

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

DIRECT SUPPORT, GENERAL SUPPORT,
AND DEPOT MAINTENANCE MANUAL

TURRET, ELEVATING AND TRAVERSING SYSTEMS,
CUPOLA, GUN-LAUNCHER AND MOUNT

FOR

ARMORED RECONNAISSANCE/AIRBORN ASSAULT VEHICLE:

FULL-TRACKED, 152MM, M551 (2350-00-873-5408),
M551A1 (2350-00-140-5151), AND
OPPOSING FORCES (OPFOR) (2350-01-115-1579)

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**DS, GS, AND DEPOT MAINTENANCE MANUAL
TURRET, ELEVATING AND TRAVERSING SYSTEMS,
CUPOLA, GUN-LAUNCHER, AND MOUNT
FOR
ARMORED RECONNAISSANCE/AIRBORNE ASSAULT
VEHICLE, FULL-TRACKED, 152mm, M551
(2350-00-873-5408), M551A1 (2350-00-140-5151),
AND OPPOSING FORCES (OPFOR) (2350-01-115-1579)**

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CHAPTER 1

INTRODUCTION

Section 1-1. SCOPE, MAINTENANCE ALLOCATION, AND REPORTS

1-1. Scope

a. This technical manual contains instructions for direct support, general support, and depot maintenance of turret, elevating and traversing systems, cupola, and gun-launcher and mount for the Armored Reconnaissance/Airborne Assault Vehicle: (AR/AAV) Full-Track, 152-MM, M551 and M551A1 (fig. 1-1 and 1-2).

b. Refer to TM 9-1430-465-30 for troubleshooting of the Shillelagh guidance and control system using the guided missile system test set AN/MSM-93 (XO-1).

c. A list of applicable publications is contained in TM 9-2350-230-L.

d. Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to the Commander, US Army Armament Command, Attn: AMSAR-MAS, Rock Island, IL 61201.

1-2. Maintenance Allocation

Maintenance responsibilities as allocated in the maintenance allocation chart (TM 9-2350-230-12) are reflected in this technical manual.

1-3. Forms, Records, and Reports

a. General. Officers of maintenance units are responsible for executing forms, records, and reports.

b. Authorized Forms. Forms applicable to operation of maintenance units are listed in the Appendix and DA Pamphlet 310-2. For instructions on use of these forms refer to TM 38-750.

c. Weapon Record Book. For instructions, procedures, and precautions in recording of pertinent data, process DA Form 2408-4 in accordance with instructions contained in TM 38-750.

d. Field Report of Accidents

(1) Injury to personnel or damage to materiel is to be reported in accordance with instructions in AR 385-40.

(2) Any accident or malfunction involving the use of ammunition must be reported in accordance with AR 75-1.

e. Equipment Improvement Recommendations. Report defective or unsatisfactorily designed materiel on Maintenance Request Form DA 2407 following instructions contained in TM 38-750.

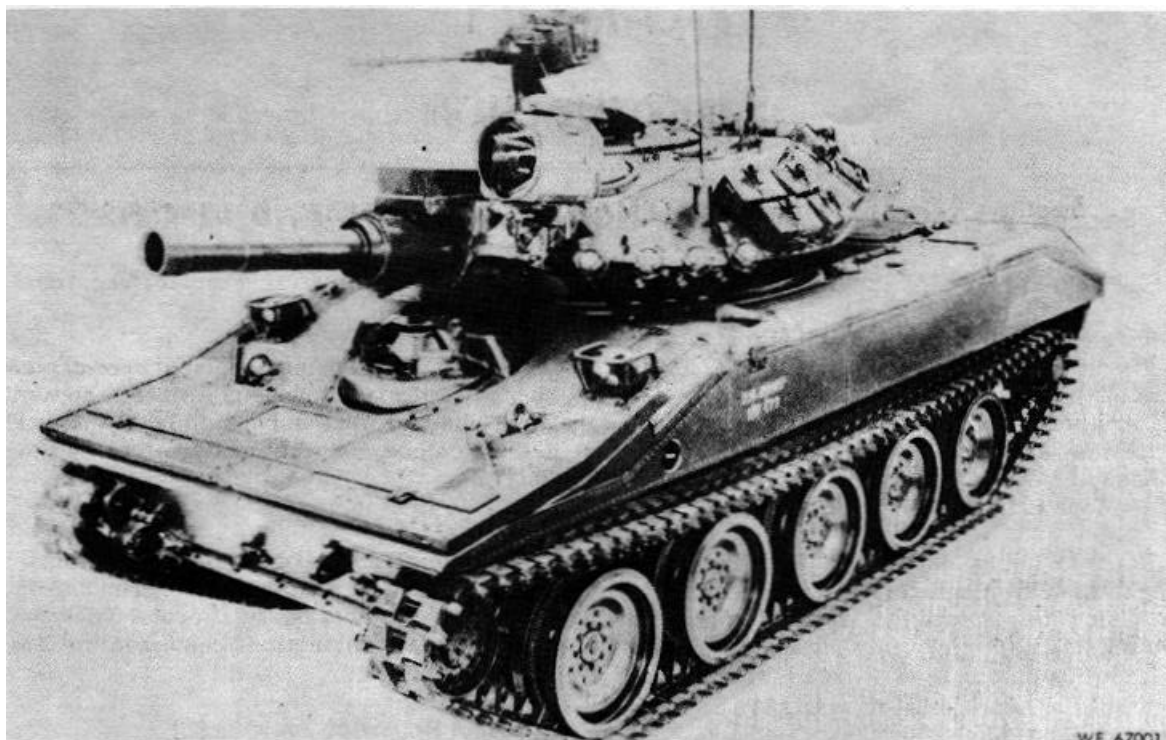


Figure 1-1. Armored reconnaissance/airborne assault vehicle:
FT, 152-mm - left front view (M551 shown).



Figure 1-2. Armored reconnaissance/airborne assault vehicle:
FT, 152-mm - right rear view (M551 shown).

Section 1-2. DESCRIPTION AND DATA

1-4. Description

A description of the M551 vehicle is contained in TM 9-2350-230-12.

1-5. Data

Data furnished in table 1-1 is supplemental to data contained in TM 9-2350-230-12. Weights are included for major components since this information is not furnished on drawings.

Table 1-1. Characteristics and Data

Component	Characteristics and Data
ELECTRIC DRIVE CONTROL SYSTEM	Type Gyro-stabilized weapon and turret electric drive control system Power Requirements.....18 to 30 volts dc Nominal standby current(approx.) 4.5 amperes Nominal idling current (control handle palm switch depressed)(approx.) 60 amps Maximum traverse slew current(approx.) 170 amps Maximum elevation slew current.....(approx.) 80 amps Turret Maximum Rotation Rate Non-Stabilized 4 rpm Turret Maximum Rotation Rate Stabilized.....(approx.) 8 rpm Elevation or Depression (Minimum Rate).....71 mils/sec.
ELEVATING MECHANISM	Gross weight - mechanism 104.52 lbs Gross weight - installation 174.58 lbs Power train ratio (Nominal)510:1 Manual response (Minimum) 9.5 mils/revolution of handwheel Manual handwheel effort (Average) 7 lbs (Maximum) 11 lbs Mode selector clutch voltage..... 18-30 volts DC (internal ground) Elevation and depression rate (Minimum) 71.0 mils/second
TURRET TRAVERSE MECHANISM	Gross weight installation 146.65 lbs Power train ratio (Manual)639.89:1 (Power).....844.47:1 Manual response (Minimum) 10 mils/revolution of handwheel Manual handwheel effort (Average) 14 lbs (Maximum) 17 lbs Traverse rate (Minimum)..... 427 mils/sec. (4 rpm) Manual drive disconnect clutch 18-30 volts DC voltage 18-30 volts DC (Internal ground)
152MM GUN-LAUNCHER M81	Breech Actuation.....Electrical or manual - separable sliding-rotating breech chamber Breech Chamber.....Left-hand 20° buttress threads - 30° interruptions Firing Method.....Electrical impulse only Length116.22 inches Bore Size 152MM (6 inches) Weight: Complete 1,121 lbs Breech Mechanism 400 lbs Tube 721 lbs

Table 1-1. Characteristics and Data - Continued

Component	Characteristics and Data
152MM GUN-LAUNCHER M81 - Continued	Tube Rifling: Length95.65 inches Depth of Groove0.050 Width of Groove 0.245/0.253 Width of Land0.1434 Number of Grooves 48 Twist RH..... 1 turn in 41.2 calibers
TURRET BEARING ASSEMBLY	Weight 410 lbs Outside Diameter79.875 ± 0.062 in. Pilot Diameter 77.515 ± 0.020 in. Inside Diameter..... 73,000 in.
ROTATABLE FLOOR BEARING ASSEMBLY	Weight 15 lbs Outside Diameter 28.000 ± 0.002 in. Inside Diameter..... 26.500 ± 0.002 in. Lubrication Packed 1/2 full with Grease 9150-261-8297 at assembly
GUN MOUNT ASSEMBLY	TypeConcentric-Differential Area Hydro-Spring Length of Recoil..... 15 inches Overall Length 84-1/4 inches Gross Weight: 1,337. 6 lbs Weight Without Gun Shield814.5 lbs Weight of Gun Shield 523 lbs Hydraulic Fluid Capacity: Recoil Mechanism19 quarts Replenisher2-1/4 quarts Buffer 22 ounces Nominal Precharge Pressure 850 psi Nominal Recoil Pressure..... .3,000 psi Nominal Recoil Cycle Time 0.6 second Operating Temperature Range..... -65°F. to +125°F.