TM 9-1265-375-10
Supersedes copy dated 18 October 1984

OPERATOR'S MANUAL

FOR

MULTIPLE INTEGRATED LASER

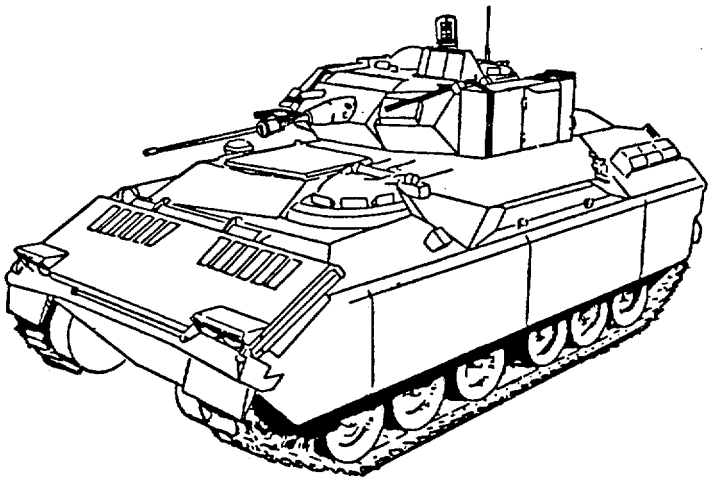
ENGAGEMENT SYSTEM

(MILES)

SIMULATOR SYSTEM, FIRING LASER: M83
(NSN 1265-01-158-4560)

FOR

M2/M3 FIGHTING VEHICLES



HEADQUARTERS, DEPARTMENT OF THE ARMY

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HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 12 AUGUST 1988

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FOR
MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM
(MILES)
SIMULATOR SYSTEM, FIRING, LASER: M83
NSN 1265-01-158-4560
FOR
M2/M3 FIGHTING VEHICLES

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.

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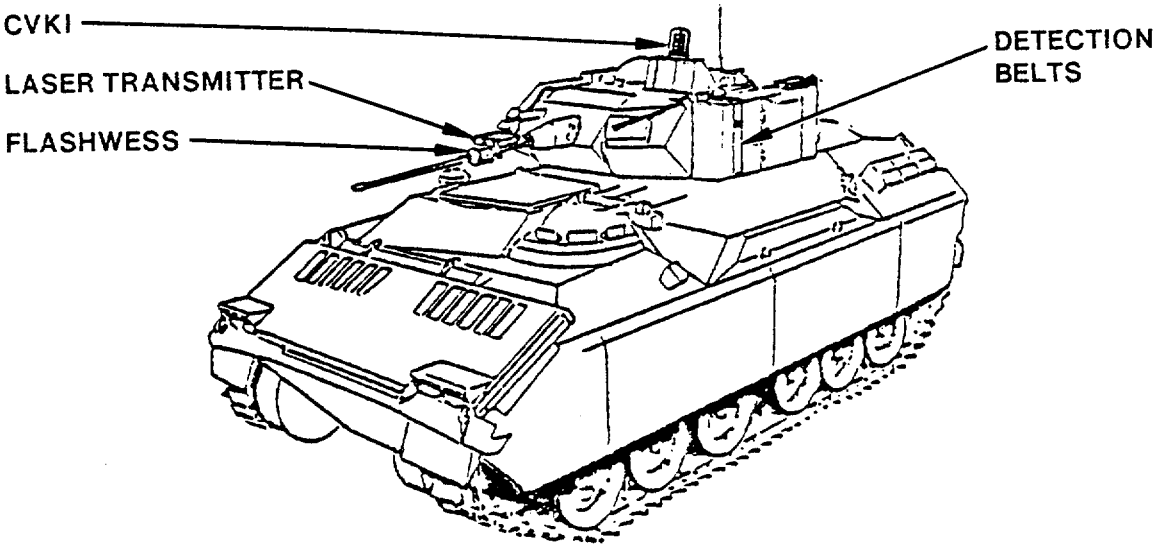
CHAPTER 1
INTRODUCTION

SECTION I. GENERAL INFORMATION



SCOPE

TYPE OF MANUAL. This manual shows you how to install, operate and maintain MILES simulator system equipment for the M2 and M3 Fighting Vehicles. 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 coveted should be referred to organizational maintenance personnel.

NOTE

To use this manual you should be able to:

Aim and Fire all M2/M3 Vehicle weapons (see TM 9-2350252-10).

Install blank-fire adapter on the M240C machine gun (see TM 9-1005-313-10).

Complete DA Form 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.

SCOPE (Continued)

PURPOSE OF EQUIPMENT. MILES equipment for the M2 and M3 Fighting Vehicles consists of two 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 prescribed by 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 9-1265-375-10-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 M2 and M3 Fighting Vehicles 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: AMSMC-QAD, Rock Island, IL 61299-6000. We'll send you a reply.

NOMENCLATURE CROSS REFERENCE LIST

Common Name	Official Nomenclature
ATWESS	Anti-Tank Weapon Effects Signature Simulator
AWESS	Automatic Weapon Effect Signature Simulator
Control Console (Loader's Control Assembly - LCA)	Console, Simulator System: For M2/M3
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. 7 and Segment No. 8
FLASHWESS	Simulator, Weapon Fire
Helmet Harness	Detector Assembly, Simulator System, Laser: Man Worn
Main Gun/Coax Machine Transmitter	Transmitter Assembly, Simulator System, Laser: Gun 25 mm
Torso Harness	Detector Assembly, Simulator System, Laser: Man-Worn
TOW	Tube Launched, Optically Sighted, Wire Command Link-Guided Missile
TOW Transmitter	Transmitter Assembly, Simulator System, Laser: TOW
TOW Simulator Tube	Simulator, Anti-Tank Missile Fire, TOW

LIST OF ABBREVIATIONS

CLP	Cleaner, Lubricant and Preservative
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
TOW	Tube Launched, Optically Tracked, Wire-guided

GLOSSARY

ATWESS Cartridge	Pyrotechnic device used to simulate backfire shock and noise of TOW firing.

GLOSSARY (Continued)

Common Name	Official Nomenclature
Control Console (Loader's Control Assembly - LCA)	MILES device used in vehicles to decode laser beam signals and fire laser transmitters.
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.
Laser Beam	Invisible beam of light which simulates weapon fire in MILES.
Laser Detector Belt 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.
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.
TOW	Wire-guided anti-tank missile.
Orange Weapon Key	Silences intercom when inserted in control console. Also used to "SELF-KILL" vehicle.
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 CHARACTERISTICS, CAPABILITIES, AND FEATURES

PURPOSE OF MILES SIMULATOR SYSTEM, LASER: M2/M3 FIGHTING VEHICLES

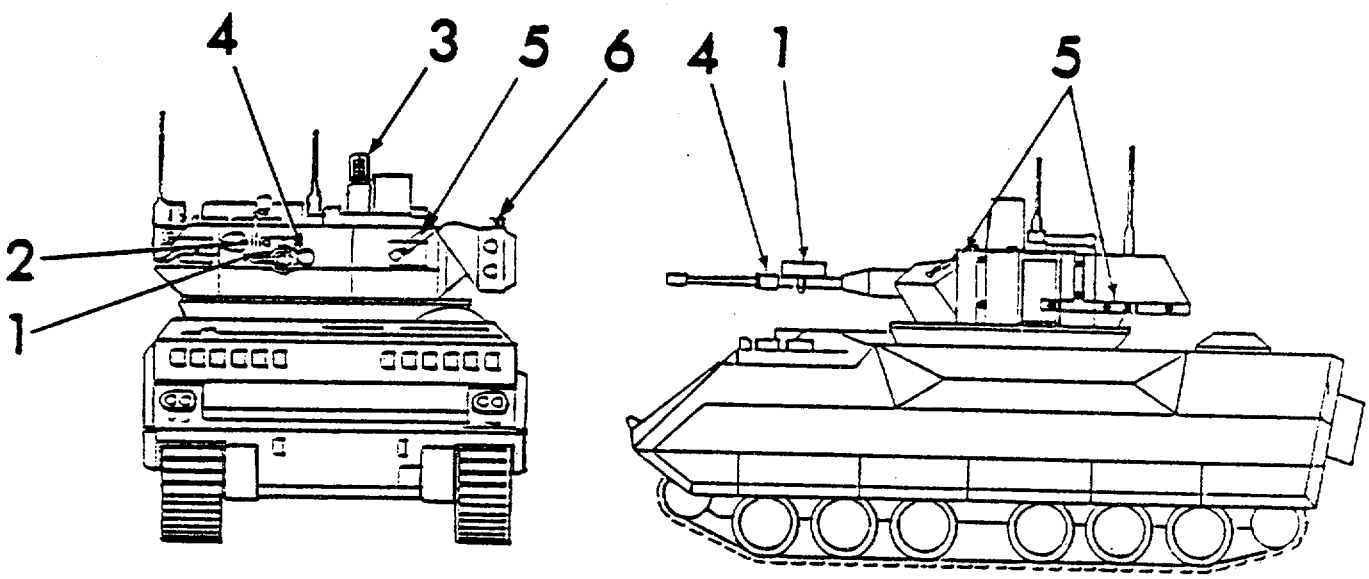
The MILES Simulator System, Laser: M2/M3 Fighting Vehicles, permits the Vehicle and Crew to take part in realistic combat training exercises. Actual firing conditions of all vehicle weapons are simulated using laser beams. Blank ammunition and an ATWESS firing device add to the system's realism.

Laser detectors mounted on the M2 and M3 vehicles and worn by crew members 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 M2 and M3 vehicles.

FEATURES AND CAPABILITIES

- Easily installed and removed.
- Simulates firing capability of all M2 and M3 weapons.
    1. 25 mm Main Gun/Coax M240C Machine Gun
    2. TOW Missile
- Blank-Fire, FLASHWESS, and ATWESS firing devices 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 (-31°F) to 62°C (144°F).
- Compatible with all other MILES training devices.
- visibility CVKI strobe light signals vehicle "NEAR MISS," "HIT," or "KILL."

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS



Main Gun/Coax Machine Gun Transmitter (1). Simulates firing effects of 25 mm Main Gun and M240C Coax Machine Gun by transmitting a special coded laser signal. Mounts on barrel of 25 mm main gun.

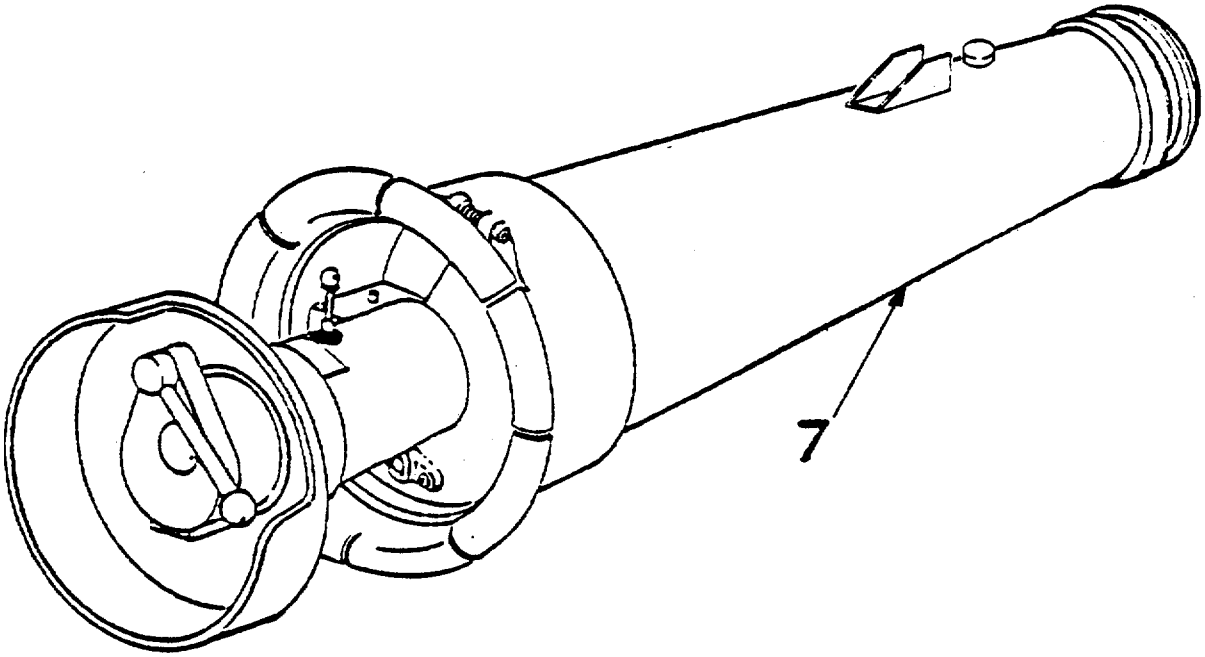
Blank Firing Attachment (2). Permits using blank ammunition in M240C machine gun.

Combat Vehicle Kill Indicator (3). Flashes strobe light for a "KILL," "HIT," or "NEAR MISS" indication. Mounts on top right side of the Integrated Sight Unit (ISU).

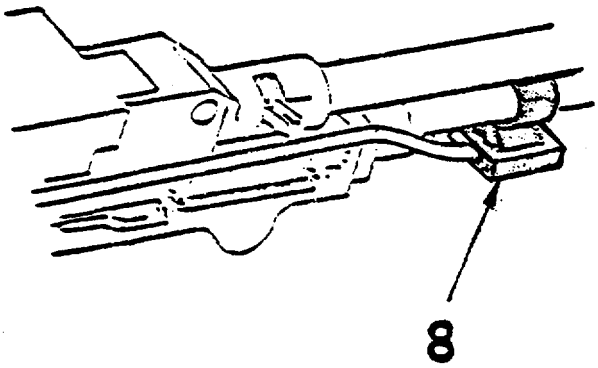
FLASHWESS (4). Lamp device powered by 24 V dc vehicle power. Flashes 120 times per minute when activated by gun system. Simulates light flashes generated by firing live ammunition. Attaches to main gun barrel.

Detector Belt System (5). Receives laser pulses from MILES-equipped opposing weapons. Generates, amplifies and routes electrical signals to the control console for determining whether signal was a "NEAR MISS," "HIT," or "KILL." Mounts on TOW launcher and sides, front, and rear of M2 and M3 vehicles.

TOW Transmitter (6). Simulates firing effects of TOW missile by transmitting a special coded laser signal. Attaches to side of raised TOW launcher.



TOW Simulator (ATWESS) Tube (7). Simulates firing signature of TOW missiles. Mounts inside TOW launcher.



Coax Machine Gun Micro/hone (8). Actuates M240C Coax Machine Gun transmitter. Attaches to lower machine gun barrel.