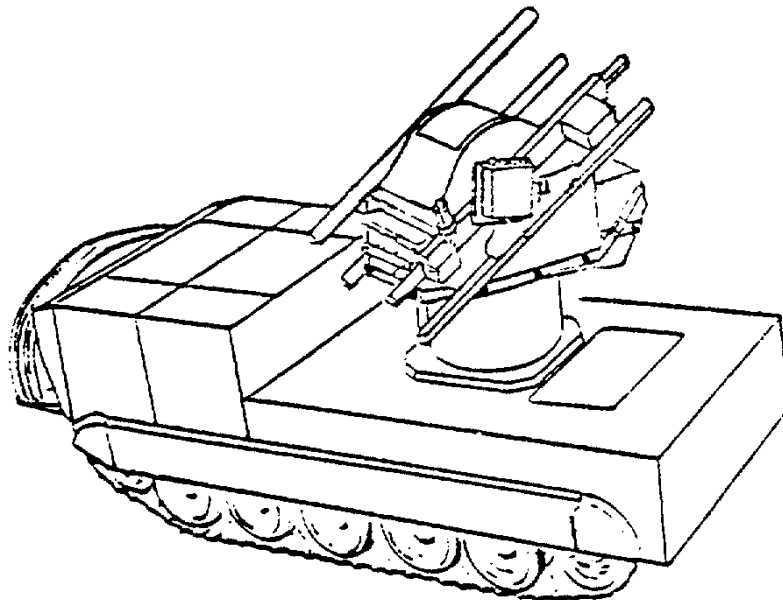


This copy is a reprint which includes current pages from Change 1.

TM 9-1265-208-10

TECHNICAL MANUAL
OPERATOR'S MANUAL
FOR
MULTIPLE INTEGRATED LASER
ENGAGEMENT SYSTEM
(MILES)
SIMULATOR SYSTEM, FIRING, LASER: M77
NSN 1265-01-154-9887
FOR
CHAPARRAL WEAPON SYSTEM



HEADQUARTERS, DEPARTMENT OF THE ARMY

OCTOBER 1984

TECHNICAL MANUAL
No. 9-1265-208-10

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 9 OCTOBER 1984

OPERATOR'S MANUAL
FOR
MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM
(MILES)
SIMULATOR SYSTEM, FIRING, LASER: M77
NSN 1265-01-154-9887
FOR
CHAPARRAL WEAPON SYSTEM

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, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-MAS, Rock Island, IL 61299-6000. A reply will be furnished to you.

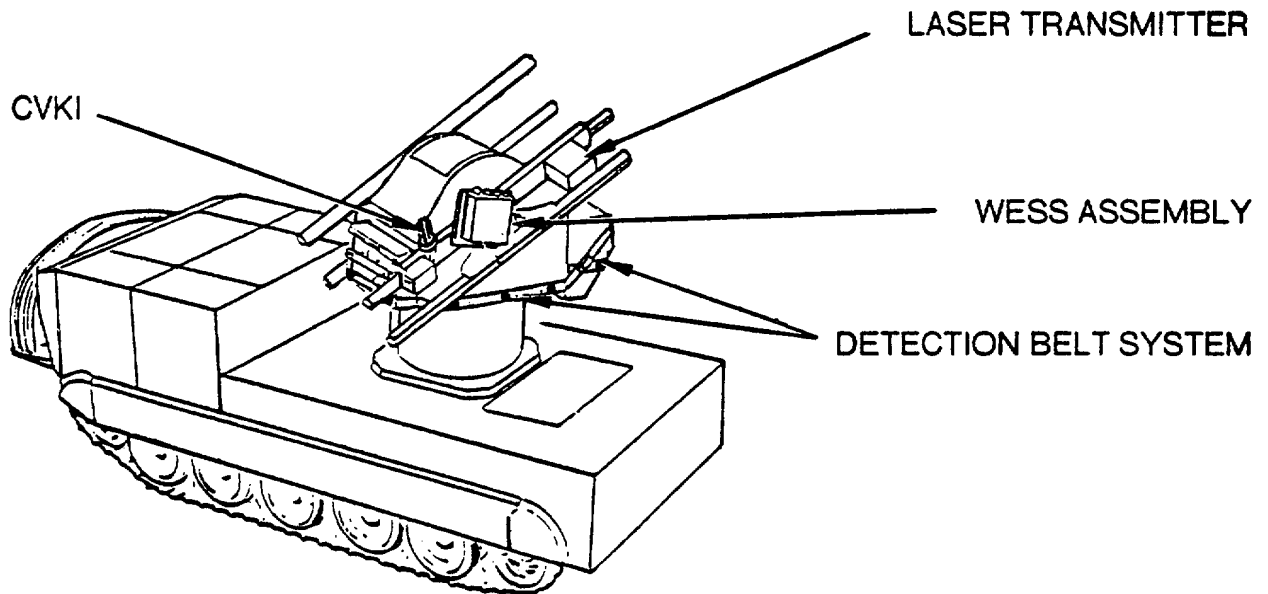
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

TABLE OF CONTENTS

		Page
CHAPTER 1	INTRODUCTION	1-1
SECTION I.	General Information	1-1
SECTION II.	Equipment Description	1-6
SECTION III.	Technical Principles of Operation	1-12
CHAPTER 2	OPERATING INSTRUCTIONS	2-1
SECTION I.	Description and Use of Operator's Controls and Indicators	2-1
SECTION II.	Preventive Maintenance Checks and Services	2-6
SECTION III.	Operation Under Usual Conditions.....	2-9
SECTION IV.	Operation Under Unusual Conditions.....	2-96
CHAPTER 3	MAINTENANCE INSTRUCTIONS.....	3-1
SECTION I.	Lubrication Instructions	3-1
SECTION II.	Troubleshooting Procedures	3-3
CHAPTER 4	AMMUNITION.....	4-1
SECTION I.	MILES AGES/AD Authorized Ammunition (ATWESS).....	4-1
APPENDIX A	REFERENCES	A-1
APPENDIX B	COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS	B-1
APPENDIX C	ADDITIONAL AUTHORIZATION LIST	C-1
APPENDIX D	EXPENDABLE SUPPLIES AND MATERIALS LIST.....	D-1
INDEX	Index-1

CHAPTER 1 INTRODUCTION

SECTION I. GENERAL INFORMATION



SCOPE

TYPE OF MANUAL. This manual shows you how to install, checkout, align, operate, and maintain the Multiple Integrated Laser Engagement System (MILES) Air-to-Ground Engagement System/Air Defense (AGES/AD), M77. for the CHAPARRAL weapon system.

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

NOTE

To use this manual you should be able to:

Operate, boresight, aim and fire the CHAPARRAL weapon system (see TM 9-1425-1586.10).

Complete DA Forms 2402 and 2404.

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

PURPOSE OF EQUIPMENT. MILES AGES/AD equipment for the CHAPARRAL Weapon System consists of a laser transmitter 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 are those as prescribed in DA PAM 738-750, The Army Maintenance Management System (TAMMS).

HAND RECEIPT MANUAL. This manual has a companion document with a TM number followed by HR" (which stands for Hand Receipt). The TM 9-1265-208-10-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

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs). If your MILES equipment for the Chaparral Weapon System 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 the Quality Deficiency Report to us at Commander, U.S. Army Armament, Munitions and Chemical Command, ATTN: AMSMCQAD, Rock Island. IL 61299- 6000. We'll send you a reply.

Change 1 1-2

REFERENCE INFORMATION

This listing includes the Nomenclature Cross Reference List. List of Abbreviations, and an explanation of terms (glossary) used in this manual

NOMENCLATURE CROSS REFERENCE LIST

<u>Common Name</u>	<u>Official Nomenclature</u>
Adapter Set	Adapter Set, Simulator System, Laser: CHAPARRAL
ATWESS	Antitank Weapons Effect Signature Simulator
Battery Box	Battery Box Assembly
Chaparral Simulator System	Simulator System, Firing Laser: CHAPARRAL Weapon
Control Indicator Assembly (CIA)	Console Simulator System, Laser: For M113 APC
Detector Belt	Detector Belt Assembly. Segment No. 1; Segment No. 2.
Interface Control Assembly (ICA)	Console, Simulator System. Laser: Vehicle Interface
Kill Indicator (CVKI) KILL/HIT/MISS	Indicator, Simulator System, Laser: Combat Vehicle
Laser Transmitter CHAPARRAL	Transmitter Assembly, Simulator System. Laser:
Rail Assembly	Rail Assembly. Simulator System. Laser: CHAPARRAL
WESS	Simulator, Weapon Fire, CHAPARRAL

LIST OF ABBREVIATIONS

AGES/AD	Air-to-Ground Engagement System/Air Defense
ATWESS	Antitank Weapons Effect Signature Simulator
CIA	Control Indicator Assembly
ICA	Interface Control Assembly
MILES	Multiple Integrated Laser Engagement System
PMCS	Preventive Maintenance Checks and Services
WESS	Weapons Effect Signature Simulator

GLOSSARY

ATWESS	Pyrotechnic device used to simulate backblast, flash, noise, and smoke of a CHAPARRAL missile firing.
ATWESS Cartridge	Explosive round used in ATWESS.
Combat Vehicle Kill Indicator	MILES device attached to vehicles to provide external flashing light. Indicates that vehicle is under opposing fire ("NEAR MISS"). has been "HIT," or "KILLED."
Control Indicator Assembly (CIA)	Receives detected laser pulse signals from detector belts. Decodes these signals and activates appropriate audio and visual alarms associated with the CVKI and intercom. Displays information on attacking weaponry.
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 and control consoles.
Fastener Tape	Hook and pile tape. Used to hold vehicle detector belts and other MILES equipment in place.
HIT	Simulated contact with opposing fire insufficient to disable vehicle or cause a fatality.
Interface Control Assembly (ICA)	Contains electronic circuitry to activate the laser transmitter when the weapon trigger is pressed.
KILL	Simulated contact with opposing fire sufficient to disable vehicle or cause a fatality.
Laser	Light Amplification by Stimulated Emission of Radiation
Laser Beam	Invisible beam of light which simulates weapon fire.
Laser Detector Assembly	Device that senses laser beams directed at it.
Laser Transmitter	Device that sends a laser beam.
MILES	Multiple Integrated Laser Engagement System. MILES consists of a laser transmitter and a detector system. It permits realistic combat training without the hazards of using live ammunition.

NEAR MISS	Simulated closeness to contact with opposing fire.
Simulator	Training device which takes the place of real equipment and which has many of its characteristics.
Orange Weapon Key	Activates ICA. Silences vehicle intercom when inserted in Control Indicator Assembly. Also used to "SELF-KILL" vehicle.
WESS	An ATWESS array. Pyrotechnic device used to simulate backblast, flash, noise, and smoke of a CHAPARRAL missile firing.

SECTION II. EQUIPMENT DESCRIPTION

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

PURPOSE OF MILES SIMULATOR SYSTEM, LASER: CHAPARRAL WEAPON SYSTEM

The MILES Simulator System, Laser: CHAPARRAL Weapon System, permits the vehicle to take part in realistic combat training exercises. Actual firing conditions of all vehicle weaponry is simulated using laser beams. ATWESS firing devices add to the system's realism.

Laser detectors mounted on the CHAPARRAL Weapon System sense enemy fire. MILES system electronics determine the accuracy and simulated damage of enemy fire. The system also detects the type of weapon directing enemy fire against the CHAPARRAL Weapon System.

FEATURES AND CAPABILITIES

- Easily installed and removed.
- Simulates firing capability of CHAPARRAL Weapon System.
- ATWESS firing devices add realism.
- Normal firing procedures used for weaponry.
- 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 (-31°F) to 62°C (144°F).
- Compatible with all other MILES training devices.
- High visibility CVKI strobe light signals CHAPARRAL "NEAR MISS." "HIT," or "KILL."