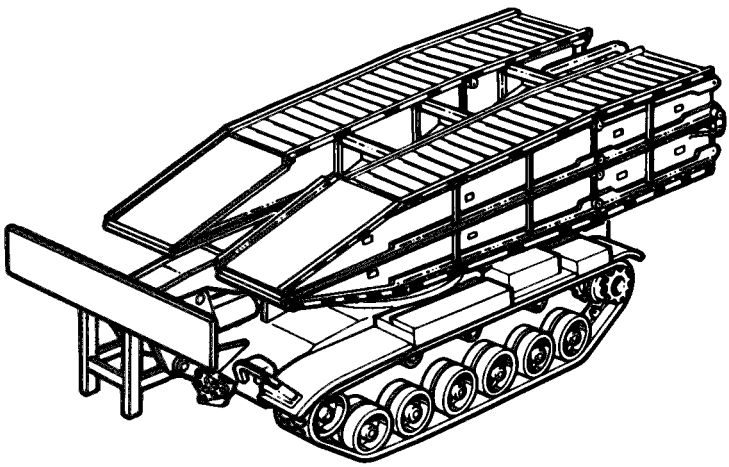
This copy is a reprint which includes current pages from Changes 1 through 6.

TM 5-5420-202-10

OPERATOR'S MANUAL



LAUNCHER
AND
M60A1 TANK CHASSIS,
TRANSPORTING:
FOR BRIDGE,
ARMORED-VEHICLE-LAUNCHED
SCISSORING TYPE, CLASS 60
5420-00-889-2020

HEADARTERS, DEPARTMENT OF THE ARMY
30 AUGUST 1985

TA247569

TECHNICAL MANUAL

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 30 August 1985

OPERATOR'S MANUAL
LAUNCHER AND M60A1 TANK CHASSIS, TRANSPORTING:
FOR BRIDGE, ARMORED-VEHICLE-LAUNCHED, SCISSORING TYPE, CLASS 60
NSN 5420-00-889-2020

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 tio 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-MCP, Warren, MI 48397-5000. A reply will be furnished to you.

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*This manual supersedes TM 5-5420-202-10, 15 December 1975.

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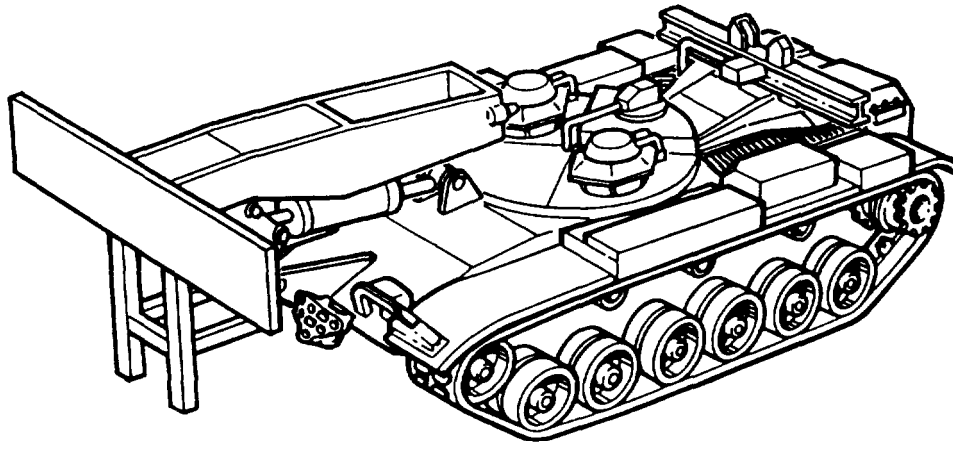
CHAPTER 1

INTRODUCTION

Section I. GENERAL INFORMATION

SCOPE

This manual is for your use in operating and maintaining the M60A1 AVLB. This heavily armored vehicle is used for launching and retrieving a scissoring type, class 60 bridge. The two-man crew consists of an operator and a commander.



MAINTENANCE FORMS AND RECORDS

Department of the Army forms and procedures used for equipment maintenance are those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS).

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S)

EIR's must be submitted by anyone who knows of an unsatisfactory condition with equipment design or use. You do not have to show a new design or list a better way to do a procedure, just tell why the design is unfavorable or why a procedure is hard. EIR's may be submitted on SF 368, Quality Deficiency Report.

Mail directly to Commander, U.S. Army Tank-automotive and Armaments Command, AMSTA-TR-T, Warren, MI 48397-5000. A reply will be sent directly to you.

Section II. EQUIPMENT DESCRIPTION

EQUIPMENT PURPOSE

- Launch, retrieve, and transport scissoring-type bridge.

EQUIPMENT CAPABILITIES

- Can be operated in nuclear, biological, or chemical environments.
- Can be operated on rough ground.
- Can be forded in water up to 4 feet deep (1.2 meters) without special equipment.
- Can launch or retrieve bridge on uphill or downhill slope of 15% or side slope of 8%.

EQUIPMENT FEATURES

- Quick launch (2-5 minutes).
- Only two persons needed for launch/retrieval of bridge.
- Heavy armor protection for personnel.

WARNING

Before launching mine clearing line charge (MICLIC) (if equipped), wear hearing protection, close all crew hatches, and turn off vehicle exhaust fans. Failure to do so may result in injury or death to personnel from rocket launching fumes and hazardous noise.

- If vehicle is equipped with mine clearing line charge (MICLIC), refer to TM 9-1375-215-14&P for operating instructions.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

The M60A1 AVLB is divided into two sections - hull and launching mechanism. The hull contains the:

- Crew compartment with all controls for operating the launching mechanism.
- Engine compartment with engine and transmission that supplies power for operating hull and launching mechanism.
- Operator and commander cupolas to enter crew compartment.
- Cupola vision blocks and periscopes for visual operation when openings (hatches) are closed.
- Bridge seat on which bridge rests during transporting.

The launcher mechanism contains the:

- Hydraulic system - pump, fluid, cylinders, hoses, and other parts for moving the bridge, outrigger, and tongue during launch and retrieval.
- Outrigger - steadies vehicle during bridge launch and retrieval.
- Tongue - connects vehicle to bridge.

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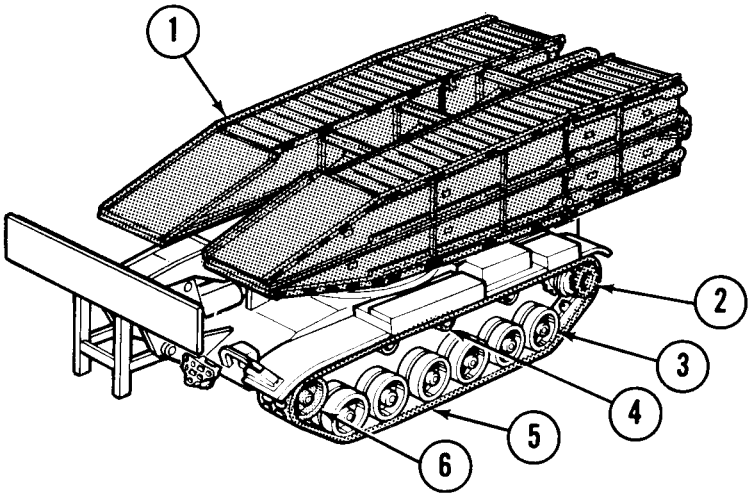
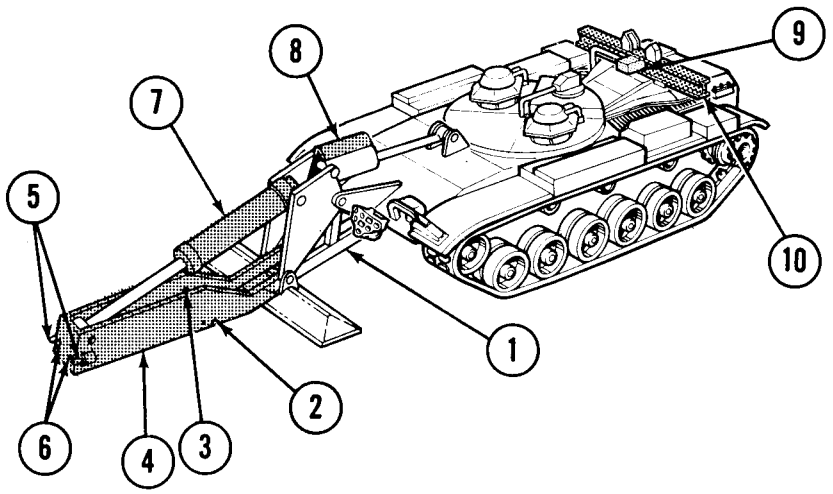
LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued



1. Bridge
2. Final drive sprocket
3. Roadwheel
4. Support roller
   Track
5. Compensating idler wheel



1. Boom and outrigger
2. Guide pin
3. Locking cylinder
4. Tongue
5. Pintles
6. Ejection cylinders
7. Tongue cylinder
8. Overhead cylinder
9. Holddown cylinder
10. Bridge seat

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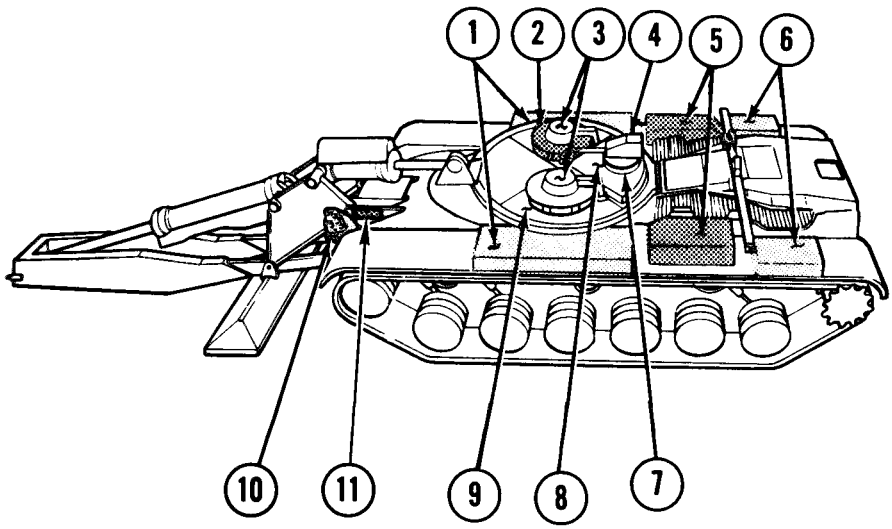
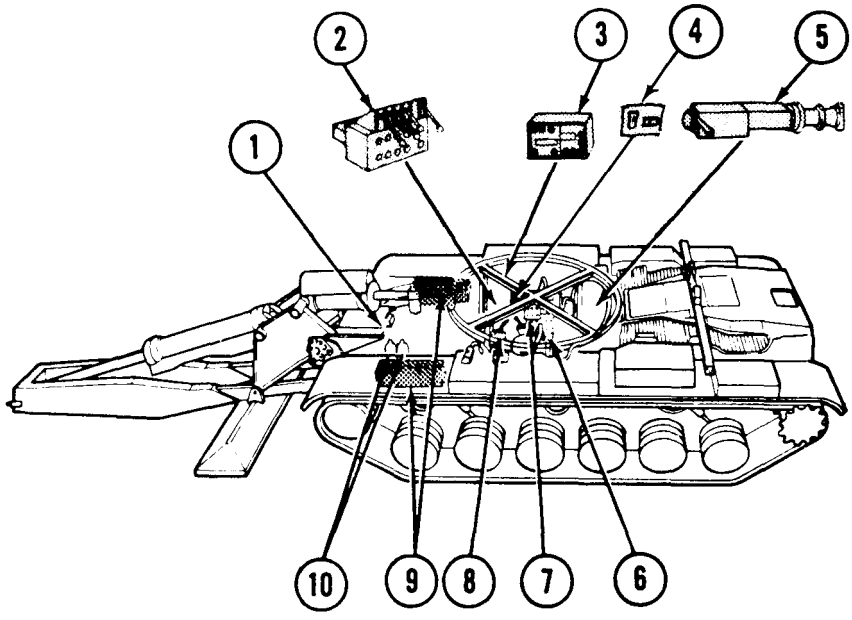
LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued



1. Front fender stowage boxes
2. Commander's cupola
3. Hatches
4. Antenna mount
   Engine air cleaners
2. Rear fender stowage boxes
7. Ventilating blower cover
8. Hydraulic oil reservoir
9* Operator's cupola
10. Smoke grenade discharger (if equipped)
11. Smoke grenade stowage boxes (if equipped)

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued



1. Personnel heater
2. Valve bank control
3. Radio
4. Grenade launcher controls
   Power take off (PTO), pump-clutch assembly
5. Operator's master control panel
7. Indicator panel
8. Night Vision Viewer
9. Batteries (6)
10. Fire extinguishers (3)

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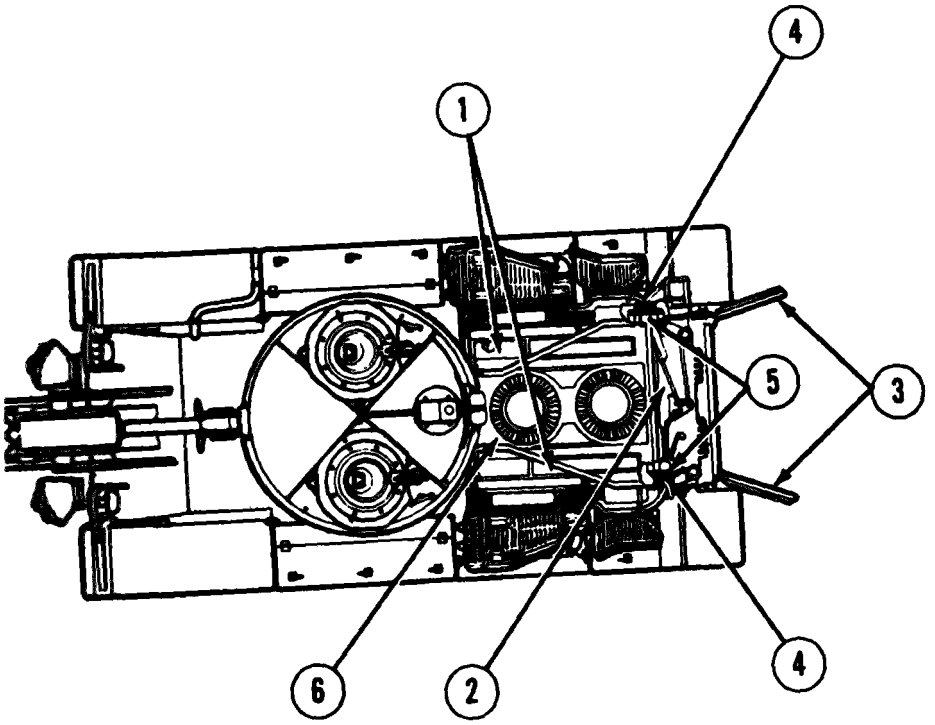
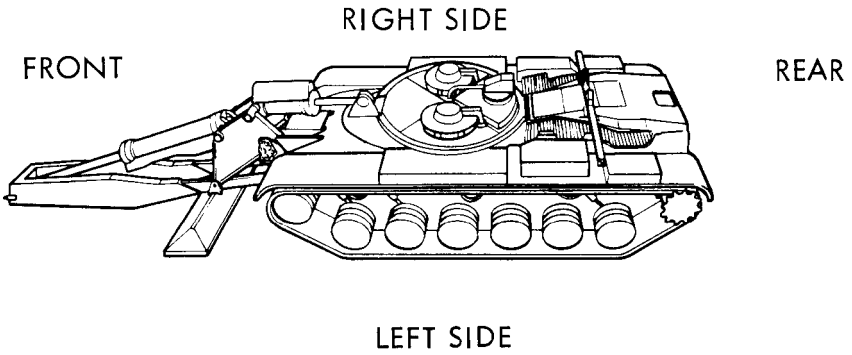
LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued



1. Fuel tanks
2. Transmission
3. Grille doors
4. Final drives
5. Universal joints
6. Engine

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - Continued

FRONT, REAR, RIGHT, AND LEFT DESIGNATIONS



DETAILED DESCRIPTION

If you need a detailed description of any component of the M60A1 bridge launcher, ask your supervisor to let you see a copy of TM 5-5420-202-20 (Hull) or TM 5-5420-228-24 (Launcher). Ask for TM 5-5420-203-14 for details on the bridge.

DIFFERENCE BETWEEN MODELS

There are several M60A1 ALVB equipment variations. This manual covers the following:

- Armored top loading engine air cleaner, or aluminum top loading engine air cleaner.
- Early model operator and commander cupolas, or late model operator and commander cupolas.
- Smoke Generator
- Driver's AN/VVS-2 Night Vision Viewer, or periscope, M24
- Smoke Grenade Launcher
- Vehicle Exhaust Dust Ejector System (VEDES) and Dust Detector System
- Mechanical Track Adjusting Link or Grease Actuated Track Adjusting Link
- AVDS-1790-2D Engine or AVDS-1790-2D A Engine

EQUIPMENT DATA

Capacities (fuel and oil):		
Fuel tanks (total)		375 gal (1419 litres)
Engine crankcase (refill)		14.5 gal (54.9 Iitres)
Transmission (refill)		17 gal (64.3 litres)
Final Drives		11 qts (10.4 litres)
Hydraulic system	w/bridge	135 gal (511 litres)
	w/o bridge	115 gal (435.3 litres)
Controls:		
Brakes		hydraulic-mechanical foot pedal
Steering		
Type		hydraulic mechanical
Turning capability		360-degree pivot
Transmission		
Type		CD-850-6A, 2 speed forward, 1 reverse
Operation		mechanical lever, 5 positions (P, N, L, H, R)
Dimensions (travel position):		
Length	(w/o bridge)	28.3 ft (8.64 m)
	(w/bridge)	37.0 ft (11.28 m)
Height	(w/o bridge)	10.0 ft (3.0 m)
	(w/bridge)	12.8 ft (3.9 m)
Width	(w/o bridge)	12.0 ft (3.6 m)
	(w/bridge)	13.2 ft (4 m)
Ground clearance		14 in. (35.6 cm)
Engine:		
Model		AVDS-1790-2D or -2DA
Type		V-12, turbosupercharged
Governed speed		
	full load.	2400 rpm
	no load	2650 rpm
	idle	700 to 750 rpm
Fuel		diesel oil
20° to 115°F (-7° to 46°C)		40 cetane, regular grade, DF-2
-25° to 20°F (-32° to -7°C)		40 cetane, regular grade, DF-1
-65° to -25° (-55° to -32°C)		40 cetane, regular grade, DF-A
Cooling system (engine and oil)		air-cooled
Fuel consumption		1.13 gpm (gal per mile) (4.3 Lpm)