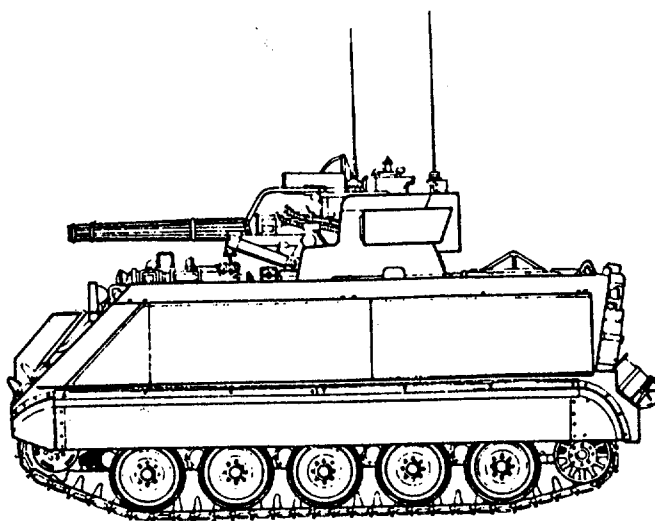


OPERATOR'S MANUAL
FOR
MULTIPLE INTEGRATED LASER
ENGAGEMENT SYSTEM
(MILES)
SIMULATOR SYSTEM, FIRING, LASER: M75
(NSN 1265-01-159-0484)
FOR
VULCAN/PRODUCT IMPROVED VULCAN
AIR DEFENSE SYSTEM,
SELF-PROPELLED



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

HEADQUARTERS, DEPARTMENT OF THE ARMY

AUGUST 1988

TECHNICAL MANUAL
No. 9-1265-201 -10

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

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 SELF-PROPELLED

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.

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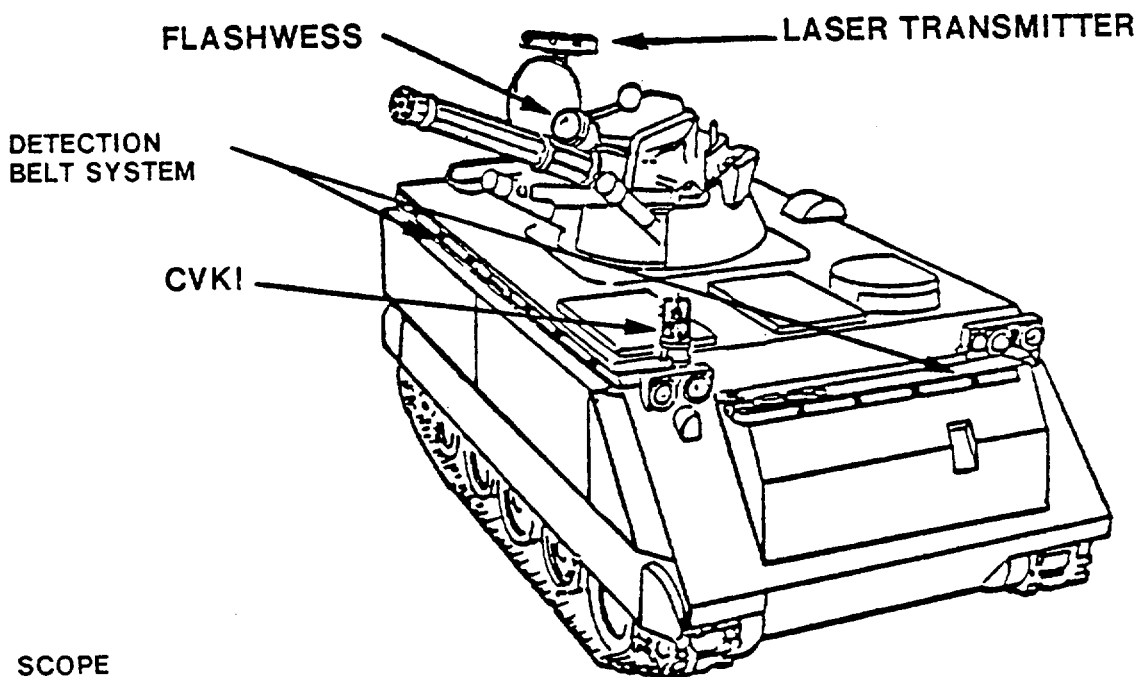
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*Supersedes TM 9-1265-201-10 dated 19 October 1984.

CHAPTER 1
INTRODUCTION

SECTION I. GENERAL INFORMATION



NOTE

Unless otherwise specified in this manual, the term **VULCAN** refers to Vulcan Air Defense System (VADS) and Product Improved Vulcan Air Defense System (PIVADS). Self-Propelled.

TYPE OF MANUAL. This manual shows you how to inspect, install, operate, and maintain MILES AGES/AD equipment for the VULCAN, Self-Propelled, Weapon System. Step-by-step instructions are given in the procedures necessary to use the MILES system.

This manual covers only authorized Operator maintenance. Any maintenance problems not covered should be referred to Organizational ("O" level) maintenance personnel.

NOTE

To use this manual you should be able to:

1. Boresight, aim, and fire the Vulcan weapon (Ref. TM 9-2350-300-10 (VADS), TM 9-2350-310-10 (PIVADS)).
2. 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 these tasks, go on with this manual.

PURPOSE OF EQUIPMENT. MILES AGES/AD VULCAN simulator system equipment (M75) for the Vulcan, Self-Propelled, Weapon System consists of a laser transmitter and detection system. It permits realistic combat training without the hazards of using live ammunition. A weapon signature simulator (flash device) is provided to simulate actual weapon firing.

LIMITATION ON EQUIPMENT. MILES-equipped weapons have the same range and operational capabilities as the real weapons. A dirty laser transmitter lens may reduce the effective range of a transmitter. The mission profiles for the MILES VULCAN system cover both air defense and ground targets. Ground targets may only be engaged with weapon in the MANUAL mode. The MILES VULCAN system is effective against MILES-equipped aircraft, vehicles, and personnel.

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 9-1265-201.10-HR consists of preprinted hand receipts (DA Form 2062) that list end item related equipment (i.e., COEI, BII, 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 VULCAN, Self-Propelled, 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: AMSMC-QAD, Rock Island, IL 61299-6000. A reply will be furnished to you.

REFERENCE INFORMATION

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

NOMENCLATURE CROSS REFERENCE LIST

<u>Common Name</u>	<u>Official Nomenclature</u>
Adapter Set	Adapter Set, Simulator System, Laser: VULCAN, Self-Propelled
Battery Box	Battery Box Assembly
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)	Adapter Assembly, Simulator System, Laser: Console, Vehicle Interface
Kill Indicator (CVKI)	Indicator, Simulator System, Laser: Combat Vehicle KILL/HIT/MISS
VULCAN, Self-Propelled,	Simulator System, Firing, Laser: VULCAN, Self-Propelled Simulator (MILES VULCAN)
VULCAN (20 mm Cannon) Transmitter	Transmitter Assembly, Simulator System, Laser: VULCAN, Self-Propelled
20 mm Cannon FLASHWESS	Adapter Assembly, Simulator, Weapon Fire

LIST OF ABBREVIATIONS

AGES/AD	Air-to-Ground Engagement System/Air Defense
CIA	Control Indicator Assembly
CVKI	Combat Vehicle Kill Indicator
ICA	Interface Control Assembly
IR	Infrared Radiation
MILES	Multiple Integrated Laser Engagement System
PMCS	Preventive Maintenance Checks and Services

ROR	Range Only Radar
SP	Self-Propelled
XMTR	Transmitter

GLOSSARY

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	Receives detected laser pulse signals from detector belts. Decodes these signals and activates appropriate audio and visual alarms. 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.
FLASHWESS	Device that simulates the flash of 20 mm cannon firing.
HIT	Simulated contact with opposing fire insufficient to disable vehicle or cause a fatality.
Interface Control Assembly	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 laser beam.

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.
Weapon Key	Orange key used to activate ICA. Silences vehicle intercom when inserted in Control Indicator Assembly. Also used to "SELF KILL" Vulcan.

SECTION II. EQUIPMENT DESCRIPTION

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

PURPOSE OF MILES SIMULATOR SYSTEM, LASER: VULCAN, SELF-PROPELLED

The MILES Simulator System, Laser: VULCAN, Self-Propelled, permits the vehicle to take part in realistic combat training exercises. Actual firing conditions of vehicle weaponry is simulated using laser beams. A FLASHWESS device adds to the system's realism.

Laser detectors mounted on the VULCAN, Self-Propelled 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 VULCAN, Self-Propelled.

FEATURES AND CAPABILITIES

- Easily installed and removed.
- Simulates firing capability of VULCAN 20 mm cannon.
 1. Firing rate
 2. Burst rate
 3. Range
- FLASHWESS device adds realism.
- Uses normal weapon firing procedures.
- 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 vehicle "NEAR MISS," "HIT," or "KILL."