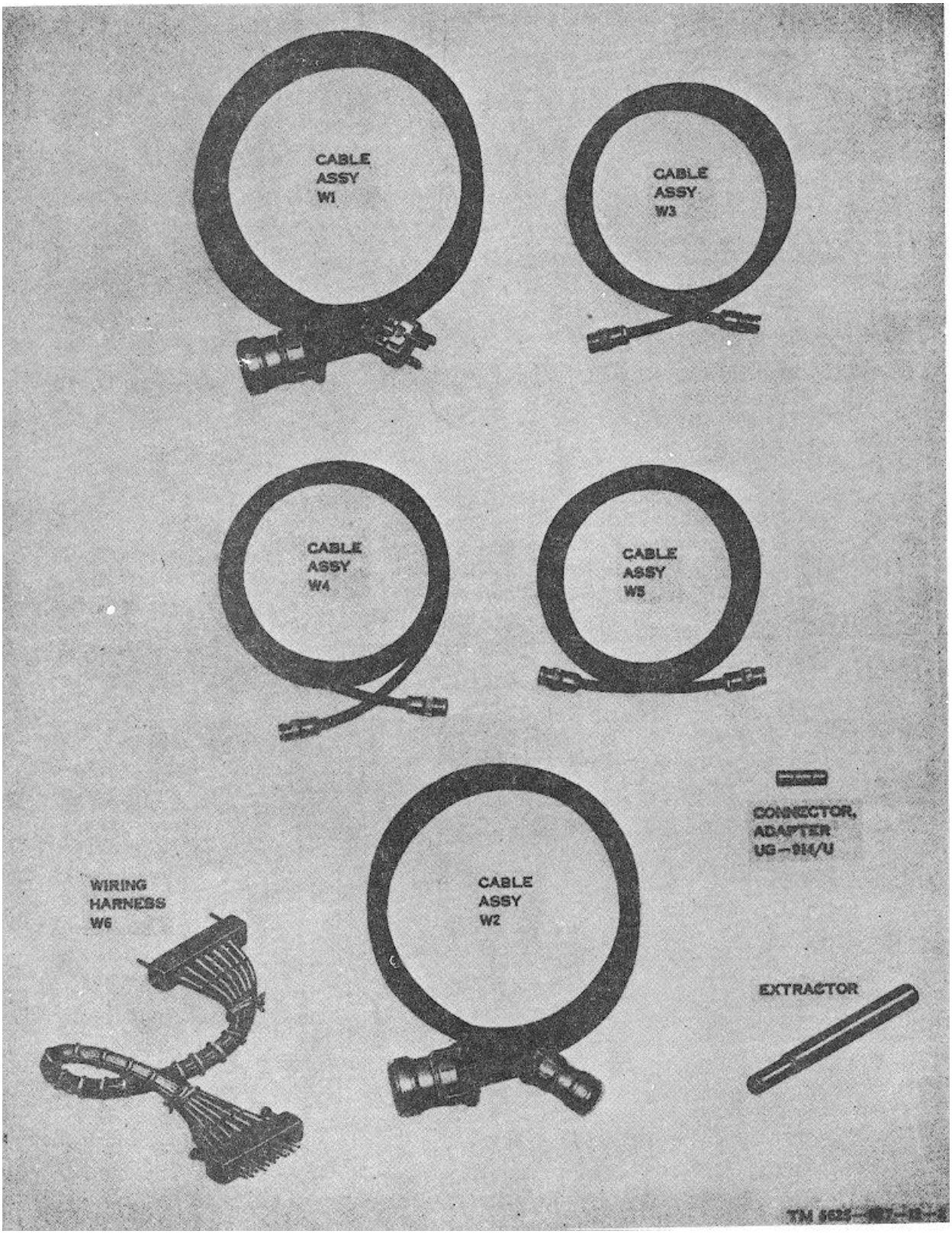

Figure 1-7. Test Set, Receiving Set, Radar Data AN/GKM-2A, minor components.

CHAPTER 2

INSTALLATION AND OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

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

a. Packaging Data. When packaged for shipment or limited storage, the AN/GKM- 2A test set is wrapped in wrapping paper and placed in a water-resistant fiberboard box. The sealed box is then placed in a shipping crate and packed with cushioning material. The inside of the shipping crate is approximately 27 inches high by 28 inches long by 22 inches wide and weighs an estimated 121 pounds including contents. The external volume of the shipping crate is approximately 11.8 cubic feet.

b. Removing Contents.

Caution: **Do not attempt to pry off the top and side of the shipping crate; equipment damage may result.**

(1) Remove the nails from the top and one side of the shipping crate with a nailpuller. Remove the top and side.

(2) Remove the top cushion and one side of the cushioning material.

(3) Carefully remove the fiberboard box, and place it on a flat, dry, clean surface.

(4) Open the fiberboard box and remove the wrapped AN,/GKM-2A test set.

(5) Remove the wrapping paper from around the AN GKM-2A..

Caution: **Before opening the cover on the case, depress the core of the cover relief valve (fig. 1-2) to insure that pressure has been equalized.**

(6) Unfasten the six link locks, and open the cover until it rests on the metal container.

(7) Press the press-to-lock-unlock fasteners to release the two hinged inner covers in the cover. Open both inner covers, and remove the contents.

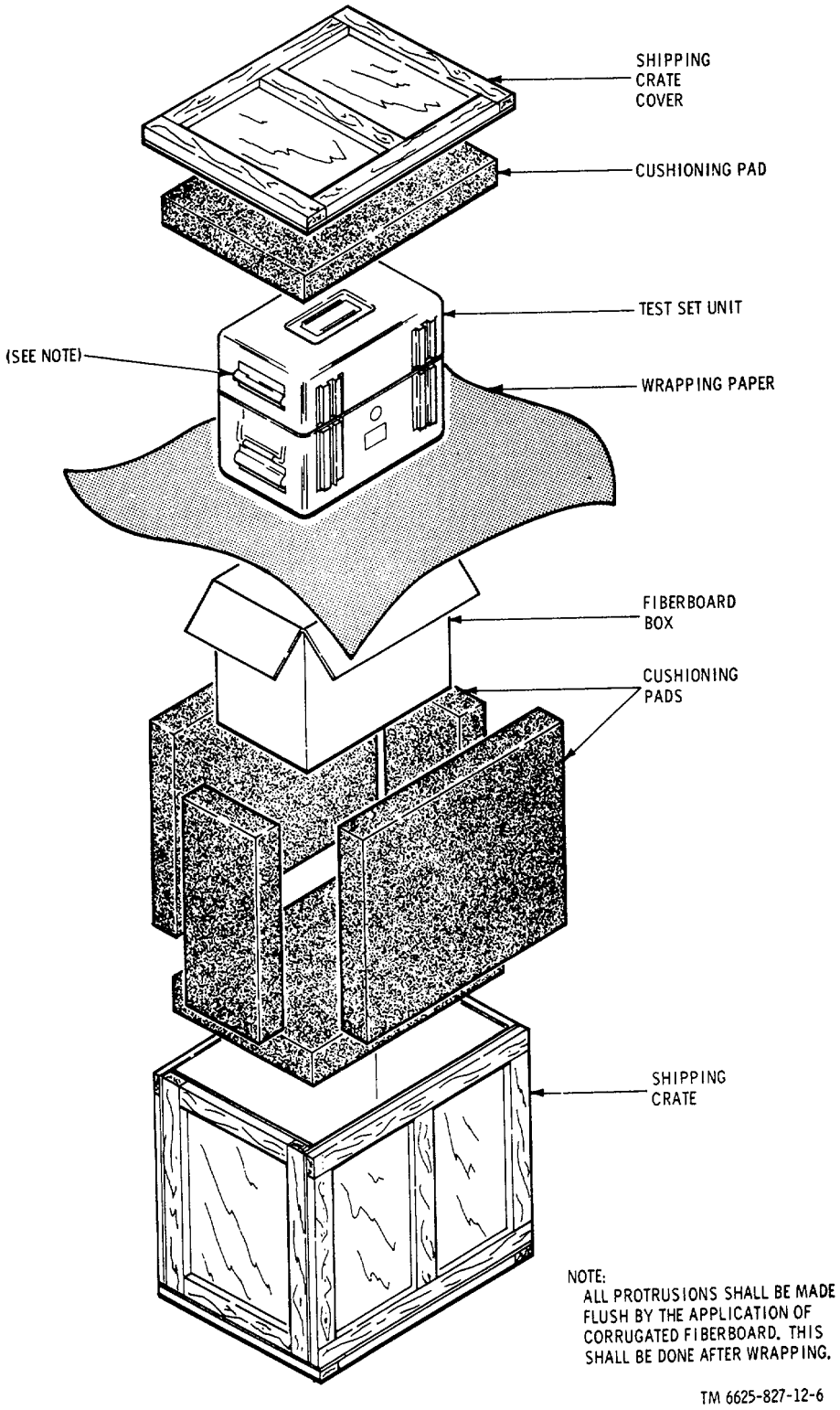

Figure 2-1. Packing of Test Set, Receiving Set, Radar Data AN/GKM-2A.

2-2. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 6 (para 1-3).

b. See that the equipment is complete as listed on the packing slip. If a packing slip is not available, check the equipment against the basic issue items list (app B). Report all discrepancies in accordance with TM 38-750. Shortage of a minor assembly or part that does not affect proper functioning of the equipment should not prevent use of the equipment.

c. 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 will appear on the front panel near the nomenclature plate. If modified, see that any operational instruction changes resulting from the modification have been entered in the equipment manual.

Note. **Current MWO's applicable to the equipment are listed in DA Pam 310-4.**

2-3. Installation of Fuses

Make sure that the proper fuses are inserted in the fuseholders on the front panel of the video simulator (fig. 1-2). The following chart lists the circuit locations and ratings of the fuses.

Caution: **Use only fuses of the correct value when replacing a fuse. Over-fusing can result in damage to the equipment.**

	Fuse		Location	
Reference symbol	Rating			
	Ampere	Volts	Circuit	Figure No.
F1	½ (SLO-BLO)	250	Ac input	1-2
F2	½ (SLO-BLO)	250	Ac return	1-2

Section II. OPERATOR'S CONTROLS AND INDICATORS

Note. **This section covers only those controls and indicators used by the operator. Controls used by maintenance personnel are covered in instructions for the appropriate maintenance category.**

2-4. Simulator, Video, Assembly SM-453/GKM-2A Controls and Indicators

(fig. 2-2)

Control, indicator, fuse or connector	Function
VIDEO switch ----------	Controls the video output signal at VIDEO OUPT connector J2. *Switch Position* — *Action* OFF — Excludes signals generated to assist in alignment of the IP-795/TKQ-2 target indicator crt sweep, gain, and bias from video signal output. Also excludes data annotation (present position) signals that check the operation of Converter-Storer, Signal Data CV-2093/TKQ-2. Remaining video output includes drift angle or groundspeed tone bursts.

Control, indicator, fuse or connector	Function	
	Switch Position	*Action*
	BIAS ADJ	Provides a recurring 52-ms pedestal (video gate) and sweep markers as part of video signal. One video gate and four sweep markers occur during each 69.25-millisecond (ms) timing cycle. These signals are used in adjusting the IP-795/TKQ-2 or IP-541/TKQ-1 radar target indicator crt, bias, sweep start, horizontal sweep gain, and sweep gate width.
	GAIN ADJ	Provides 4-ms bars (square wave) on a recuring 52-ms pedestal as part of video signal. The bars signal is used in adjusting the video gain in the IP-795/TKQ-2 or IP-541/TKQ-1 radar target indicator.
	BARS	Provides 4-ms bars for 52 ms as part of video signal.
	111S	Provides a 16-bit data word representing aircraft present position coordinate of 111 kilometers (km) south as part of the video signal. This signal is sent to Converter-Storer, Signal Data CV-2093/TKQ-2 where it is processed and displayed on the RO-166/UP or returned to the AN/GKM-2A to be visually monitored on the DATA TEST indicator.
	222N	Same as position 111S except represents coordinate 222 km north.
	555W	Same as position 111S except represents coordinate 555 km west.
	888N	Same as position 111S except represents coordinate 888 km north.
ACFT IDENT switch 1 (2-position toggle).	In the ON position, adds a 1125-cps, 6.875-ms wide aircraft identification tone burst to first groundspeed tone burst of video signal at VIDEO OUPT connector J2. The presence of this tone burst represents a binary weight of 1. This simulated aircraft identification signal is used in checking Decoder. Video KY-564/TKQ-2 or CV-918/TKQ-1.	
ACFT IDENT switch 2 (2-position toggle).	Same as ACFT IDENT switch 1 except adds aircraft identification tone burst to second groundspeed tone burst to represent a binary weight of 2.	
ACFT IDENT switch 4 (2-position toggle).	Same as ACFT IDENT switch 1 except adds aircraft identification tone burst to first drift angle tone burst to represent a binary weight of 4.	
ACFT IDENT switch 8 (2-position toggle).	Same as ACFT IDENT switch 1 except adds aircraft identification tone burst to second drift angle tone burst to represent a binary weight of 8.	

Control, indicator, fuse or connector	Function
DRIFT ANGLE DEGREES switch (5-position rotary).	Controls the width of the 10.5-kc drift angle tone bursts that are part of the composite video signal at VIDEO OUPT connector J2. *Switch Position* — *Width of tone burst in milliseconds (ms)* -15 — 2.5 -10 — 4 0 — 6.875 +10 — 9.75 +15 — 11.25
DATA ANNOTATION TEST switch (pushbutton).	When pressed, initiates a series o: data annotation tone bursts and 16-bit data words (the configuration of which is determined by setting of VIDEO switch) for checking Converter-Storer, Signal Data CV-2093/TKQ-2.
GROUND SPEED KNOTS switch (3-position toggle).	Controls the width of the 14.5-kc groundspeed tone bursts that are part of the composite video signal at VIDEO OUPT connector J2. *Switch Position* — *Width of tone burst in milliseconds (ms)* 150 — 2.5 225 — 6.875 300 — 11.25
POWER switch (2-position toggle).	In ON position, applies power to the SM-453/GKM-2A video simulator. In OFF position, removes power.
MODULATION switch (2-position toggle).	In ON position, fm-modulates outputs of RF OUPT 360 MC connector J7 and RF OUPT 240 MC connector J8 with 1,000-cps square wave. In OFF position, causes outputs of connectors J7 and J8 to be continuous wave (cw) signals.
RF switch (2-position toggle).	In ON position, provides 240-mc and 360-mc rf signals at connectors J8 and J7 for confidence testing Receiver, Radio R-1335/G. In OFF position, no signals are provided at connectors J7 and J8.
DATA TEST indicator----------	Provides visual display of data word processed by Converter-Storer, Signal Data CV-2093/TKQ-2.
115 VAC- and 115 VAC RET-1/2 AMP SLO-BLO fuses.	Function as power line fuses. Protect the SM-453/GKM-2A video simulator from damage caused by line surges, application of incorrect voltage, or internal short circuit due to part malfunction.
Pilot lamp ----------	Lights when POWER switch is set to ON.
Pilot lamp DIM control (adjustable lens).	Dims pilot lamp when turned CW.
RF OUPT 240 MC connector J8.	Provides 240-mc rf signal, simulating the rf input to Receiver, Radio R-1335/G that is normally obtained from the aircraft via antenna reception.

Control, Indicator, fuse or connector	Function
RF OUPT 360 MC connector J7.	Provides 360-mc rf signal, simulating the rf input to Receiver, Radio R-1335/G that is normally obtained from the aircraft via antenna reception.
DATA TEST connector J6	Receives processed data word from Converter-Storer, Signal Data CV-2093/TKQ-2 for presentation on DATA TEST indicator.
FAST SYNC connector J5	Provides synchronizing signal for external test equipment.
SLOW SYNC connectors J3 and J4	Provides synchronizing signal for external test equipment.
VIDEO OUPT connector J2	Provides composite video signals having precise frequencies, levels, durations, and sequences that simulate the video signal normally produced by Receiver, Radio R-1335/G.
POWER INPUT connector J1	Connects 115-volt ac power from external source to the SM-453/ GKM-2A video simulator.

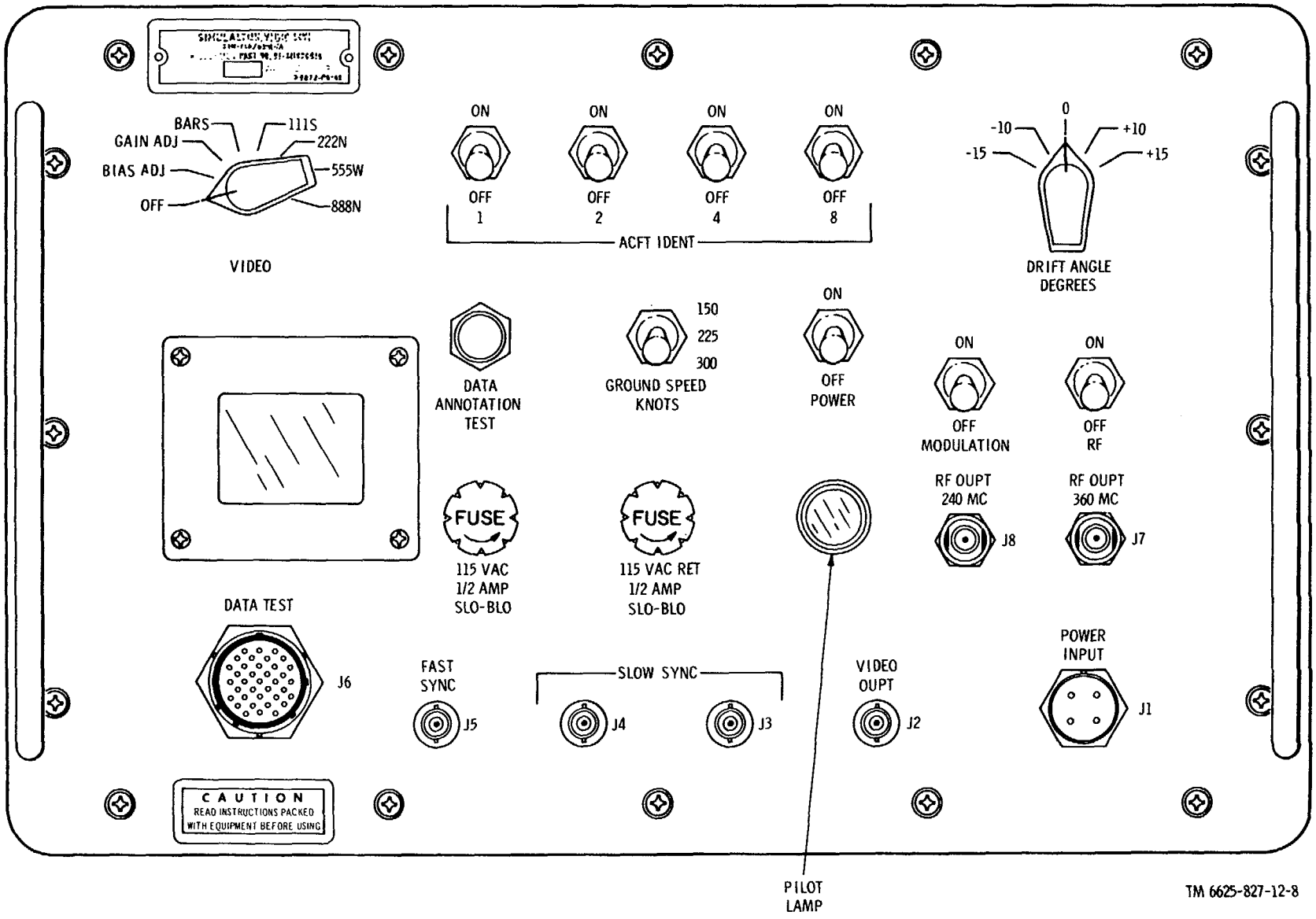

Figure 2-2. Simulator, Video, Assembly SM-453/GKM-2A, operating controls and indicators.

2-5. Mask, Alignment MX-7354/GKM-2A Indicators

(fig. 2-3)

Indicator	Function
Targets A through F	Targets A through F on each alignment mask window provide tolerances for use in adjusting the IP-541/TKQ-1 and IP-795/TKQ-2 crt traces.
Pilot lamps (8)	Illuminate the alignment mask panel when the power cord is plugged into connector J5 or J8 of the IP-541/TKQ-1 or IP-795/TKQ-2 and power is applied.

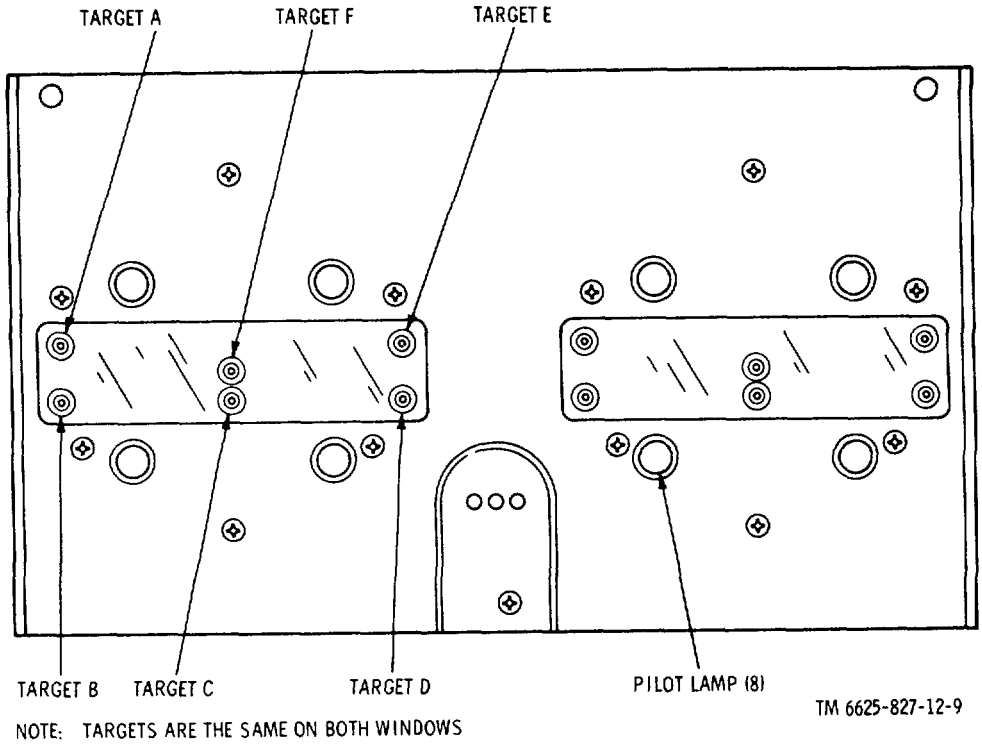

Figure 2-3. Mask, Alignment MX-7354/GKM-2A, indicators.

2-6. Mask, Alignment MX-7306/GKM-2A Controls and Indicators

(fig. 2-4)

Control or indicator	Function
Mask markings	Provide a means of adjusting the video display on the film used in Recorder-Processor-Viewer, Radar Mapping RO-166/UP and of adjusting the film speed.
Pivot arm	Positions the mask over the face of the RO-166/UP.

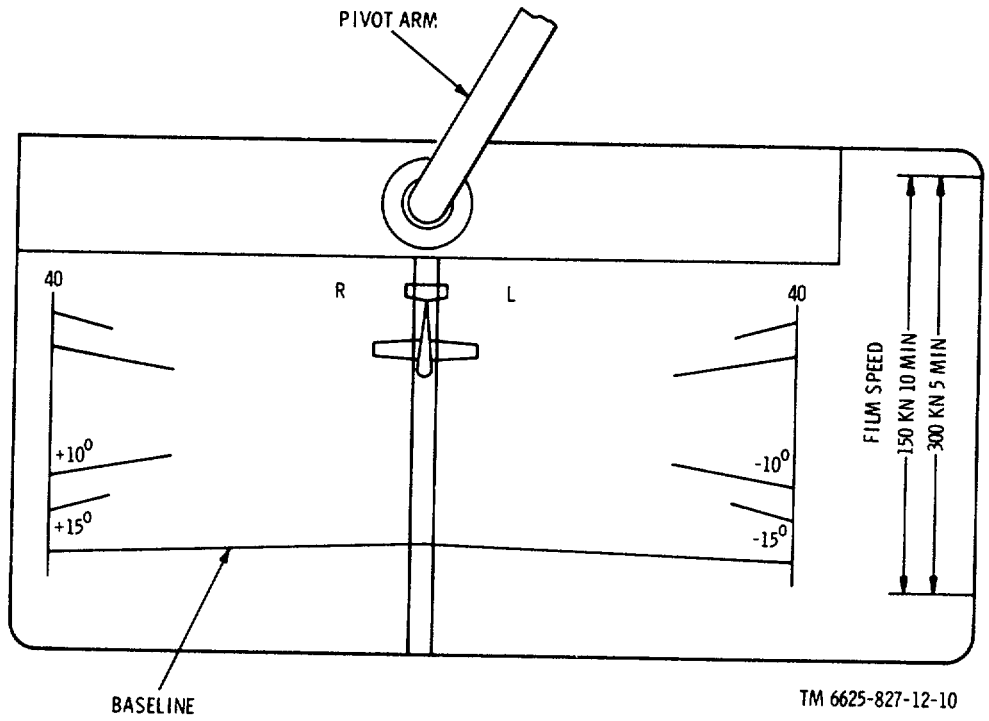

Figure 2-4. Mask, Alignment MX-7306/GKM-2A, controls and indicators.

Section III. OPERATION UNDER USUAL CONDITIONS

2-7. Starting Procedure

(fig. 2-5)

a. Preliminary. Set the video simulator front panel controls as follows:

Control	Position
VIDEO	OFF
ACFT IDENT (4 switches)	OFF
DRIFT ANGLE DEGREES	0
GROUND SPEED KNOTS	225
POWER	OFF
MODULATION	OFF
RF	OFF

b. Starting. The following procedure applies to both an AN TKQ-1 and an AN/TKQ-2 radar data receiving set. Unless otherwise stated, instructions apply to both. See figure 2-5 for a typical test setup.

(1) Connect cable W1 between SM-453/GKM-2A video simulator POWER INPUT connector J1 and a 115-volt shelter outlet.

Note. **If it is desired to observe the present position information on the AN/GKM-2A DATA TEST indicator, perform the procedures given in (2) and (3) below; if not, proceed to (4) below.**

(2) If the system under test is an AN/TKQ-2, disconnect cable 5W23 from Converter-Storer, Signal Data CV-2093 TKQ-2 connector J4.

(3) If the system under test is an AN/TKQ-2, connect cable W2 between video simulator DATA TEST connector J6 and Converter-Storer, Signal Data CV-2093/TKQ-2 connector J4.

(4) Disconnect cable 5W6 from Receiver, Radio R-1335/G VIDEO connector 9A2J3.

(5) Connect cable 5W6 to Connector, Adapter UG-914/U.

(6) Connect cable W3 between the video simulator VIDEO OUPT connector J2 and Connector, Adapter UG-914/U.

(7) As necessary, connect cable W4 between the video simulator SLOW SYNC connector J3 or J4 and test oscilloscope (not supplied with test set) to provide synchronization.

(8) Disconnect cable 5W8 (AN/TKQ-1) or cable 5W9 (AN/TKQ-2) from Receiver, Radio R-1335/G ANTENNA connector 9A1J2.

(9) Connect cable W5 between video simulator RF OUPT 240 MC connector J8 or RF OUPT 360 MC connector J7 and Receiver, Radio R-1335/G ANTENNA connector 9A1J2.

(10) Set the video simulator POWER switch to ON.

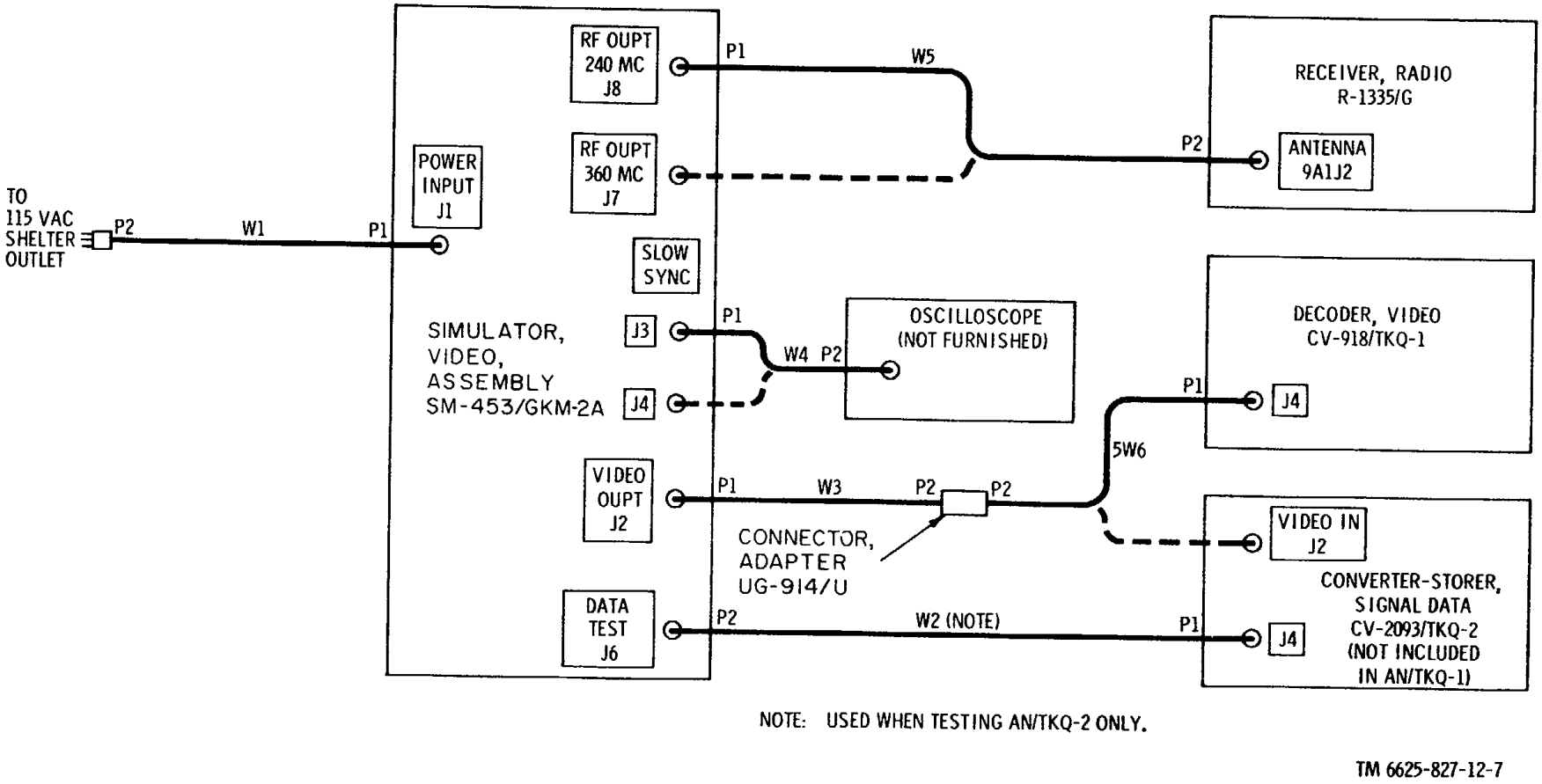

Figure 2-5. Typical test setup.

2-8. Operating Procedure

The AN/GKM-2A test set is used to test and align Receiving Sets, Radar Data AN/TKQ-2 and AN/TKQ-1. Technical manual TM 11-5840-294-12 and -35 on the AN/TKQ-2, and TM 11-5840-262-12 and -35 on the AN/TKQ-1 contain necessary procedures for installing and operating the AN/GKM-2A test set.

CHAPTER 3

MAINTENANCE

3-1. Scope of Maintenance

The maintenance duties are listed below together with a reference to the paragraphs covering the specific maintenance function.

a. Daily preventive maintenance checks and services (para 3-5).

b. Weekly preventive maintenance checks and services (para 3-6).

c. Quarterly preventive maintenance checks and services (para 3-7).

d. Cleaning (para 3-8).

e. Touchup painting (para 3-9).

f. Troubleshooting (para 3-11).

g. Repairs and adjustments.

(1) Replacement of fuses (para 3-13d).

(2) Replacement of lamps (para 3-13a, b, c).

(3) Replacement of cable connectors (para 3-13e).

3-2. Special Tools and Equipment Required for Maintenance

a. No special tools are required by the operator or organizational repairman.

b. The only test equipment required is Multitester AN/USM-210. It is used to check for a defective cable assembly.

3-3. Preventive Maintenance

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

a. Systematic Care. The procedures given in paragraphs 3-4 through 3-9 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 service charts (paras 3-5, 3-6, and 3-7) outline functions to be performed at specific intervals. These checks and services are to maintain Army electronic equipment in a combat serviceable condition; that is, in good general (physical) condition and in good operation condition. To assist in maintaining combat serviceability, the charts indicate what to check, how to check, and what the normal conditions are. The References column lists the paragraphs or manuals that contain detailed repair or replacement procedures. If the defect cannot be remedied by performing the corrective action indicated, higher category maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38-750.

3-4. Preventive Maintenance Checks and Services Periods

a. Preventive maintenance checks and services of the AN/GKM-2A test set are required daily, weekly, and quarterly. Paragraph 3-5 specifies checks and services that must be accomplished daily. A troubleshooting chart (para 3-12). includes checks and corrective measures to be performed when a malfunction is detected while performing the operational checks in the daily preventive maintenance checks and services chart.

b. Paragraphs 3-6 and 3-7 specify additional checks and services that must be performed on a weekly and quarterly basis, respectively.

3-5. Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Completeness	See that the equipment is complete.	Appx B.
2	Cleanliness	See that all exterior surfaces and the front panel of the video simulator are clean and dry and free of dust, dirt, grease and fungus.	Para 3-8.
3	Connectors	Check the tightness of all connectors.	
4	Present position display(DATA TEST) indicator; pilot lamp lens; Platen, Focusing MX-7116/ASM-223; Mask, Alignment MX-7354/GKM-2A; and Mask, Alignment MX-7306/GKM-2A.	Check all glass and plastic window surfaces for cracks or discoloration.	
5	Controls	During operation, check to see that the mechanical action of each knob and switch is smooth and free of external or internal binding, and no excessive looseness is apparent.	
6	Preliminary	Set the SM-453/GKM-2A video simulator POWER switch to OFF, and DIM control (adjustable lens) on pilot lamp fully ccw.	
7	Preliminary	Connect cable W1 (connector to POWER INPUT connector J1 on the SM-453/GKM-2A video simulator, and connect connector P2 of cable W1 to a source of 115 volts, 50 to 420 cps.	
8	MX-7354/GKM-2A alignment mask pilot lamps.	Connect alignment mask power cord connector to J5 or J6 of target indicator (IP-795/TKQ-2 or IP-541/TKQ-1). Note that all eight alignment mask pilot lamps light when target indicator is on.	Para 3-12.
9	SM-453/GKM-2A video simulator POWER switch.	Set to ON. Note that pilot lamp lights.	Para 3-12.
10	Pilot lamp DIM control(adjustable lens).	Turn fully cw. Note that pilot lamp dims.	Para 3-12.

3-6. Weekly Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Cables----------	Inspect cable connectors for corrosion, bent pins, or thread damage. Repair or replace as necessary. Inspect all cables for cracks, cuts, or badly chafed areas on cable jacketing.	Para 3-13e.
2	Handles and latches.	Inspect handles, latches, hinges, and other exterior items for looseness. Tighten as necessary.	
3	Metal surfaces----------	Inspect exposed metal surfaces for corrosion. Clean and touchup paint as required.	Para 3-9.

3-7. Quarterly Preventive Maintenance Checks and Services Chart

Sequence No.	Item to be inspected	Procedure	References
1	Publications----------	See that all publications are complete, serviceable, and current.	DA Pam 310-4.
2	Modifications ----------	Check DA Pam 310-4 to determine if new applicable MWO's have been published. All urgent MWO's must be applied immediately. All normal MWO's must be scheduled.	TM 38-750 and DA Pam 310-4.
3	Spare parts----------	Check all spare parts (operator and organizational) for general condition and method of storage. No overstock should be evident and all shortages must be on valid requisitions.	App B and TM 11-6625-827-25P.
4	Interior components----------	a. Inspect interior components for evidence of overheating, arcing, leakage, and other deterioration. Clean as necessary. b. Inspect for loose parts and connections.	Para 3-8.

3-8. Cleaning

Inspect the exterior surface of each unit of the AN/GKM-2A test set. The exterior surfaces should be clean, free of dirt, grease, and fungus.

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

Warning: THE FUMES OF TRICHLOROETHANE ARE TOXIC PROVIDE THOROUGH VENTILATION WHENEVER USED. DO NOT USE NESR AN OPEN FLAME. TRICHLOROETHANE IS NOT FLAMABLE, 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

surfaces other than the panel fronts with a cloth dampened (not wet) with trichloroethane. Wipe parts dry with a clean cloth.

c. Remove dirt from plugs and jacks with a brush.

d. Clean the panel fronts, indicators, and control knobs with a soft, clean cloth. If dirt is difficult to remove, dampen the cloth with water. Use a mild soap if necessary.

3-9. Touchup Painting Instructions

Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Refer to the applicable cleaning and refinishing practices specified in TB SIG 364.

3-10. Lubrication

No lubrication of the AN/GKM-2A is required.

3-11. General Troubleshooting Information

The troubleshooting chart (para 3-12) supplements the operational checks (sequence No. 6 through 10) contained in the daily preventive maintenance checks and services chart. To troubleshoot the equipment, perform all functions starting with sequence number 6 in the daily preventive maintenance checks and services chart (para 3-5) and proceed through the functions until an abnormal condition or result is observed. When an abnormal condition or result is observed, note the apparent trouble symptom and turn to the corresponding trouble symptom in the troubleshooting chart (para 3-12). Perform the checks and corrective actions indicated in the troubleshooting chart. If the corrective measures indicated do not result in correction of the trouble, higher category maintenance is required. Paragraphs 2-3 and 3-13 (referenced in the chart) contain additional information and step-by-step instructions to be used during the troubleshooting procedures.

3-12. Troubleshooting Chart

Item No.	Symptom	Probable trouble	Checks and corrective measures
1	An MX-7354/GKM-2A alignment mask pilot lamp does not light when power is applied.	Defective pilot lamp (MS25236-8623).	Replace defective pilot lamp (para 3-13).
2	SM-453/GKM-2A video simulator pilot lamp does not light when power switch is set to ON.	a. Power cable W1 loose.	a. Tighten power cable connection
		b. Power cable W1 defective.	b. Inspect and make continuity check.
		c. Defective power line fuses F1 or F2.	c. Replace defective fuse (para 2-3).
		d. Defective pilot lamp (MS15571-2).	d. Replace defective pilot lamp (para 3-13).
3	Pilot lamp does not dim when adjustable lens is turned cw.	Defective pilot lamp assembly lens.	Replace lens.

3-13. Repairs

a. Replacement of Simulator, Video Assembly SM-453/GKM-2A Pilot Lamp.

(1) Remove the pilot lamp (fig. 2-2) lens by turning it counterclockwise.

(2) The bulb is now loose.

Note. **The lens cap is the only retaining force on the bulb.**

(3) Pull the defective lamp out, put the new lamp (MS15571-2) in, and replace the lens.

b. Replacement of Simulator, Video, Assembly SM-453/GKM-2A DATA TEST Indicator lamps.

(1) Remove the four screws and washers securing the bezel and filter to the panel (fig. 3-1).

(2) Carefuly dislodge the shielded window from its recess by exerting pressure at the upper or lower window edge with fingernails.

Caution: **Be careful to avoid scratching or marring the anodized surfaces of insulators. The SM453/GKM-2A video simulator must be referred to a higher category of maintenance for replacement of these insulators if they should be scratched or marred.**

(3) Remove the two socket head screws securing the lamp housing assembly to the video simulator, and carefully withdraw the lamp housing assembly with its attached grommets, lamps, and lamp retainer.

(4) Place the lamp housing assembly on a bench, frontside down, and remove the two grommets securing the lamp retainer.

(5) Remove the lamp retainer, and withdraw the defective lamp from the lamp housing assembly.

(6) Place a new lamp, Dwg No. SM-B-567899, into the lamp housing assembly.

(7) Place the lamp retainer on the lamp housing assembly, making sure that the center terminal at the rear of each lamp protrudes through a hole in the lamp retainer.

(8) Secure the lamp retainer to the lamp housing assembly with two grommets.

(9) Carefully install the lamp housing assembly, grommets, lamps, and lamp retainer into the recess in the video simulator.

(10) Secure the lamp housing assembly to the video simulator with the two socket head screws.

(11) Install the shielded window into its recess in the video simulator.

(12) Secure the bezel and filter to the panel with the four remaining screws and washers.

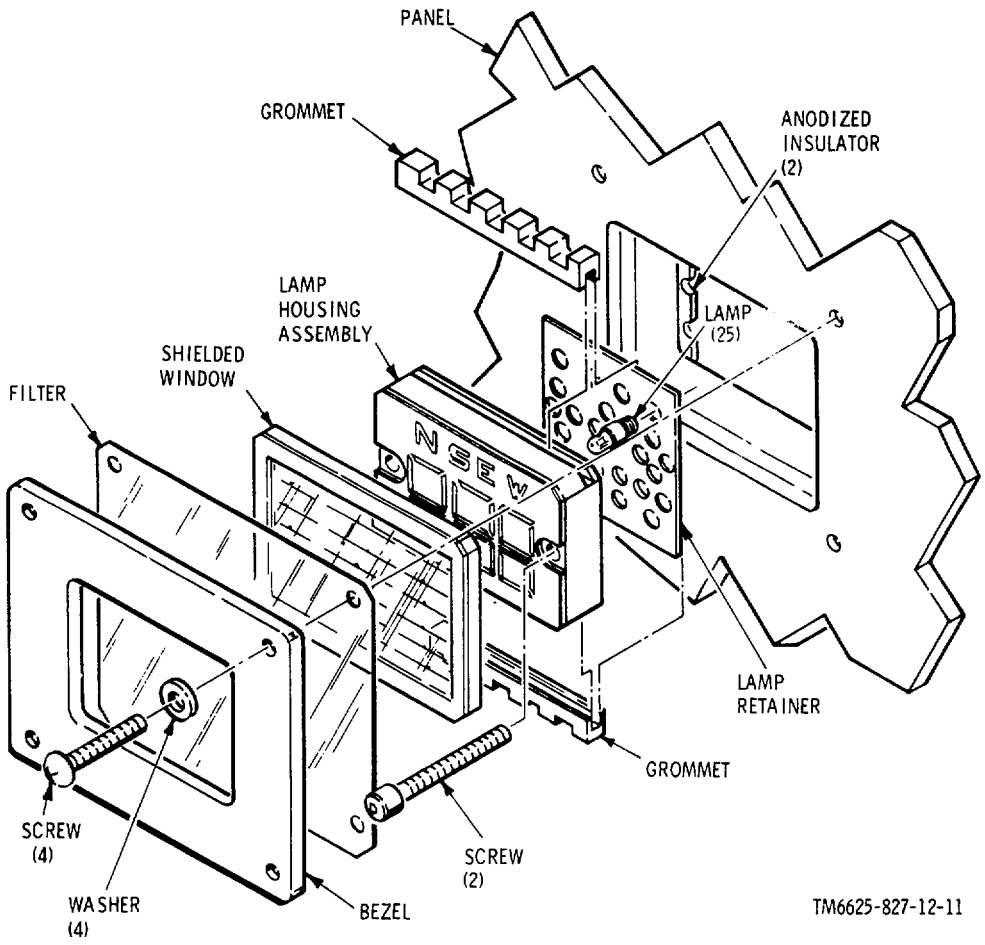

Figure 3-1. DATA TEST indicator lamp replacement.

c. Replacement of Mask, Alignment MX-7354/GKM-2A Pilot Lamps.

(1) Remove the defective pilot lamp (fig. 2-3) by turning the base of the lamp counterclockwise. The base and lamp are packaged together in an unseparable assembly and are replaced as a unit.

(2) Install the new pilot lamp (MS25236-8623) by turning clockwise.

d. Replacement of Fuses. Refer to paragraph 2-3 for fuse replacement information.

e. Replacement of Connectors on Coaxial Cable Assemblies. The organizational repairman may replace the UG-260B/U BNC-series connectors on cable assemblies W3 and W4 and the UG-536B/U N-series connectors on cable assembly W5. For information on replacement of these connectors, refer to TM 11-530.

CHAPTER 4
SHIPMENT, LIMITED STORAGE, AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

4-1. Disassembly of Equipment

Prepare units of the AN/GKM-2A test set for shipment and limited storage as follows:

a. Disconnect the test cables, coil them as illustrated in figure 1-7, and tie them with cotton twine.

b. Place test cable assemblies W1 through W5, Connector, Adapter UG-914/U, running spares, and wiring harness W6 in the small compartment in the cover of the case for the SM-453/GKM-2A (fig. 1-2). Place the MX-7354 GKM-2A alignment mask, the MX-7306/ GKM-2A accessory mask, the MX-7305/GKM-2A magnifier, and the MX-7116/ASM-23 focusing plated in the large compartment. Place the technical manual in the container on the rear of the small compartment.

c. Use dry, soft packing material to fill all voids and dampen any vibration.

d. Secure the inner covers by depressing the press-to-lack-unlock fasteners.

e. Close and secure the case cover by fastening the six link locks.

4-2. Repackaging for Shipment or Limited Storage

The exact procedure for repackaging depends on the material available and the conditions under which the equipment is to be shipped or stored. Adapt the procedures outlined below whenever circumstances permit. The information concerning the original packaging (para 2-1) will also be helpful.

a. Material Requirements. The following materials are required for packaging the AN/GKM-2A test set. For stock numbers of materials, refer to SM 38-100.

Material	Quantity
Cushioning material, bound fiber(Specification MIL-C-7769), 4-inch thickness	20 square feet
Box, fiberboard (Specification PPP-B-636) 19-3/4 by 13-1/2 18-3/4 inches (inside dimensions).by	1
Box, wood veneer, paper overlaid(Specification PPP-B-576) 28 by21-3/4 by 26-3/4 inches (inside dimensions).	1
Paper, wrapping, laminated and creped (Specification MIL-B-130A) 70 by36 inches.	18 square feet
Tape (Specification PPP-T-76), 2 inches wide.	70 inches long

b. Packaging. Package the AN/GKM-2A test set as outlined below. Refer to figure 2-1.

(1) Wrap the AN/GKM-2A test set with wrapping paper, and secure it with 2-inch tape. Fill in flush between protrusions with corrugated fiberboard after wrapping.
(2) Place the wrapped test set into the fiberboard box, and tape the lids closed.
(3) Place the bottom cushioning pad into the shipping crate (wooden box), and place the side and two end cushioning pads into the wooden box as illustrated in figure 2-1.
(4) Place the fiberboard box into the cushioned wooden box.
(5) Place the remaining side and top cushioning pads into the wooden box.
(6) Secure the wooden box top to the wooden box.

Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

4-3. Authority for Demolition

The demolition procedures given in paragraph 4-4 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.

4-4. Methods of Destruction

The tactical situation and time available will determine the method to be used when destruction of equipment is ordered. In most cases, it is preferable to demolish completely some portions of the equipment rather than to partially destroy all the equipment units.

a. Smash. Use sledges, axes, hammers, crowbars, and any other heavy tools to smash the equipment.

(1) Remove the cover and empty its contents. Use the heaviest tool on hand to smash the connectors, knobs, and DATA TEST indicator on the SM-453/GKM-2A video simulator front panel. Smash the masks, magnifier, platen, cable connectors, case cover, and spare parts.
(2) Remove the SM-453/GKM-2A video simulator unit from its case. With the heaviest tool on hand, smash as much of the circuitry as possible. Smash the case.

b. Cut. Use axes, handaxes, machetes, and similar tools to cut cable assemblies and wiring. Cut all cables and wiring in a number of places.

***Warning*: Be extremely careful with explosives and incendiary devices. Use these items 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. Pour gasoline on the cut cables and wiring, and ignite it. Use a flamethrower to burn spare parts, or pour gasoline on the spares and ignite them. Use incendiary grenades to complete the destruction of the equipment.

d. Explode. Use explosives to complete demolition or to cause maximum damage, before burning, when time does not permit complete demolition by other means. Powder charges, fragmentation grenades, or incendiary grenades may be used. Incendiary grenades usually are most effective if destruction of small parts and wiring is desired.

e. Dispose. Bury or scatter the destroyed parts or throw them into nearby waterways. This is particularly important if a number of parts have not been completely destroyed.

APPENDIX A
REFERENCES

Following is a list of references available to the operator and organizational repairman of Test Set, Receiving Set, Radar Data AN/GKM-2A.

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	Modification Work Orders.
FM5-25	Explosives and Demolitions.
SB 11-573	Painting and Preservation Supplies Available for Field Use for Electronics Command Equipment.
SB 38-100	Preservation, Packing, and Packing Materials, Supplies and Equipment Used by the Army.
TB 746-10	Field Instructions for Painting and Preserving Electronics Command Equipment.
TM 11-1500-232-25	Installation Practices for Aircraft Electric and Electronic Wiring.
TM 11-5840-262-12	Organizational Maintenance Manual: Receiving Set, Radar Data AN/TKQ-1.
TM 11-5840-262-35	DS, GS, and Depot Maintenance Receiving Set, Radar Data AN/TKQ-1.
TM 11-5840-294-12	Organizational Maintenance Manual: Receiving Set, Radar Data AN/TKQ-2 and Test Facilities Kit M-1148/TKQ-2.
TM 11-5840-294-35-Series	Receiving Set, Radar Data AN/TKQ-2.
TM 38-750	Army Equipment Record Procedures

APPENDIX A
REFERENCES

Following is a list of references available to the operator and organizational repair technician of Test Set, Receiving Set, Radar Data AN/GKM-2A.

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	Military Publications: US Army Equipment Index of Modification Work Orders.
FM 5-25	Explosives and Demolitions.
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 43-0118	Field Instructions for Painting and Preserving Electronics Command Equipment Including Camouflage Pattern Painting of Electrical Equipment Shelters.
TM 11-5840-262-12	Operator's and Organizational Maintenance Manual: Receiving Set, Radar Data AN/TKQ-1.
TM 11-5840-294-12	Operator's and Organizational Maintenance Manual (Including Repair Parts and Special Tools List): Receiving Set, Radar Data AN/TKQ-2 and AN/TKQ-2A and Test Facilities Kit, MK-1148/TKQ-2
TM 38-750	The Army Maintenance Management System (TAMMS).
TM 55-15600-323-25	Organizational, DS, GS, and Depot Maintenance Manual: Installation Practices for Aircraft Electric and Electronic Wiring.
TM 740-90-1	Administrative Storage of Equipment.
TM 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command).

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

Section I. INTRODUCTION

B-1. Scope
This appendix lists basic issue items and items troop installed or authorized required by the crew/operator for installation, operation, and maintenance of Test Set, Receiving Set, Radar Data AN/GKM-2A.

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. A list, in alphabetical sequence of items which, at the discretion of the unit commander, may accompany the end item, but are not subject to be turned in with the end item.

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.* Not applicable.

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

c. 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.

d. 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.

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

f. Unit of Measure (U/M). 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.

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

h. Quantity Authorized (Items Troop Installed or Authorized Only). Indicates the quantity of the item authorized to be used with the equipment.

Section II. BASIC ISSUE ITEMS LIST

(1) ILLUSTRATION QTY (A) FIG. NO.	(1) ILLUSTRATION QTY (B) ITEM NO.	(2) FEDERAL STOCK NUMBER	(3) PART NUMBER	(4) FSCM	(5) DESCRIPTION USABLE ON CODE	(6) UNIT OF MEAS	(7) QTY FURN WITH EQUIP
1-2					CASE, TEST SET CY-6010/GKM-2A	EA	1

SECTION III. ITEMS TROOP INSTALLED OR AUTHORIZED UST

(1) FEDERAL STOCK NUMBER	(2) PART NUMBER	(3) FSCM	(4) DESCRIPTION USABLE ON CODE	(5) UNIT OF MEAS	(6) QTY AUTH
5120-963-6570	----------	--------	EXTRACTOR: SM-C-567919; (80063) ----------	EA	1
5120-224-2504	----------	--------	KEY, SOCKET-HEAD: CLASS 1 TYPE 1 SIZE 5/64; (81348)	EA	1
5120-198-5398	----------	--------	KEY, SOCKET-HEAD: CLASS 1 TYPE 1 SIZE 1/16; (181348)	EA	1

APPENDIX C
MAINTENANCE ALLOCATION

Section I. INTRODUCTION

C-1. General

This appendix provides a summary of the maintenance operations for AN/GKM-2A and AN/GKM-2B.

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 Function

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 (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

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

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

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

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

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

i. Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, reviting, 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 or assembly), end item, or system. This function does not include the trial and error replacement of running spare type items such as fuses, lamps, or electron tubes.

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

k. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of 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 equipments/ components.

C-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. When items are listed without maintenance functions, it is solely for purpose of having the group numbers in the MAC and RPSTL coincide.

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

C - Operator/Crew
O - Organizational
F - Direct Support
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.

C-4. Tool and Test Equipment Requirements (Sect. III)

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

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

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

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

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

SECTION II MAINTENANCE ALLOCATION CHART
FOR
AN/GKM-2A AND AN/GKM-2B

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT
00	TEST SETS, RECEIVING SET, RADAR DATA AN/GRM-2A AND AN/GRM-2B	Inspect		0.4				Visual
		Test		0.3				6
		Test				0.5		4 thru 21,25,30
		Service		0.5				1
		Adjust				0.2		2,3
		Calibrate				1		2 thru 21,25,30
		Replace		0.1				
		Repair		0.5				1
		Repair				3		2 thru 31
		Overhaul					4	2 thru 32
01	TEST SET CASE CY-6010/GKM-2A	Inspect		0.2				Visual
		Service		0.2				1,6
		Replace		0.2				
		Repair				0.5		1,6
02	ALIGNMENT MASK MX-7306/GKM-2A	Inspect		0.2				Visual
		Service				0.3		2
		Adjust				0.3		2
		Replace		0.1				
		Repair				0.4		2
03	ALIGNMENT MASK MX-7354/GKM-2A	Inspect		0.3				Visual
		Service				0.3		2
		Adjust				0.3		2
		Replace		0.1				
		Repair		0.2				1,6
		Repair				0.4		2,6
04	MAGNIFIER MX-7305/GKM-2A	Inspect		0.2				Visual
		Replace		0.1				
		Repair		0.3				1
05	CABLE ASSEMBLY, POWER ELECTRICAL CX-1164 (8 FT) (W1)	Inspect		0.3				Visual
		Test		0.3				6
		Replace		0.1				
		Repair				1		2,3,6
06	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-1164/U (4 FT) (W2)	Inspect		0.3				Visual
		Test		0.3				6
		Replace		0.1				
		Repair				1		2,3,6
07	CABLE ASSEMBLY, RADIO FREQUENCY CG-530C/U (6 FT) (W3)	Inspect		0.3				Visual
		Test		0.3				6
		Replace		0.1				
		Repair				1		2,3,6
08	CABLE ASSEMBLY, RADIO FREQUENCY CG-2625A/U (6 FT) (W5)	Inspect		0.3				Visual
		Test		0.3				6
		Replace		0.1				
		Repair				1		2,3,6
09	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL CX-11645/U (1 FT 3 IN) (W6)	Inspect		0.3				Visual
		Test		0.3				6
		Replace		0.1				
		Repair				1		2,3,6
010	FOCUSING PLATEN MX-7116/ASM-233	Inspect		0.3				Visual
		Replace		0.1				
		Repair				0.3		2,3

SECTION II MAINTENANCE ALLOCATION CHART
FOR
AN/GKM-2A AND AN/GKM-2B

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT
011	VIDEO ASSEMBLY SIMULATOR SM-453/OGR2A AND SM-453A/GKX-2A	Inspect		0,4				Visual
		Test				0.5		4 thru 21,25,30
		Service		0.5				1
		Adjust				0.2		2,4,10,13
		Calibrate				1		2 thru 21,25,30
		Replace		0.1				
		Repair		0.3				1,6
		Repair				2		2 thru 31
01101	POWER SUPPLY MODULE(A1)	Inspect				0.2		Visual
		Test				0.5		4 thru 7,16,19, 20,21,30
		Adjust				0.3		2,5,6,7,16
		Replace				0.2		2
		Repair				1		2 thru 7,16,19, 20,21,30
01102	SYNCHRONIZER MODULE (A2) (USED ONLY IN SM-453/GKM2A)	Inspect				0.2		Visual
		Test				0.5		4 thru 15,17 thru 21,30
		Replace				0.3		2
		Repair				2		2 thru 15, 17 thru 21,30
01103	GATE GENERATOR MODULE (A3) (USED ONLY IN SM-453/GKM-2A)	Inspect				0.2		Visual
		Test				0.5		4 thru 15, 17 thru 21,30
		Replace				0.3		2
		Repair				2		2 thru 15, 17 thru 21,30
01104	DATA ENCODER MODULE (A) (USED ONLY IN SM-453/GKM-2A)	Inspect				0.2		Visual
		Test				0.5		4 thru 15, 17 thru 21, 30
		Replace				0.3		2
		Repair				2		2 thru 15, 17 thru 21, 30
01105	VIDEO GENERATOR MODULE (A5) (USED ONLY IN SM-453/GKM-2A)	Inspect				0.2		Visual
		Test				0.5		4 thru 15, 17 thru 21,30
		Adjust				0.3		2,4,10,13,15
		Replace				0.3		2
		Repair				2.5		2 thru 15, 17 thru 21,30
01106	RF GENERATOR MODULE (A6)	Inspect				0.2		Visual
		Test				0.5		4 thru 15, 17 thru 21, 25,26, 30
		Align				0.5		2,4,8,10,13,15, 21 thru 27,29,30, 31
		Replace				0.3		2
		Repair				1.5		2 thru 15, 17 thru 21,25,26,30
		Repair[1]					1.5	2 thru 15, 17 thru 21,25,26,30

(1) Pertains to repair of cavity Z1.

SECTION II MAINTENANCE ALLOCATION CHART
FOR
AN/GKM-2A AND AN/GKM-2B

(1) GROUP NUMBER	(2) COMPONENT ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE CATEGORY C	O	F	H	D	(5) TOOLS AND EQUIPMENT
01107	SYNCHRONIZER-VIDEO GENERATOR MODULE (A7) (USED ONLY IN SM 453A/GKM2A)	Inspect				0.2		Visual
		Test				0.5		4 THRU 15, 17 thru 21,30
		Align				0.5		2,4,10,13,30
		Replace				0.3		2
		Repair				2		2 thru 15, 17 thru 21, 30

TABLE I. TOOL AND TEST EQUIPMENT REQOUIREMENTS FOR

AN/GKM-2A AND AN/GKM-2B

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	0	TOOL KIT, ELECTRONIC EQUIPMENT TK-101/G	6625-00-064-5178	
2	H,D	TOOL KIT, ELECTRONIC EQUIPMENT TK-105/G	5180-00-610-8177	
3	H,D	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/G	5180-00-605-0079	
4	H.D	OSCILLOSCOPE AN/USM-281C	6625-00-106-9622	
5	H,D	ELECTRONIC VOLTMETER AN/USM-98	6625-00-753-2115	
6	O,H,D	MULTIMETER AN/USM-223	6625-00-999-7465	
7	H,D	VOLTMETER, METER ME-30A/U	6625-00-669-0742	
8	H,D	GENERATOR, SIGNAL AN/URM-127	6625-00-783-5965	
9	H,D	ELECTRONIC VOLTMETER AN/URM-145	6625-00-973-3986	
10	H,D	GENERATOR, SIGNAL AN/USM-44A	6625-00-539-9685	
11	H,D	GENERATOR, SWEEP AN/USM-203C	6625-00-935-0145	
12	H,D	GENERATOR, SWEEP SG-92/U	6625-00-546-6662	
13	H,D	ANALYZER SPCTRUM AN/UPM-84A	6625-00-411-3072	
14	H,D	ANALYZER SPECTRUM TS-723/U	6625-00-668-9418	
15	H,D	ELECTRONIC COUNTER, DIGITAL READOUT AN/USM-207	6625-00-911-6368	
16	H,D	VARIAC, VARIABLE CN-16	5950-00-235-2086	
17	H,D	ATTENUATOR, VARIABLE CN-796/U	5985-00-831-5991	
18	H,D	GENERATOR, SIGNAL AN/URM-70	6625-00-519-2104	
19	H,D	TEST SET, TRANSISTOR TS-1836/U	6625-00-893-2628	
20	H,D	TEST SET, ELECTRON TUBE TV-7D/U	6625-00-376-4939	
21	H,D	MULTIMETER ME-26B/U	6625-00-646-9409	
22	H,D	TEST CABLE A	Fabricate	
23	H,D	TEST CABLE B	Fabricate	
24	H,D	TEST CABLE C	Fabricate	
25	H,D	CONNECTOR, ADAPTER UG-914/U	5935-00-280-1454	
26	H,D	CONNECTOR, ADAPTER MICRODOT 033-0103	5935-00-797-4934	
27	H,D	CONECTOR, ADAPTER U-274A/U (2 REQUIRED)	5935-00-926-7523	
28	H,D	CONNECTOR, ADAPTER UG-201A/U (2 REQUIRED)	5935-00-201-3090	
29	H,D	ATTENUATOR, 3 DB MICROLAB AB-03N (2 REQUIRED)	5985-00-957-4814	
30	H,D	TEST FIXTURE, VIDEO SIMULATOR	Fabricate	
31	H,D	AMPLIFIER, TUNEABLE RF BOONTON 230A		
32	D	TEST SET, ELECTRON TUBE TV-2/U	6625-00-699-0263	

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SETION III. TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOLS AND TEST EQUIPMENT REQUIREMENTS

TOOLS AND EQUPMENT	MAINTENANCE CATEGORY	NOMENCLATURE	FEDERAL STOCK NUMBER	TOOL NUMBER
		AN/GKM-2A (continued)		
1	H,D	OSCILLOSCOPE, SUBASSEMBLY MX-2330/G	6625-542-1667	
2	H,D	PREAMPLIFIER AM-1839B/USM	6625-701-4037	
3	H,D	ELECTRONIC VOLTMETER AN/USM-98	6625-753-2115	
4	O,H,D	MULTITESTER AN/USM-210	6625-019-0815	
5	H,D	VOLTMETER METER ME-30A/U	6625-669-0742	
6	H,D	GENERATOR, SIGNAL AN/URM-127	6625-783-5965	
7	H,D	ELECTRONIC VOLTMETER AN/URM-145	6625-973-3986	
8	H,D	GENERATOR, SIGNAL AN/USM-44	6625-669-4031	
9	H,D	GENERATOR, SWEEP AN/USM-203	6625-086-7165	
10	H,D	GENERATOR, SWEEP SG-92/U	6625-546-6662	
11	H,D	ANALYZER, SPECTRUM AN/UPM-84	6625-557-8262	
12	H,D	ANALYZER, SPECTRUM TS-723/U	6625-668-9418	
13	H,D	ELECTRONIC COUNTER AN/USM-207	6625-911-6368	
14	H,D	VARIAC, VARIABLE CN-16	5950-235-2086	
15	H,D	ATTENUATOR, VARIABLE CN-796/U	5985-831-5991	
16	H,D	GENERATOR, FM FREQUENCY SIGNAL AN/URM-70	6625-519-2104	
17	H,D	TEST SET, TRANSISTOR TS-1836/U	6625-893-2628	
18	H,D	TEST SET ELECTRON TUBE TV-7D/U	6625-376-4939	
19	D	TEST SET, ELECTRON TUBE TV-2/U	6625-699-0263	

TOOLS AND TEST EQUIPMENT REQUIREMENTS				
TOOLS AND EQUPMENT	**MAINTENANCE CATEGORY**	**NOMENCLATURE**	**FEDERAL STOCK NUMBER**	**TOOL NUMBER**
		AN/GKM-2A (continued)		
10	H,D	TOOL KIT, ELECTRONIC EQUIPMENT TK-100/S	5180-605-0079	
11	O	TOOLS AND TEST EQUIPMENT AVAILABLE TO THE REPAIRMAN USER		

APPENDIX D
ORGANIZATIONAL MAINTENANCE REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

D-1. Scope

This manual lists repair parts and special tools required for the performance of organizational maintenance of the Test Set, Receiving Set, Radar Data AN/GKM-2A.

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 al-lowances for initial stockage at the organizational level.

b. Repair Parts - Section III. A list of repair parts authorized for the performance of maintenance at the organizational level.

c. Special Tools, Test and Support Equipment - Section IV. Not applicable.

NOTE

All indexes noted below are cross-referenced to index numbers. The index numbers appear in ascending sequence in column 1 of the repair parts list. The index number for the particular item will be the same for the item in all sections of this publication.

d. Federal Stock Number Cross-Reference to Index Number - Section V. A list of Federal stock numbers in ascending numerical sequence cross-referenced to index (sequence) numbers.

e. Figure and Item Number Cross-Reference to Index Numbers - Section VI. Not applicable.

f. Reference Designation Cross-Reference to Index Number - Section VII. A list of reference designa-ions (or item numbers) to index numbers.

D-3. Explanation of Columns

The following provides an explanation of columns in the tabular lists.

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.
P2 —	Repair parts which are procured and stocked for insurance purposes because the combat or military essentiality of the end item dictates that a minimum quantity be available in the supply system.
P9 —	Assigned to items which are NSA design controlled: unique repair parts, special tools, test, measuring and diagnostic equipment, which are stocked and supplied by the Army COMSEC logistic system, and which are not subject to the provisions of AR 380-41.
P10 —	Assigned to items which are NSA design controlled: special tools, test, measuring and diagnostic equipment for COMSEC support, which are accountable under the provisions of AR 380-41, and which are stocked and supplied by the Army COMSEC logistic system.
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.
X —	Parts and assemblies which are not procured or stocked and the mortality of which normally is below that of the applicable end item or component. The failure of such part or assembly should result in retirement of the end item from the supply system.
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 obtain- able through cannibalization, require-ments 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 code indicates the lowest category of maintenance authorized to install the listed item. The maintenance level code is —

Code *Explanation*

O.....Organizational maintenance

NOTE

No higher category of maintenance codes are to be used in an organizational manual.

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

Code *Explanation*

R — Repair parts and assemblies that are eco-omically repairable at DSU and GSU activities and are normally furnished by supply on an exchange basis.

S — Repair parts and assemblies which are economically repairable at DSU and GSU activities and which normally are furnished by supply on an exchange basis. When items are determined bv a GSU to be uneconomically repairable, 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 2. This column indicates the Federal stock number assigned to the item and w ill be used for requisitioning purposes.

c. Description, Column .3. This column indicates 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.

d. Unit of Measure (or Unit of Issue), Column 4. A 2-character alphabetic abbreviation indicating the amount or 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 AN/GKM-2A. 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 of Section II and Column 6 of Sections III and IV.

(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 Commanding General, U.S. Army Electronics Command, ATTN: AMSEL-ME-NMP-RR, Fort Monmouth, N.J. 077033 for exception or revision to the allowance list. Revisions to the range of items authorized will be made by the USA ECOM national maintenance point based upon engineering experience, demand data, or TAERS information.

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

(1) *Figure number, column 7a*. Not applicable.

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

D-4. Special Information

Repair parts mortality is computed from failure rates derived from experience factors with the individual parts in a variety of equipments. Variations in the specific application and periods of use of the electronics equipment, the fragility of electronic piece parts, plus intangible material and quality factors intrinsic to the manufacture of electronic parts, do not permit mortality to be based on hours of end item use. However, long periods of continuous use under adverse conditions are likely to increase repair parts mortality.

D-5. Location of Repair Parts

a. This manual contains two cross-reference indexes (secs. V, VII) to be used to locate a repair part when either the Federal stock number, reference number (manufacturer's part number), figure number, or reference designation is known. The first column in each cross-reference index is prepared, as applicable, in numerical or alphanumerical sequence. The last column of each cross-reference index lists the index number assigned to the part.

b. Refer to the appropriate cross-reference index (para D-2*d,f*) and note the index number in the last column; then refer to the repair parts list to locate the index number which is listed in ascending order in column 1 of the repair parts list.

D-6. Federal Supply Code for Manufacturers

Code	*Manufacturer's name*
80063	Army Electronics Command Procurement and Production Directorate
81348	Federal Specifications
81349	Military Specifications Promulgated by Standardization Div. Directorate of Logistic Services DSA
96906	Military Standards Promulgated by Standardization Div. Directorate of Logistic Services DSA

SECTION II. PRESCRIBED LOAD ALLOWANCE

(1) Federal Stock Number	(2) Description	(3) 15-Day Org Maint. Alw (A) 1-5	(B) 6-20	(C) 21-50	(D) 51-100
6240-051-4843	LAMP: M25236-8623; (96906)	2	2	3	5
5920-199-9498	FUSE: F02B250V1-2A; (81349)	2	2	2	3
5355-160-5910	KNOB: MS90120-2BO1; (96906)	*	*	*	2
6240-155-8706	LAMP: MS15571-2; (96906)	2	2	2	3
6240-913-3552	LAMP: SM-B-567899; (80063)	10	13	30	57

SECTION III. REPAIR PARTS FOR ORGANIZATIONAL MAINTENANCE

(1) SMR CODE	(2) FEDERAL STOCK NUMBER	(3) DESCRIPTION REF 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) ILLUS-TRATION (a) FIG. NO.	(b) ITEM NO.
		TEST SET, RECEIVING SET RADAR DATA AN/GKM-2A								
A001	6625-926-4393	TEST SET, RECEIVING SET, RADAR DATA AN/GKM-2A (This item is nonexpendable)								
P_O A086A	6240-062-4843	LAMP: MS25236-8623; (96906)	EA	8	2	2	3	5		
P-O A405	5920-199-9498	FUSE: F02B2FOV1-2A; (81349)	EA	2	2	2	2	3		F1,F2
P-O A408	5355-160-5910	KNOB: MS90120-2BO1	EA	2	*	*	*	2		
P-O A409	6240-155-8706	LAMP: MS15571-2; (96906)	EA	1	2	2	2	3		DS2
P-O A410	6240-913-3552	LAMP: SM-B-567899; (80063)	EA	25	10	13	30	57		

SECTION V. INDEX-FEDERAL STOCK NUMBER CROSS REFERENCE TO INDEX NUMBER (CONTINUED)

FEDERAL STOCK NUMBER	INDEX NO.	FEDERAL STOCK NUMBER	INDEX NO.	FEDERAL STOCK NUMBER	INDEX NO.
5355-160-5910	A408				
5920-199-9498	A405				
6240-051-4843	A086A				
6240-155-8706	A409				
6240-913-3552	A410				
6625-926-4393	A001				

SECTION VII. INDEX-REFERENCE DESIGNATION CROSS REFERENCE TO INDEX NUMBER (CONTINUED)

REFERENCE DESIGNATION	INDEX NO.	REFERENCE DESIGNATION	INDEX NO.	REFERENCE DESIGNATION	INDEX NO.
F1, F2	A405				
DS2	A409				

APPENDIX E
DIFFERENCE DATA FOR AN/GKM-2B

Section I. DESCRIPTION AND DATA

E-1. General

a. This appendix contains difference data necessary to describe the electrical and physical differences between Test Set, Receiving Set, Radar Set, Radar Data AN/GKM-2A and Test Set, Receiving Set, Radar Data AN/GKM-2B (fig. E-1). The data contained in the previous chapters of this technical manual apply to both versions of the AN/GKM-2 except for the deletions, modifications, and additions that change the equipment to the AN/GKM-2B configuration.

b. The change consists of the replacement of two toggle switches, on the front panel of Simulator, Video, Assembly SM-453/GKM-2A, with two rotary switches. The resultant physical and procedural changes are contained in the following paragraphs. As a result of this change, the video simulator nomenclature changes from SM-453/GKM-2A to SM-453A/GKM-2A.

E-2. Purpose and Use

a. Test Set, Receiving Set, Radar Data AN/ GKM-2B provides a means for testing, aligning, and adjusting Receiving Sets, Radar Data AN/ TKQ-1, AN/TKQ-2, and AN/TKQ-2A. Simulator, Video, Assembly SM-453A/GKM-2A generates signals to simulate those composite signals normally received by Receiving Sets, Radar Data AN/TKQ-1, AN/TKQ-2, and AN/TKQ-2B, thus permitting these equipments to be checked for operational accuracy. Mask, Alignment MX-7354/GKM-2A; Mask, Alignment MX-7306/ GKM-2A; Platen, Focusing MX-7116/ASM-223; and Magnifier MX-7305/GKM-2A provide means for accurately aligning or adjusting the video display components of Receiving Sets, Radar Data AN/TKQ-1 and AN/TKQ-2.

b. When in use, the SM-453/GKM-2A is connected to components of the AN/TKQ-1, AN/TKQ-2, or AN/TKQ-2A. The video simulator generates signals used to align components of the AN/TKQ-1, AN/TKQ-2, and AN/TKQ-2A as well as variable drift angle signals, groundspeed signals, data annotation signals (AN/TKQ-2 only), aircraft identification signals, and video signals normally received by the particular equipment under test. In response to these signals, the AN/TKQ-1, AN/TKQ-2, or AN/TKQ-2A produces a test film that shows its performance characteristics. The test film enables the operator to determine any need for equipment adjustment or alignment. The video simulator also provides rf outputs that are used for confidence testing of Receiver, Radio R-1335A/G and also provides a density test pattern.

c. The MX-7354/GKM-2A and MX-7305/GKM-2A are used for adjusting the cathode-ray tube (crt) traces of Indicator, Radar Target IP-541/ TKQ-1, IP-795/TKQ-2 or IP-1236/TKQ-2A. The MX-7306/GKM-2A provides a means of adjusting the video display on the film used in Recorder-Processor-Viewer, Radar Mapping RO-166/UP. It is also used for adjusting the travel speed of the film. The MX-7116/ASM-223 focusing platen provides a means of observing the RO-166/UP present position display (ppd) readout when the AN/TKQ-2 is being rested or aligned.

E-3. Technical Characteristics

The technical characteristics for Simulator, Video, Assembly SM-453A/GKM-2A are the same as those for SM-453/GKM-2A (para 1-5a(1)), except as follows. Fine sync and density test pattern output signals have been added to the composite signal as shown below and a parenthetical condition has been added to the fast sync output signal (para 1-5*a*(4)) as follows:

Fine sync ..... A 0.9 ms window with a 0.125 ms, 20 volts pp pulse.

Density test pattern ..... Provides 6-step density test for checking recorder/processor.

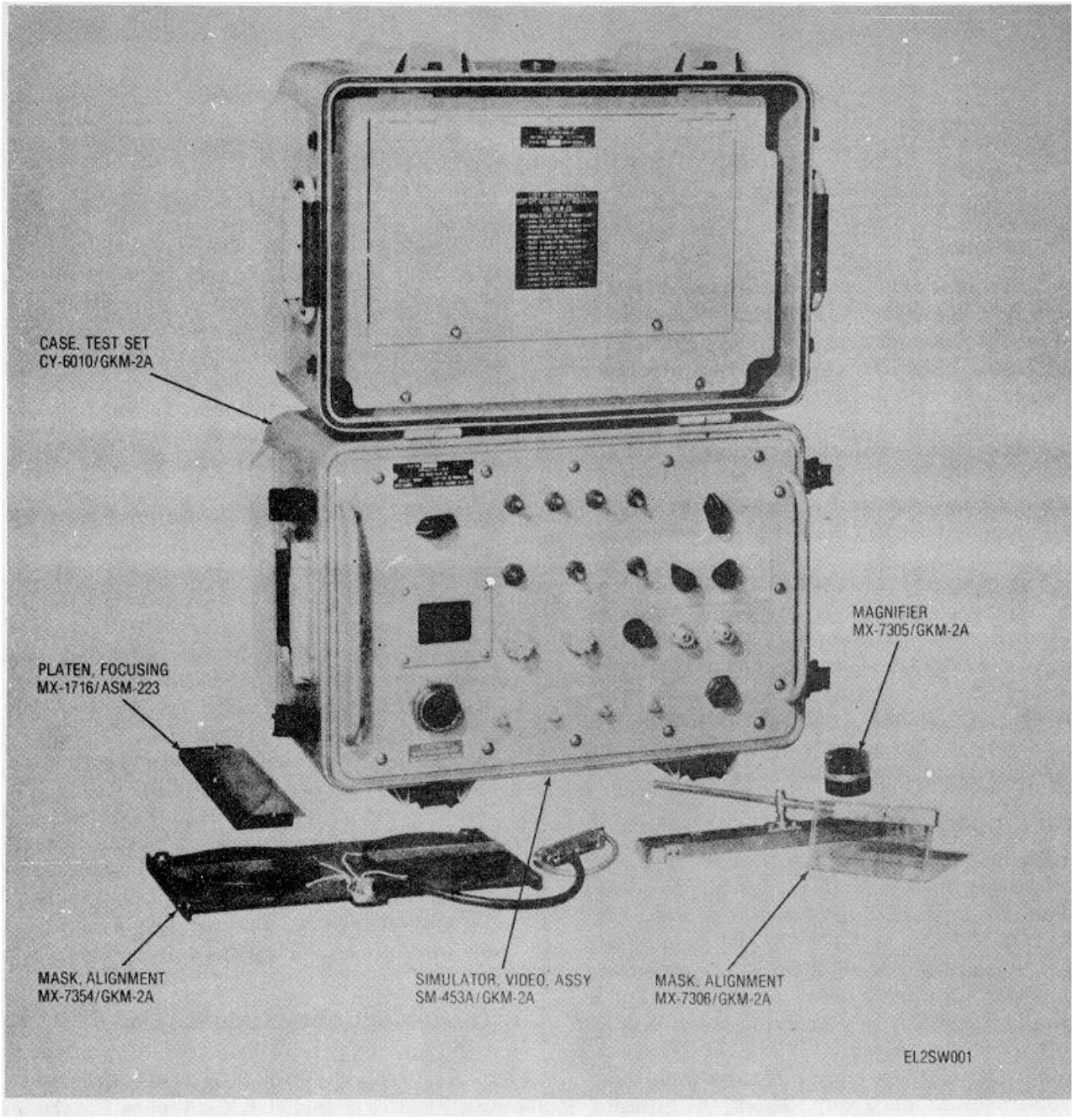

Figure E-1. Test Set, Receiving Set, Radar Data AN/GKM-2B, less minor components and running spares.

Fast sync .....(One pulse per cycle with MODE switch in any of the TKQ-2A positions):
Amplitude ..... 10 volts
Width .....1 ms

E-4. Description of Simulator, Video, Assembly SM-453A/GKM-2A
(fig. E-2)

The description of Simulator, Video, Assembly SM-453A/GKM-2A is the same as that for Simulator, Video, Assembly SM-453/GKM-2A except that the MODULATION and RF toggle switches on SM-453/GKM-2A are replaced by two rotary switches. The two new switches are labeled RF and MODE, as shown in figure E-2, and their functions are discussed in paragraph E-5.

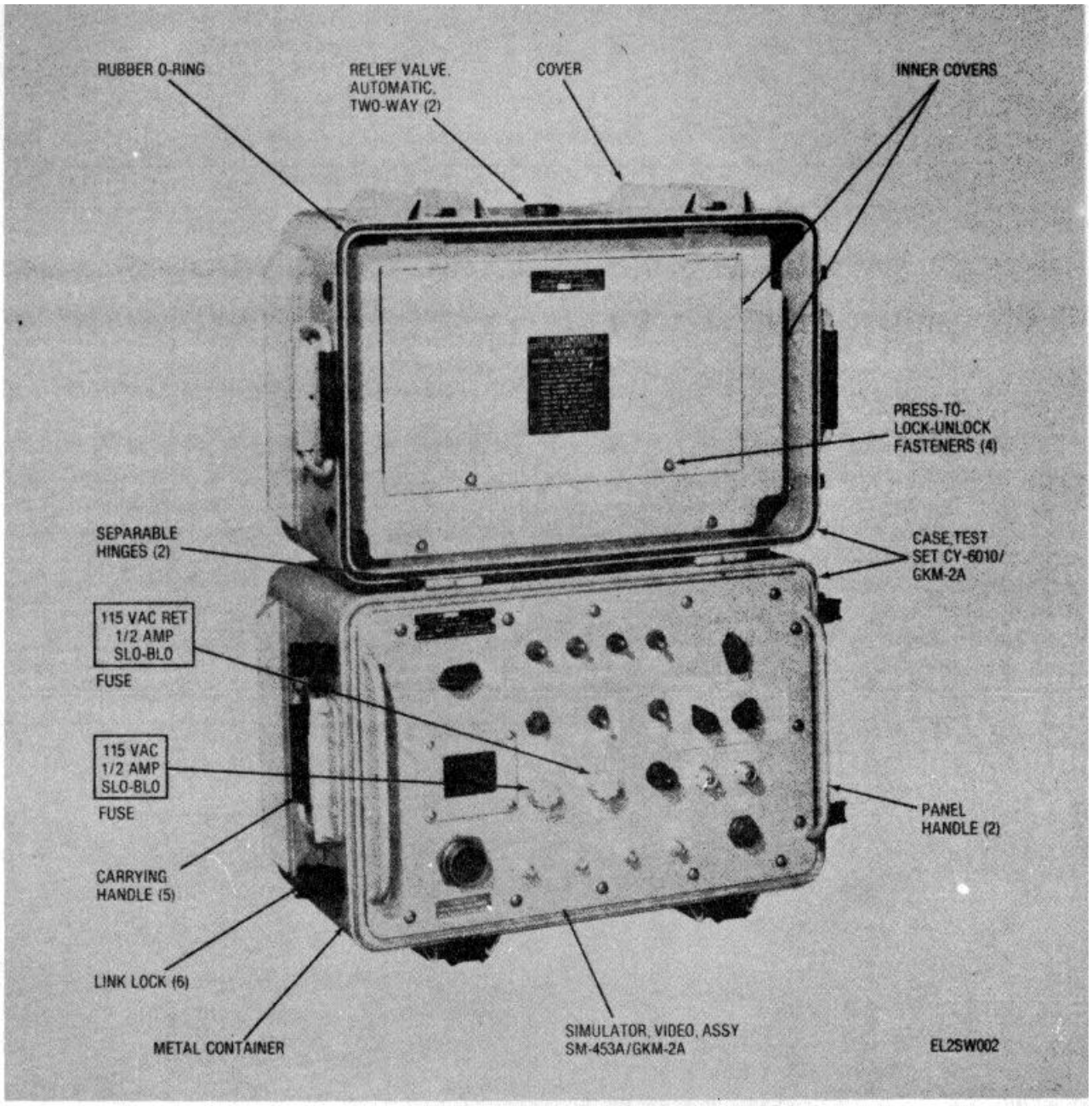

Figure E-2. Simulator, Video, Assembly, SM-453A/GKM-2A and Case, Test Set CY-6010/GKM-2A.

Section II. OPERATION UNDER USUAL CONDITIONS

E-5. General

Simulator, Video, Assembly SM-453A/GKM-2A controls and indicators are the same as those for SM-453/GKM-2A (para 2-4), except as follows. Disregard the MODULATION and RF switches functions, in paragraph 24, and substitute the RF and MODE switches functions in table E-1. The function of the VIDEO switch, in the BIAS ADJ position, has been expanded as described in table E-1.

Table E-1. Simulator, Video, Assembly SM-453a/gkm-2A Controls and Indicators

Control, indicators, fuse or connector	Function	
	Switch position	*Action*
Video switch	BIAS ADJ	Provides a recurring 52-ms pedestal (video gate) and sweep markers as a part of video signal. One video gate and four sweep markers occur during each 69.25 millisecond (ms) timing cycle. These signals are used to adjust the IP-795/TKQ-2 or IP-541/TKQ-1 radar target indicator crt, bias, sweep start, horizontal sweep gain, and sweep gate width. Also these signals provide a six-step density test pattern during the first half of the sweep.
RF switch (3-position rotary)		Provides 240-MHz and 360-MHz rf signals at RF OUTPUT 240 MC connector J8 and RF OUTPT 360 MC connector J7 for confidence testing Receiver, Radio R-1335A/G. In OFF position, no signals are provided at connectors J7 and J8. In NO MOD position, causes outputs of connectors J7 and J8 to be continuous wave (cw) signals. In MOD position, fm modulates outputs of connectors J7 and J8 with 1-kHz square wave. Video output is disabled with MODE switch in MOD position.
MODE switch (4-position rotary)		In TKQ/2 position, operation of the system is the same as described in previous sections of this technical manual. In one of the three TKQ/2A positions (L, BOTH, or R), the fine sync window and find sync pulses are put into tonebursts as required by Receiving Set, Radar Data AN/TKQ-2A. In addition, the appropriate fine sync pulse is removed, when switch is in either L or R position, to initiate automatic antenna operation.

E-6. Starting Procedures

(fig. E-4)

The starting procedure for Simulator, Video, Assembly SM-453A/GKM-2A is the same as for the SM-453/GKM-2A (para 2-7), except as indicated below.

a. Preliminary. Set the video simulator front panel controls as follows:

Control	*Position*
VIDEO	OFF
ACFT IDENT (4 switches)	OFF
DRIFT ANGLE DEGREES	0
GROUND SPEED KNOTS	225

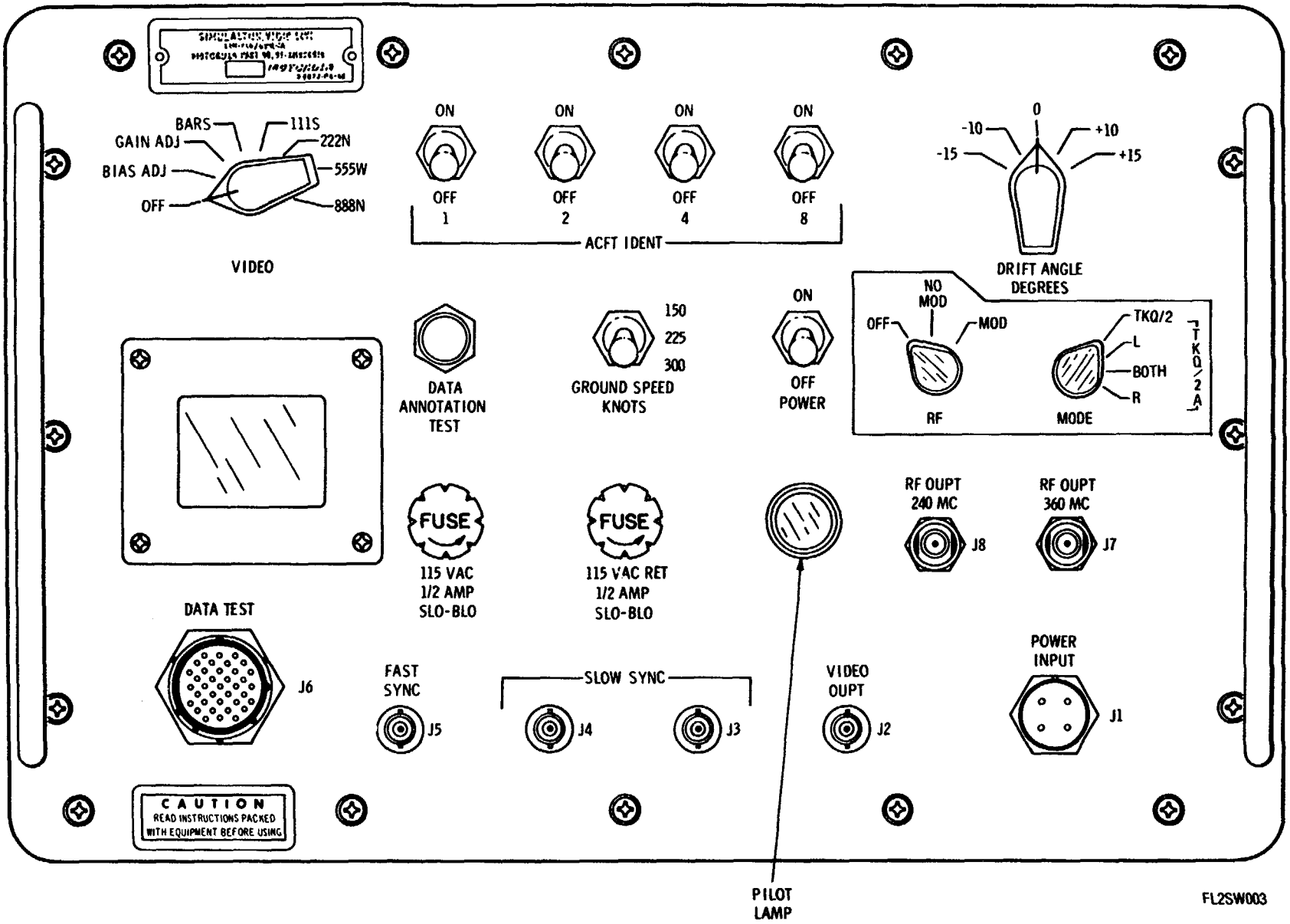

Figure E-3. Simulator, Video, Assembly SM-453A/GKM-2A, operating controls and indicators.

Control	*Position*
POWER	OFF
MODE	AS REQD
RF	OFF

b. Starting. The following procedure applies to AN/TKQ-1, AN/TKQ-2, and AN/TKQ-2A radar data receiving sets. Unless otherwise stated, instructions apply to all sets. See figure E-4 for a typical test setup.

(1) If the system under test is an AN/TKQ-2A, disconnect cable 5W23 from Converter-Storer, Signal Data CV-2093/TKQ-2 connector J4.

(2) If the system under test is an AN/TKQ-2A, connect cable W2 between video simulator DATA TEST connector J6 and Converter-Storer, Signal Data CV-2093/TKQ-2A connector J4.

(3) Disconnect cable 5W6 from Receiver, Radio R-1335A/G VIDEO connector 9A2J3.

E-7. Operating Procedure

The AN/GKM-2B test set is used to test and align Receiving Sets, Radar Data AN/TKQ-2A, AN/TKQ-2, and AN/TKQ-L Technical manuals 11-5840-294-12 for the AN/TKQ-2 and AN/TKQ- 2A,and 11-5840-26212 for the AN/TKQ-1 contain necessary procedures for installing and operating the AN/GKM-2B test set.

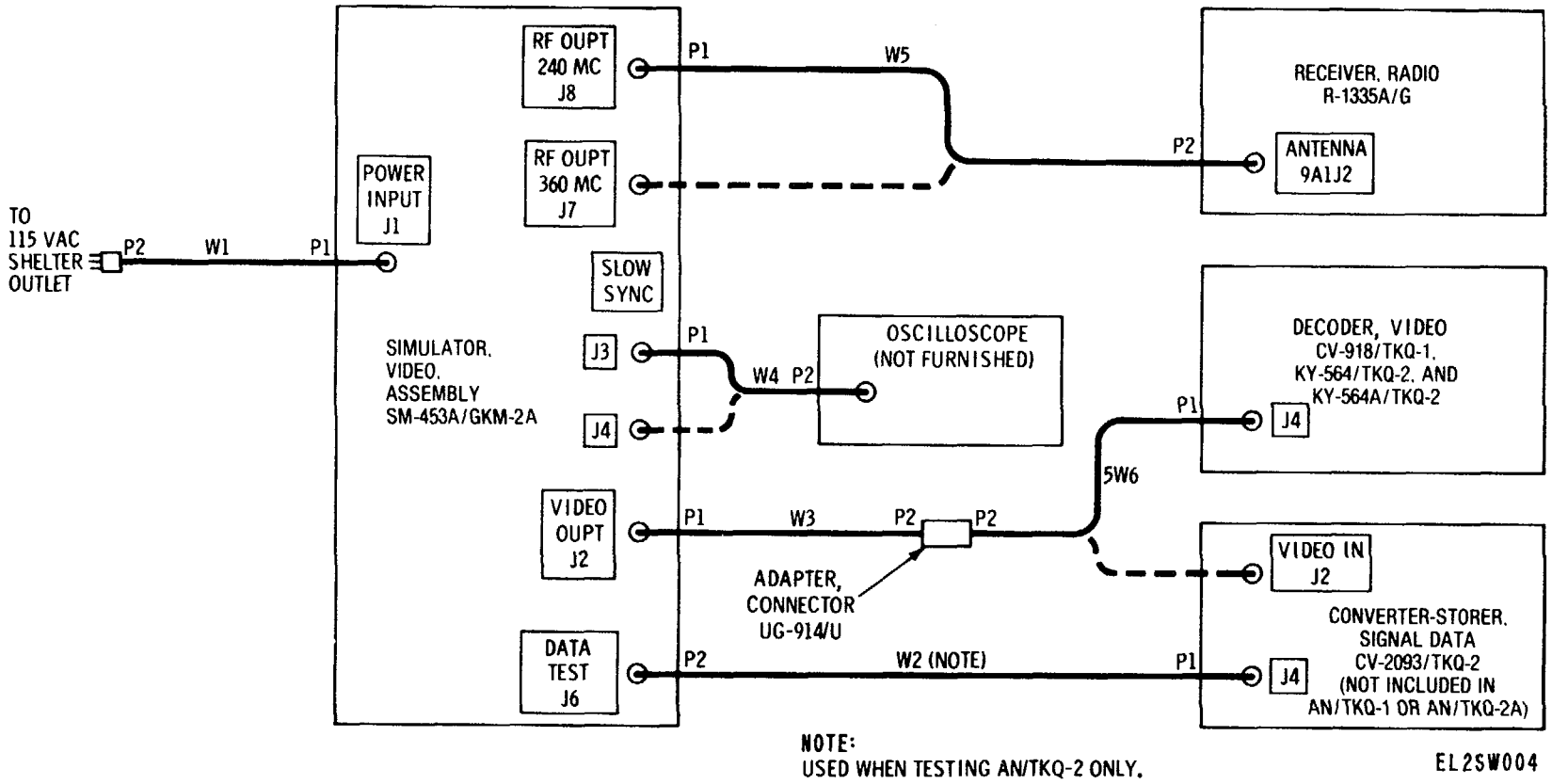

Figure E-4. Typical test setup.

GLOSSARY

Section I. ABBREVIATIONS

ACFT IDENT	Aircraft identification
OUPT	Output
ppd	Present position display

Section II. DEFINITIONS OF UNUSUAL TERMS

Aircraft identification. An identification number from 1 to 15, used as a means of distinguishing between data received from various aircraft.

Data annotation. The present position of an aircraft in relation to a fixed point, containing distance (kilometers) and direction (north, south, east, or west) coordinates.

Drift angle. The angular difference between the heading of the aircraft and its course or flight plan.

Groundspeed. The actual ground distance covered by an aircraft per unit time.

Tone burst. A video signal of precise frequency and duration.

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