D E P A R T M E N T O F T H E A R M Y T E C H N I C A L M A N U A L

OPERATOR, ORG., DS, GS, AND DEPOT MAINTENANCE MANUAL:

INFRARED TEST SET 4931-895-3894 (SECONDARY REFERENCE)

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INFRARED TEST SET 4931-895-3894

			Paragraph	Page
CHAPTER	1	INTRODUCTION		
Section	I.	General	1-1-1-2	1-1
	II.	Description and data	1-4, 1-5	1-3, 1-6
CHAPTER	2.	THEORY OF OPERATION		
Section	I.	General operation	2-1	2-1
	II.	Functional description	2-2-2-4	2-2-2-3
CHAPTER	3.	OPERATING INSTRUCTIONS		
Section	I.	Service upon receipt of test set	3-1-3-5	3-1-3-3
	II.	Controls	3-6, 3-7	3-3
	III.	Operation under usual conditions	3-8-3-11	3-4-3-5
	IV.	Preparation for travel	3-12, 3-13	3-7
CHAPTER	4.	OPERATOR'S MAINTENANCE INSTRUCTIONS		
Section	I.	Parts, special tools, and equipment for operators	4-1-4-3	4-1
	II.	Preventive maintenance services	4-1-4-8	4-1-4-7
CHAPTER	5.	DEPOT MAINTENANCE INSTRUCTIONS	5-1-5-4	5-1
CHAPTER	6.	INSPECTION		
Section	I.	General	6-1-6-4	6-1
	II.	Inspection of test set in the hands of using personnel	6-5, 6-6	6-2
	III.	Maintenance shop inspection	6-7, 6-8	6-2
	IV.	Pre-embarkation inspection	6-9, 6-10	6-3
CHAPTER	7.	TROUBLESHOOTING		
SECTION	I.	General	7-1, 7-2	7-1, 7-3
	II.	Operational check	7-3, 7-4	7-3
	III.	Troubleshooting	7-5, 7-6	7-4
CHAPTER	8.	REPAIR AND OVERHAUL		
SECTION	I.	Parts, special tools, and equipment for field and depot maintenance	8-1-8-4	8-1
	II.	General maintenance	8-5-8-10	8-1-8-2
	III.	Disassembly and assembly	8-11-8-16	8-2-8-8
CHAPTER	9.	FINAL INSPECTION	9-1, 9-2	9-1
CHAPTER	10.	SHIPMENT, STORAGE, AND DESTRUCTION OF MATERIEL TO PREVENT ENEMY USE		
SECTION	I.	Shipment and storage	10-1-10-3	10-1-10-2
	II.	Destruction of materiel to prevent enemy use	10-4-10-9	10-2-10-3
APPENDIX	A.	REFERENCES		A-1
★	B.	BASIC ISSUE ITEMS LIST AND ITEMS TROOP INSTALLED OR AUTHORIZED LIST		B-1
	C.	MAINTENANCE ALLOCATION CHART		C-1
INDEX				I-1

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1-1. Scope

a. These instructions are published for the information and guidance of personnel to whom the infrared secondary reference test set 4931-895-3894 is issued (fig. 1-1).

b. This manual contains description, theory of operation, and information on operation and preventive maintenance for use by depot personnel.

c. Appendix A, B, and C are contained in this technical manual. Appendix A contains a list of current references, including supply catalogs, technical manuals, and other available publications applicable to the test set. Appendix B lists the basic issue items available for operation. Appendix C contains the maintenance allocation charts which list maintenance responsibilities allocated to each echelon of maintenance.

1-2. Maintenance Technique.

a. In all cases where the nature of repair modification or adjustment is beyond the scope or facilities of the using personnel, the responsible maintenance unit should be informed in order that trained personnel with suitable tools and equipment may be provided or other proper instructions issued.

b. These instructions are intended for maintenance specialists who have been thoroughly trained in electronics field and depot maintenance practices and have had previous experience in performance testing, alignment and adjustment procedures on similar types of materiel.

c. The maintenance. technique, IROAN (Inspect, Repair, Only as Necessary), will be used to restore this materiel to serviceable condition. IROAN is the systematic isolation and remedy of a malfunction or defective component through tests, diagnosis, and singular repair. No segment of the materiel will be disassembled before the definite need to do so has been systematically established.

1-3. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions given in TM 38-750.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damage or Improper Shipment) as prescribed in AR 700-58 (Army), NAVSAANDA Publication 378 (Navy), and AFR 71-4 (Air Force).

c. Reporting of Equipment Manual Improvements. Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publications) and forwarded direct to: Commanding General, U.S. Army Missile Command, ATTN: AMSMI-MFPE, Redstone Arsenal, Alabama 35809.

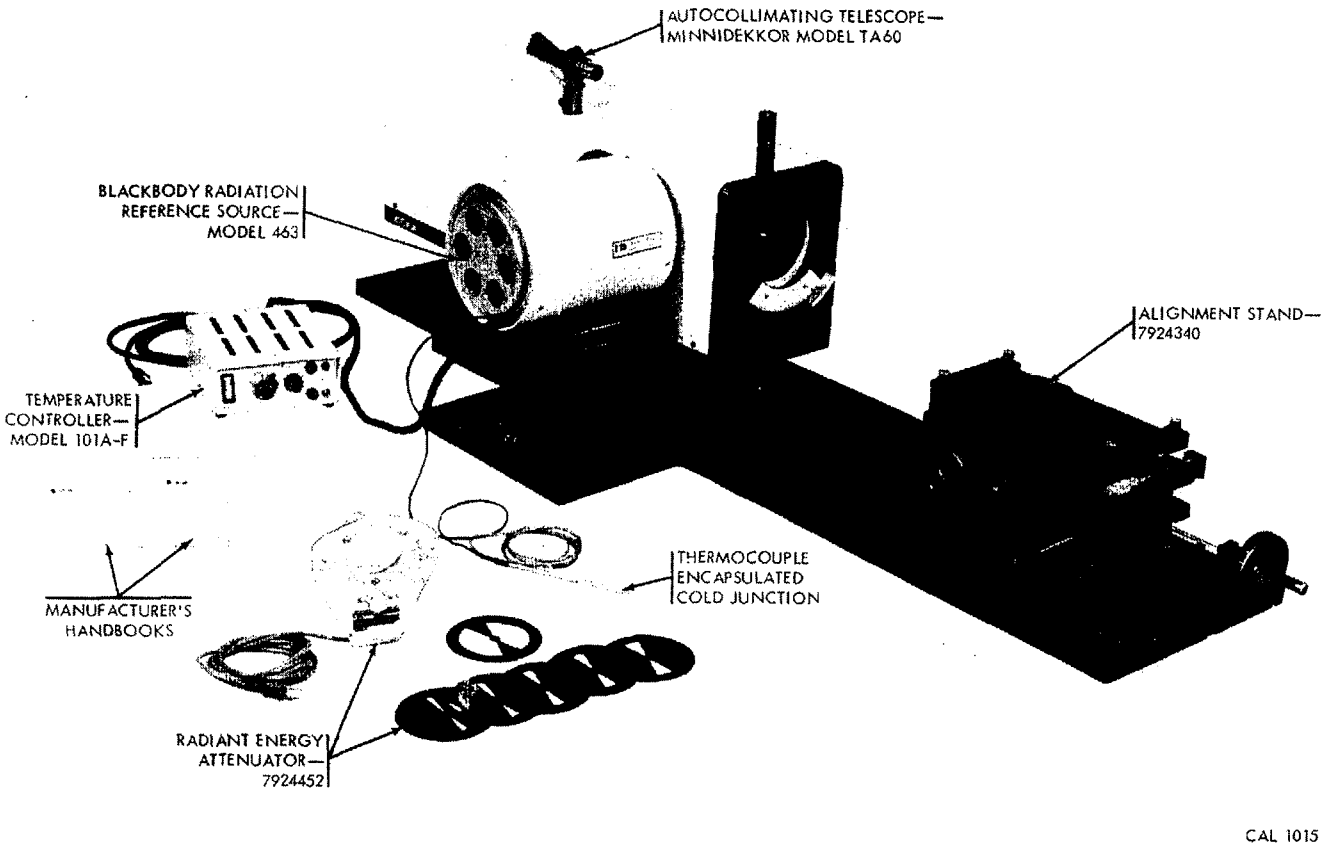

Figure 1-1. Infrared secondary reference test set 4931-895-3894.

Section II. DESCRIPTION AND DATA

1-4. Description

a. General. The infrared secondary reference test set will hereafter be referred to as the test set. It is a standard for calibrating the infrared secondary transfer set 4931-895-3886. The test set and the secondary transfer test set comprise the infrared calibration system for calibration of the AN/TSM-54 and AN/TSM-82 Guided Missile Tests Sets hereafter referred to as the GMTS. Designed for operation .in a laboratory-type environment at an Army secondary reference calibration laboratory, the test set consists of the following (fig, 1-1): (1) a precision alignment stand - 7924340; (2) a matched, pre-calibrated temperature controller Model 101A-F and blackbody radiation reference source - Model 463; (3) a matched pre-calibrated off-axis collimator - Model 230A and radiant energy attenuator - 7924452; (4). an autocollimating telescope - Minnidekkor Model TA 60; and (5) manufacturer's handbooks for the temperature controller, blackbody radiation reference source, and collimator. A general description of each test set component is presented below. Separate coverage is provided in the form of manufacturer's handbooks.

b. Alignment Stand - 7924340. The alignment stand (fig. 1-2) provides a 'means for precise optical alignment positioning of the instrument under calibration test with the test set off-axis collimator. A machined aluminum base plate includes three legs for mounting on an optical bench. Three removable recessed foot pads located on the top surface of the base plate ensure proper positioning of the collimator during preoperational setup. The alignment stand adjustment mechanism includes adapters for mounting the infrared secondary transfer test set radiometer optical unit during calibration testing. It is capable of four degrees of freedom, lateral .and vertical translation, and rotation about the lateral and vertical axes. A 4-inch circular handle at the side of the stand provides major vertical translation; a 2-inch circular handle on the front of the stand provides major lateral translation. Precise calibration alignment of the mounted instrument under test with the collimator is accomplished by dial settings of two micrometers.

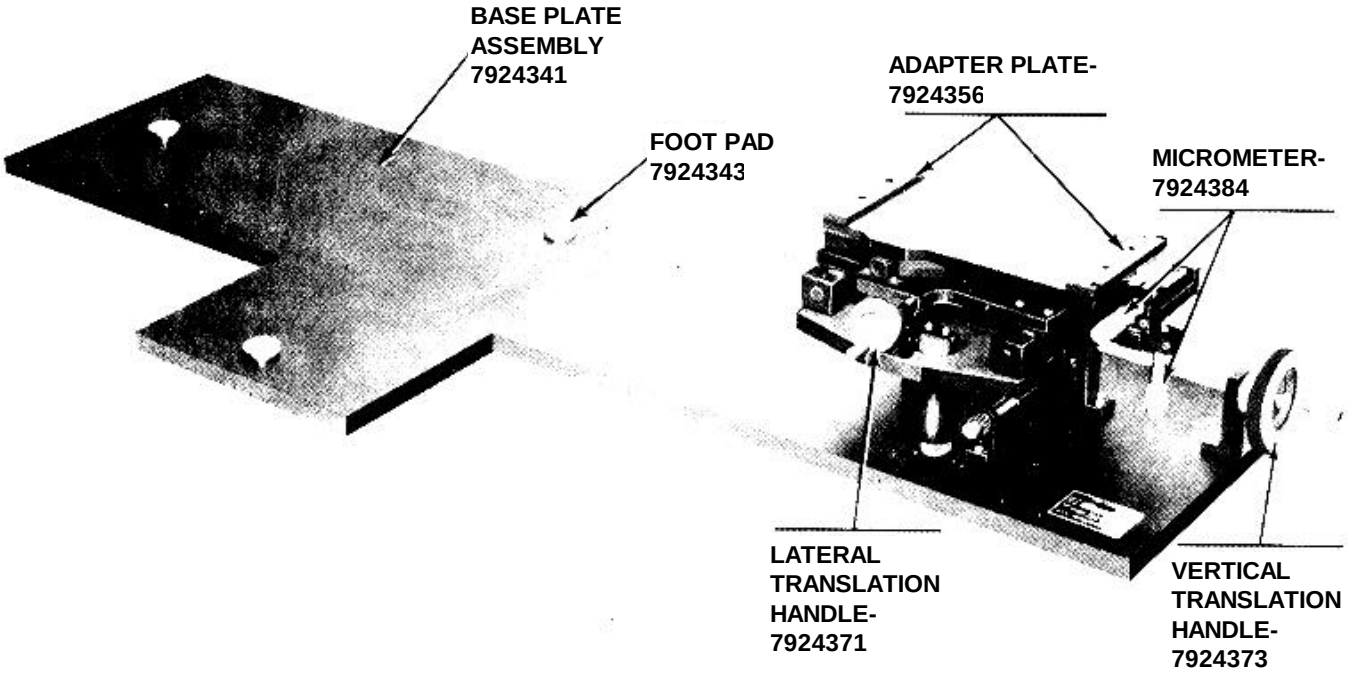

Figure 1-2. Alignment stand - 7924340-front view.