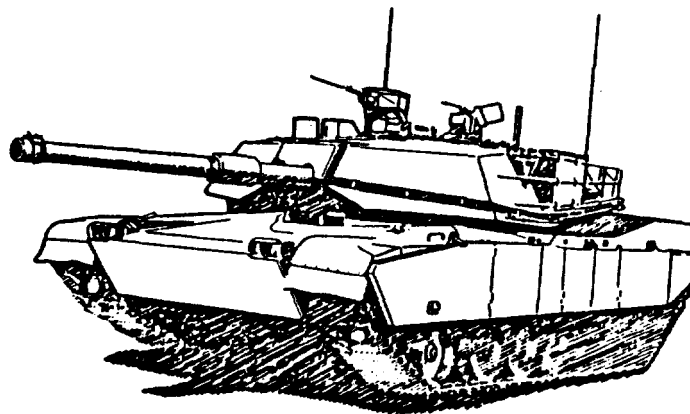


OPERATOR'S MANUAL
FOR
MULTIPLE INTEGRATED LASER
ENGAGEMENT SYSTEM
(MILES)
SIMULATOR SYSTEM, FIRING, LASER: M82
NSN 1265-01-137-7697
FOR
M1/M1A1 ABRAMS TANK



DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY

JULY 1988

TECHNICAL MANUAL
No. 9-1265-373-10-1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 15 JULY 1988

OPERATOR'S MANUAL
FOR
MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM
(MILES)
SIMULATOR SYSTEM, FIRING, LASER: M82
NSN 1265-01-137-7897
FOR
M1/M1A1 ABRAMS TANK

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander U.S. Army Simulation, Training, and Instrumentation Command (STRICOM), ATTN: AMSTI-LSM, 12350 Research Parkway, Orlando, FL 32826-3276. A reply will be furnished to you.

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

TABLE OF CONTENTS

	Page
CHAPTER 1	1-0
SECTION I	1-1
SECTION II	1-1
SECTION III	1-6
CHAPTER 2	1-11
SECTION I	2-0
SECTION II	2-0
SECTION III	2-2
CHAPTER 3	2-4
SECTION I	3-1
SECTION II	3-1
APPENDIX A	3-1
APPENDIX B	A-1
APPENDIX C	B-0
APPENDIX D	C-1
APPENDIX E	D-1
INDEX	E-1
EXPENDABLE SUPPLIES AND MATERIALS LIST	
SPECIAL TOOLS AND TEST EQUIPMENT	INDEX-1

* Supersedes TM 9-1265-373-10-1 dated 15 December 1983

HOW TO USE THIS MANUAL

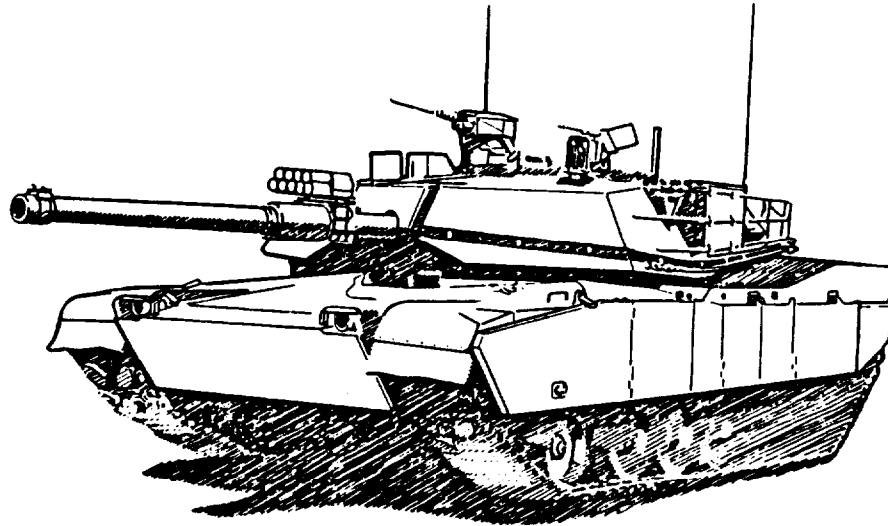
The first part of this manual (TM 9-1255-373-10-1) briefly explains the purpose of the equipment and how it is used. This is followed by step-by-step guidance for every task needed to install, test, align, operate and remove the MILES M1 equipment. A special index precedes each set of tasks. These can be used as checklists to ensure that all tasks have been completed.

NOTE

Unless otherwise specified, procedures in this technical manual apply to both the M1 and the M1A1 tanks (even though only the M1 Tank is mentioned).

CHAPTER 1 INTRODUCTION

SECTION I. GENERAL INFORMATION



SCOPE

Type of Manual. This manual shows you how to install, operate and maintain MILES simulator system equipment for the M1 Abrams Tank. Step-by-step instructions are given for all procedures necessary to use the system.

This manual covers only authorized operator maintenance. Any maintenance problems not covered should be referred to organizational maintenance personnel.

Skills Needed to Use this Manual

To use this manual you should be able to:

1. Aim and fire all M1 or M1A1 Tank weapons (see TM 9-2350-255-10 or TM 9-2350-264-10).
2. Install M240 and M2 machine guns (see TM 9-1005-313-10 and TM 9-1005-213-10).
3. Install blank-fire adapters on the M240 and M2 machine guns.
4. Install Hoffman MGT/WESS firing device. Know how to interface with M1 trigger cable assembly (see TM Simulator, Tank Gun Fire Device 17-61, Hoffman Werke Jan. 79 and revised 1 Apr. 79).
5. Complete DA Form 2404.

If you cannot do these tasks, ask your NCO or instructor to show you how. When you can do all these tasks, go on with this manual.

Purpose of Equipment. MILES equipment for the M1 Abrams Tank consists of three battery-operated laser transmitters and a detector system. It permits realistic combat training without the hazards of using live ammunition.

Limitation on Equipment. MILES-equipped weapons have the same range and operational capabilities as the normal weapons, but a **dirty laser transmitter lens** may reduce the effective range of the transmitters.

Maintenance Forms and Records. Department of the Army forms and procedures used for equipment maintenance will be those described by DA PAM 738-750, The Army Maintenance Management System (TAMMS).

Reporting Equipment improvement Recommendations (EIRS). If your MILES equipment for the M1tank needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail to us at Commander, U.S. Army Armament Munitions and Chemical Command, ATTN: AMSMC-QAD, Rock Island, IL 61299-6000. We'll send you a reply.

Hand Receipt Manual. This manual has a companion document with a TM number followed by " - HR" (which stands for Hand Receipt). The TM 9-1265-373-10-1-HR consists of preprinted hand receipts (DA Form 2062) that list end item related equipment (i.e., COEI, BII, and AAL) you must account for. As an aid to property accountability, additional -HR manuals may be requisitioned from the following source in accordance with procedures in Chapter 3, AR 310-2:

Commander
The U.S. Army Adjutant General Publications Center
2800 Eastern Boulevard
Baltimore, MD 21220

REFERENCE INFORMATION

This section includes the nomenclature cross reference list, list of abbreviations, and explanations of terms (glossary) used in this manual.

A. NOMENCLATURE CROSS REFERENCE LIST

<u>Common Name</u>	<u>Official Nomenclature</u>
Control Console (Loader's Control Assembly - LCA)	Console, Simulator System: For M1 Tank
Controller Gun	Controller's Gun, Simulator System, Laser
CVKI	Indicator Simulator System, Laser: Combat Vehicle Kill/Hit/Miss
Detector Belt Segments	Detector Belt Assembly, Segment No. 3 and Segment No. 6
Dry Fire Plug	Plug Assembly, Dry Fire
Helmet Harness	Detector Assembly, Simulator System, Laser: Man Worn
Hoffman Device	Main Tank Gun Weapons Effects Signature Simulator
M2 Machine Gun Transmitter	Transmitter Assembly, Simulator System, Laser: For M2 Machine Gun, M1 Tank
M240 Machine Gun Transmitter	Transmitter Assembly, Simulator System, Laser: For M240 Machine Gun
Torso Harness	Detector Assembly, Simulator System, Laser: Man Worn
105 mm/Coax MG Transmitter For (Main Gun Transmitter)	Transmitter Assembly, Simulator System, Laser: 105 mm/Coax Machine Gun
120 mm/Coax MG Transmitter For (Main Gun Transmitter)	Transmitter Assembly, Simulator System, Laser: 120 mm/Coax Machine Gun

B. LIST OF ABBREVIATIONS

CVKI	Combat Vehicle Kill Indicator
LCA	Loader's Control Assembly
MILES	Multiple Integrated Laser Engagement System
MWLD	Man Worn Laser Detector
NCOIC	Non-Commissioned Officer In Charge
TC	Tank Commander

C. GLOSSARY

Common Name

Control Console (Loader's Control Assembly - LCA)	MILES device used in vehicles to decode laser beam signals and fire main gun/coax machine gun transmitter.
Controller	Umpire or referee in a MILES training exercise.
Controller Gun	Device used to test MILES detector systems. Also used to disqualify soldiers or vehicles from an exercise.
Controller Key	Green key used by controller to reset MILES transmitters.
Combat Vehicle Kill Indicator	MILES device attached to armored vehicles to provide external flashing light. Indicates that vehicle is under opposing fire (NEAR MISS), has been "HIT" or "KILLED".
Fastener Tape	Hook and pile tape. Used to hold vehicle detector belts and other MILES equipment in place.
Helmet Harness	Part of the laser detector assembly worn on a combat helmet.
Hit	Simulated contact with opposing fire insufficient to disable vehicle or cause a fatality.
Kill	Simulated contact with opposing fire sufficient to disable vehicle or cause a fatality.

C. GLOSSARY (Cont.)

Laser Beam	Harmless, invisible beam of light which simulates weapon fire in MILES.
Laser Detector Assembly	Device that senses the laser beam directed at it.
Laser Transmitter	Device that sends the laser beam.
Man Worn Laser Detector	Helmet and torso assembly worn by personnel which senses a laser beam directed at it.
Near Miss	Simulated closeness to contact with opposing fire.
Orange Weapon Key	Used to turn on M2 machine gun transmitter. Silences intercom when inserted in control console. Also used to "SELF KILL" vehicle.
Simulator	Training device which takes the place of real equipment and which has many of its characteristics.
Torso Harness	Part of the laser detector assembly worn on the upper body.
Yellow Weapon Key	Carried by vehicle personnel wearing MWLDs. When continuous alarm sounds, it is put in the MWLD key receptacle to silence alarm.

SECTION II. EQUIPMENT DESCRIPTION

EQUIPMENT PURPOSE, CAPABILITIES, AND FEATURES

PURPOSE OF MILES SIMULATOR SYSTEM, LASER: M1 TANK

The MILES Simulator System, Laser: M1 Tank, permits the vehicle and crew to take part in realistic combat training exercises. Actual firing conditions of all vehicle weapons are simulated using laser beams. Blank ammunition and a Hoffman device add to the system's realism.

Laser detectors mounted on the M1 tank and worn by crew members sense enemy fire. MILES system electronics determines the accuracy and simulated damage of enemy fire. The system also detects the type of weapon directing enemy fire against the M1 vehicle.

FEATURES AND CAPABILITIES

- Easily installed and removed.
- Simulates firing capability of all M1 weapons.
 1. 105 mm or 120 mm main gun/coax M240 machine gun
 2. Tank commander's M2 machine gun
 3. Loader's M240 machine gun
- Blank fire and main gun Hoffman device add realism.
- Normal firing procedures used for all weapons.
- Detects all opposing fire.
 1. Attacking weapon accuracy
 - a. "NEAR MISS"
 - b. "HIT"
 - c. "KILL"
 2. Attacking weapon identification
- Uses eye safe battery-powered laser transmitters.
- Operates in temperatures from - 35°C (- 26F) to 62°C (144°F).
- Compatible with all other MILES training devices.
- High visibility CVKI strobe light signals vehicle "NEAR MISS," "HIT" or "KILL".