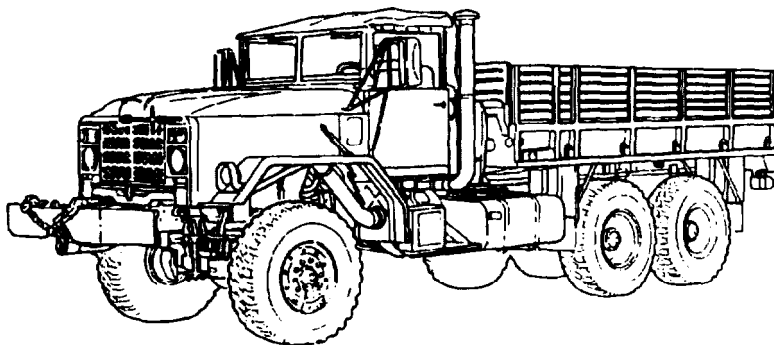


ARMY TM 9-2320-272-24-1 AIR FORCE TO 36A12-1C-1155-2-1

This publication supersedes TM 9-2320-272-20-1, October 1985, and changes 1 through 4; TM 9-2320-272-20-2, October 1985, and changes 1 through 3; TM 9-2320-272-34-1, June 1986, and changes 1 through 2; TM 9-2320-272-34-2, June 1986, and changes 1 and 2; and TM 9-2320-358-24&P, October 1992

TECHNICAL MANUAL VOLUME 1 OF 4

UNIT, DIRECT SUPPORT, AND GENERAL SUPPORT MAINTENANCE MANUAL FOR TRUCK, 5-TON, 6X6, M939, M939A1, M939A2 SERIES TRUCKS (DIESEL)



HOW TO USE THIS MANUAL

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TRUCK, CARGO: 5-TON, 6X6, DROPSIDE,

M923 (2320-01-050-2084) (EIC: BRY); M923A1 (2320-01-206-4087) (EIC: BSS); M923A2 (2320-01-230-0307) (EIC: BS7);
M925 (2320-01-047-8769) (EIC: BRT); M925A1 (2320-01-206-4088) (EIC: BST); M925A2 (2320-01-230-0308) (EIC: B58);

TRUCK, CARGO: 5-TON, 6X6 XLWB,

M927 (2320-01-047-8771) (EIC: BRV); M927A1 (2320-01-206-4089) (EIC: BSW); M927A2 (2320-01-230-0309) (EIC: BS9);
M928 (2320-01-047-8770) (EIC: BRU); M928A1 (2320-01-206-4090) (EIC: BSX); M928A2 (2320-01-230-0310) (EIC: BTM);

TRUCK, DUMP: 5-TON, 6X6,

M929 (2320-01-047-8756) (EIC: BTH); M929A1 (2320-01-206-4079) (EIC: BSY); M929A2 (2320-01-230-0305) (EIC: BTN);
M930 (2320-01-047-8755) (EIC: BTG); M930A1 (2320-01-206-4080) (EIC: BSZ); M930A2 (2320-01-230-0306) (EIC: BTO);

TRUCK, TRACTOR: 5-TON, 6X6,

M931 (2320-01-047-8753) (EIC: BTE); M931A1 (2320-01-206-4077) (EIC: BS2); M931A2 (2320-01-230-0302) (EIC: BTP);
M932 (2320-01-047-8752) (EIC: BTD); M932A1 (2320-01-205-2684) (EIC: BS5); M932A2 (2320-01-230-0303) (EIC: BTQ);

TRUCK, VAN, EXPANSIBLE: 5-TON, 6X6,

M934 (2320-01-047-8750) (EIC: BTB); M934A1 (2320-01-205-2682) (EIC: BS4); M934A2 (2320-01-230-0300) (EIC: BTR);

TRUCK, MEDIUM WRECKER: 5-TON, 6X6,

M936 (2320-01-047-8754) (EIC: BTF); M936A1 (2320-01-206-4078) (EIC: BS6); M936A2 (2320-01-230-0304) (EIC: BTT).

DISTRIBUTION STATEMENT A - Approved for public release; distribution is unlimited.

DEPARTMENTS OF THE ARMY AND THE AIR FORCE

JUNE 1998

TECHNICAL MANUAL
NO. 9-2320-272-24-1

HEADQUARTERS
DEPARTMENTS OF THE ARMY AND THE AIR FORCE
Washington, D.C., 30 JUNE 1998

TECHNICAL ORDER
NO. 36A12-1C-1155-2-1

TECHNICAL MANUAL
VOLUME 1 OF 4
UNIT, DIRECT SUPPORT, AND
GENERAL SUPPORT MAINTENANCE MANUAL
FOR

TRUCK, 5TON, 6X6, M939, M939A1, M939A2 SERIES TRUCKS (DIESEL)

TRUCK	MODEL	EIC	NSN WITHOUT WINCH	NSN WITH WINCH
Cargo, Dropside	M923	BRV	2320-01-050-2084	
Cargo, Dropside	M923A1	BSS	2320-01-206-4087	
Cargo, Dropside	M923A2	BS7	2320-01-230-0307	
Cargo, Dropside	M925	BRT		2320-01-047-8769
Cargo, Dropside	M925A1	BST		2320-01-206-4088
Cargo, Dropside	M925A2	BS8		2320-01-230-0308
Cargo	M927	BRV	2320-01-047-8771	
Cargo	M927A1	BSW	2320-01-206-4089	
Cargo	M927A2	BS9	2320-01-230-0309	
Cargo	M928	BRU		2320-01-047-8770
Cargo	M928A1	BSX		2320-01-206-4090
Cargo	M928A2	BTM		2320-01-230-0310
Dump	M929	BTH	2320-01-047-8756	
Dump	M929A1	BSY	2320-01-206-4079	
Dump	M929A2	BTN	2320-01-230-0305	
Dump	M930	BTG		2320-01-047-8755
Dump	M930A1	BSZ		2320-01-206-4080
Dump	M930A2	BTO		2320-01-230-0306
Tractor	M931	BTE	2320-01-047-8753	
Tractor	M931A1	BS2	2320-01-206-4077	
Tractor	M931A2	BTP	2320-01-230-0302	
Tractor	M932	BTD		2320-01-047-8752
Tractor	M932A1	BS5		2320-01-205-2684
Tractor	M932A2	BTQ		2320-01-230-0303
Van, Expansible	M934	BTB	2320-01-047-8750	
Van, Expansible	M934A1	BS4	2320-01-205-2682	
Van, Expansible	M934A2	BTR	2320-01-230-0300	
Medium Wrecker	M936	BTF		2320-01-047-8754
Medium Wrecker	M936A1	BS6		2320-01-206-4078
Medium Wrecker	M936A2	BTT		2320-01-230-0304

REPORTING OF 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 or DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual, directly to: Director, Armament and Chemical Acquisition and Logistics Activity, ATTN: AMSTA-AC-NML, Rock Island, IL 61299-7630. A reply will be furnished to you. You may also provide DA Form 2028-2 information via datafax or e-mail:

- E-mail: am&a-ac-nml.ria-emh2.army.mil
- Fax: DSN 783-0726 or commercial (309) 782-0726

DISTRIBUTION STATEMENT A - Approved for public release; distribution is unlimited.

*This publication supersedes TM 9-2320-272-20-1, 24 October 1985, and changes 1 through 4; TM 9-2320-272-20-2, 25 October 1985, and changes 1 through 3; TM 9-2320-272-34-1, 10 June 1986, and changes 1 through 2; TM 9-2320-272-34-2, 10 June 1986, and changes 1 and 2; and TM 9-2320-358-24&P, 21 October 1992.

This publication is published in four volumes. TM 9-2320-272-24-1 contains chapters 1, 2, and 3 (through section IX). TM 9-2320-272-24-2 contains chapters 3 (sections X through XVI) and 4 (sections I through III). TM 9-2320-272-24-3 contains chapter 4 (sections IV through XVI). TM 9-2320-272-24-4 contains chapters 5 and 6 and appendices A through H. Volume 1 contains a table of contents for the entire manual. Volumes 1, 2, and 3 contain an alphabetical index covering tasks found in their respective volume. Volume 4 contains an alphabetical index covering all tasks found in the entire manual.

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HOW TO USE THIS MANUAL

ABOUT YOUR MANUAL

Spend some time looking through this manual. You'll find that it has a new look, different than most TMs you've been using, including its predecessors, TM 9-2320-272-20-1, TM 9-2320-272-20-2, TM 9-2320-272-34-1, TM 9-2320-272-34-2, and TM 9-2320-358-24&P.

New features added to improve the convenience of this manual and increase your efficiency are:

- a. **Accessing Information** - These include physical entry features such as the bleed-to-edge indicators on the cover and edge of the manual. Extensive troubleshooting guides for specific systems lead directly to step-by-step directions for problem solving and maintenance tasks.
- b. **Illustrations** - A variety of methods are used to make locating and fixing components much easier. Locator illustrations with keyed text, exploded views, and cut-away diagrams make the information in this manual easier to understand and follow.
- c. **Commonality** - Only items that are unique to a specific series or vehicle will be given a separate procedure. When only minor differences occur, notes are added to tell you to alter the normal procedure in one way or another to accommodate the differences.
- d. **Keying Text with Illustrations** - Instructions/text are located together with illustrations of the specific task you are performing. In most cases, the task steps and illustrations are located on facing pages, with text on the left and illustrations on the right. Continue reading for an example of modular text and illustration layout,

HOW TO USE THIS MANUAL

Here's an example of how to use your manual:

Task: The unit maintenance mechanic of an M939 series vehicle reports that the engine cranks but fails to start.

Troubleshooting steps:

1. Look at the cover of this manual. You'll see subjects listed from top to bottom on the right-hand side.
2. Look at the right edge of the manual. On some of the pages you'll see black bars (edge indicators) that are aligned with the subject bars on the cover. These are the locations of the subjects in the manual.
3. Look for UNIT TROUBLESHOOTING in the subject list on the cover,
4. Turn to the page with the edge indicator matching the subject bar for UNIT TROUBLESHOOTING. Page numbers are also listed next to the subject titles.
5. An edge indicator is placed on the first page of the UNIT TROUBLESHOOTING.

NOTE

If the first page of a subject has an even-numbered page, it will appear on your left, but the edge indicator will still be on the page to your right. So, if the information you are looking for does not start on the page to your right, it will on the page to your left.

6. Look down the list until you find ENGINE. Beneath that heading you will find the symptoms noted by the maintenance mechanic: Engine cranks, fails to start.
7. Turn to the page indicated: page 2-9.
8. On page 2-9, steps/test relating to resolving the malfunction of "Engine cranks, fails to start," are:
Step 1. You inspect the fuel pump shutoff valve and find it is defective and must be replaced. You see para. 4-6 referenced.
Step 2. The rest of the inspection shows no other cause for the problem.
9. Locate para. 4-5, and you will find the detailed procedure for removing the old fuel pump shutoff valve and replacing it with a new one.

HOW TO USE THIS MANUAL (Contd)

NOTE

Before starting the maintenance task, look through the entire procedure to familiarize yourself with it.

- a. The entire procedure (4-5. FUEL PUMP SHUTOFF REPLACEMENT), according to the THIS TASK COVERS header, includes: a. Removal and b. Installation.
- b. The nine basic subheadings listed under INITIAL SETUP outline the task preconditions, materials, tools, manpower requirements, and general safety instructions. They are:
 - APPLICABLE MODELS: Any models that require that particular maintenance task.
 - TEST EQUIPMENT: Test equipment needed to complete a task.
 - SPECIAL TOOLS : Those tools required to complete the task.
 - MATERIALS/PARTS: All parts or materials required to complete the task.
 - PERSONNEL REQUIRED: The number and type of personnel needed to accomplish a task.

NOTE

If you think you need more help to correctly or safely complete the task (perhaps as a result of an unusual condition, etc.), alert your supervisor and ask for help.

- REFERENCES(TM): Those manuals required to complete the task.
 - EQUIPMENT CONDITION Notes the conditions that must exist before starting the task. For (4-5. FUEL PUMP SHUTOFF REPLACEMENT), the hood must be raised and secured (TM 9-2320-272-10), and the left splash shield removed (TM 9-2320-272-10).
 - SPECIAL ENVIRONMENTAL CONDITIONS: Outlines specific environmental conditions necessary to perform the task. For example: Darken an area when adjusting headlight beams.
 - GENERAL SAFETY INSTRUCTIONS: Summarizes all safety warnings for the maintenance task.
- c. A step-by-step maintenance procedure follows the INITIAL SETUP.
 - d. At the end of the procedure, FOLLOW-ON TASK(S) will list those additional task(s) that must be performed to complete the procedure. The follow-on tasks for 4-5. FUEL PUMP SHUTOFF REPLACEMENT are: Start engine (TM 9-2320-272-10), check fuel pump shutoff valve for proper operation (TM 9-2320-272-101, install left splash shield (TM 9-2320-272-10), and lower and secure hood (TM 9-2320-272-10X)
10. Refer to our example procedure, 4-5. FUEL PUMP SHUTOFF REPLACEMENT as we review the following points:
 - a. Modular Text: Both pages of text and illustrations are to be used together. This manual was designed so that the two pages are visible at once, making part identification and procedure sequence easy to follow.
 - b. Initial Setup: Outlines task conditions.
 - c. Illustrations: An exploded view of the components removed from the vehicle shows part locations, attachments, and spatial relationships.
 11. Refer to TM 9-2320-272-24P, Unit, Direct Support, and General Support Maintenance Repair Parts and Special Tools List for Truck, 5-Ton, 6x6, M939, M939A1, M939A2 Series Trucks, when requisitioning parts and special tools for Unit, Direct Support, and General Support maintenance,
 12. Your manual is easier to use once you understand its design. We hope it will encourage you to use it more often.

CHAPTER 1 INTRODUCTION

- Section I. General Information (page 1-1)
 Section II. Equipment Description and Data (page 1-5)
 Section III. Principles of Operation (page 1-25)

Section I. GENERAL INFORMATION

1-1. SCOPE

a. This manual contains information and instructions needed to service and maintain 5-ton, 6x6, M939, M939A1, and M939A2 (M939/A1/A2) series vehicles by unit, direct support, and general support maintenance personnel. This manual is intended to be used in conjunction with TM 9-2320-272-10 and TM 9-2320-272-24P for overall completion of tasks found in this manual.

b. The vehicle model numbers and description of vehicles covered in this manual are:

Table 1-1. Vehicle Cross-Reference Table.

VEHICLE DESCRIPTION	M939 SERIES	M939A1 SERIES	M939A2 SERIES
Truck, Cargo, Dropside, Without Winch (WO/W)	M923 (EIC: BRY)	M923A1 (EIC: BSS)	M923A2 (EIC: BS7)
Truck, Cargo, Dropside, With Winch (W/W)	M925 (EIC: BRT)	M925A1 (EIC: BST)	M925A2 (EIC: BS8)
Truck, Cargo, Extra Long Wheelbase (XLWB), Without Winch (WO/W)	M927 (EIC: BRV)	M927A1 (EIC: BSW)	M927A2 (EIC: BS9)
Truck, Cargo, Extra Long Wheelbase (XLWB), With Winch (W/W)	M928 (EIC: BRU)	M928A1 (EIC: BSX)	M928A2 (EIC: BTM)
Truck, Dump, Without Winch (WO/W)	M929 (EIC: BTH)	M929A1 (EIC: BSY)	M929A2 (EIC: BTN)
Truck, Dump, With Winch (W/W)	M930 (EIC: BTG)	M930A1 (EIC: BSZ)	M930A2 (EIC: BTO)
Truck, Tractor, Without Winch (WO/W)	M931 (EIC: BTE)	M931A1 (EIC: BS2)	M931A2 (EIC: BTP)
Truck, Tractor, With Winch (W/W)	M932 (EIC: BRD)	M932A1 (EIC: BS5)	M932A2 (EIC: BTQ)
Truck, Van, Expansible	M934 (EIC: BTB)	M934A1 (EIC: BS4)	M934A2 (EIC: BTR)
Truck, Medium Wrecker	M936 (EIC: BTF)	M936A1 (EIC: BS6)	M936A2 (EIC: BTT)

1-2. MAINTENANCE FORMS, RECORDS, AND REPORTS

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).

1-3. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Procedures for destruction of Army materiel to prevent enemy use can be found in TM 750-244-6.

1-4. PREPARATION FOR STORAGE OR SHIPMENT

Storage and shipment instructions are found in chapter 6. Additional information can be found in TM 740-90-1, Marking, Packing, and Shipment of Supplies and Equipment: General Packaging Instructions for Field Use.

1-5. OFFICIAL NOMENCLATURE

The nomenclature, names, and designations used in this manual are in accordance with MIL-HDBK-63038-2.

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs); REPORTING OF 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 back of this manual direct to: Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AC-NML, Rock Island, IL 61299-7630. A reply will be furnished to you.

1-7. WARRANTY INFORMATION

The 5-ton, 6x6, M939/A1 series vehicle Cummins engine (model NHC 250) and Allison transmission (model MT564CR) are warranted in accordance with TB 9-2300-295-15/21. The warranty starts on the date found in block 23, DA Form 2408-9, in logbook. Report all defects in material or workmanship to your supervisor, who will take appropriate action.

1-8. ARMY PETROLEUM, OILS, AND LUBRICANTS (POL)

Proper disposal of hazardous waste material is vital to protecting the environment and providing a safe work environment. Materials such as batteries, oils, and antifreeze must be disposed of in a safe and efficient manner.

The following references are provided as a means to ensure proper disposal methods are followed:

- Technical Guide No. 126 (from the U.S. Army Environmental Hygiene Agency)
- National Environmental Policy Act of 1969 (NEPA)
- Clean Air Act (CAA)
- Resource Conservation and Recovery Act (RCRA)
- Comprehensive Environmental Response, Compensation, and Liability Act
- Emergency Planning and Community Right to Know Act (EPCRA)
- Toxic Substances Control Act (TSCA)
- Occupational Health and Safety Act (OHSA)

The disposal of Army Petroleum, Oils, and Lubricants (POL) products are affected by some of these regulations. State regulations may also be applicable to POL. If you are unsure of which legislation affects you, contact state or local agencies for regulations regarding proper disposal of Army POL.

1-9. USE OF METRIC SYSTEM

The equipment/system described herein contains metric common and special tools; therefore, metric units in addition to U.S. standard units will be used throughout this publication.

1-10. LIST OF ABBREVIATIONS

AOAP - Army Oil Analysis Program	mm - millimeter
bx - box	mpg - miles per gallon
CAGEC - Commercial and Government Entity Code	mph - miles per hour
cm - centimeter	N•m - Newton meter
CTIS - Central Tire Inflation System	NATO - North Atlantic Treaty Organization
cu-ft - cubic feet	OZ - ounce
cu-yd - cubic yard	para. - paragraph
cuM - cubic Meter	PMCS - Preventive Maintenance Checks and Services
ea - each	POL - Petroleum, Oils, and Lubricants
ft - feet	psi - pounds per square inch
GM - Grease, Automotive and Artillery	pt - pint
GTW - Gross Towed Weight	PTO - Power Takeoff
gal. - gallon	qt - quart
in. - inch	rpm - revolutions per minute
kg - kilograms	SEA - Standard, Engineering, and Automotive
km/h - kilometers per hour	TMDE - Test, Measurement, and Diagnostic Equipment
km/L - kilometers per liter	U/M - Unit of Measure
kPa - kiloPascal	W/W - With Winch
L - liter	WO/W - Without Winch
lb-ft - pound-feet	XLWB - Extra Long Wheelbase
lb - pound	
max - maximum	
min - minimum	

1-11. GLOSSARY

APPROACH ANGLE - Angle between front tire and front bumper

DEPARTURE ANGLE - Angle between rear tire and rear bumper

FORDING - Crossing through water

GRADE - Steepness of terrain

HYDRAULIC - Operated by oil pressure

OPERATOR - Driver of vehicle

PAULIN - Canvas cover or tarpaulin (tarp)

SLAVING - Jump starting

Section II. EQUIPMENT DESCRIPTION AND DATA

1-12. EQUIPMENT DESCRIPTION AND DATA INDEX

PARA. NO.	TITLE	PAGE NO.
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1-14.	Location and Description of Major Components	1-16
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1-13. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

a. The M939, M939A1, and M939A2 (M939/A1/A2) series of vehicles are varied in design and capabilities. The M939 was a redesign and retrofit of the MS09 series of vehicles, providing enhanced capabilities.

(1) The leading features of the M939 are:

- (a) Automatic transmission (Allison MT654)
- (b) Hydraulic-assisted power steering system
- (c) Complete airbrake system
- (d) Improved cooling system
- (e) Three-crewmember cab
- (f) Tilt hood

(2) Changes were incorporated into later production engines (after engine serial number 11246663) which provided for control of exhaust gas recirculation back to the air intake manifold and the use of top-stop injectors to make up a clean air configuration.

(3) The M939A1 improved on the M939 by adding 14:00xR20 super-sized tires, increasing the minimum road clearance and approach and departure angle. This necessitated a modification to the spare tire rack and lifting device used on all series vehicles.

(4) The M939A2 incorporated a new engine (Cummins 6CTA8.3) and the Central Tire Inflation System (CTIS).

b. The M939/A1/A2 series vehicles can be distinguished from the M809 series by the following features:

(1) On the left side, the exhaust was moved behind the cab and tilted out so exhaust gases clear the side of the vehicle. Hood latches were installed on the sides of the hood near the mirrors. The battery box was incorporated into the companion seat to improve battery life in cold climates. A steering-assist cylinder was installed between the right front frame rail and the right axle hub.

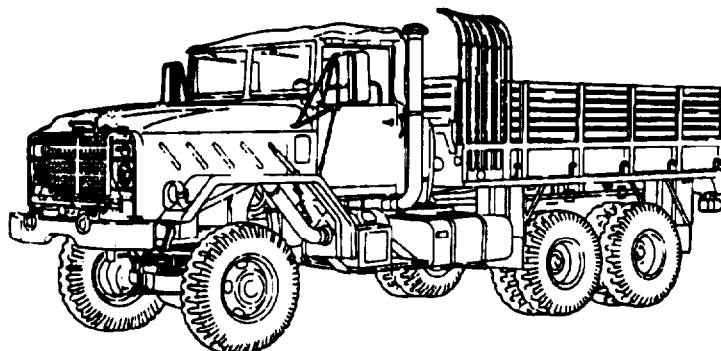
(2) From the front, the hood and fenders are an assembly which tilt forward for access to the engine compartment. A tilt handle and locking device was installed to tilt and hold the hood in a secured open position.

(3) The air filter was moved under the driver's door and the intake stack was brought up behind the cab, even with the cab top.

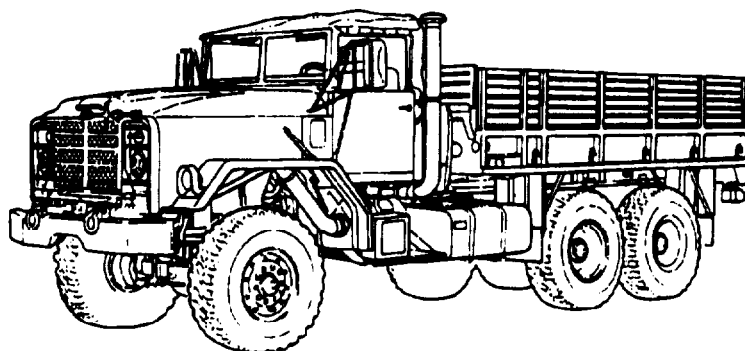
1-13. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Contd)

c. Cargo Trucks With Dropsides: M923/A1/A2 WO/W and M925/A1/A2 W/W.

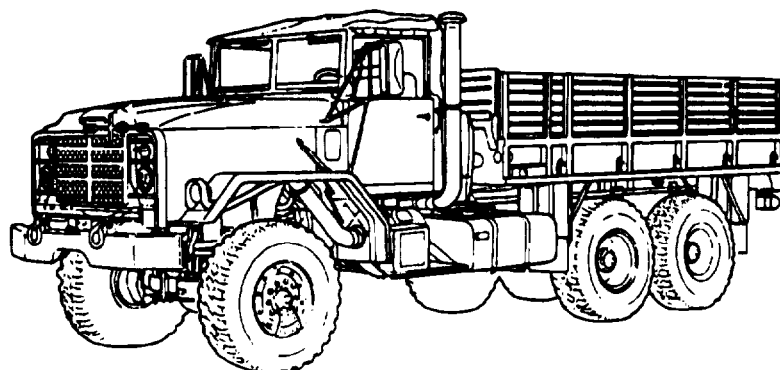
PURPOSE: These models are used to transport cargo and troops. The vehicles have a payload rating of 10,000 lbs (4,540 kg) and provide 550 cu-ft (15.4 CuM) of cargo space. Removable dropsides and tailgate permit hauling of extra wide loads and easy access for unloading cargo. Troop seats, bows, and canvas are also available. The M925/A1/A2 models have front winches and can be used for recovery operation. The bed of the M923A1/A2 and M925A1/A2 has been shifted back to facilitate a new lifting davit and spare tire mount. When the tire is mounted in its storage location on the M923A1/A2 and M925A1/A2, the top of the tire extends above the minimal reducible height and may need to be removed to obtain the necessary measurement.



M923

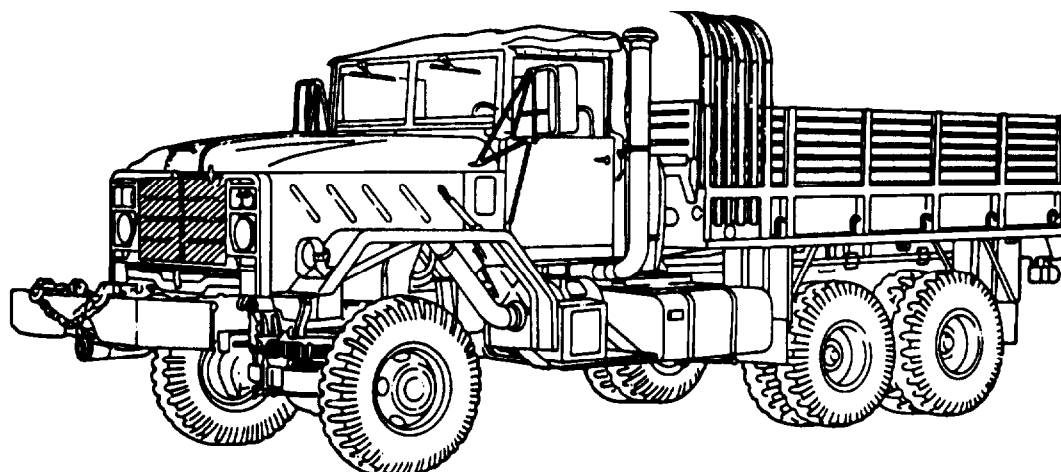


M923A1

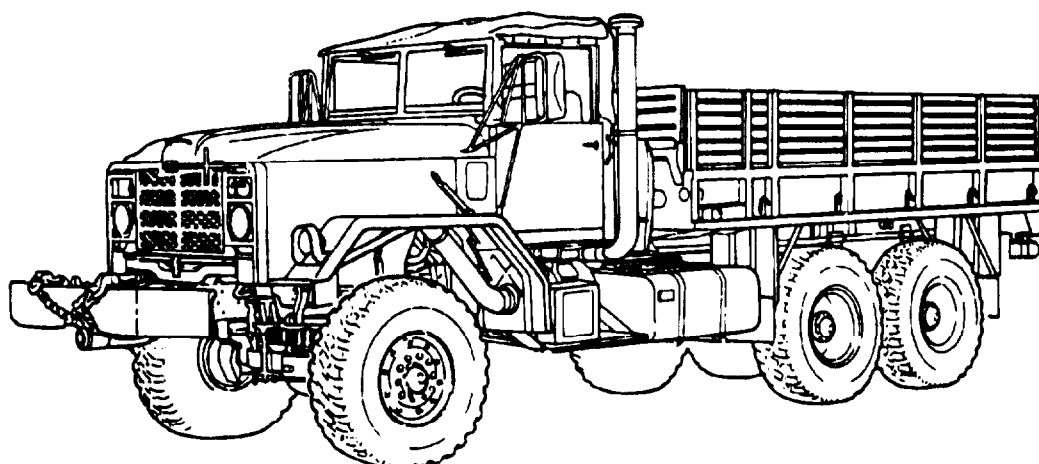


M923A2

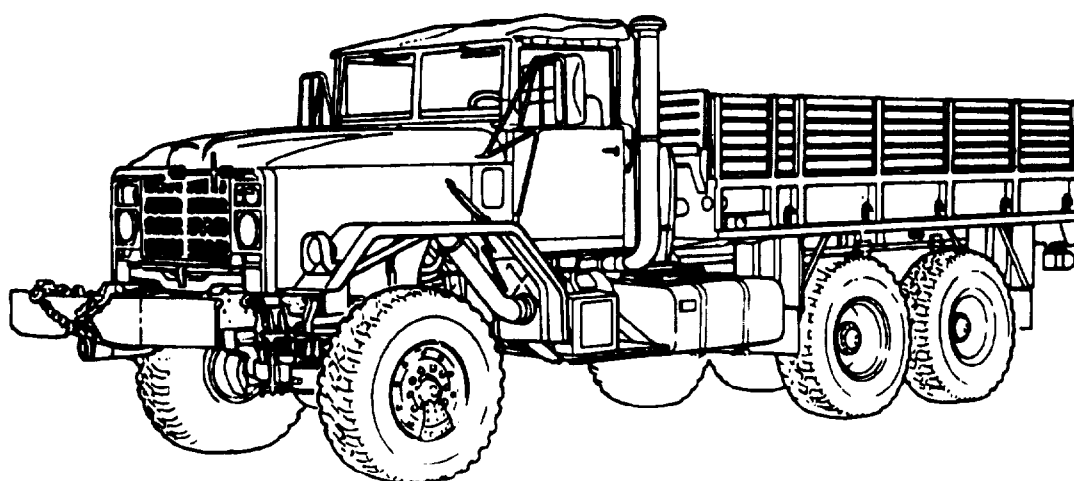
1-13. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Contd)



M925



M925A1

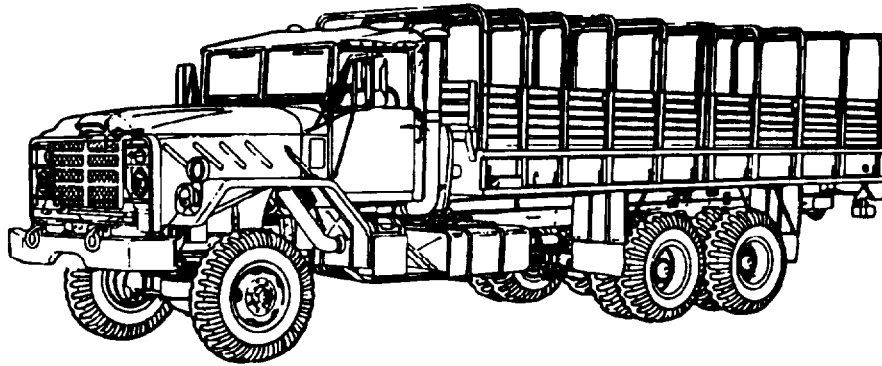


M925A2

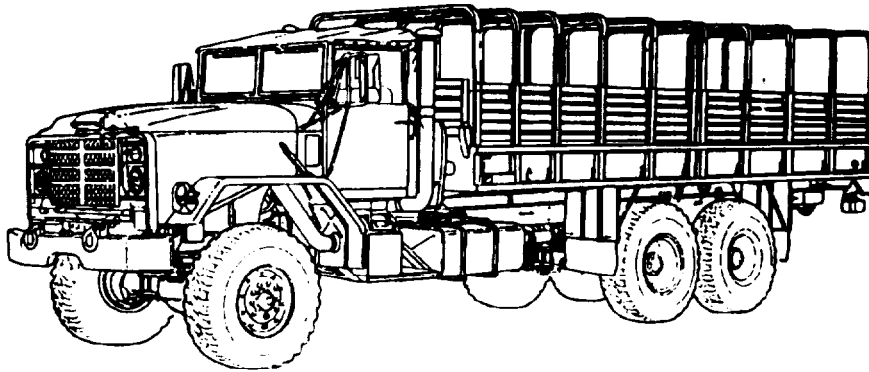
1-13. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Contd)

d. Cargo tick With Extra Long Wheelbase (XLWB): M927/A1/A2 WO/W and M928/A1/1A2 W/W.

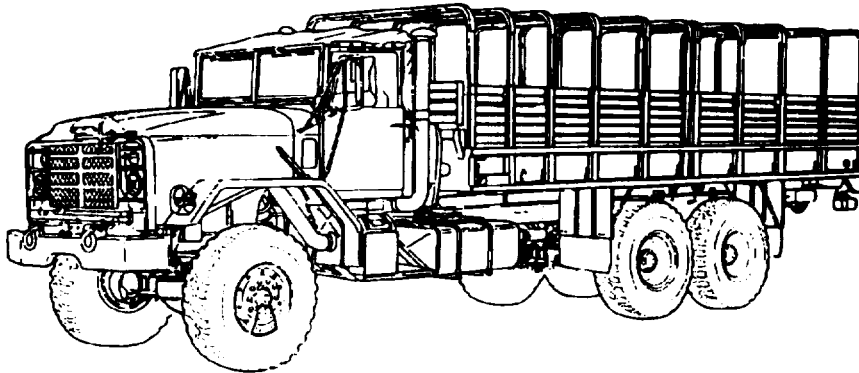
PURPOSE: These models are used to transport troops and longer cargo loads. They have the same characteristics as the M923/A1/A2 and M925/A1/A2, but have additional 76 in. (193 cm) of bed space that allows an extra 194 cu-ft (5.4 cuM) of cargo space. Troop seats, bow, and tarpaulin are available. This vehicle has permanent steel-welded sides. The M928/A1/A2 model vehicles have winches and can be used for recovery operations. The bed of the M923A1/A2 and M925A1/A2 has been shifted back to facilitate a new lifting davit and spare tire mount. When the tire is mounted in its storage location on the M923A1/A2 and M925A1/A2, the top of the tire extends above the minimal reducible height and may need to be removed to obtain the necessary measurement.



M927

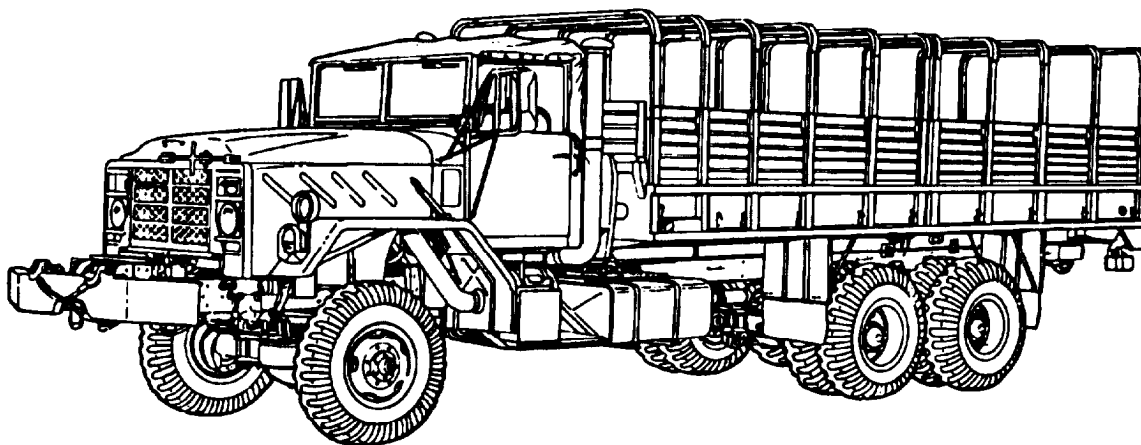


M927A1

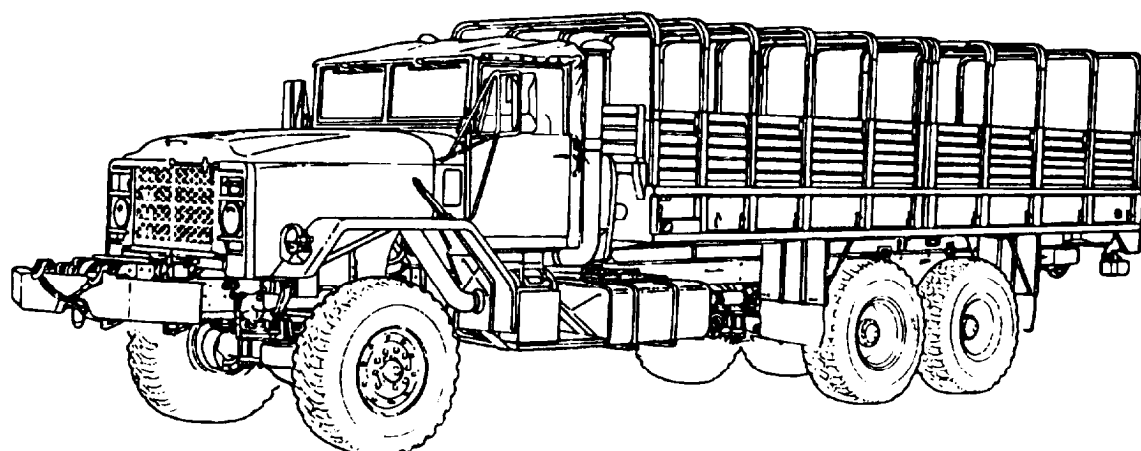


M927A2

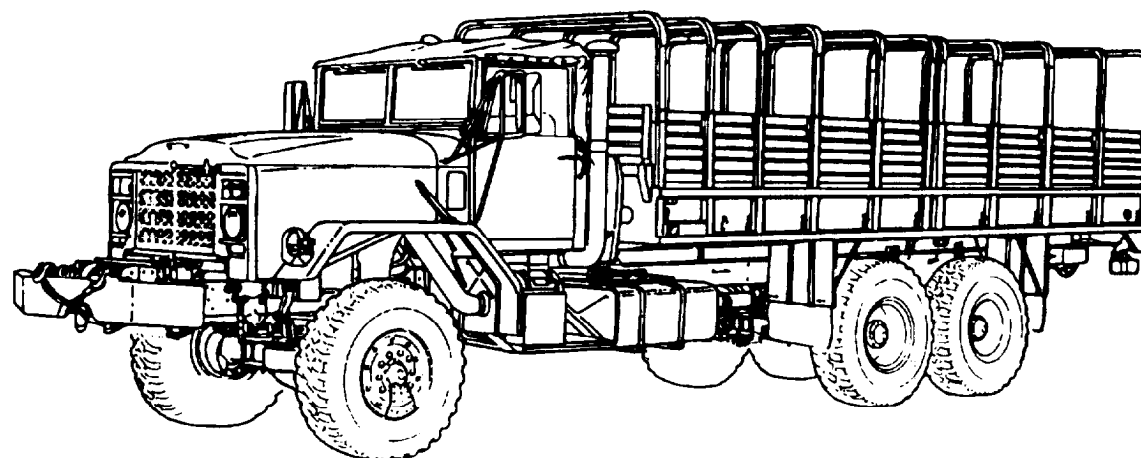
1-13. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Contd)



M928



M928A1

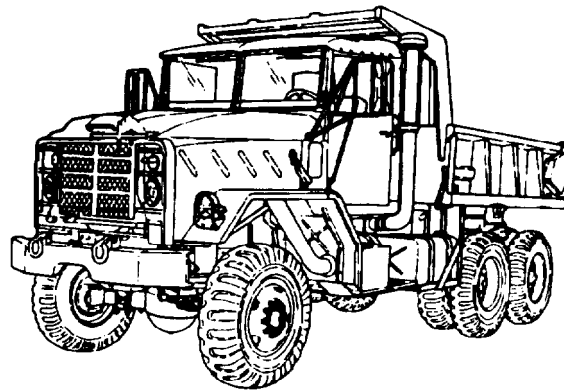


M928A2

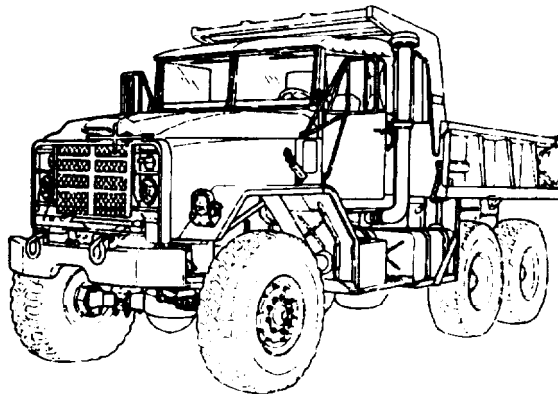
1-13. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Contd)

- e. Dump Truck: M929/A1/A2 WO/W and M930/A1/A2 W/W.

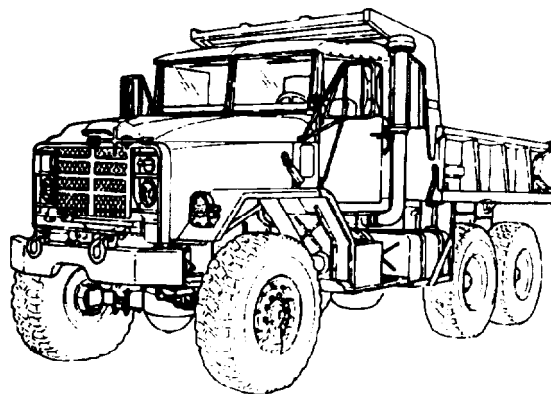
PURPOSE: These models are for hauling and dumping cargo. They have a capacity of 5 cu-yd (3.84 cuM). The bodies have provisions for side racks and troop seats, and bow and tarpaulin for troop transport. The M930/A1/A2 have front winches and can be used for recovery operations. Additional support brackets have been designed on the M929A1/A2 and M930A1/A2 model vehicles and are available to support the bed in a slightly raised position for removal of the 14:00xR20 spare tire.



M929

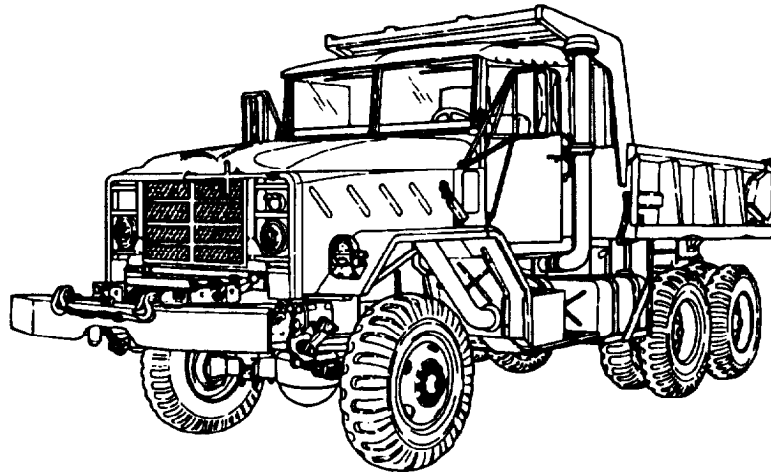


M929A1

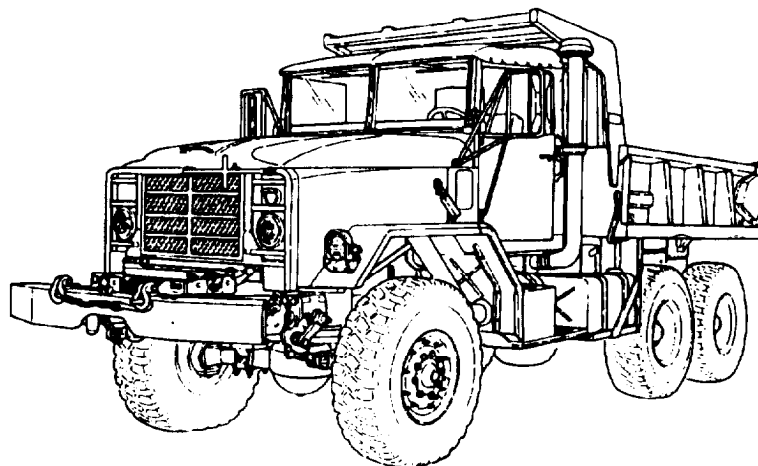


M929A2

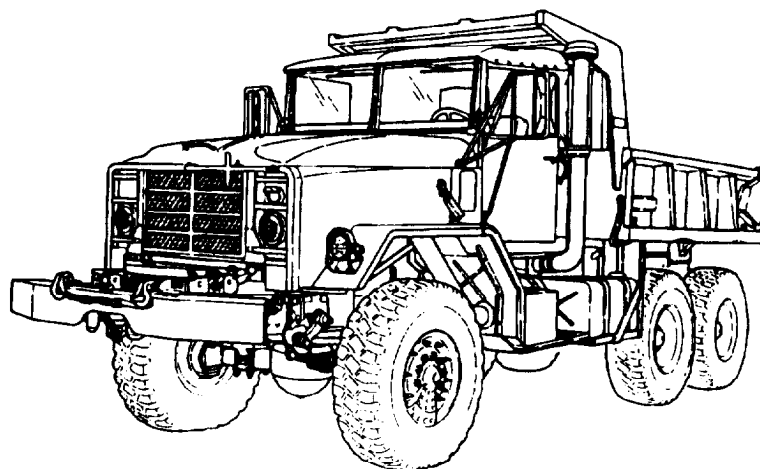
1-13. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Contd)



M930



M930A1

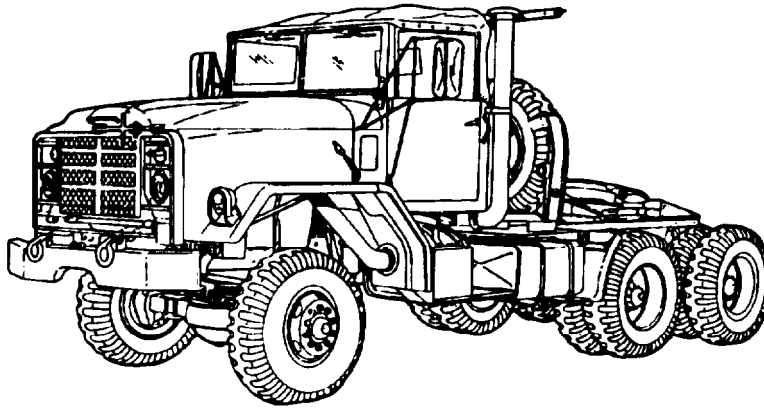


M930A2

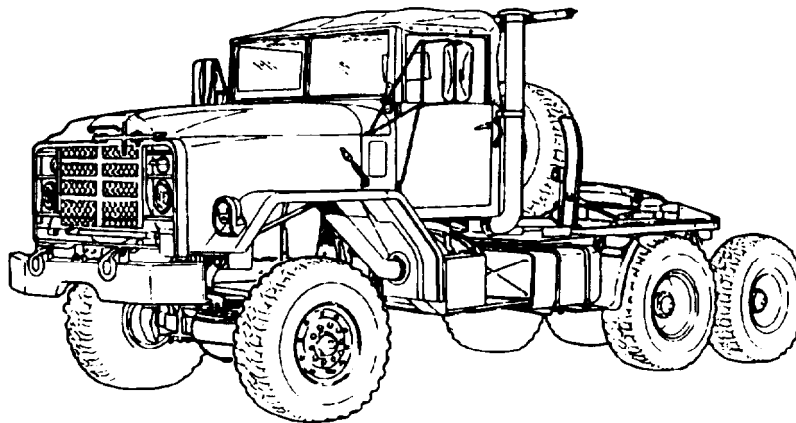
1-13. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Contd)

f. Tractor Trucks: M931/A1/A2 WO/W and M932/A1/1A2 W/W.

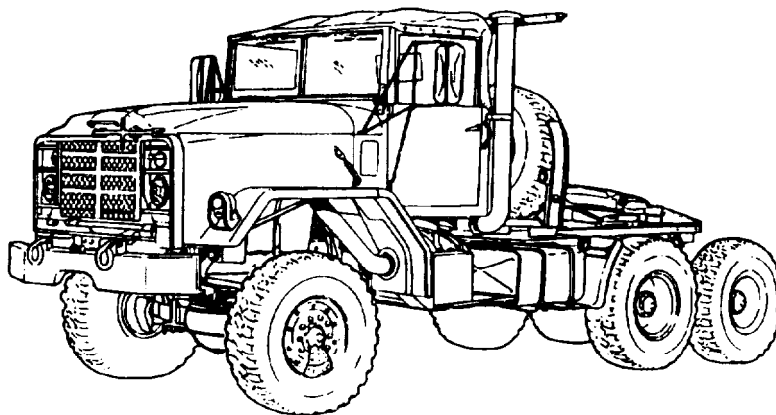
PURPOSE: These vehicles are equipped with a fifth wheel and are used for hauling semitrailers. The fifth wheel is capable of pivoting 21 degrees up, 15 degrees down, or 7 degrees sideways. The M932/A1/A2 model vehicles have front winches and can be used for recovery operations.



M931

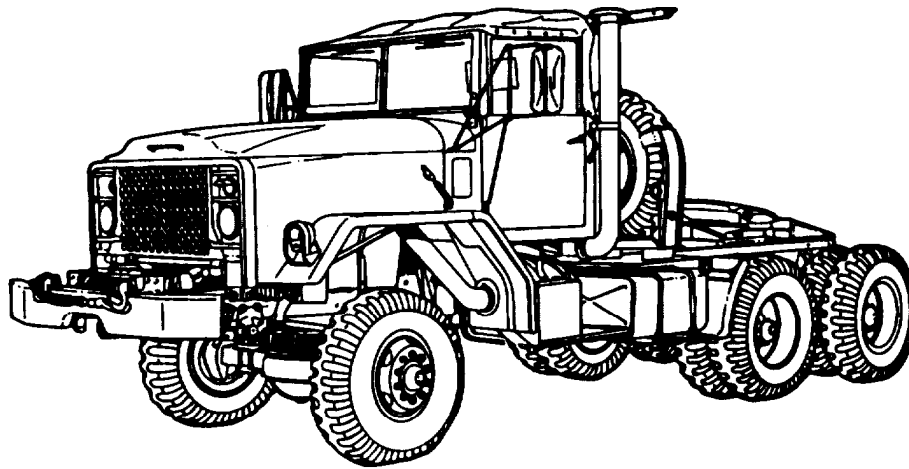


M931A1

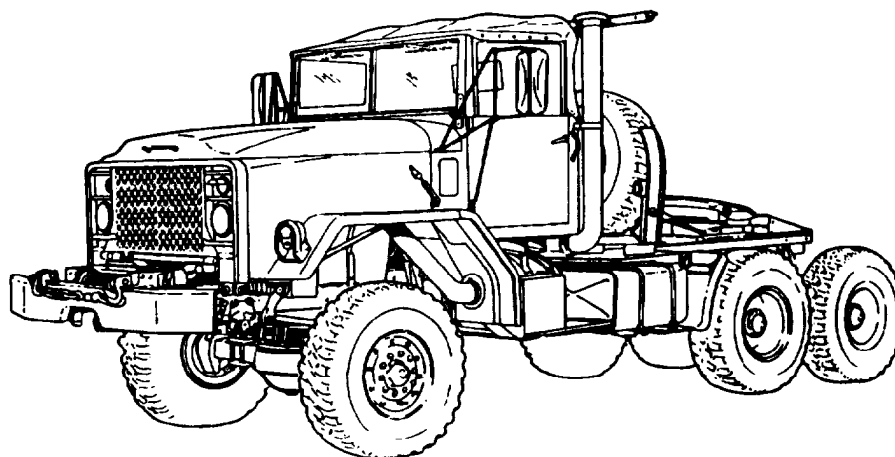


M931A2

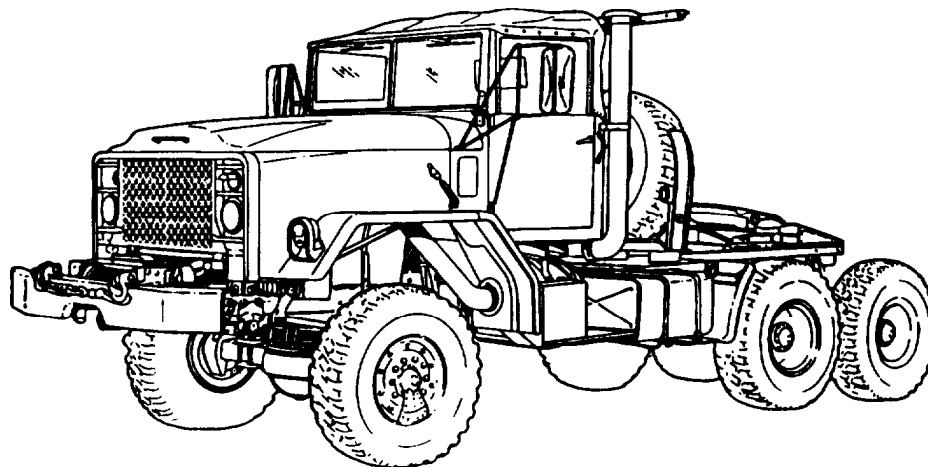
I-13. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Contd)



M932



M932A1

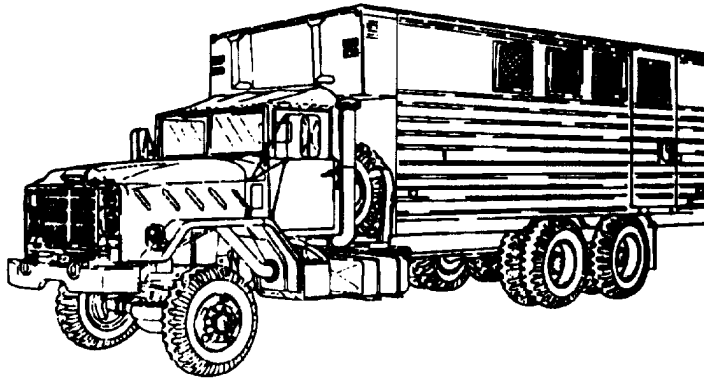


M932A2

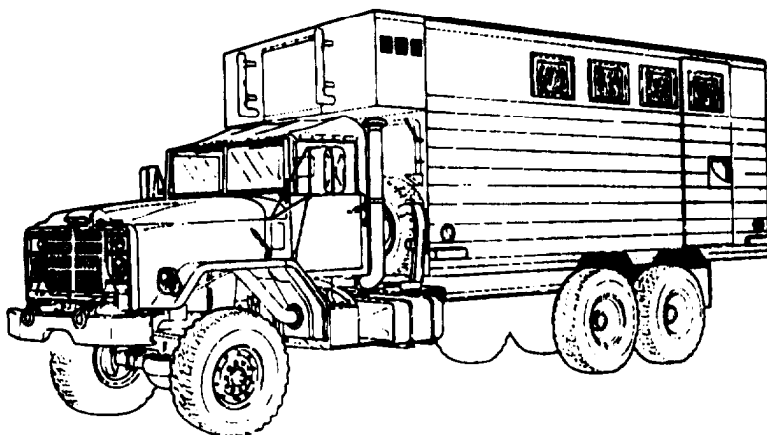
1-13. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Contd)

g. Expansible Vans: M934/A1/A2.

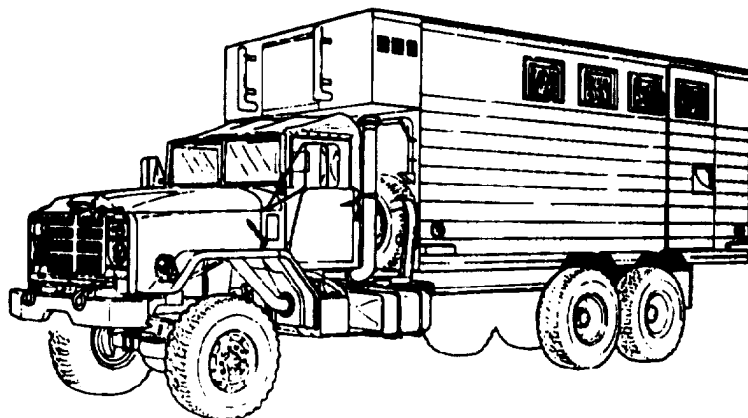
PURPOSE: These vehicles are used for electronics, maintenance, supply, power, and base station operation. The van body can be expanded when set up in a stationary mode of operation; when mission requires more mobile-type operation, the body is left in the retracted position.



M934



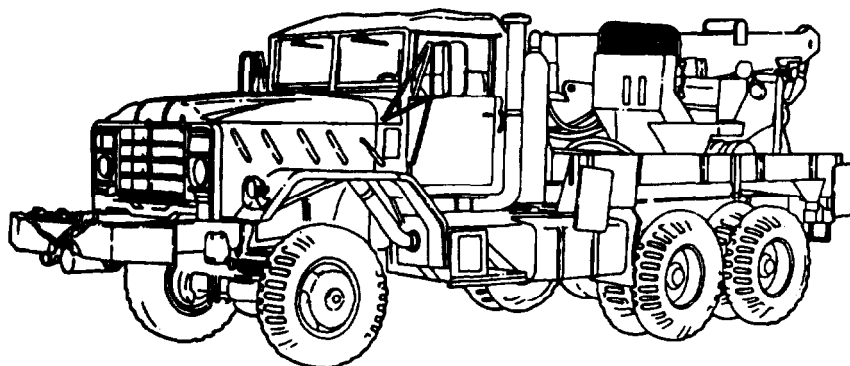
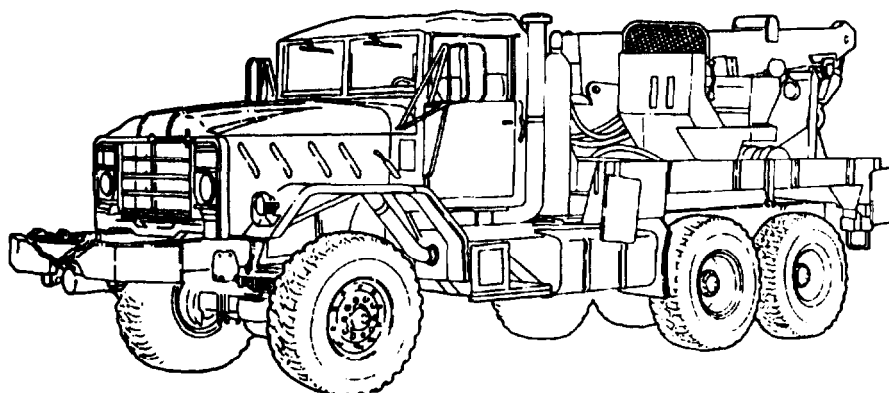
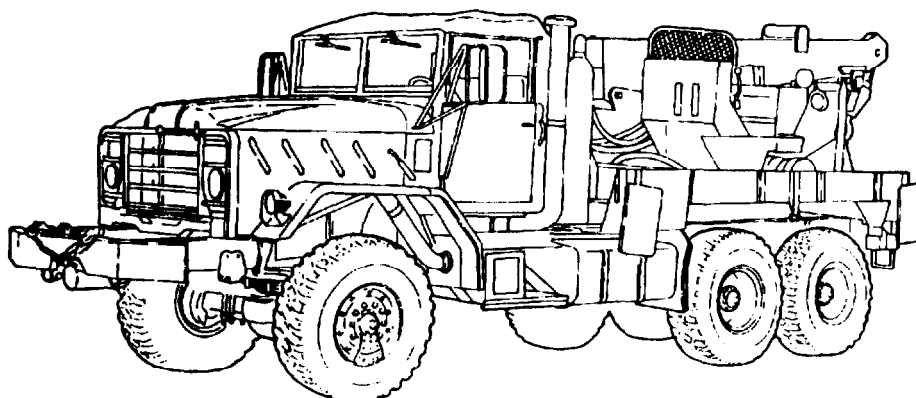
M934A1



M934A2

1-13. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Contd)**h. Medium Wrecker: M936/A1/A2.**

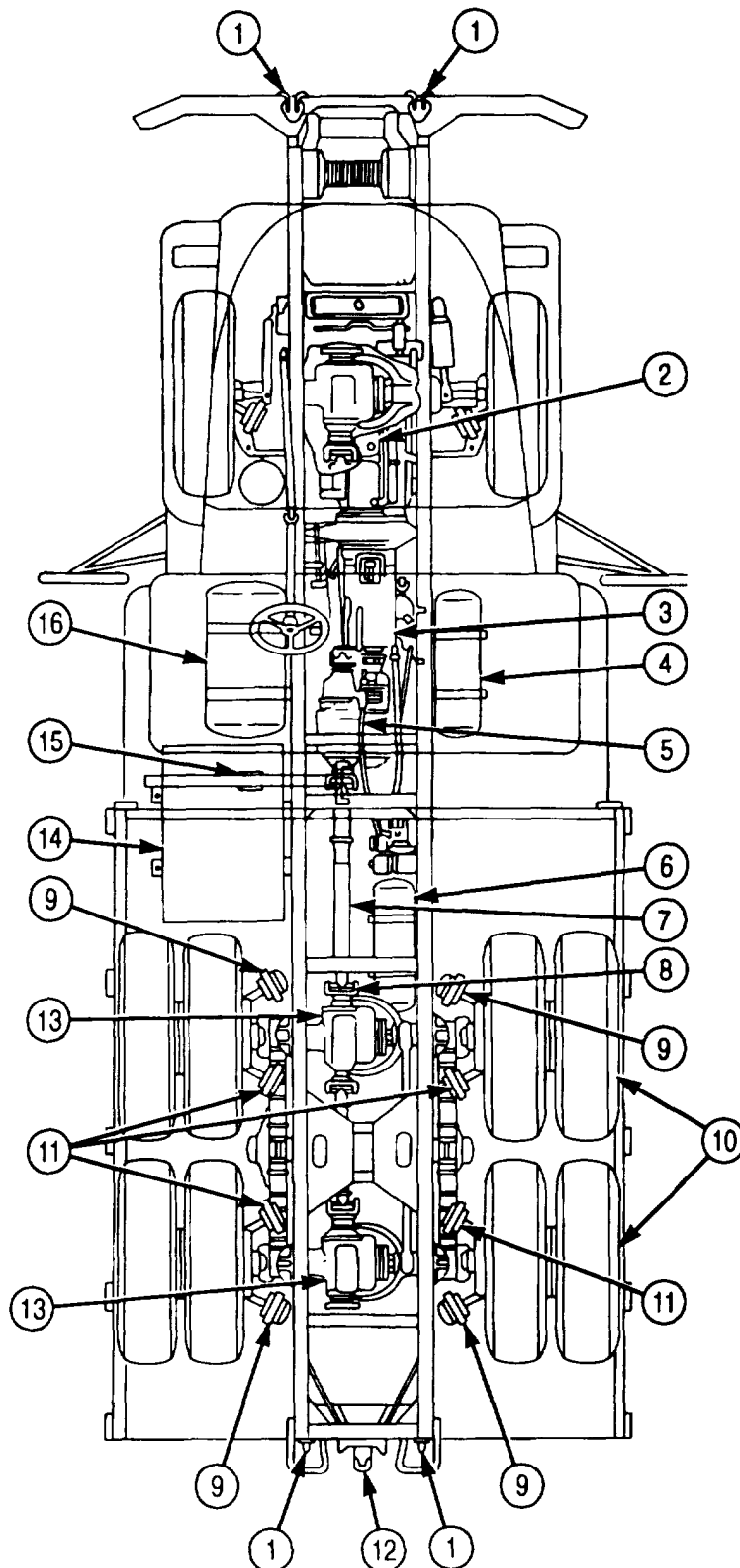
PURPOSE: These vehicles are used for wrecker and salvage operations. They have a revolving hydraulic crane with a self-supported extendable boom. Boom-to-ground supports and outriggers are provided. Crane lifting capacity is 20,000 lb (9,080 kg). The vehicle has a front winch with a 20,000 lb (9,080 kg) capacity. M936/A1 models are equipped with front anchor brackets for heavy straight and side pulls using the front winch. All models are equipped with a 45,000 lb (20,250 kg) capacity rear winch, rear anchor brackets for heavy straight and side pulls, and spring brake override of the Power Takeoff (PTO) air switch for self-recovery operations.

**M936****M936A1****M936A2**

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

a. Exterior Components. The components described herein are common to most vehicles covered in this manual. Specific differences can be found in TM 9-2320-272-10 or in table 1-2, Differences Between Models (para. 1-15), of this manual.

- ① LIFTING SHACKLE(S)
- ② ENGINE
- ③ TRANSMISSION
- ④ PRIMARY AND SECONDARY AIR RESERVOIRS
- ⑤ TRANSFER CASE
- ⑥ WET TANK RESERVOIR
- ⑦ REAR PROPELLER SHAFT(S)
- ⑧ UNIVERSAL JOINT(S)
- ⑨ SERVICE BRAKE CHAMBER
- ⑩ REAR BOGIE
- ⑪ SPRING BRAKE CHAMBER
- ⑫ TOWING PINTLE
- ⑬ REAR DIFFERENTIAL(S)
- ⑭ FUEL TANK(S)
- ⑮ SPARE TIRE CARRIER
- ⑯ AIR CLEANER



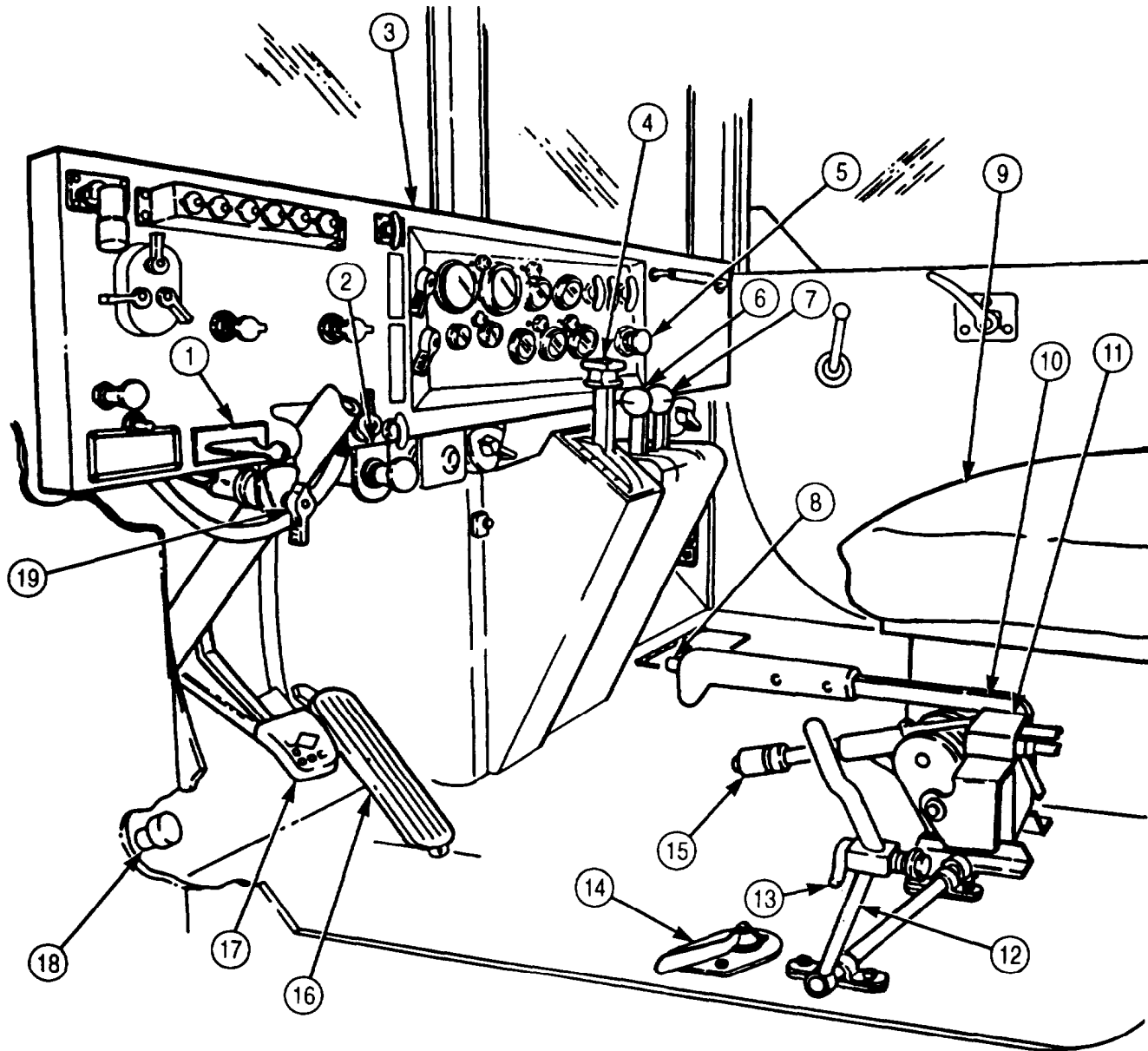
1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Contd)

Key Item and Function

- 1 **LIFTING SHACKLE(S)** - Permit vehicle to be towed by another vehicle or used for tiedown attachment when transporting vehicle.
- 2 **ENGINE** - There are two different Cummins model engines used, the NHC 250 (M939/A1 series vehicles) and 6CTA8.3 diesel (M939A2 series vehicles), which provide mechanical power to the vehicle and engine-driven subsystems.
- 3 **TRANSMISSION** - The Allison MT546CR automatic, used on all M939/A1/A2 series vehicles, adapts the engine's output for a varying range of operating speeds.
- 4 **PRIMARY AND SECONDARY AIR RESERVOIRS** - Provides storage of compressed air and isolation between air subsystems.
- 5 **TRANSFER CASE** - Directs the engine and transmission output to the specified axles and/or auxiliary equipment.
- 6 **WET TANK RESERVOIR** - Provides reserve storage of compressed air created by the air compressor or external source when demand is low and releases it when required. This lessens the cycling of the engine-driven air compressor.
- 7 **REAR PROPELLER SHAFT(S)** - Transmits power between transfer case and forward-rear axle assemblies, and between forward-rear and rear-rear axles assemblies.
- 8 **UNIVERSAL JOINT(S)** - Provides a flexible point between a component and the propeller shafts. This allows components that cannot maintain precision alignment to transfer power from one point to another, without undue stress or breakage.
- 9 **SERVICE BRAKE CHAMBER** - Mechanical brake actuator that is activated by applying air pressure to an expandable cylinder, causing it to apply braking force to the brakedrum.
- 10 **REAR BOGIE** - The suspension system comprised of both rear axles, upper and lower torque rods, springs, and seats that support the rear vehicle weight.
- 11 **SPRING BRAKE CHAMBER** - Mechanical brake actuator that is spring-loaded to apply brakes when air is low or not present. During normal vehicle operation, air piston counteracts the spring tension and allows the brakes to release. Spring brakes can be bypassed by pushing in the spring brake OVERRIDE switch on the instrument panel, or released using procedures found in TM 9-2320-272-10.
- 12 **TOWING PINTLE** - Provides a secure quick-connect/disconnect for towing vehicles or equipment.
- 13 **REAR DIFFERENTIAL(S)** - Bi-directionally transfer power from the propeller shaft to the axles, and provide a straight-through connection to power additional propeller shafts.
- 14 **FUEL TANK(S)** - Provides storage of fuel.
- 15 **SPARE TIRE CARRIER** - Stores spare tire.
 - Davit - Used to load and unload spare tire on M923/A1/A2, M925/A1/A2, M927/A1/A2, M928/A1/A2, M931/A1/A2, and M9321/A1/A2 model vehicles.
 - Winch and Swinging Davit - Used to load and unload spare tire on M934A1/A2 model vehicles. Optional kit is available for M934 model vehicle.
 - Hoist and Lifting Eye - Used to load and unload spare tire on M929/A1/A2, M930/A1/A2, and M934 model vehicles. Optional kit is available to support dump bed in semi-raised position during tire removal.
 - Vehicle Crane - Used to load and unload spare tire on M936/A1/A2 model vehicles. **NOTE:** On M936/A1/A2 model vehicles, remove spare tire prior to changing tire, and install tire in spare tire carrier after tire change is complete. Operation of crane and/or vehicle engine while vehicle is on jacks may cause the vehicle to slip off jack.
- 16 **AIR CLEANER** - Filters air before it enters the intake manifold or turbocharger and collects dust in removable section of filter canister.

1-14. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Contd)

b. Interior Cab Components. The components described herein are common to one or more vehicles covered in this manual. Components not found here can be found in TM 9-2320-272-10 or in table 1-2, Differences Between Models (para. 1-15), of this manual.



Key Item and Function

- 1 **FRONT-WHEEL DRIVE LOCK-IN SWITCH** - A pneumatic switch that permits front-wheel drive to be engaged when the transfer case is in HIGH position. Operation of switch is not required when transfer case is in LOW position; system will automatically switch into six-wheel drive.

1-14 LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Contd)

Key Item and Function

- 2 **POWER TAKEOFF (PTO) SPRING BRAKE OVERRIDE SWITCH** - Used during rear winch self-recovery operations of M936/A1/A2 model vehicles only. This air control switch must be held in to override spring brake air dump switch on transfer case PTO lever.
- 3 **INSTRUMENT PANEL** - Houses controls and indicators.
- 4 **TRANSMISSION SELECTOR LEVER** - Manual control to select driving gear.
- 5 **SPRING BRAKE OVERRIDE SWITCH** - Pressed in to release spring brakes independent of the mechanical parking brake for tests and adjustments. Can be used to release spring brakes in the event a leak or stoppage occurs in lines between primary and spring brake reservoirs, or primary system air shutoff valve is closed.
- 6 **TRANSMISSION POWER TAKEOFF (PTO) LEVER** - Used on M925/A1/A2, M928/A1/A2, M929/A1/A2, M930/A1/A2, M932/A1/A2, and M936/A1/A2 model vehicles only. Provides hydraulic power for front winch and/or dump body operation.
- 7 **WINCH CONTROL LEVER** - Provides control of winch unwinding and winding operations from inside the cab.
- 8 **TRANSFER CASE SHIFT LEVER SWITCH** - Used in conjunction with transmission selector lever in NEUTRAL position to allow transfer case to be shifted between HIGH and LOW gears.
- 9 **PASSENGER SEAT** - Combination two-person crew seat, battery box, and storage box. Seats are equipped with two sets of seatbelts, the battery box houses four batteries, and the storage compartment stores technical manuals. NOTE: Ensure companion seatbelts are not caught inside battery box.
- 10 **TRANSFER CASE SHIFT LEVER** - Pushed down to shift transfer case into HIGH gear, center position for NEUTRAL, and up position for LOW gear. When transfer case is placed in LOW, it will automatically engage six-wheel drive. In HIGH, the instrument panel-mounted front-wheel drive lock-in switch must be used to achieve six-wheel drive operation.
- 11 **SPRING BRAKE CONTROL SWITCH** - Senses the position of the parking brake control lever and signals the spring brakes to engage when the lever is up and disengage when it is down. Spring brakes can be tested independently from parking brake by raising this switch without pulling up the parking brake control lever (TM 9-2320-272-10).
- 12 (a) **DUMP BODY CONTROL LEVER** - Used on M929/A1/A2 and M930/A1/A2 to control raising (pulled back) and lowering (pushed forward) of dump body.
 (b) **TRANSFER CASE POWER TAKEOFF (PTO)** - Used on M936/A1/A2 to control the hydraulic pump that delivers hydraulic pressure to the rear winch and crane. A spring brake air dump switch is installed on the lever when used on these vehicles, which engages the spring brakes. To override this feature during self-recovery operation with the rear winch, the driver must depress and hold the PTO spring brake override air switch on the instrument panel.
- 13 **DUMP BODY CONTROL LEVER SAFETY LATCH** - Secures dump body control lever or transfer case PTO in NEUTRAL when not in use.
- 14 **FUEL TANK SELECTOR LEVER** - Used on dual tank model vehicles only. NOTE: Tanks must be switched periodically to lessen the buildup of contaminants and fungus.
- 15 **PARKING BRAKE CONTROL LEVER** - Pulled up to set mechanical brake on output of transfer case and to engage the spring brakes, and down to disengage brakes. Knob on top of handle is turned clockwise to increase braking action on the output of transfer case, and counterclockwise to decrease braking action. Spring brakes engagement is controlled by the spring brake control switch located on the back of the lever.
- 16 **ACCELERATOR PEDAL** - Foot control to vary the speed of the engine.
- 17 **BRAKE PEDAL** - Applies the service brakes.
- 18 **DIMMER SWITCH** - Depressed to change between HIGH and LOW beam setting on headlights.
- 19 **FUEL GAUGE TANK SELECTOR SWITCH** - Used to switch fuel gauge to read either left or right fuel tank. Installed only on dual tank model vehicles.