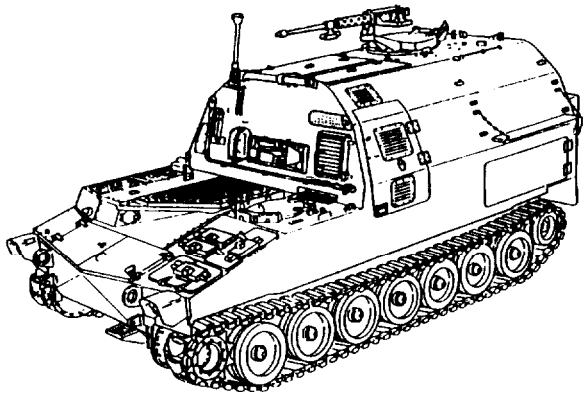
TM 9-2350-287-10

OPERATOR'S MANUAL



CARRIER, AMMUNITION, TRACKED
M992A21
(NSN 2350-01-352-3021)
EIC: AE6

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HEADQUARTERS, DEPARTMENT OF THE ARMY
OCTOBER 1993

Change 1

TECHNICAL MANUAL
NO. 9-2350-287-10

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON D.C., 22 OCTOBER 1993

OPERATOR'S MANUAL

CARRIER, AMMUNITION, TRACKED
M992A1
(NSN 2350-01-352-3021)
EIC: AE6

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 the back of this manual directly to Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-IM-OPIT, Warren, MI 48397-5000. A reply will be furnished to you.

You may also provide DA Form 2028-2 information to TACOM via datafax or e-mail:
- TACOM's fax number is DSN 786-6323 or Commercial (810) 574-6323
- TACOM's e-mail address is tacom-tech-pubs@cc.tacom.army.mil

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HOW TO USE THIS MANUAL

This operator's manual was designed to provide you with the information you will need to operate and maintain the M992A1.

The information contained in this manual is presented in four chapters and five appendixes. Each chapter is divided into sections covering operating procedures and/or other information for specific vehicle systems or components. When a reference is made to a table, figure, paragraph, or appendix, refer to that portion of the text.

To find information pertaining to a broad range of information (such as vehicle troubleshooting, preventive maintenance, or vehicle descriptions):

1. Identify the desired topic.
2. Find the general topic in the table of contents in the front of this manual or in the index on the front cover.
3. Refer to the page called out in the table of contents or the front-cover index.

To find information relating to a specific component or system.

1. Determine the name or function of the component/system.
2. Find the name or function in the subject-index listing at the end of this manual.
3. Refer to the page called out in the subject-index listing.

IMPORTANT

You must read and understand this manual BEFORE operating the M992A1.

Throughout this manual you will frequently see the phrase 'notify Unit maintenance.' When instructed to notify Unit maintenance, do exactly that; Unit maintenance personnel have the tools and training to efficiently and correctly perform the next level of maintenance. Throughout this manual you will also see WARNING, CAUTION, and NOTE headings. There are good reasons for every one of these notices.

WARNING

A warning Is used to alert the user to hazardous operating and maintenance procedures, practices, or conditions that could result in Injury or death. Warnings must be strictly observed.

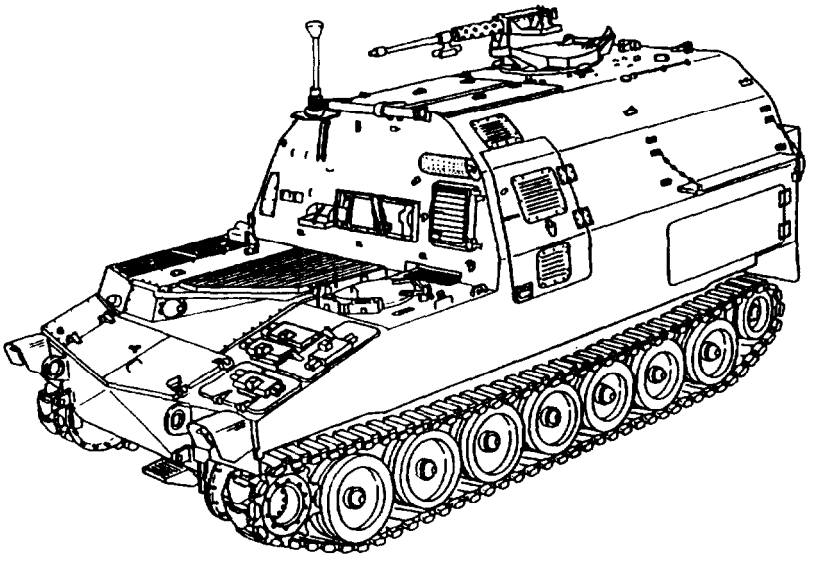
CAUTION

A caution is used to alert the user to hazardous operating or maintenance procedures, practices, or conditions that could result in damage to, or destruction of, equipment or mission effectiveness. Cautions must be strictly observed.

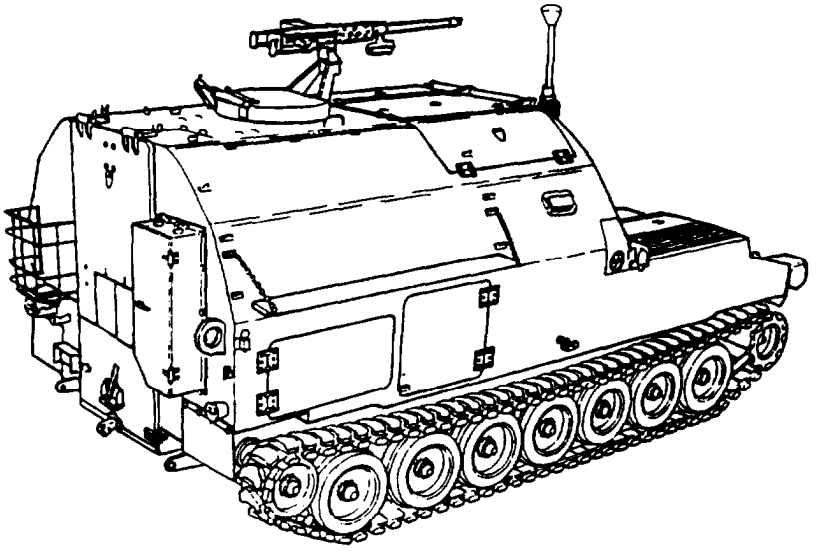
NOTE

A note highlights an essential operating or maintenance procedure, condition, or statement.

Note that Appendix A of this manual gives the full title of every manual, form, pamphlet, or other document referenced in this manual. Also, acronyms and abbreviations used in the manual are listed and spelled out on page 1-2.



M992A1 FRONT LEFT VIEW



M992A1 REAR RIGHT VIEW

CHAPTER 1
INTRODUCTION

Chapter Overview

This chapter introduces the operator to the M992A1 Tracked Ammunition Carrier. The information found in Chapter 1 includes the following:

- Brief description and purpose of the M992A1
- Statement of intended vehicle use
- Reference to pertinent documents
- List of abbreviations used throughout this manual
- Vehicle data and specifications
- Location and description of equipment essential for successful mission completion
- Technical principles of operation for various M992A1 systems

Chapter 1 is divided into the following sections:

Section I	GENERAL INFORMATION
Section II	EQUIPMENT CAPABILITIES, FEATURES, DESCRIPTION, AND PERFORMANCE DATA
Section III	TECHNICAL PRINCIPLES OF OPERATION

Section I. GENERAL INFORMATION

Scope

This manual contains information you need to operate the M992A1, Tracked Ammunition Carrier. The primary use of the M992A1 is to provide overland transport of 155 millimeter projectiles and charges from ammunition supply points to howitzers in the field. Included in the manual are instructions for the proper use of on-board ammunition handling and stowage equipment, as well as driving and crew maintenance procedures.

In terms of driving capabilities and limitations, the M992A1 is comparable to the M109A6 howitzer. The speed, mobility, and maneuverability of the M992A1 equals that of the M109A6, making the M992A1 well suited for efficient resupply of ammunition to M109A6 howitzers.

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 (HR) Manuals

This manual has a companion document with a TM (technical manual) number followed by HR (hand receipt). TM 9-2350-287-10-HR consists of preprinted hand receipts (DA Form 2062) that list the end-item-related equipment you must account for: Components of End Items (COEI), Basic Issue Items (BII), and Additional Authorization List (AAL). As an aid to property accountability, additional HR manuals may be requisitioned from the following source, in accordance with procedures found in AR 25-30:

The U.S. Army Adjutant General Publications Center
ATTN: AGLD-OD
1655 Woodson Road
St. Louis, MO 63114

Destruction of Army Materiel To Prevent Enemy Use

Refer to TM 750-244-6 for procedures on the destruction of tank-automotive equipment to prevent use by an enemy. Destruction of munitions is covered in TM 750-244-5-1 (conventional ammuntion) and TM 43-0002-33 (improved conventional munitions).

Reporting Equipment Improvement Recommendations (EIRs)

If your M992A1 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 Form 368. Mail it to the address specified in DA Pam 738-750.

List of Abbreviations

A	Annually
AAL	Additional Authorization List
AFES	Automatic Fire Extinguishing System
AFES/MDS	Automatic Fire Extinguishing System Manual Discharge System
AHE	Ammunition Handling Equipment
AOAP	Army Oil Analysis Program
APU	Auxiliary Power Unit
BII	Basic Issue Items
BITE	Built-In Test Equipment
CAGEC	Commercial and Government Entity Code
CARC	Chemical Agent Resistant Coating
CK	Cyanogen Chloride
COEI	Components of End Items
CVC	Combat Vehicular Crewman
DA	Department of the Army
DOD	Department of Defense
E	Empty
EIR	Equipment Improvement Recommendation
Ext.	Extinguisher
F	Full; Fahrenheit
GAA	Grease, Automotive and Artillery
GPS	Global Positioning System

List of Abbreviations (continued)

H	Hour
HR	Hand Receipt
IAW	In Accordance With
Illus	Illustration
I R	Infrared
L	Low
LAW	Lubricating Oil for Aircraft Weapons
LED	Light-Emitting Diode
LHR/CS	Low Heat Rejection/Cold Start
LRB	Left Rear Bottom (canister stowage area)
LRT	Left Rear Top (canister stowage area)
M	Monthly
MOM	Momentary
MTOE	Modification Table of Organization and Equipment
MWRH	Mounted Water Ration Heater
N	Neutral
NBC	Nuclear, Biological, and Chemical
OC	On Condition
OFSA	Optical Fire Sensing Assembly
p.	Page
para	Paragraph
PLGR	Precision Lightweight GPS Receiver
PMCS	Preventive Maintenance Checks and Services
Qty. Recm.	Quantity Recommended
Qty. Rqr.	Quantity Required
RRB	Right Rear Bottom (canister stowage area)
RRM	Right Rear Middle (canister stowage area)
RRT	Right Rear Top (canister stowage area)
RSI	Remote Status Indicator
S	Semiannually
SCEA	Standard Control Electronic Amplifier
STE/ICE	Simplified Test Equipment/Internal Combustion Engine
T/A	Test and Alarm
TAMMS	The Army Maintenance Management System
3-D	3-Dimensional
TOE	Table of Organization and Equipment
U/M	Unit of Measure
VFP	Ventilated Face Piece
VFPS	Ventilated Face Piece System
W/	With
W/O	Without

Section II. EQUIPMENT CAPABILITIES, FEATURES, DESCRIPTION, AND PERFORMANCE DATA

Purpose

The M992A1 is a field artillery ammunition support vehicle comparable to current field artillery weapons (M109A6 and M110A2 self-propelled howitzer class) in terms of speed, mobility, and survivability.

Capabilities

This full-tracked, self-propelled, diesel-powered vehicle is highly mobile and maneuverable. It is capable of long-range, high-speed operation on improved roads. It is also well suited to rough terrain, muddy or marshy ground, sand, snow, and ice. The M992A1 can also ford waterways where maximum depth is 42 inches (106.68 cm).

Features

- Ammunition handling equipment (AHE) that includes a hydraulically operated conveyor, two projectile rack assemblies, and related components.
- A diesel-powered auxiliary power unit (APU) used to drive the hydraulic system and recharge vehicle batteries.
- Simplified test equipment for the internal combustion engine (STE/ICE).
- Automatic fire extinguishing system (AFES).

  AFES is an automatic and manual electrical system that, when activated, provides fire-extinguishing capability for the engine and crew compartments. It consists of test and alarm panels, sensors, and associated equipment explained later in this section and in the Chapter 4 operating instructions.

  Automatic electrical operation will automatically sense and discharge an agent to extinguish hydrocarbon fires. The crew system provides an automatic electrical second-shot capability if the fire continues burning or if a second fire occurs.

  To discharge the fire-extinguishing agent, manual electrical operation must be manually activated by the crew. The crew system second-shot manual electrical activation is available if the fire continues to burn; it must be manually activated by a crew member.

  These systems will not activate unless the crew/engine test and alarm panel maintenance switches are in the horizontal POWER ON normal operational position. (See Chapter 4.)

- Nuclear, biological, and chemical (NBC) agent detection and protection system.
- Ammunition storage racks and compartments.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

The locations and descriptions of major components used to operate the M992A1 effectively are shown on pages 1-5 through 1-8.

MAIN ENGINE EXHAUST OUTLET (1): Provides outlet for main engine exhaust gases.

APU ENGINE EXHAUST OUTLET (2): Provides outlet for APU engine exhaust gases.

IDLER WHEELS (3): Right and left idler wheels guide, support, and maintain tension for the track.

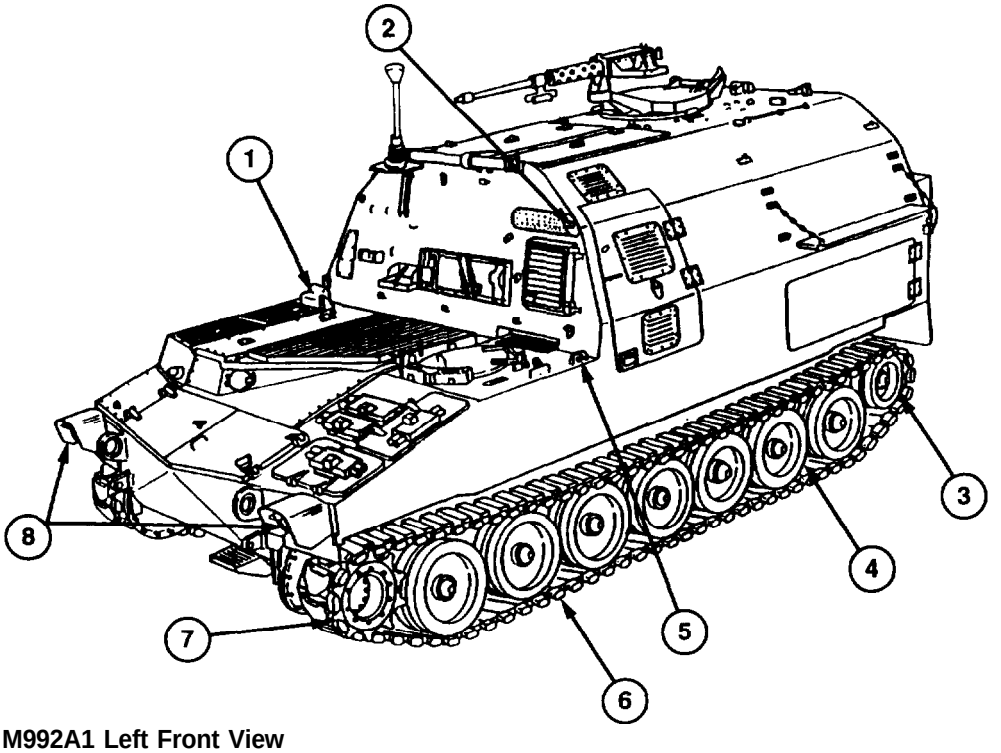
ROADWHEELS (4): Seven sets per side provide support and guide the track.

LANYARD CABLE PULL HANDLE (5): Provides for emergency manual discharge of one engine compartment and two crew compartment extinguishers to extinguish fires in the engine and crew compartments.

TRACKS (6): Eighty two-pin, rubber-padded track shoes per side provide support and traction in various terrains.

DRIVE SPROCKETS (7): Left and right sprockets are mounted on the final drives to drive each track.

HEADLAMPS (8): Provide light for night driving under normal or blackout conditions.



M992A1 Left Front View

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (continued)

UPPER REAR DOOR (BALLISTIC SHIELD) (1): Provides ballistic protection to personnel and materiel in crew compartment during vehicle operation.

COMMANDER'S CUPOLA (2): Provides access to machine gun mount; rotates manually 360 degrees (6400 mils).

MACHINE GUN (3): M2, 0.50-caliber heavy barrel provides protection for the vehicle.

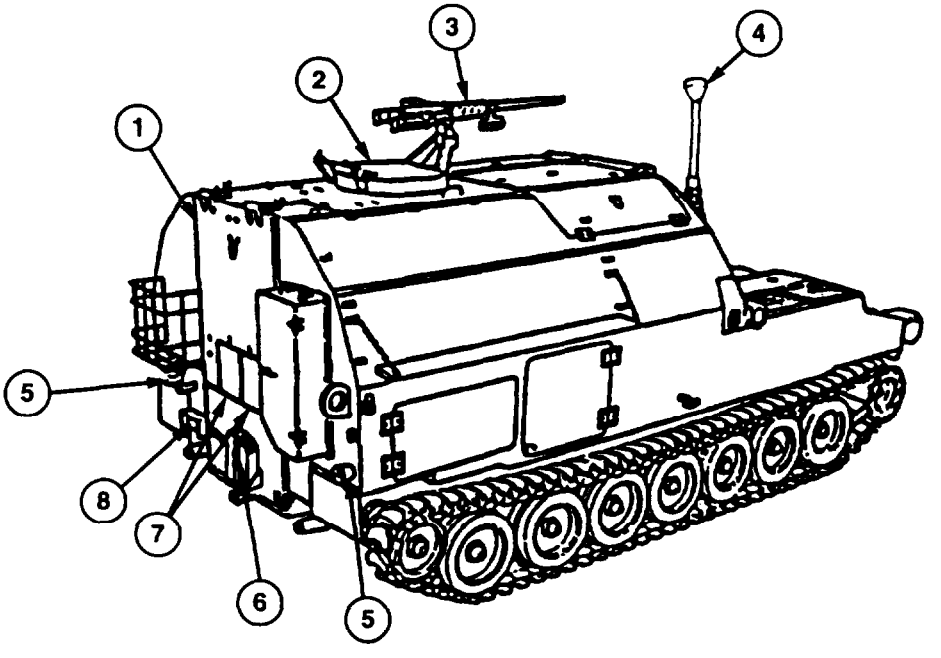
AN/PSN-11 (PLGR) (4): Satellite Signals Navigation Set Antenna in conjunction with Global Positioning System (GPS) unit; provides highly accurate, continuous, all-weather, three-dimensional (3-D) position, velocity, and time.

TAILLIGHT/STOPLIGHT (5): Two combination taillight/stoplight units provide rear light for night driving under normal and blackout conditions.

M13 DECONTAMINATING APPARATUS, PORTABLE (6): Used to spray decontaminating agent DS-2 on surfaces of the vehicle and equipment to reduce the level of chemical toxic agents.

SMALL UPPER DOORS (7): Two small doors allow operation of conveyor while upper rear door is closed.

REAR NATO SLAVE RECEPTACLE (8): Used to connect the M992A1 electrical system with that of another vehicle to provide power access.



M992A1 Right Rear View