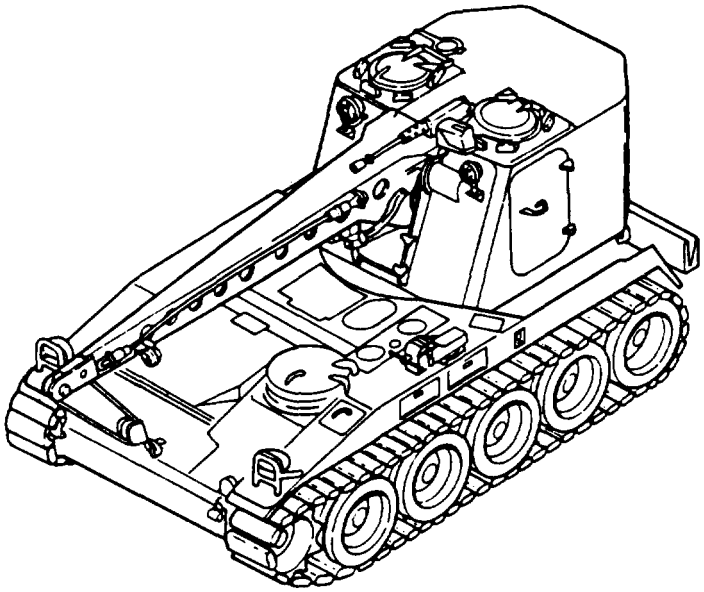
TM 9-2350-238-10

OPERATOR'S MANUAL



RECOVERY VEHICLE, FULL-TRACKED: LIGHT, ARMORED, M578 (2350-00-439-6242) (EIC:3LA)

HEADQUARTERS, DEPARTMENT OF THE ARMY
27 April 1990

TECHNICAL MANUAL

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RECOVERY VEHICLE, FULL TRACKED: LIGHT, ARMORED, M578 (2350-00-439-6242) (EIC:3LA)

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

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*This manual supersedes TM 9-2350-238-10, 17 March 1978, including all changes.

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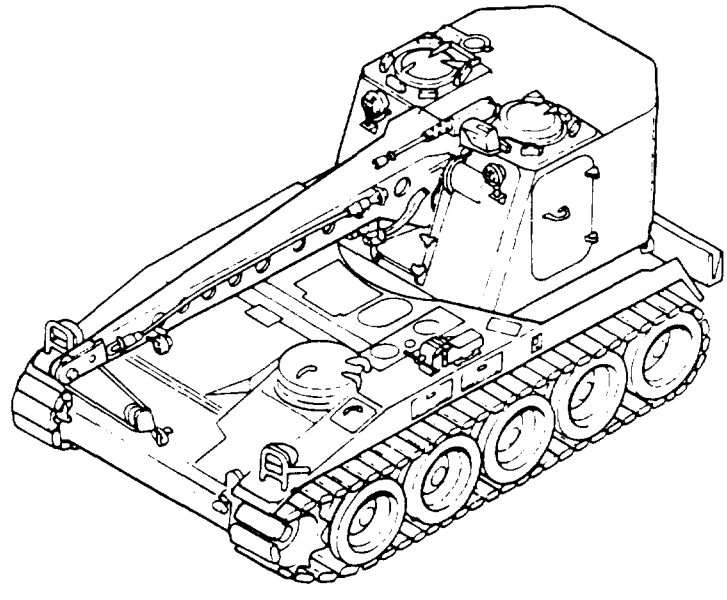
Section I. GENERAL INFORMATION



SECTION INDEX

SCOPE

This manual is for your use in operating and maintaining the Armored Light Full Tracked Recovery Vehicle M578. The vehicle is provialed with a boom, winches, and equipment to perform its recovery mission. Special purpose kits are provided to aid recovery operations in cold climates, Operation and maintenance of these kits are covered in Chapter 5.

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).

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S)

If your M578 Recovery Vehicle 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 (Product Quality Deficiency Report). Mail it to us at U.S. Army Armament, Munitions, and Chemical Command, ATTN: AMSMC-QAD, Rock Island, IL 61299-6000. We'll send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

a. Corrosion Prevention and Control (CPC) of Army material is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in the future.

b. While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

c. If a corrosion problem is identified, it can be reported using SF 368, Product Quality Deficiency Report. Use of key words such as "corrosion," "rust, " "deterioration, " or "cracking" will assure that the information is identified as a CPC problem.

d. The form should be submitted to: Commander, U.S. Army Armament, Munitions and Chemical Command, ATTN: AMSMC-QAS/ Customer Feedback Center, Rock Island, IL 61299-6000.

Section II. EQUIPMENT DESCRIPTION

SECTION INDEX

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

PURPOSE

The M578 Recovery Vehicle is used to pick up or tow disabled mechanized equipment, as a crane at repair base, and as a carrying platform for spare parts and maintenance personnel.

CAPABILITIES AND FEATURES

The M578 Recovery Vehicle is a light, full-tracked, self-propelled, diesel-powered vehicle with a 30,000 lb (1 3,620 kg) boom winch and a 60,000 lb (27,240 kg) tow winch mounted in an armored cab. It is highly mobile and maneuverable and may be air transported. The vehicle is capable of long-range, high-speed operation on improved roads. It can also traverse rough terrain, muddy or marshy ground, snow or ice, and can ford streams of a depth of 42 in. (1 06.7 cm).

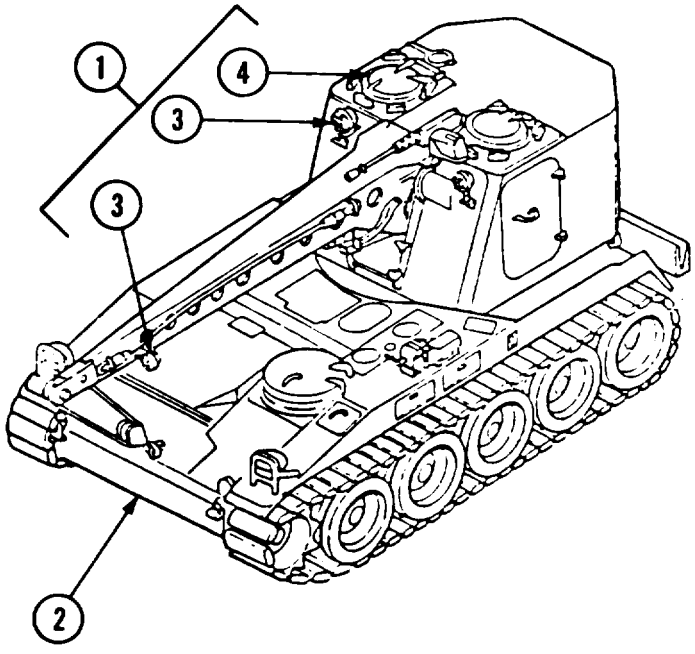
A suspension lockout system and a spade assembly provide a stable platform and increase lifting and winching capabilities of the vehicle. Suspension lockout system, boom, winches, cab, and spade are hydraulically powered.

A machine gun mount support is installed on the rigger/gunner cupola to accommodate a Browning M2 caliber .50 machine gun.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

The following pages show location and give a brief description of components and accessories with which the crew must be familiar to effectively operate the M578 Recovery Vehicle.

M578 RECOVERY VEHICLE– LEFT FRONT VIEW



1 CRANE. Crane consists of boom, cab, boom cylinders, boom cable, tow cable, hydraulic reservoir, seats, and operating controls.

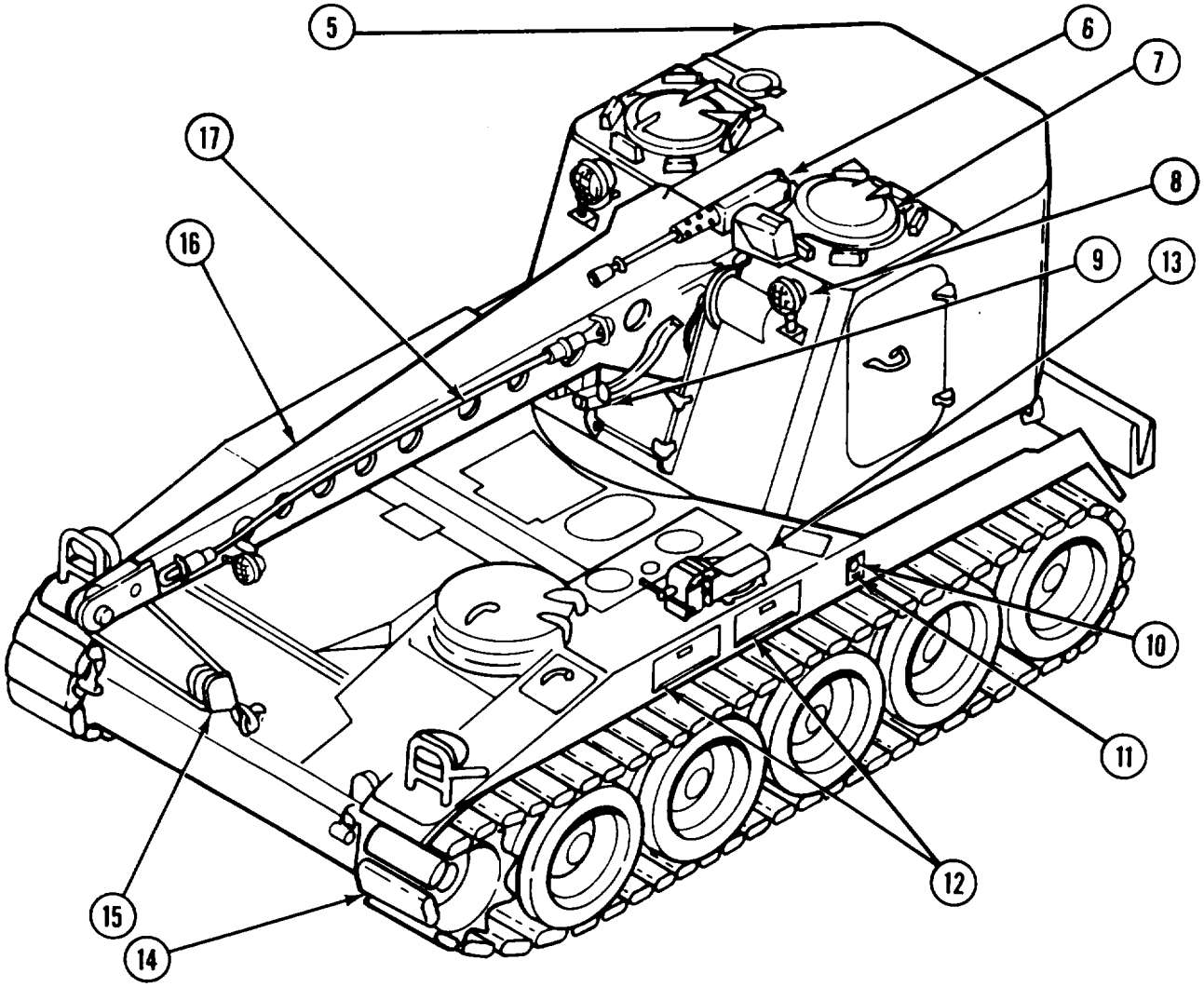
2 HULL. Hull is an armor steel and armor steel plate weldment which forms vehicle chassis.

3 FLOODLIGHT. Two 24-volt sealed beam units provide illumination for night operations.

4 CRANE OPERATOR'S CUPOLA. Crane operator's cupola consists of an armor-plate mounting ring welded to cab and an armor-plate cover hinged to cab top and counterbalanced by a torsion bar. Six M 17 periscopes are provided for external vision.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS–CONTINUED

M578 *RECOVERY VEHICLE– LEFT FRONT VIE W– CONTINUED*



LOCATION AND DESCRIPTION OF MAJOR COMPONENTS–CONTINUED

M578 RECOVERY VEHICLE– LEFT FRONT VIEW– CONTINUED

5 CAB. Cab is an armor steel weldment which houses hydraulic reservoir; supports boom, winches, and controls; and provides protection for crew members. It has provision for radio and intercommunication equipment. Doors are provided for access to cab and stowage compartments.

6 MACHINE GUN. M578 Recovery Vehicle armament is a heavy barrel M2 Browning Caliber .50 Machine Gun.

7 RIGGER/GUNNER CUPOLA. Rigger/gunner cupola consists of an armor-plate hinged cupola cover, traverse ring, six Ml 7 periscopes for external vision, and caliber .50 machine gun mount support. Cover is counterbalanced by a torsion bar.

8 FLASHER LAMP. Flasher lamp warns oncoming traffic and personnel during travel and recovery operations.

9 LEVEL WIND ASSEMBLY. Level wind assembly is a guide for winch wire rope and provides a perfect layup on tow winch drum. Sensing switches actuate cab traversing system to keep cab lined up with wire rope.

10 SLAVE RECEPTACLE. Slave receptacle is used to receive or provide 24-volt power for emergency starting of vehicle, if batteries are discharged.

11 FIXED FIRE EXTINGUISHER CONTROL HANDLE. Control handle starts a fixed fire extinguisher system to protect vehicle and crew in the event of fire in engine compartment.

12 ENGINE AIR CLEANER ACCESS DOOR. This door provides access to engine air intake filters for cleaning and replacement purposes.

13 VISE. Vise is mounted on surface above air filter compartment.

14 TRACK. Right and left tracks consist of rubber-padded steel track shoes and are driven by drive sprockets attached to final drives.

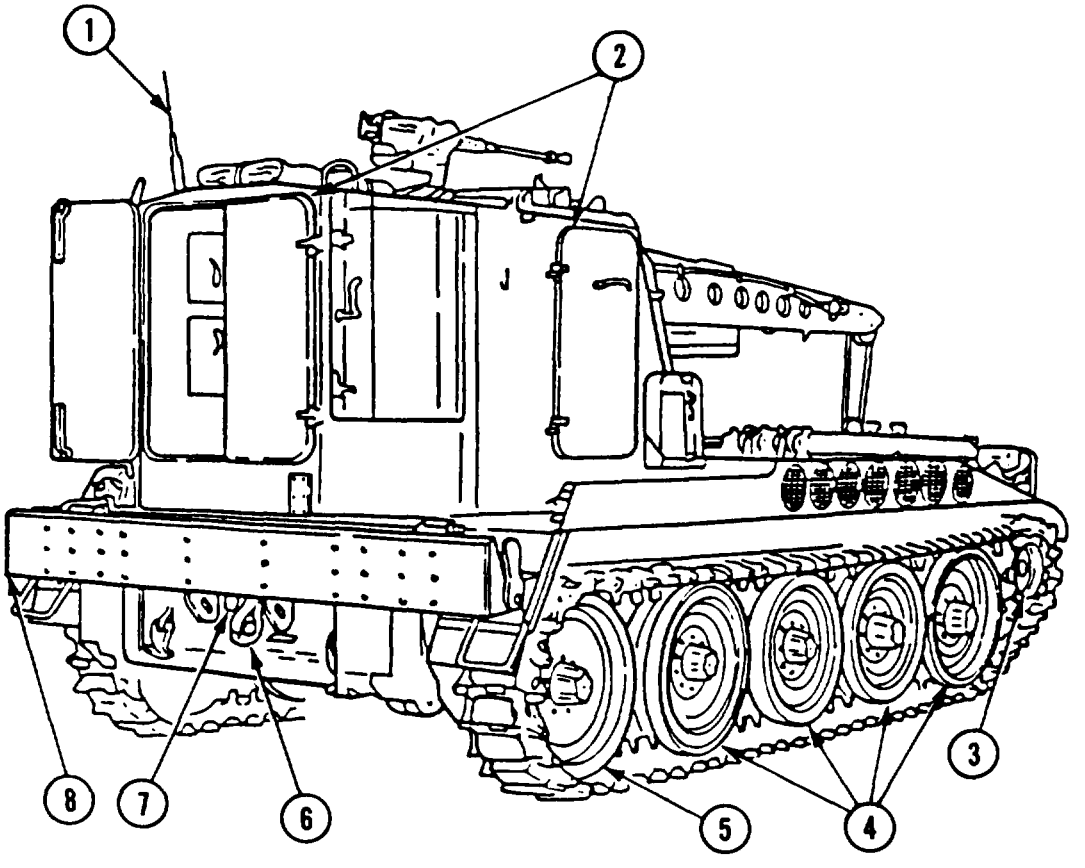
15 SINGLE BOOM BLOCK. Single boom block is a sheave, block, and hook assembly used to increase capability of boom winch.

16 BOOM. Boom is a box section steel plate weldment which can be raised and lowered by hydraulic cylinders for hoisting operations.

17 TOW CABLES. Two 10 ft (31 m) tow cables are mounted on boom, one on each side. These cables have a safe operating load of 110,000 lb (49,940 kg).

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS–CONTINUED

M578 *RECOVER Y VEHICLE– RIGHT REAR VIEW*



1 ANTENNA. Antenna is used with radio to receive and transmit signals which provide outside communication.

2 DOORS, Doors provide access to cab and stowage compartments.

3 DRIVE SPROCKET. Right and left drive sprockets are mounted on final drives to drive tracks.

4 ROAD WHEEL. The eight pairs of road wheels provide support and guide the tracks and suspension points for vehicle.

5 TRAILING IDLER ROAD WHEEL. Two pairs of trailing idler road wheels provide supports, guides, and tension for track and suspension points for vehicle.

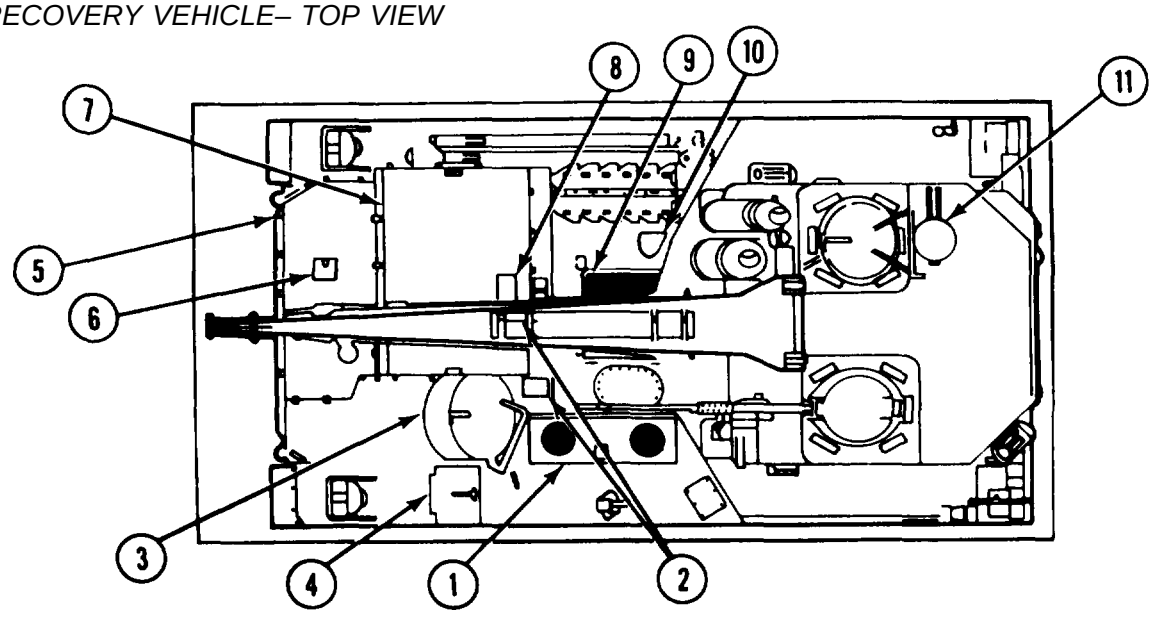
6 TOWING PINTLE. Towing pintle is used in towing operations as a vehicle attaching point for tow bar.

7 TRAILER RECEPTACLE. Trailer receptacle is used to supply electrical power to a towed trailer.

8 SPADE. Spade is hydraulically powered and is emplaced on ground during heavy load lifting and tow winching operations.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS–CONTINUED

M578 RECOVERY VEHICLE– TOP VIEW



1 BATTERY COMPARTMENT ACCESS DOOR. This door provides access for service and replacement of four batteries.

2 RADIATOR FILL CAP COVERS. These covers provide access for checking coolant level and filling two radiators.

3 DRIVER'S CUPOLA. Driver's cupola consists of an armor-plate mounting ring welded to hull and an armor-plate cupola cover hinged to hull deck counterbalanced by a torsion bar. Three M 17 periscopes are provided for external vision.

4 AIR CLEANER BLOWER ACCESS DOOR. This door provides access for service and replacement of air cleaner blower and access to impact wrench and controls.

5 TRANSMISSION DECK. This cover provides for access to transmission and forward power plant compartment.

6 TRANSMISSION OIL ACCESS DOOR. This door provides access for checking and filling transmission with oil.

7 ENGINE DECK. This cover provides access to engine and rear power plant compartment.

8 ENGINE OIL ACCESS DOOR. This door provides access for checking and filling engine with oil.

9 FAN WELL COVER. This cover screens out debris from engine cooling air intake and provides access to fan belt, tensioner, magnetic clutch, and drive shaft.

10 DIESEL FUEL FILL COVER. This cover provides access to fuel cap for filling vehicle with fuel.

11 HYDRAULIC OIL FILL COVER. This cover provides access for filling hydraulic reservoir with oil.