

TECHNICAL MANUAL

TRANSPORT GUIDANCE

M113 FAMILY OF VEHICLES

**(M113A2, M113A3, M106A2, M125A2, M548A1,
M577A2, M667, M730A2, M741A1, M901A1, M981,
M1015A1, M1059, M1064, AND M1068)**

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TRANSPORT GUIDANCE M113 Family of Vehicles

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CHAPTER 1 INTRODUCTION

Section I. GENERAL

1-1. Purpose and Scope

This manual is for transportation officers and other personnel responsible for safe transport of the M113 Family of Vehicles (FOV). It provides transportability guidance for safe shipping and receiving of the M113 FOV. It includes significant technical and physical characteristics of the vehicles as well as safety requirements for worldwide movement by various modes of transportation. Where appropriate, this manual provides metric equivalents in parentheses next to US customary units of measure.

1-2. Related Publications

Additional information on transport procedures can be found in the following:

MTMCTEA Pamphlet 55-19, *Tiedown Handbook for Rail Movements*.

MTMCTEA Pamphlet 55-20, *Tiedown Handbook for Highway Movements*.

MTMCTEA Pamphlet 56-1, *Surface Transportation, Marine Terminal Lifting Guidance*.

MTMCTEA Pamphlet 70-1, *Transportability for Better Strategic Mobility*.

FM 10-567/TO 13C7-16-171, *Airdrop of Supplies and Equipment Rigging Tracked Personnel—Cargo Carriers*.

FM 55-65, *Strategic Deployment by Surface Transportation*.

TM 38-250/AFR 71-4, *Preparation of Hazardous Materials for Military Air Shipment*.

USAREUR Reg 55-8, *Loading and Securing Military Wheeled and Tracked Vehicles on European Railcars*.

AR 55-162, *Permits for Oversize, Overweight, or Other Special Military Movements on Public Highways in the United States*.

AR 55-228, *Transportation by Water of Explosives and Hazardous Cargo*.

1-3. User Comments

Send comments and recommendations for improving this manual on a DA Form 2028 (Recom-

mended Changes to DA Publications and Blank Forms) or a marked copy of a page or pages of the manual to Director, MTMC Transportation Engineering Agency, ATTN: MTTE-TR, 720 Thimble Shoals Blvd, Suite 130, Newport News, VA 23606-2574.

1-4. Definitions

The following definitions are used throughout this manual:

a. *Breaking Strength (BS)*. The stress at which a part (wire rope) actually fails.

b. *CONUS*. Continental United States.

c. *Curb Weight (CW)*. Total weight of operable carrier, including fuel, all system fluids, and on-vehicle basic issue items (BII). CW does not include crew weight.

d. *FISTV*. Fire Support Team Vehicle.

e. *Gross Vehicle Weight (GVW)*. CW plus maximum payload.

f. *Total Load Restraint (TLR)*. The TLR given for highway, rail, and marine modes includes allowances for shipping directions and typical tiedown angles. For example, the highway TLR is 1.5 times GVW: 1.5 x 20,000 pounds = 30,000 pounds.

g. *TOW*. Tube-Launched, Optically Tracked, Wire-Guided Missile.

1-5. Warnings, Cautions, and Notes

Throughout this manual the following special messages emphasize important or critical information:

WARNINGS

Instructions that must be followed to prevent serious injury to, or death of, personnel.

CAUTION

Instructions that must be followed to prevent damage to, or destruction of, equipment.

NOTE

An operating procedure that should receive special attention.

Section II. SAFETY

1-6. General

To ensure safe operation and movement, operators should follow the precautions and safety considerations given below. Specific safety instructions are

given throughout the manual as warnings, cautions, and notes.

a. When the ramp door latch on any of the carriers (except the M113A3, M548, M548A1,

M667, M730A2, M901, M901A1, M981, M1015A1, and M1064) is not functioning properly, use the procedure given in appendix E.

b. Check each carrier to ensure all loose items are appropriately secured per instructions in the respective operator's manuals.

c. All carriers must be driven only by qualified drivers.

d. When a carrier is being driven, the driver's hatch cover must be secured in the fully open or fully closed position.

e. If a track is thrown while the carrier is in operation, do not apply brakes unless absolutely necessary. Instead, let the carrier coast to a stop.

f. Do not mount or dismount a carrier when it is in motion.

g. The driver must bring the carrier to a complete stop before entering or leaving a building.

h. Anytime carriers are operated in reverse, or within 20 feet of a building or other carrier, a "ground guide" must direct driver movement.

i. Do not operate the engine in an enclosed area without adequate ventilation.

j. High voltage in the M19 periscope can cause serious injury. Always connect the power cable to the periscope before turning the master power switch and the infrared (IR) power switch to ON. Never disconnect the power cable from the periscope until the image on the screen disappears completely.

Section III. EQUIPMENT DESCRIPTION

1-7. General

a. The M113 FOV are fully tracked, self-propelled carriers, and are either thick skinned (armored) or thin skinned (unarmored). The armored variants are derived from the M113A2 or M113A3, and the unarmored are derived from the M548. The M667 guided missile carrier is a special exception. It is thin skinned, but is not based on the M548.

b. All of the variants are powered by a diesel engine and are supported by a torsion-bar suspension. Various product improvements on some variants have resulted in transmission, suspension, armor, and power upgrades. The carriers vary in height and weight, but unless otherwise noted, are considered the same for transportability purposes.

c. The following paragraphs contain the specific administrative and technical data that affect transportability for each of the individual carriers. Each subsection contains a vehicle picture and the relating transportability characteristics and data necessary for safe movement. For transportability purposes, the pictures of the newest versions (A1, A2, and A3) are representative of the older versions.

1-7-1. M106, M106A1, and M106A2 (figs 1-1 and 1-2). This carrier is designed to transport the 107-mm (4.2-inch) M30 mortar and crew. The M30 is mounted on a turntable in the personnel compartment and is fired to the rear with the mortar hatch open. The mortar may be dismounted and fired from the ground by using the M24A1 mortar mount that is stored on the carrier. The M106 was converted to the M106A1, which was then converted to the M106A2. The M106A2

is capable of Low Altitude Parachute Extraction System (LAPES) operations.

1-7-1. M106, M106A1, and M106A2 (figs 1-1 and 1-2). This carrier is designed to transport the 107-mm (4.2-inch) M30 mortar and crew. The M30 is mounted on a turntable in the personnel compartment and is fired to the rear with the mortar hatch open. The mortar may be dismounted and fired from the ground by using the M24A1 mortar mount that is stored on the carrier. The M106 was converted to the M106A1, which was then converted to the M106A2. The M106A2 is capable of Low Altitude Parachute Extraction System (LAPES) operations.

1-7-2. M113, M113A1, M113A2, and M113A3 Armored Personnel Carrier (figs 1-3 and 1-4). This is a combat troop transporter that provides protected transportation for cargo or troops. Almost all M113's and M113A1's have been converted to M113A2's or M113A3's. The M113, M113A1, M113A2, and M113A3 are capable of LAPES operations and low velocity air drop (LVAD).

1-7-3. M125A1 and M125A2 Armored Self-Propelled 81-mm Mortar (figs 1-5 and 1-6). This carrier is designed to transport the 81-mm mortar and crew. The M125A2 is a product improvement of the M125A1.

1-7-4. M548 and M548A1 Cargo Carrier (figs 1-7 and 1-8). This is a full-tracked, unarmored, forward area transport vehicle that provides transportation for ammunition and general cargo. The M548A1 is a product improvement of the M548.