

**ARMY TM 9-2320-280-10
AIR FORCE TO 36A12-1A-2091-1
MARINE CORPS TM 2320-10/6B**

(SUPERSEDES TM 9-2320-280-10, 18 JUNE 1991)

**OPERATOR'S MANUAL
FOR**

TRUCK, UTILITY: CARGO/TROOP CARRIER, 1-1/4 TON, 4X4, M998
(2320-01-107-7155) (EIC: BBD); M998A1 (2320-01-371-9577) (EIC: BBN);

TRUCK, UTILITY: CARGO/TROOP CARRIER, 1-1/4 TON, 4X4, W/WINCH, M1038
(2320-01-107-7156) (EIC: BBE); M1038A1 (2320-01-371-9578) (EIC: BBP);

TRUCK, UTILITY: HEAVY VARIANT, 4X4, M1097 (2320-01-346-9317) (EIC: BBM); M1097A1
(2320-01-371-9583) (EIC: BBU); M1097A2 (2320-01-380-8604) (EIC: BB6); M1123
(2320-01-455-9593) (EIC: B6G);

TRUCK, UTILITY: TOW CARRIER, ARMORED, 1-1/4 TON, 4X4,
M966 (2320-01-107-7153) (EIC: BBC); M966A1 (2320-01-372-3932) (EIC: BBX); M1121
(2320-01-956-1282) (EIC: B6H);

TRUCK, UTILITY: TOW CARRIER, ARMORED, 1-1/4 TON, 4X4, W/WINCH,
M1036 (2320-01-107-7154) (EIC: BBH);

TRUCK, UTILITY: TOW CARRIER, W/SUPPLEMENTAL ARMOR, 1-1/4 TON, 4X4,
M1045 (2320-01-146-7191); M1045A1 (2320-01-371-9580) (EIC: BBR);
M1045A2 (2320-01-380-8229) (EIC: BB5);

TRUCK, UTILITY: TOW CARRIER, W/SUPPLEMENTAL ARMOR, 1-1/4 TON, 4X4, W/WINCH,
M1046 (2320-01-146-7188); M1046A1 (2320-01-371-9582) (EIC: BBT);

TRUCK, UTILITY: ARMAMENT CARRIER, ARMORED, 1-1/4 TON, 4X4, M1025
(2320-01-128-9551) (EIC: BBF); M1025A1 (2320-01-371-9584) (EIC: BBV);
M1025A2 (2320-01-380-8233) (EIC: BB3);

TRUCK, UTILITY: ARMAMENT CARRIER, ARMORED, 1-1/4 TON, 4X4, W/WINCH, M1026
(2320-01-128-9552) (EIC: BBG); M1026A1 (2320-01-371-9579) (EIC: BBQ);

TRUCK, UTILITY: ARMAMENT CARRIER, W/SUPPLEMENTAL ARMOR, 1-1/4 TON, 4X4, M1043
(2320-01-146-7190); M1043A1 (2320-01-372-3933) (EIC: BBY);
M1043A2 (2320-01-380-8213) (EIC: BB4);

TRUCK, UTILITY: ARMAMENT CARRIER, W/SUPPLEMENTAL ARMOR, 1-1/4 TON, 4X4,
W/WINCH, M1044 (2320-01-146-7189); M1044A1 (2320-01-371-9581) (EIC: BBS);

TRUCK, UTILITY: S250 SHELTER CARRIER, 4X4, M1037 (2320-01-146-7193) (EIC: BBK);

TRUCK, UTILITY: S250 SHELTER CARRIER, 4X4, W/WINCH, M1042 (2320-01-146-7187);

TRUCK, AMBULANCE, 2-LITTER, ARMORED, 4X4, M996 (2310-01-111-2275)
(EIC: BBB); M996A1 (2310-01-372-3935) (EIC: BB2);

TRUCK, AMBULANCE, 4-LITTER, ARMORED, 4X4, M997 (2310-01-111-2274) (EIC: BBA);
M997A1 (2310-01-372-3934) (EIC: BBZ); M997A2 (2310-01-380-8225) (EIC: BB8);

TRUCK, AMBULANCE, 2-LITTER, SOFT TOP, 4X4, M1035 (2310-01-146-7194);
M1035A1 (2310-01-371-9585) (EIC: BBW); M1035A2 (2310-01-380-8290) (EIC: BB9).

Approved for public release; distribution is unlimited.

**HEADQUARTERS, DEPARTMENTS OF THE ARMY, THE
AIR FORCE, AND MARINE CORPS**

JANUARY 1996

***ARMY TM 9-2320-280-10
AIR FORCE TO 36A12-1A-2091-1
MARINE CORPS TM 2320-10/6B**

**TECHNICAL MANUAL
NO. 9-2320-280-10
NO. 2320-10/6B**

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DEPARTMENTS OF THE ARMY,
THE AIR FORCE, AND MARINE CORPS
WASHINGTON, D.C. 31 JANUARY 1996**

**TECHNICAL ORDER
NO. 36A12-1A-2091-1**

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REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028-2 (Recommended Changes to Equipment Technical Publications), through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is <http://aeprs.ria.army.mil>. If you need a password, scroll down and click on "ACCESS REQUEST FORM." The DA Form 2028 is located in the ONLINE FORMS PROCESSING section of the AEPS. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax or email your letter, DA Form 2028, or DA Form 2028-2 direct to: Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-LC-CIP-WT, Rock Island, IL 61299-7630. The email address is amsta-ac-nml@ria.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726. (Marine Corps) Submit NAVMC 10772 to the Commanding General (826), MCLB, 814 Radford Blvd., Albany, GA 31704-1128.

*This publication supersedes TM 9-2320-280-10 dated 18 JUNE 1991 and all changes.

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CHAPTER 1 INTRODUCTION

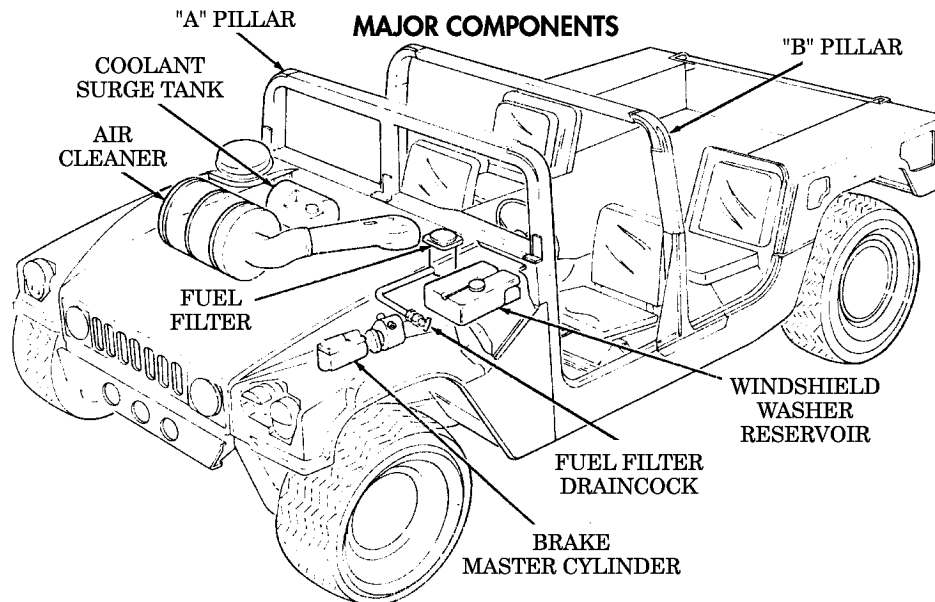
Section I. GENERAL INFORMATION

1-1. SCOPE

a. This manual contains instructions for operating and servicing M998 series vehicles.

These vehicles are:

- (1) M998 and M998A1 Cargo/Troop Carriers
- (2) M1038 and M1038A1 Cargo/Troop Carriers, W/W
- (3) M1097, M1097A1, M1097A, and M1123 Heavy Variants
- (4) M966, M966A1, and M1121 TOW Carriers, Armored
- (5) M1036 TOW Carrier, Armored, W/W
- (6) M1045, M1045A1, and M1045A2 TOW Carriers, W/Supplemental Armor
- (7) M1046 and M1046A1 TOW Carriers, W/Supplemental Armor, W/W
- (8) M1025, M1025A1, and M1025A2 Armament Carriers, Armored
- (9) M1026 and M1026A1 Armament Carriers, Armored, W/W
- (10) M1043, M1043A1, and M1043A2 Armament Carriers, W/Supplemental Armor
- (11) M1044 and M1044A1 Armament Carriers, W/Supplemental Armor, W/W
- (12) M1037 S250 Shelter Carrier
- (13) M1042 S250 Shelter Carrier, W/W
- (14) M996 and M996A1 2-Litter Ambulances, Armored
- (15) M997, M997A1, and M997A2 4-Litter Ambulances, Armored
- (16) M1035, M1035A1, and M1035A2 2-Litter Ambulances, Soft Top



b. The material presented here provides operators with information and procedures needed to provide the safest and most efficient operation of these vehicles. This information includes:

- (1) Operator forms and records.
- (2) Descriptions of each vehicle and its operation.
- (3) The purpose of each vehicle.
- (4) Vehicle limitations.
- (5) The function of all controls and indicators.
- (6) Operating instructions for each vehicle.
- (7) Cautions and warnings to operators regarding safety to personnel and equipment.
- (8) How and when to use special purpose kits.
- (9) Operator maintenance checks and service procedures.
- (10) Troubleshooting procedures to be followed by operators if the vehicle malfunctions.

1-2. MAINTENANCE FORMS AND RECORDS

(Army) 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). (Marine Corps) Refer to TM 4700-15/1 series.

1-3. HAND RECEIPT MANUAL

This operator's manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt). The TM 9-2320-280-10-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 12, AR 25-30:

Commander
U.S. Army Publications Distribution Center
2800 Eastern Blvd.
Baltimore, MD 21220-2896

1-4. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

(Army) If your M998 series vehicles need 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: Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-Q, Warren, Michigan 48397-5000. We'll send you a reply.

1-5. EQUIPMENT IMPROVEMENT REPORT AND MAINTENANCE DIGEST (EIR MD)

The quarterly Equipment Improvement Report and Maintenance Digest, TB 43-0001-39 series, contains valuable field information on the equipment covered in this manual. The information in the TB 43-0001-39 series is compiled from some of the Equipment Improvement Reports that you prepared on the vehicles covered in this manual. Many of these articles result from comments, suggestions, and improvement recommendations that you submitted to the EIR program. The TB 43-0001-39 series contains information on equipment improvements, minor alterations, proposed Modification Work Orders (MWOs), warranties (if applicable), actions taken on some of your DA Form 2028s (Recommended Changes to Publications), and advance information on proposed changes that may affect this manual. The information will help you in doing your job better and will help in keeping you advised of the latest changes to this manual. Also refer to DA Pam 25-30, Consolidated Index of Army Publications and Blank Forms, and appendix A, References, of this manual. (Marine Corps) Submit QDR's in accordance with MCO 4855-10. For those with access to the World Wide Web (WWW), the EIR MD can be viewed through the Army Electronic Product Support. The site is <http://aeps.ria.army.mil>.

1-6. BREAK-IN SERVICE

Upon receipt of vehicle, or after engine replacement, break-in precautions must be observed during the first 500 miles (805 kilometers) of operation. For break-in procedure, refer to paragraph 2-9.

Section II. EQUIPMENT DESCRIPTION

1-7. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

The 1-1/4 ton, 4x4, M998 series vehicles are tactical vehicles designed for use over all types of roads, as well as cross-country terrain in all weather conditions. The vehicles have four driving wheels powered by a V-8 liquid-cooled diesel engine. Four-wheel hydraulic service brakes and a mechanical parking brake are common to all models in the M998 series. All vehicles are equipped with a pintle hook for towing. Tiedown and lifting eyes are provided for air, rail, or sea shipment.

1-8. METRIC SYSTEM

The equipment/system described herein contains metric components and requires metric, common, and special tools; therefore, metric units in addition to standard units will be used throughout this publication. In addition, a metric conversion table is located on the inside back cover of this publication.

1-9. CARGO/TROOP CARRIERS (M998, M998A1, M1038, AND M1038A1)

a. Differences. The only difference between the M998 and M998A1 cargo/troop carriers and the M1038 and M1038A1 cargo/troop carriers is that the M998 and M998A1 do not have winches and the M1038 and M1038A1 do. This difference affects:

- Vehicle Length
- Vehicle Weight
- Shipping Dimensions
- Approach Angle
- Special Winch-Assisted Operations

It does not affect the basic purpose, performance, or special limitations of the vehicles.

b. Purpose of the Vehicle. M998, M998A1, M1038, and M1038A1 cargo/troop carriers are used to transport equipment, materials, and/or personnel. The cargo carrier is capable of transporting a payload (including crew) of 2,500 pounds (1,134 kilograms). The troop carrier is capable of transporting a two-man crew and eight passengers. Both use a troop seat kit for troop transport operations. The cargo/troop carrier also has a four-man crew configuration. The M1038 and M1038A1 are equipped with winches. This feature permits recovery operations of similar vehicles.

c. Performance. Fully-loaded M998, M998A1, M1038, and M1038A1 cargo/troop carriers will climb road grades as steep as 60% (31°) and traverse a side slope of up to 40% (22°). The vehicle fords hard bottom water crossing up to 30 inches (76 centimeters) without a deepwater fording kit and 60 inches (152 centimeters) with the kit. Refer to table 1-15 for cruising range.

d. Special Limitations. None.

e. Special Instructions in the Manual.

- (1) Refer to paragraph 2-2, Controls, Indicators, and Equipment.
- (2) Refer to paragraph 2-44, Troop Seat Kit Operation.
- (3) Refer to chapter 2, section V, Cargo/Troop Carrier and S250 Shelter Carrier Operation.