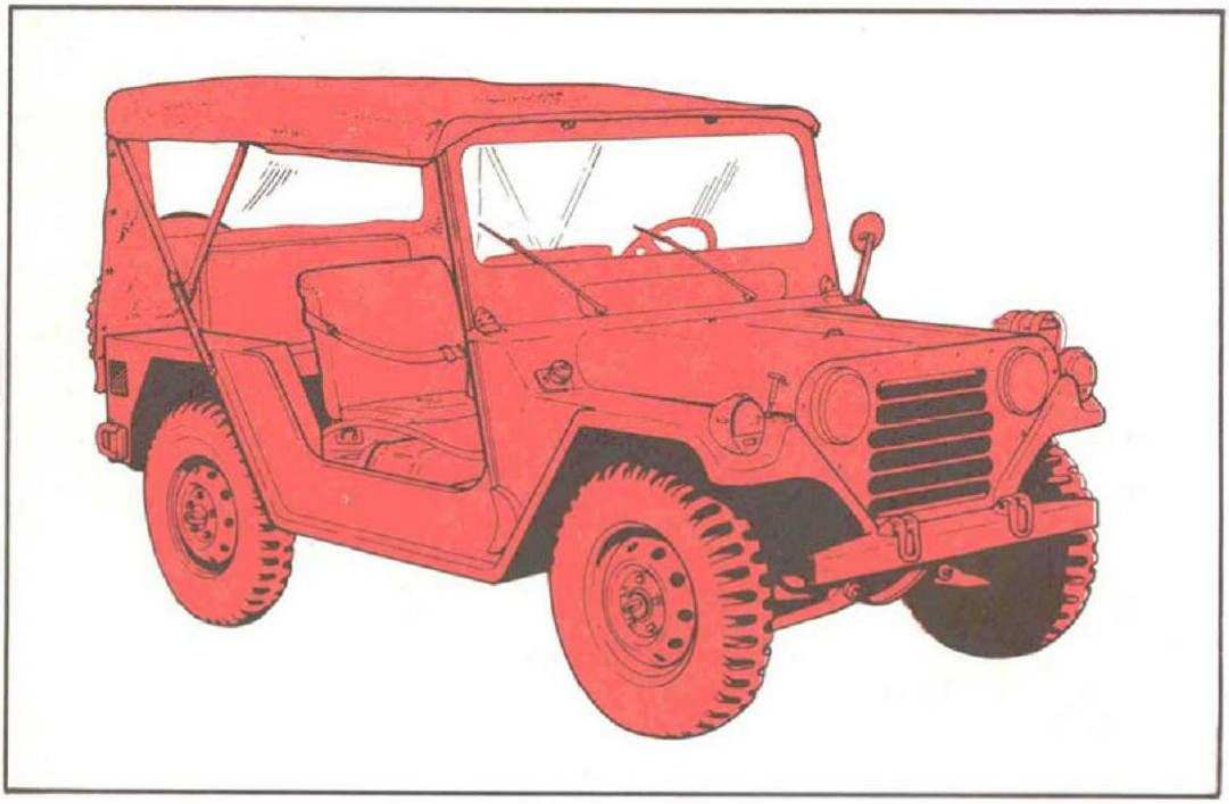
OPERATOR'S MANUAL
FOR
¼ TON, 4X4, M151 SERIES VEHICLES



TRUCK, UTILITY: ¼ TON, 4X4,
M151 (2320-00-542-4783)
M151A1 (2320-00-763-1092)
M151A2 (2320-00-177-9258)

TRUCK, UTILITY: ¼ TON, 4X4,
106MM RECOILLESS RIFLE
M151A1C (2320-00-763-1091)
M825 (2320-00-177-9257)

TRUCK, AMBULANCE, FRONTLINE: ¼ TON, 4X4,
M718 (2310-00-782-6056)
M718A1 (2310-00-177-9256)

HEADQUARTERS, DEPARTMENT OF THE ARMY

MARCH 1983

WARNING

CARBON MONOXIDE POISONING CAN BE DEADLY

Carbon monoxide is a colorless, odorless, deadly poisonous gas, which, when breathed, deprives the body of oxygen and causes suffocation. Exposure to air contaminated with carbon monoxide produces symptoms of headache, dizziness, loss of muscular control, apparent drowsiness, coma. Permanent brain damage or death can result from severe exposure.

It occurs in the exhaust fumes of fuel-burning heaters and internal-combustion engines and becomes dangerously concentrated under conditions of inadequate ventilation. The following precautions must be observed to ensure the safety of personnel whenever the personnel heater, main, or auxiliary engine of any vehicle is operated for maintenance purposes or tactical use.

1. DO NOT operate heater or engine of vehicle in an enclosed area unless it is ADEQUATELY VENTILATED.

2. DO NOT idle engine for long periods without maintaining ADEQUATE VENTILATION in personnel compartments.

3. DO NOT drive any vehicle with inspection plates, cover plates, engine compartment doors removed unless necessary for maintenance purposes.

4. BE ALERT at all times during vehicle operation for exhaust odors and exposure symptoms. If either are present, IMMEDIATELY VENTILATE personnel compartments. If symptoms persist, remove affected personnel from vehicle and treat as follows: Expose to fresh air; keep warm; DO NOT PERMIT PHYSICAL EXERCISE: if necessary, administer artificial respiration.

THE BEST DEFENSE AGAINST CARBON MONOXIDE POISONING IS ADEQUATE VENTILATION.

WARNING

Extreme care should be used when driving M151 series vehicles. They have more responsive steering and acceleration than other vehicles. Watch speed, especially on turns. A full right or left turn at speeds above 20 mph (32 km/h) can cause any vehicle to go out of control and/or turn over.

WARNING

Do not use an open flame type light to check fuel tank or tank filler neck strainer.

WARNING

Use extreme care in removing radiator filler cap when temperature gage reads above 180° F (82° C).

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Warning a

WARNING

Use extreme care to prevent battery compartment cover or tools from touching any electrical connection point and any metal part of the vehicle at the same time. Exercise special care when working near the batteries. Each battery is rated at 12 volts and can cause painful injuries when short circuited. Do not use open flame near batteries.

WARNING

Do not change the ventilator position with the vehicle in motion.

WARNING

If oil pressure is zero, stop engine and investigate.

WARNING

Arctic Kit -65°F (-54°C) (Heater Equipped Vehicles)
Accumulation of oil or grease on the oil pan is a serious fire hazard. Wait until the indicator light goes out before attempting to restart heater or backfire will result causing severe injury.

WARNING

Use care in replacing tires to avoid personnel injury.

WARNING

Do not attempt to ford water deeper than 60 inches (152 cm) with deepwater fording kit, as water will enter intake pipe, stalling engine, damaging vehicle and endangering occupants. After fording, do not rely on brakes until tested and found reliable.

HNICAL MANUAL
No. 9-2320-218-10-1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC *16 March 1983*

OPERATOR'S MANUAL
TRUCK, UTILITY: 1/4 TON, 4x4, M151 (2320-00-542-4783), M151A1 (2320-00-763-1092), M151A2 (2320-00-177-9258)
TRUCK, UTILITY: 1/4 TON, 4x4, 106MM RECOILLESS RIFLE M151A1C (2320-00-763-1091) M825 (2320-00-177-9257)
TRUCK, AMBULANCE, FRONTLINE: 1/4 TON, 4x4, M718 (2310-00-782-6056), M718A1 (2310-00-177-9256)

Current as of 1 June 1982

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 Publication and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Tank-Automotive Command, ATTN: DRSTA-MB, Warren, Michigan 48090. A reply will be furnished to you.

This manual supersedes TM 9-2320-218-10, 10 August 1978.

HOW TO USE THIS MANUAL

a. This manual contains information for safe and efficient operation of your equipment. These instructions provide you with a general knowledge of the equipment, its characteristics and usual and unusual operation procedures.

b. Provides you with troubleshooting procedures, so that you can keep your equipment operating properly.

c. Provides best possible operating instructions under most circumstances. Multiple emergencies, adverse weather, terrain, etc., may require modification of these procedures.

d. Takes a "positive approach" and normally states only what you can do. Unusual operations or configurations are prohibited unless specifically included. Before attempting any questionable operation, which is not specifically permitted in this manual, clearance must be obtained from your supervisor.

CHAPTER 1
INTRODUCTION

Section I. GENERAL INFORMATION

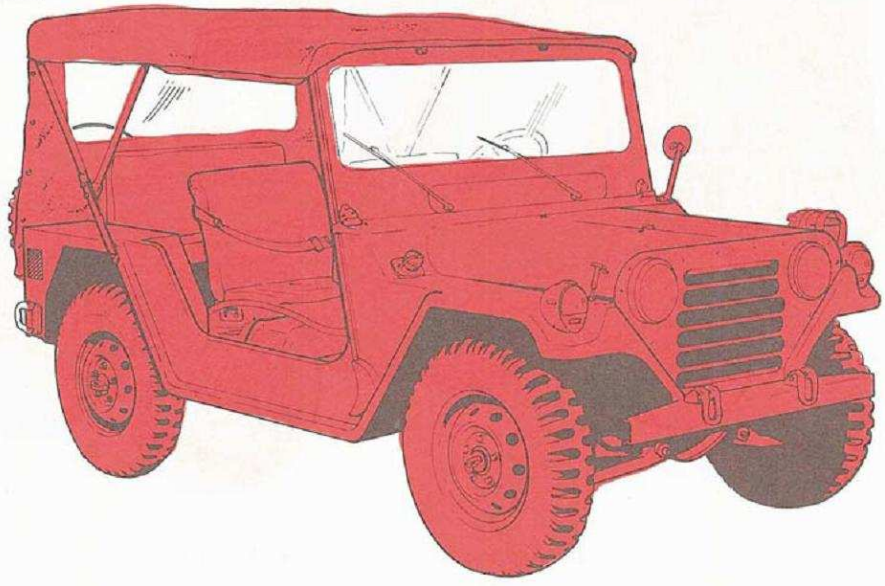
1-1. Scope. This manual is for use in operating and maintaining all of the ¼ ton, 4x4 models of the M151 series vehicles. This series vehicle includes the M151, M151A1, and M151A2 ¼ ton utility truck, M151A1C and M825 ¼ ton utility truck with 106MM recoilless rifle and the M718 and M718A1 ¼ ton, truck, ambulance, frontline. Operation and maintenance instructions for special purpose kits are also included.

1-2. Maintenance Forms and Records. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, the Army Maintenance Management System (TAMMS).

1-3. Reporting Equipment Improvement Recommendations (EIR's). EIR's can and must be submitted by anyone who is aware of an unsatisfactory condition with the equipment design or use. It is not necessary to show a new design or list a better way to perform a procedure, just simply tell why the design is unfavorable or why a procedure is difficult. EIR's may be submitted on Standard Form 368. Mail directly to: Commander, U.S. Army Tank-Automotive Command, ATTN: DRSTA-M, Warren, Michigan 48090. A reply will be furnished directly to you.

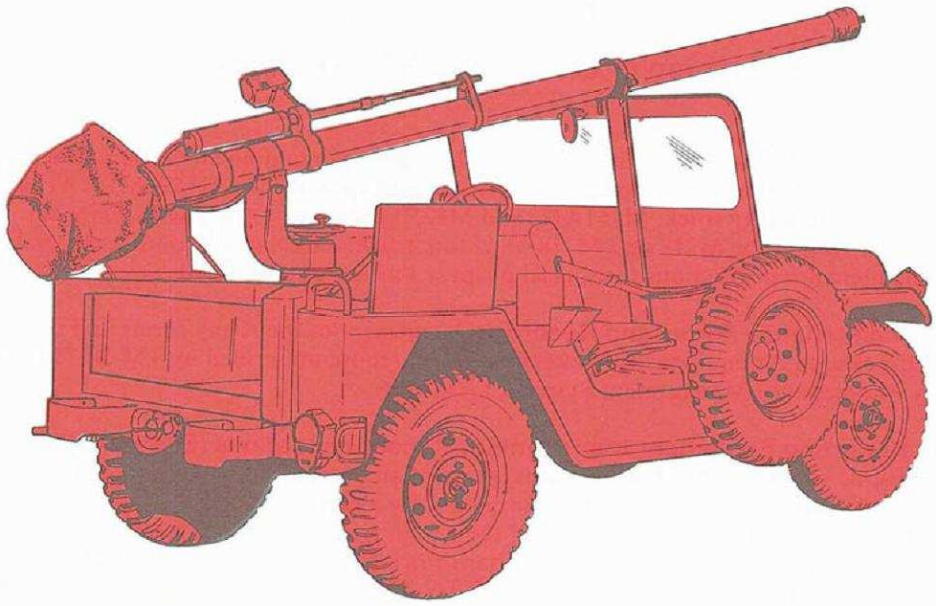
1-4. Security of Tactical Wheeled Vehicles. Refer to TB 9-2300-422-20 for requirements and material applications needed to achieve the necessary degree of protection required for tactical wheeled vehicles in all classes.

1-5. Metric System. The equipment/system described herein is non-metric and does not require metric common or special tools. For reference, a metric table is located on inside of back cover.

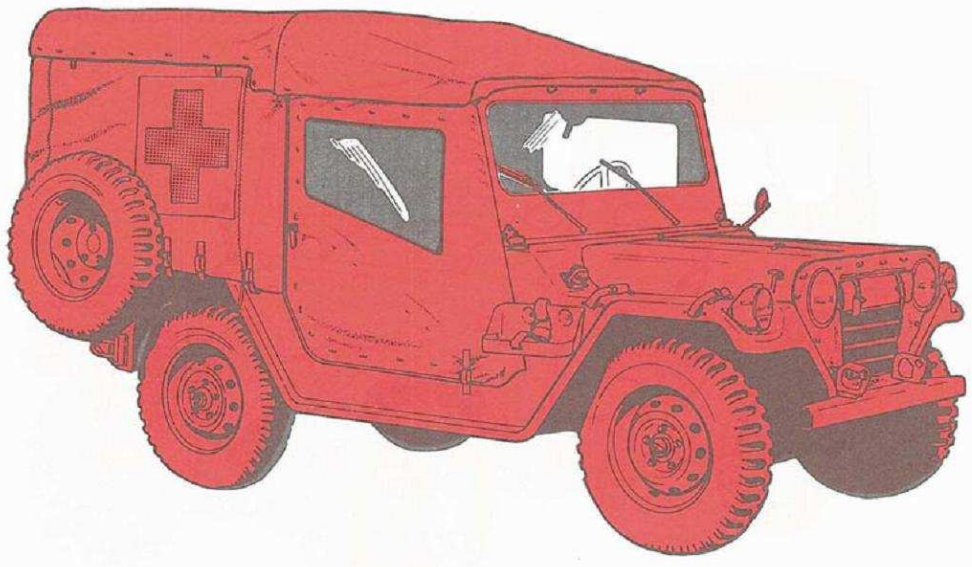


Truck, Utility, ¼ Ton, 4x4, Right Front View.

TA 157121

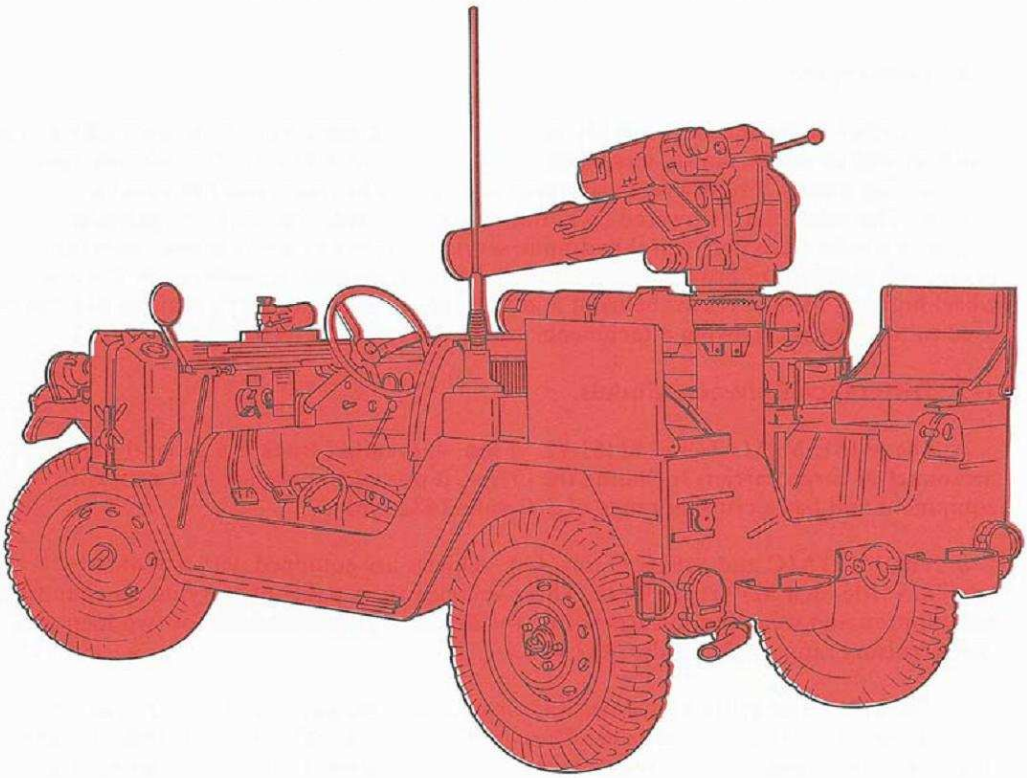


Truck, Utility, ¼ Ton, 4x4, 106MM Recoilless Rifle, Right Rear View.

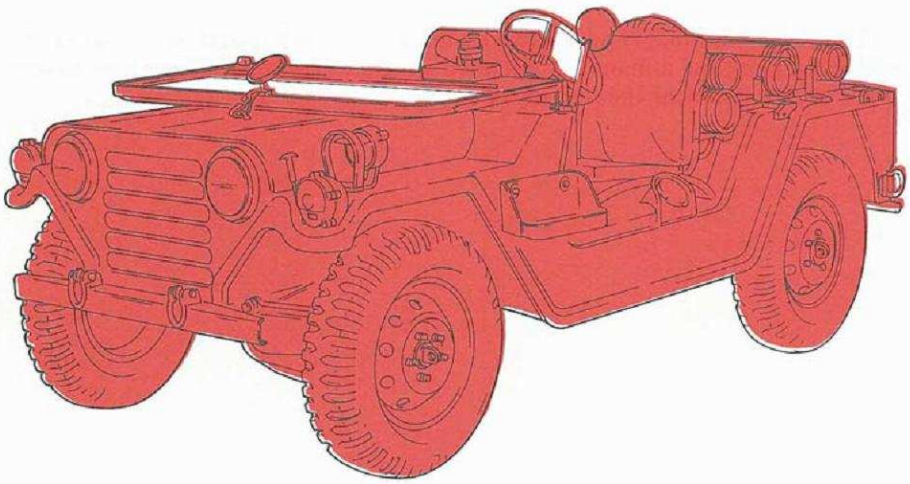


Truck, Ambulance, Front Line, ¼ Ton, 4x4, Right Front View.

TA 157122



Truck, Guided Missile Equipment (Jeep Launcher), ¼ Ton, 4x4, Left Rear View.



Truck, Guided Missile (Missile Carrier), ¼ Ton, 4x4, Left Front View.

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Section II. DESCRIPTION AND DATA

1-6. Description.

The ¼ ton 4x4 models of the M151 series vehicles are designed for use over all types of roads as well as cross-country terrain and in all weather conditions. The vehicles have four driving wheels. Front wheel drive may be engaged as road conditions and terrain require. The vehicles are powered by a four cylinder in-line, liquid cooled gasoline engine. Vehicles have four-wheel hydraulic service brakes and a mechanical parking brake. All vehicles are provided with a pintle hook at the rear, a tiedown eye at each wheel hub and lifting eyes at the front and rear. M151A1C and M825 vehicles will not be used to tow trailers. Towing attachments are used for vehicle recovery only.

1-7. Difference Between Models.

a. The M151, M151A1, and M151A2, ¼ ton, 4x4, utility truck is a general purpose personnel or cargo carrier. Including the driver, it provides space for four men with equipment and has a cruising range of 300 miles (482 km).

b. The M151A1C and M825, ¼ ton, 4x4, vehicles are equipped with a 106MM recoilless rifle on a M79 rifle mount. These vehicles are capable of carrying six rounds of ammunition and weapon tools. Including the driver, it provides space for two men and has a cruising range of 275 miles (442 km).

c. The M718 and M718A1, ¼ ton, 4x4, frontline ambulance trucks are designed to carry ambulatory and litter patients. The cargo area of the M718 and M718A1 vehicles are longer and higher to accommodate the litters and patients. These vehicles have a cruising range of 300 miles (482 km).

d. The TOW launcher and missile carrier equipped trucks are covered in TM 9-1425-472-12. Refer to this technical manual for all description, data, and operating instructions of these vehicles.

e. The M151A2, M825, and M718A1 vehicles have two electrically controlled windshield wipers and a manually operated windshield washer. Wiper and washer controls are located near the steering column.

TA 157124

1-8. Tabulated Data.

This paragraph provides tabulated data you will need to ensure safe and efficient operation of the M151 series vehicles. The following is a list of data tables provided for easy reference:

a. Vehicle Dimensions. See table 1-1.

b. Weights. See table 1-2.

c. Shipping Dimensions. See table 1-3.

d. Capacities for Normal Operating Conditions. See table 1-4.

e. General Service Data. See table 1-5.

f. Tire Inflation Data. See table 1-6.

g. Maximum Operating Speeds. See table 1-7.

Table 1-1. Vehicle Dimensions.

	Length Overall		Height Overall		Width Overall	
Vehicle	Inches	Centimeters	Inches	Centimeters	Inches	Centimeters
M151	132.7	337.1	71.0	180.3	64.0	162.6
M151A1	132.7	337.1	71.0	180.3	64.0	162.6
M151A2	132.7	337.1	71.0	180.3	64.3	163.3
M151A1C	143.5	364.5	77.2	196.1	76.5	194.3
M825	143.5	364.5	77.2	196.1	76.5	194.3
M718	143.0	363.2	76.3	193.8	72.0	182.9
M718A1	143.0	363.2	76.3	193.8	71.6	181.9

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Table 1-2. Weights.

	Maximum Payload — Including Personnel			
	Highway		Cross Country	
Vehicle	Pounds	Kilograms	Pounds	Kilograms
M151	1,200	545	800	363
M151A1	1,200	545	800	363
M151A2	1,200	545	800	363
M151A1C	1,730	785	1,730	785
M825	1,730	785	1,730	785
M718	900	409	900	409
M718A1	900	409	900	409
	Maximum Towed Load (Pintle)			
	Highway		Cross Country	
Vehicle	Pounds	Kilograms	Pounds	Kilograms
M151	2,000	908	1,500	681
M151A1	2,000	908	1,500	681
M151A2	2,000	908	1,500	681
W/M461A1 Trailer:				
M151	1,420	645	1,170	531
M151A1	1,420	645	1,170	531
M151A2	1,420	645	1,170	531

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Table 1-3. Shipping Dimensions.

Vehicle	Shipping Height (Reduced)		Shipping Width (Reduced)	
	Inches	Centimeters	Inches	Centimeters
M151	52.5	133.3	62.3	158.2
M151A1	52.5	133.3	64.0	162.5
M151A2	52.5	133.3	64.3	163.3
M151A1C	53.0	134.6	65.9	167.4
M825	53.0	134.6	65.9	167.4
M718	51.7	131.3	65.9	167.4
M718A1	51.7	131.3	65.9	167.4

Vehicle	Shipping Length (Reduced)		Shipping Weight	
	Inches	Centimeters	Pounds	Kilograms
M151	132.7	337.0	2,273	1,031.9
M151A1	132.7	337.0	2,400	1,089.6
M151A2	132.7	337.0	2,440	1,107.7
M151A1C	133.9	340.1	2,580	1,171.3
M825	133.9	340.1	2,590	1,175.8
M718	143.0	363.2	2,620	1,189.5
M718A1	143.0	363.2	2,750	1,248.5

Vehicle	Shipping Cubage (Operational)		Shipping Cubage (Reduced)	
	Cubic Ft.	Cubic Meters	Cubic Ft.	Cubic Meters
M151	346.0	9.69	255.0	7.14
M151A1	350.0	9.80	260.0	7.28
M151A2	350.0	9.80	260.0	7.28
M151A1C	404.0	11.31	283.0	7.92
M825	405.0	11.34	283.0	7.92
M718	440.0	12.32	285.0	7.98
M718A1	455.0	12.74	285.0	7.98

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Table 1-4. Capacities for Normal Operating Conditions

Vehicle	Description	Capacity		In Normal Operating Conditions +32°F to +90°F (0°C to 32.2°C)
		Standard	Metric	
All	Cooling System	9 quarts*	8.5 liters	1/2 Ethylene Glycol, 1/2 Water
All	Engine (crankcase only)	4 quarts	3.7 liters	OE/HDO 30
All	Engine (crankcase with new filter)	5 quarts	4.7 liters	OE/HDO 30
All	Fuel Tank (non-emission control equipped)	17 gallons	64.3 liters	Gasoline, Fuel (91 minimum research octane)
M151A2, M825, M718A1	Fuel Tank (emission control equipped)	16 gallons	60.5 liters	Gasoline, Fuel (91 minimum research octane)
All	Differentials	2 pints	.94 liters	GO 85/140
All	Transmission	5.5 pints	2.6 liters	GO 80/90

*With -25° F (-32°C) heater kit, add 1 quart (.94 liters)

Table 1-5. General Service Data

Vehicle	Description	+90°F(+32°C)	+40°F to -10°F (+4° to -23°C)	0°F to -65°F (-17°C to -54°C)	Arctic Conditions
All	Cooling System	1/2 Ethylene Glycol 1/2 Water	1/2 Ethylene Glycol 1/2 Water	2/3 Ethylene Glycol 1/3 Water	Refer to FM 9-207
All	Engine (crankcase only)	OE/HDO 30	OE/HDO 10	OEA	
All	Differentials (each)	GO 85/140	GO 85/140	GO 75	
All	Steering Gear	GO 80/90	GO 80/90	GO 75	
All	Transmission	GO 80/90	GO 80/90	GO 75	
All	Brake Master Cylinder	HB	HB	HB	
All	Windshield Washer	1/3 Cleaning Compound 2/3 Water	1/2 Cleaning Compound 1/2 Water	2/3 Cleaning Compound 1/3 Water	

TA 157128

Table 1-6. Tire Inflation Data.

VEHICLE (TIRE SIZE 7.00 X 16)	PRESSURE RATING			
	FRONT		REAR	
	Standard (psi) H CC	Metric (kPa) H CC	Standard (psi) H CC	Metric (kPa) H CC
M151, M151A1, M151A2	20 20	138 138	25 20	172 138
M151A1C, M825	25 25	172 172	40 40	276 276
M718, M718A1	20 20	138 138	25 25	172 172
Sand, Snow, and Mud:				
M151, M151A1, M151A2	15 15	103 103	15 15	103 103
M151A1C, M825	20 20	138 138	35 35	241 241
M718	15 15	103 103	20 20	138 138
M718A1	20 20	138 138	20 20	138 138
Trailer Towing:				
M151, M151A1, M151A2	35 20	172 138	40 20	276 138
H: Highway CC: Cross Country				

Table 1-7. Maximum Operating Speeds

	MAXIMUM SPEEDS	
	Miles Per Hour	Kilometers Per Hour
All Models:		
Reverse	9	14
First Gear	11	18
Second Gear	21	34
Third Gear	40	64
M151, M151A1, M151A2, M718, M718A1:		
Fourth Gear	55	88
M151A1C, M825:		
Fourth Gear	50	80

TA 157129

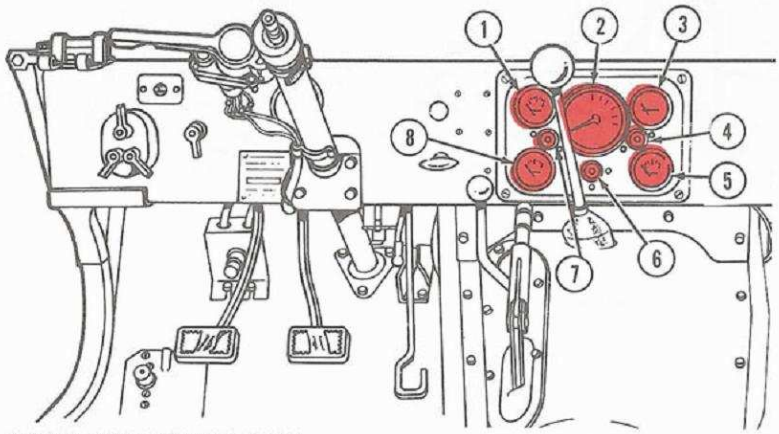
CHAPTER 2
OPERATING INSTRUCTIONS

Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

2-1. Know Your Controls and Indicators. Before attempting to operate your equipment, be sure that you are familiar with the location and function of all controls and indicators. This section describes the location and function of the M151 series vehicles.

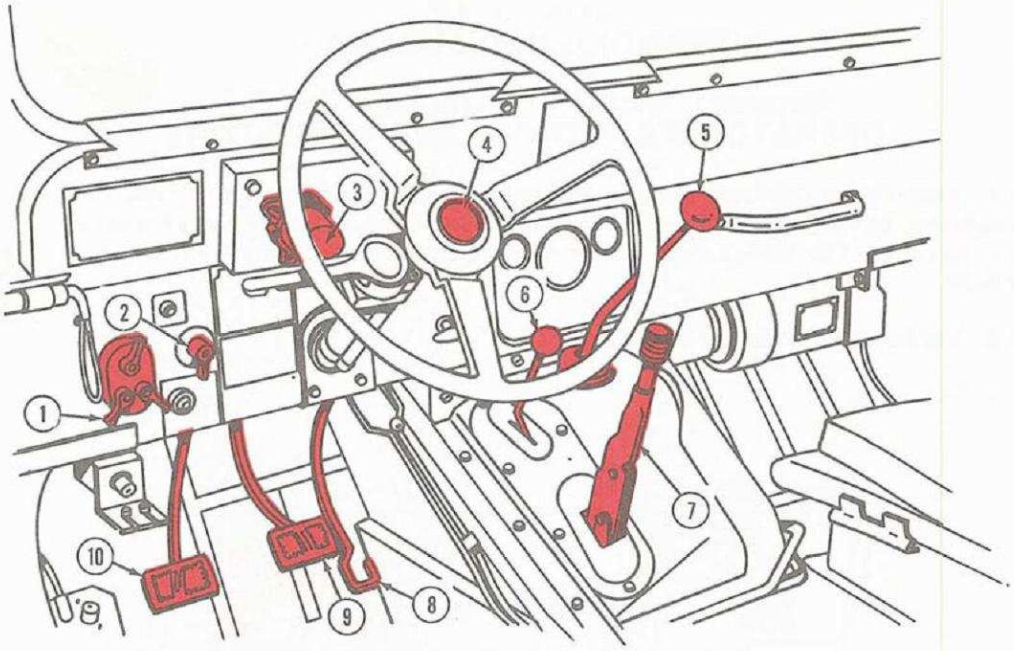
2-2. Vehicle Controls and Indicators.

a. Indicators.



KEY	ITEM AND FUNCTION
1	*Fuel Gage* indicates the amount of fuel in the tank.
2	*Speedometer/Odometer* indicates vehicle speed and total mileage.
3	*Battery-Generator Indicator* indicates the charging level of the battery charging system. For normal operation, the indicator should be in the green area.
4	*Right Hand Panel Light* illuminates the right side of the instrument panel.
5	*Engine Temperature Gage* indicates the engine coolant temperature. Normal operating temperatures should be 170-190°F.
6	*Headlight High Beam Indicator* illuminates when headlights are on high beam (bright).
7	*Left Hand Panel Light* illuminates the left side of the instrument panel.
8	*Oil Pressure Gage* indicates the engine oil pressure when the engine is running. Normal oil pressure at idle should be minimum 15 psi. Normal oil pressure at operating speed should be 35-55 psi.

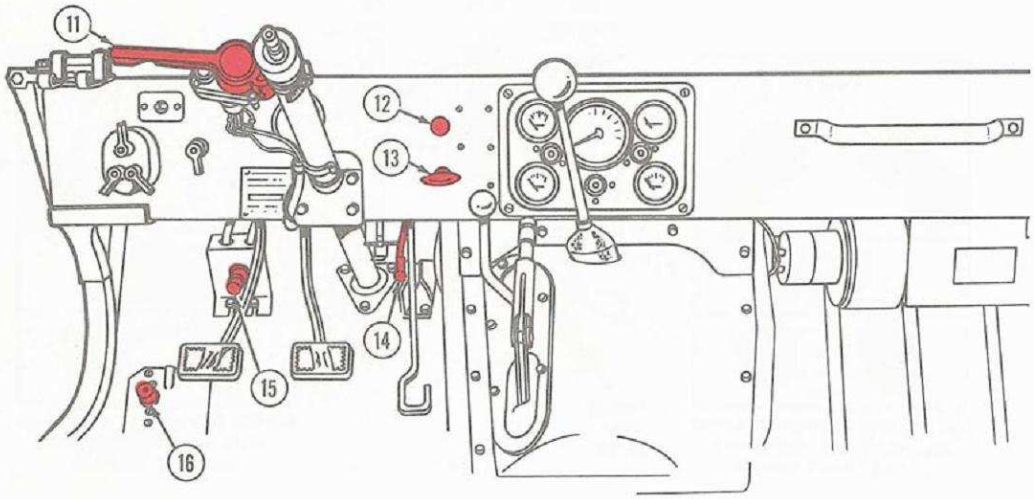
TA 157130



b. Controls.

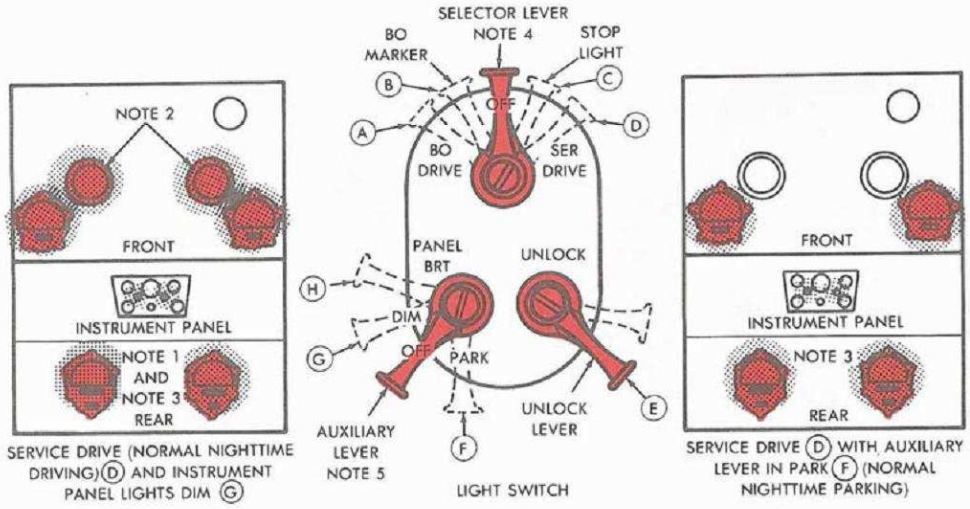
KEY	ITEM AND FUNCTION
1	*Light Switch* controls operation of vehicle lights (see page 2-4) for the lighting chart.
2	*Ignition Switch* energizes the electrical system.
3	*Windshield Wiper* control operates the windshield wipers. The switch is a two-speed, electrically operated control, and is mounted directly to the wiper motor.
4	*Horn Button* activates the horn when depressed.
5	*Transmission Shift Lever* is used to select the proper gear ratio.
6	*4-Wheel Drive Lever* is used to engage the front axle drive.
7	*Parking Brake Lever* is pulled up to set parking brake. Knob on top of the lever is turned clockwise to increase braking action, and counterclockwise to decrease braking action.
8	*Accelerator Pedal* controls the engine speed.
9	*Service Brake Pedal* is depressed to brake or stop the vehicle.
10	*Clutch Pedal* is depressed to disengage the clutch and allows shifting of transmission to different gear ratios. The desired clutch pedal free travel is 1⅛ to 1½ inches (29 to 38 mm).

TA 157131



KEY	ITEM AND FUNCTION
11	*Directional Signal Control* activates the turn signal lights. To indicate a left turn, move lever down. To indicate a right turn, move lever up. The control is not self-canceling and must be manually returned. To activate the warning flasher, pull tab and move lever to the full up position.
12	*Choke Control* is used to control operation of the choke to facilitate starting and warmup of a cold engine.
13	*Hand Throttle Control* is used to set engine speed at the desired rpm without maintaining foot pressure on the accelerator pedal. The hand throttle control will lock in any desired position when pulled out. Rotating the throttle control knob locks or unlocks the throttle control.
14	*Windshield Washer Lever* operates the manual windshield washer pump.
15	*Starter Switch* when depressed engages starter to crank the engine.
16	*Dimmer Switch* operates the low or high beam of headlights when in service drive.

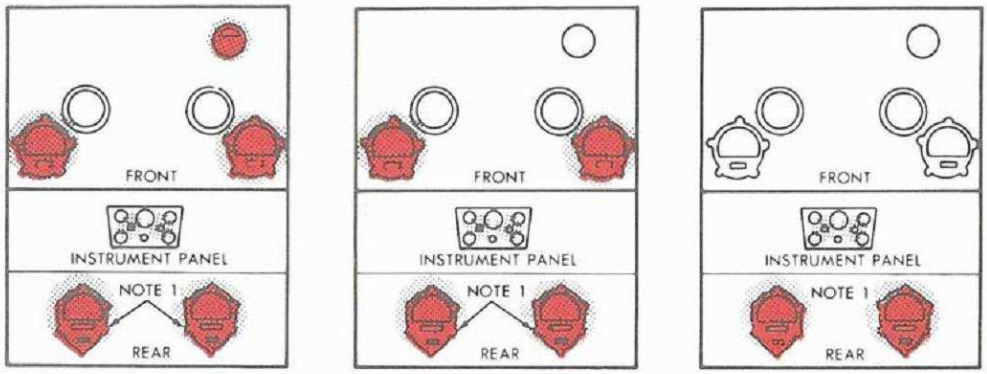
TA 157132



SERVICE DRIVE (NORMAL NIGHTTIME DRIVING) (D) AND INSTRUMENT PANEL LIGHTS DIM (G)

LIGHT SWITCH

SERVICE DRIVE (D) WITH AUXILIARY LEVER IN PARK (F) (NORMAL NIGHTTIME PARKING)



BLACKOUT DRIVE (A)

BLACKOUT MARK (B)

STOPLIGHTS FOR DAYTIME DRIVING (C)

NOTE 1. STOPLIGHT GOES ON WHEN BRAKES ARE APPLIED.

NOTE 2. DIMMER SWITCH OPERATES HI AND LO BEAM OF HEADLIGHTS WHEN IN SERVICE DRIVE (D)

NOTE 3. TAILLIGHT GOES ON.

NOTE 4. TO PLACE SELECTOR LEVER IN BLACKOUT DRIVE (A), STOPLIGHT (C), OR SERVICE DRIVE (D), UNLOCK LEVER (E) MUST BE LIFTED TO UNLOCK POSITION. NO LIGHTS OPERATE WHEN SELECTOR LEVER IS IN OFF POSITION.

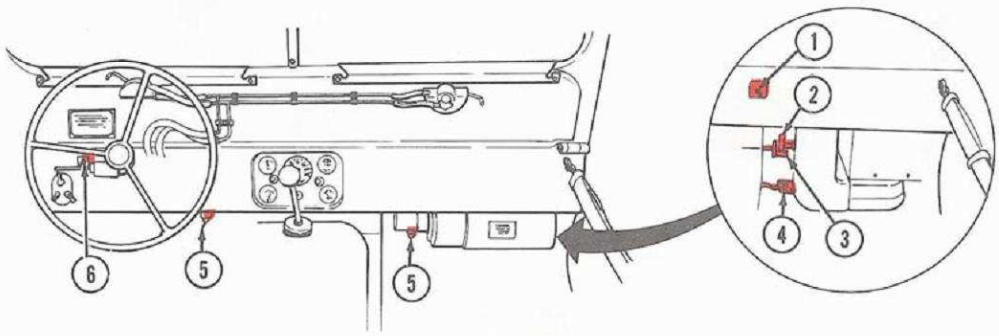
NOTE 5. INSTRUMENT PANEL LIGHTS ARE BRIGHT IN PANEL BRT (H) POSITION. THE AUXILIARY LEVER CAN BE OPERATED AT ANYTIME IN ANY POSITION.

TA 157133

2-3. Hot Water Heater -25°F (-32°C) Controls and Indicators.

a. Description. The hot water heater -25°F (-32°C) includes a crew compartment heater with defroster and slave receptacle. On older models the hot water heater is provided as a kit on vehicles operated in areas where normal temperature during the coldest part of the year is above -25°F (-32°C). Water capacity of the hot water heater is 1 quart (.946 liter).

b. Controls.

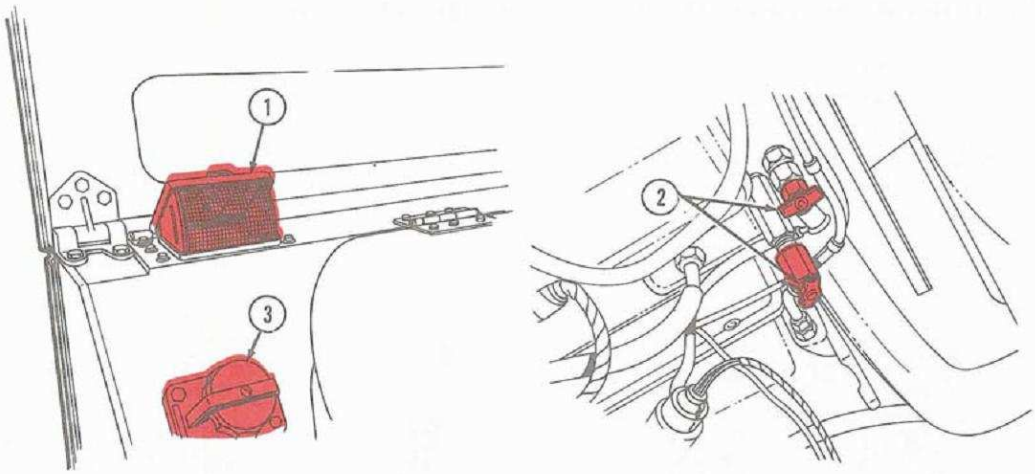


NOTE

For operation of heater refer to Section III of this chapter.

KEY	ITEM AND FUNCTION
1	*Heater Switch (Older Models)* controls the blower motor speed. The switch is a two-speed, electrically operated control.
2	*Driver Heat Lever (Older Models)* is located above the defroster lever on the left side of the diverter box. An outward pull is required to release the lever from the detents. Rotate lever to forward detent for driver heat or to rear detent for closed position.
3	*Defroster (Older Models).* The defroster lever is the lower lever on the left side of the diverter box. An outward pull is required to release the lever from the detents. Rotate lever to forward detent for defrosting or to rear detent for closed position.
4	*Auxiliary Heat Door (Older Models).* A lever located on the bottom of the diverter box can manually open the door to provide additional heat to crew members.
5	*Diverter Controls (Later Models).* For additional heat in the driver or passenger compartment open the door on the diverter by pushing the lever down.
6	*Heater Switch (Later Models)* controls the blower motor speed. The switch is a two-speed, electrically operated control, and is located on the instrument panel, left side of the steering column.

TA 157134



KEY	ITEM AND FUNCTION

WARNING

Do not change the ventilator position with the vehicle in motion.

1 *Cowl Ventilator.* The heater ventilator is located on the right hand side of the cowl top panel. When pulled up to the stop, fresh outside air is admitted to the heater.

2 *Shutoff Cocks.* Two shutoff cocks are provided to stop the circulation of engine coolant through the heater core. The shutoffs are located at the front of the engine; one on the water pump and the other on the cylinder head. To allow circulation of coolant through the heater core, turn both shutoff cocks counterclockwise, fully open.

NOTE

Both shutoff cocks must be fully open to allow circulation of coolant through the heater for maximum heat.

3 *Slave Receptacle* (when installed) is located on the right hand side of the cowl panel below the cowl ventilator. Slave receptacle is used to provide auxiliary electrical power.

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Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

2-4. General. Every mission begins and ends with the paperwork. There isn't much of it, but you have to keep it up. The forms and records you fill out have several uses. They are a permanent record of the services, repairs, and modifications made on your vehicle. They are reports to organizational maintenance and to your commander. They are a checklist for you when you want to know what is wrong with the vehicle after its last use, and whether those faults have been fixed. For the information you need on forms and records, see TM 38-750.

2-5. Preventive Maintenance Checks and Services (Table 2-1).

a. Do your before (B) PREVENTIVE MAINTENANCE just before you operate the vehicle. Pay attention to the CAUTIONS and WARNINGS.

b. Do your during (D) PREVENTIVE MAINTENANCE while you operate the vehicle and at halts or rest stops.

c. Do your after (A) PREVENTIVE MAINTENANCE right after operating the vehicle. Pay attention to the CAUTIONS and WARNINGS.

d. Do your weekly (W) PREVENTIVE MAINTENANCE weekly.

e. Do your monthly (M) PREVENTIVE MAINTENANCE once a month.

f. If something doesn't work, troubleshoot it with the instructions in this manual or notify your supervisor.

g. Always do your PREVENTIVE MAINTENANCE in the same order, so it gets to be a habit. Once you've had some practice, you'll spot anything wrong in a hurry.

h. If anything looks wrong and you can't fix it, write it on your DA form 2404 and report it to organizational maintenance RIGHT NOW.

i. When you do your PREVENTIVE MAINTENANCE, take along the BII tools you need to make all the checks. You always need a rag or two.

(1) Keep it clean: dirt, grease, oil, and debris only get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (SD-2) (items 30 through 33 of appendix D) on all metal surfaces. Use soap and water when you clean rubber or plastic material.

(2) Bolts, nuts, and screws: check them all for obvious looseness, missing, bent, or broken condition. You can't try them all with a tool, of course. But look for chipped paint, bare metal, or rust around bolt heads. If you find one you think is loose, tighten it and report it to organizational maintenance.

(3) Welds: look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to organizational maintenance.

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(4) Electric wires and connectors: look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors and make sure the wires are in good shape.

(5) Hoses and fluid lines: look for wear, damage, and leaks, and make sure clamps and fittings are tight. Wet spots show leaks, of course. But a stain around a fitting or connector can mean a leak. If a leak comes from a loose fitting or connector, tighten it. If something is broken or worn out, report it to organizational maintenance.

j. When you check for operating CONDITION: you look at the item to see if it's serviceable.

k. When you inspect for CORRECT ASSEMBLY OR STOWAGE: you look at the component to see if it's installed as an assembly — with NO missing parts, and make sure it's installed in the right place.

l. The PREVENTIVE MAINTENANCE table 2-1 is set up so you can make your before—operation (B) checks as you walk around your vehicle.

m. It is necessary for you to know how fluid leakage affects the status of your vehicle. The following are definitions of the types/classes of leakage an operator or crew member needs to know to be able to determine the status of his/her vehicle. Learn, then be familiar with them and REMEMBER — WHEN IN DOUBT, NOTIFY YOUR SUPERVISOR!

Leakage Definitions for Crew/Operator PMCS

CLASS I — Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

CLASS II — Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/inspected.

CLASS III — Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

CAUTION

Equipment operation is allowable with minor leakages (Class I or II). Of course, consideration must be given to the fluid capacity in the item/system being checked/inspected. When in doubt, notify your supervisor. When operating with Class I or II leaks, continue to check fluid levels as required in your PMCS. Class III leaks should be reported immediately to your supervisor or to organizational maintenance.

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Table 2-1. Operator/Crew Preventive Maintenance Checks and Services

NOTE: These checks are to be made in the order listed, within designated interval.

B-Before operation D-During operation A-After operation W-Weekly M-Monthly

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled or adjusted as needed	EQUIPMENT IS NOT READY/ AVAILABLE IF:
						NOTE Perform weekly as well as before PMCS's if:	
						a. You are the driver but have not operated the vehicle since the last weekly.	
						b. You are operating the vehicle for the first time.	
						MAKE THE FOLLOWING WALK-AROUND CHECKS	
						EXTERIOR OF VEHICLE	
1						EXTERIOR	
	●					*a.* Visually check for obvious damage to body that would impair operation.	
	●					*b.* Check tires for cuts, gouges, or cracks. Remove all penetrating objects.	Tires have cuts, gouges, or cracks which would result in mission failure during operation. One or more axle mounted tires missing or unserviceable and no spare available.
	●					*c.* Look under vehicle for evidence of fluid leakage (fuel, oil, coolant, and brake fluid).	Any fuel leakage. Class III leakage of oil, coolant, or brake fluid is evident.
						d. Check condition of:	
		●				*(1)* Windshield and windows.	
				●		*(2)* Windshield hinges and pins.	
		●				*(3)* Windshield wiper arms and blades.	
	●					*(4)* Mirrors.	
				●		*(5)* All locking and fastening devices.	

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Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (Cont'd)

NOTE: These checks are to be made in the order listed, within designated interval.

B-Before operation D-During operation A-After operation W-Weekly M-Monthly

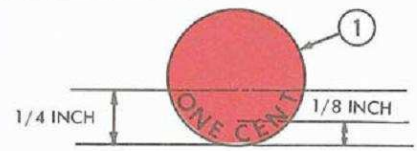
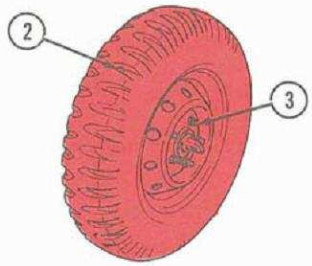
ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled or adjusted as needed	EQUIPMENT IS NOT READY/ AVAILABLE IF:
				•		*(6)* Towing pintle.	
				•		*(7)* Spare tire mounting.	
		•				*(8)* Check operation of doors and windows.	
		•				*(9)* Check operation of horn.	
		•				*(10)* Check operation of headlights, taillights, and turn signals.	
2						TIRES	
				•		*a.* Check tires for correct air pressure. Refer to table 1-6 for correct tire pressres.	
					•	*b.* Check tire tread depth. A penny (1) can be used as an approximate measure for tread depth as shown below. For an accurate measure of tread depth, use procedures outlined in TM 9-2610-201-14. On tires with wear bars (2), tread should not be worn beyond level of wear bar (2).  IF TREAD DOESN'T COVER TOP OF "C" IN "ONE CENT" SEE TM 9-2610-201-14.	Tire tread depth is 1/8 in. (3.17 mm) or less, or worn beyond level of wear bar (2).
					•	*c.* Ensure all wheel stud nuts (3) are tight using wheel stud nut wrench. 	

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Table 2-1. Operator/Crew Preventive Maintenance Checks and Services

NOTE: These checks are to be made in the order listed, within designated interval.

B-Before operation D-During operation A-After operation W-Weekly M-Monthly

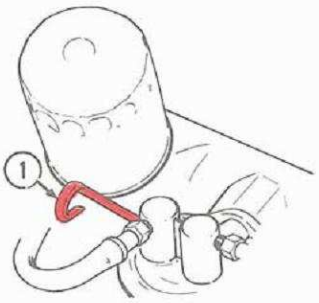
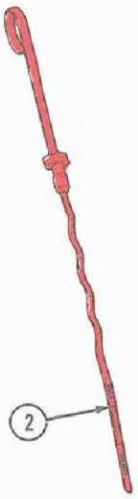
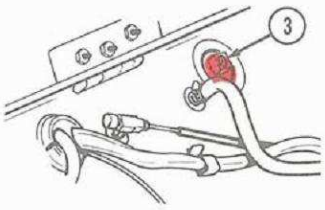
ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled or adjusted as needed	EQUIPMENT IS NOT READY/ AVAILABLE IF:
						ENGINE COMPARTMENT **CAUTION** Install dipstick (1) as shown.  	
3		●				OIL LEVEL. Check engine oil level. Safe operating oil level is between "ADD" and "FULL" marks on dipstick. Add oil as required. Do not exceed "FULL" mark (2).	
4				●		MASTER CYLINDER (BRAKES) Check security of cap (3) on left firewall and be sure vent hole is not obstructed.  	
5					●	Check for leaks.	Brake master cylinder leaking.

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Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (Cont'd)

NOTE: These checks are to be made in the order listed, within designated interval.

B-Before operation D-During operation A-After operation W-Weekly M-Monthly

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled or adjusted as needed	EQUIPMENT IS NOT READY/ AVAILABLE IF:
6						RADIATOR	
				•		Check radiator coolant level. Fill just below bottom of filler neck. Check for coolant leaks.	Evidence of Class III leaks.
7					•	Check radiator for security of mounting.	
	•					Check for obstructions blocking air flow.	
8						FAN BELTS	
					•	Check generator alternator fan belts for frays, cracks, and serviceability.	Belts missing or belts unserviceable.
9						GENERATOR/ALTERNATOR	
					•	Check for security of mounting or damage.	
10						EXHAUST SYSTEM	
					•	Visually inspect exhaust manifold, all pipes, and muffler for carbon deposits indicating exhaust leakage.	Evidence of leaking.
		•				Listen for exhaust leakage.	
11						ENGINE COMPONENTS	
					•	Check for damage to external engine components. Check all lines, connections, and fittings for leakage or damage.	Evidence of Class III leaks.
						BRAKES	
12						SERVICE BRAKES	
		•				During operation, observe brake pedal (1) travel and braking operation for pulling and stopping ability.	Service brakes not operating properly.
13					•	Brake pedal (1) free travel of 1 4 to 7 8 in. must be maintained. When brake pedal (1) is depressed, distance between brake pedal and floor should not be less than 2 in. (5 cm).	

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Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (Cont'd)

NOTE: These checks are to be made in the order listed, within designated interval.

B-Before operation D-During operation A-After operation W-Weekly M-Monthly

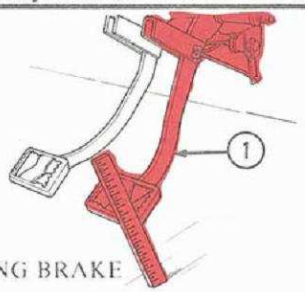
ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled or adjusted as needed	EQUIPMENT IS NOT READY/ AVAILABLE IF:
							
14						PARKING BRAKE	
					•	Check parking brake for proper amount of tension; make rotary adjustment on handle if necessary. Apply parking brake and test ability to hold the vehicle on an incline (when available) or perform the following stall test: With engine running at idle, depress clutch, place transmission selector in 1st gear, release clutch slowly. Engine should stall if parking brake is functioning properly.	
						INTERIOR OF VEHICLE	
15						SEAT LOCKING PINS	
	•					Check for security of seat and seat locking pins.	Seat locking pins missing.
16						SAFETY STRAP	
	•					If so equipped, check safety strap for completeness condition, and security.	
17						BATTERIES	
				•		Check electrolyte level. Keep filler caps tight. If low, notify organizationl maintenance.	
18					•	Check terminals for damage or corrosion. Inspect for obvious defects, such as cracked battery case, burnt, broken, or loose battery terminal posts.	One or more unserviceable or missing batteries.
					•	Check battery cables for terminal covers and cable identifying tags.	

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Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (Cont'd)

NOTE: These checks are to be made in the order listed, within designated interval.

B-Before operation D-During operation A-After operation W-Weekly M-Monthly

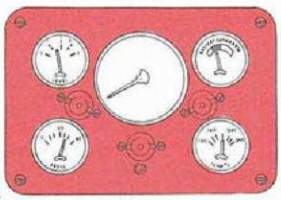
ITEM NO.	INTERVAL					ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled or adjusted as needed	EQUIPMENT IS NOT READY/ AVAILABLE IF:
	B	D	A	W	M		
19						BATTERY COMPARTMENT	
					•	Check battery compartment for corrosion. Clean light corrosion with soft cloth. If heavily corroded, notify organizational maintenance.	
						ENGINE RUNNING	
						WARNING	
						If oil pressure is zero, stop engine immediately and investigate.	
20						INSTRUMENTS	
	•	•				Turn ignition switch on and observe instruments for correct operation. Start engine and again observe instruments before operating vehicle.	Oil, temperature or battery gages do not function properly.
		•				Gages should read as follows:	
						Battery indicator should read in the green area.	
						Oil pressure: Minimum at idle 15 psi Normal at operating speed 35-55 psi	
						Coolant temperature Normal 170-190°F	
							

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Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (Cont'd)

NOTE: These checks are to be made in the order listed, within designated interval.

B-Before operation D-During operation A-After operation W-Weekly M-Monthly

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled or adjusted as needed	EQUIPMENT IS NOT READY/ AVAILABLE IF:
	B	D	A	W	M		
21						CLUTCH	
		●				Check clutch operation for slipping, grabbing, or chattering.	Clutch inoperative, slipping or definite grab or chatter.
22					●	Check clutch pedal for proper free travel (clutch pedal free travel must be 1-1 8 to 1-1 2 in.) (29 to 38 mm).	
23						CONTROLS	
		●			●	In warming up the engine, check operation of choke, accelerator and throttle controls. Check clutch, gear shifting, and steering. Note operating faults such as wander, shimmy, difficulty in engaging gears.	Steering action either loose or binding.
		●				During operation listen for unusual noises in engine, transmission transfer, differential, and drive line components.	
						UNDERBODY	
24						DRIVE AXLES AND PROPELLER SHAFTS	
		●				Listen for unusual noises. Clicking or clunking noise indicates a worn U-joint.	One differential inoperative.
						NOTE	
						If any of the U-joints are defective, then one of the differentials is considered to be inoperative.	
25						SHOCK ABSORBERS	
		●				Observe any unusual dip, sway or unstable handling.	
26					●	Visually inspect for leaks, damage, and security of mounting.	Evidence of Class II leakage, looseness, or damage.

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Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (Cont'd)

NOTE: These checks are to be made in the order listed, within designated interval.

B-Before operation D-During operation A-After operation W-Weekly M-Monthly

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled or adjusted as needed	EQUIPMENT IS NOT READY/ AVAILABLE IF:
	B	D	A	W	M		
27						BODY	
					•	Inspect body rails, crossmembers, and under body supports for cracks, breaks, broken welds, bolts, rivets, and rusted-thru conditions.	Any obvious cracked or broken side rail, crossmembers, rust-thru conditions, broken welds, bolts or rivets.
						HOT WATER HEATER, -25°F (-32°C)	
28						COWL PANEL VENTILATOR	
	•					Pull cowl ventilator up to open position. Inspect wire mesh for obstructions.	
						ARCTIC KIT -65°F (-54°C)	
29						AIR INTAKE	
	•					Clean heater fresh air intake screen.	
30						BRUSH GUARD COVER	
	•					Inspect brush guard cover to ensure that all snap fasteners and straps are secure. If not in use, check to be sure cover is stowed behind rear seat back.	
						HARD TOP KIT	
31						BODY	
					•	Inspect exterior body panels for scratches, dents or abrasions, which might affect corrosion resistance or protective qualities of body.	

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Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (Cont'd)

NOTE: These checks are to be made in the order listed, within designated interval.

B-Before operation D-During operation A-After operation W-Weekly M-Monthly

ITEM NO.	INTERVAL B	D	A	W	M	ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled or adjusted as needed	EQUIPMENT IS NOT READY/ AVAILABLE IF:
32		•				DOORS When opening and closing doors, check for ease of operation, secure latching, and condition of weather-sealing.	
		•					
33						BODY SEALS	
					•	Inspect all sealing gaskets for air leaks.	
34						GLASS Observe glass for broken or chipped panes.	
35		•				WINDOWS When opening and closing sliding windows, check for ease of operation and condition of weathersealing.	
36						HARDWARE	
					•	Inspect all bolts, nuts, and attaching parts for security of attachment and tightness. Inspect interior body panels for scratches, dents, or abrasions.	
						DEEP WATER FORDING KIT (BEFORE FORDING OPERATION)	
37						FORDING VALVE	
	•					Inspect fuel tank filler cap fording valve for ease of operation.	
						CAUTION Four-way vent connection located on the firewall should be tight.	
38						BRAKE MASTER CYLINDER	
	•					Inspect brake master cylinder cap for security and watertightness.	

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Table 2-1. Operator/Crew Preventive Maintenance Checks and Services (Cont'd)

NOTE: These checks are to be made in the order listed, within designated interval.

B-Before operation D-During operation A-After operation W-Weekly M-Monthly

ITEM NO.	INTERVAL					ITEM TO BE INSPECTED PROCEDURE: Check for and have repaired, filled or adjusted as needed	EQUIPMENT IS NOT READY/ AVAILABLE IF:
	B	D	A	W	M		
39						EXHAUST	
	•					Inspect for security of attachment to body. Visually inspect for carbon deposits indicating exhaust leakage at flange.	Obvious leakage of exhaust fumes; or damaged or missing parts of exhaust system.
		•				Listen for evidence of exhaust leakage.	
						PATIENT COMPARTMENT (M718 AND M718A1 ONLY)	
40						PATIENT COMPARTMENT	
	•					Inspect patient compartment to determine condition operation of following items: litter racks, rear step, rear door hold open devices and latches, blackout curtains, top and side curtains. Inspect compartment for obvious leakage of water. Inspect cushions for serviceability and sanitary conditions.	Both litter racks unserviceable or missing.
41	•					Check for exhaust fumes in patient compartment.	Obvious leakage of exhaust fumes.

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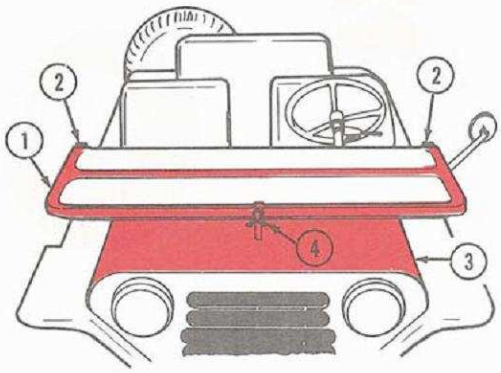
Section III. OPERATION UNDER USUAL CONDITIONS

2-6. General. This section describes, locates, illustrates and furnishes operators, crew or driver, sufficient information pertaining to the various controls, instruments and equipment provided for proper operation of M151 series vehicles. Special emphasis on driver familiarization and training is necessary. In the case of M151A1C, M825, M718 and M718A1 vehicles, because of additional loads, centers of gravities are changed and you should familiarize yourself with handling characteristics and precautionary measures to be taken for safe operation of these vehicles.

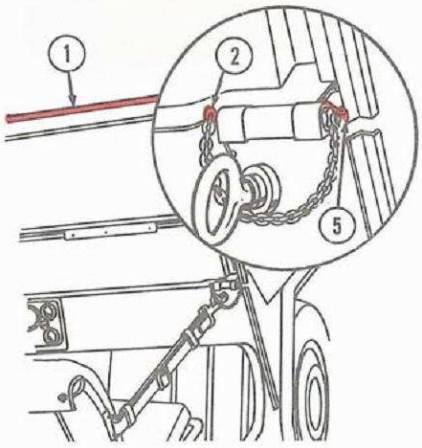
2-7. Preparation of Vehicles Before Operation.

a. Raising and Lowering Windshield.

(1) Vehicles are equipped with fold-down windshield assemblies (1). The windshield (1) may be folded forward onto the hood (3) of the engine compartment and secured.



(2) To erect the windshield (1), unbuckle the stowage strap (4) and remove retainers (5) and two hinge pins (2).



(3) Raise windshield (1), install two hinge pins (2) and retainers (5).

(4) To lower windshield (1), reverse the procedure in steps *(2)* and *(3)* above.

b. Installing and Removing Folding Soft Top.

NOTE

For ease of installation and removal of folding soft top, it is recommended that two people perform these procedures.

(1) M151, M151A1, and M151A2 vehicles are equipped with a folding top and rear curtains stowed under rear seat. Doors and side curtains are available as a special purpose kit.

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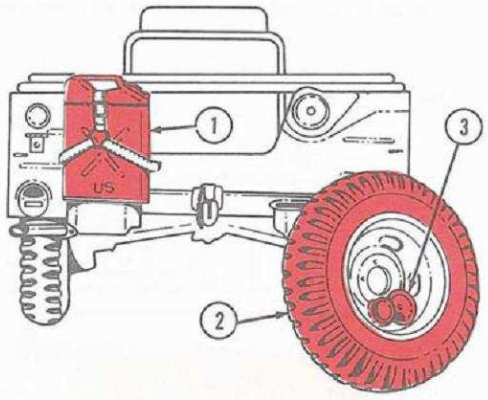
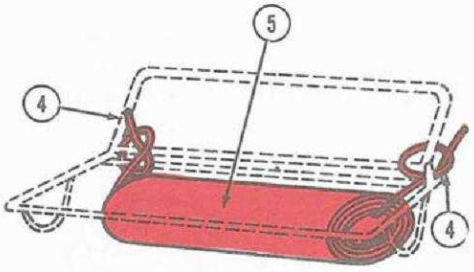
NOTE

M718 and M718A1 vehicles are equipped with a soft top, rear and side curtains, and doors. These items are normally removed and installed by the crew or operator. Soft top and curtains are not released for the M151A1C and M825 vehicles with 106MM rifle installed.

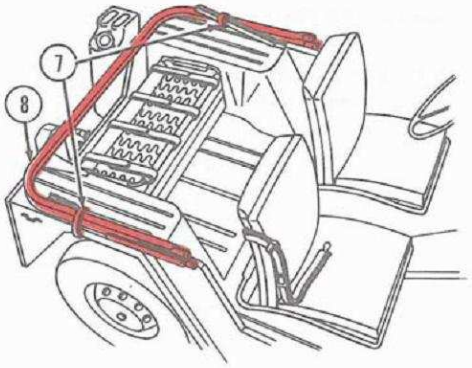


(2) Remove the spare tire retainer clamp assembly (3), wheel and tire assembly (2), and gasoline can (1) from rear of vehicle.

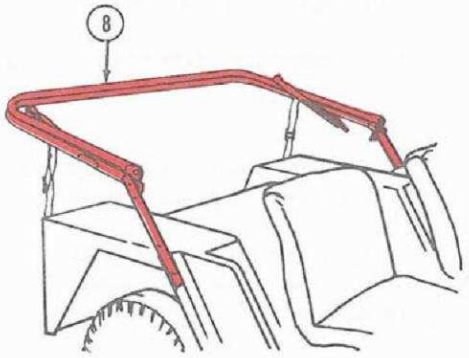
(3) Raise the rear seat.



(4) Untie the stowage straps (4) and remove the stowed soft top (5).



(5) Unbuckle the two stowage straps (7) holding the top bows (8).



(6) Stand at the rear center of the vehicle, grasp bows (8), raise and pull rearward to lock in position.

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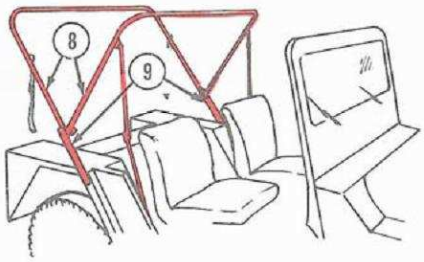
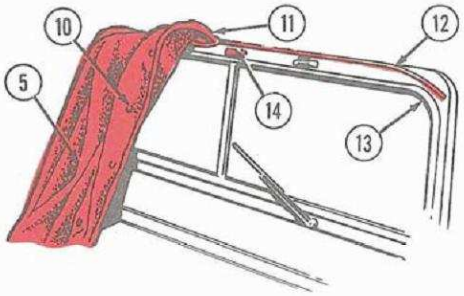
(7) Raise bows (8) upward and forward over the vehicle, aline holes in bows (8) and install two wing screws (9) from inside toward outside.





(8) Unfold the soft top (5). Lay it over the right front fender and hood, with button fasteners (10) up. Start the (forward) beaded edge (11) of the top through the retainer channel (12) at the top of the windshield (13).

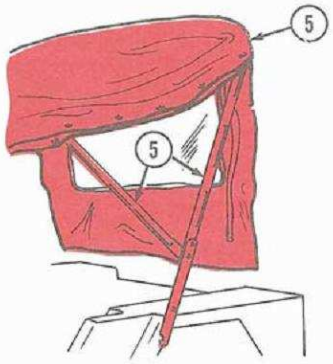
CAUTION

Do not use hand tools when sliding soft top bead through retainer channel.

(9) Stand in the PASSENGER COMPARTMENT and slowly slide beaded edge (11) through the channel (12).

NOTE

Hold top up so it does not catch on bracket (14).



(10) Center soft top (5) over windshield (13).

(11) Push bow assembly (8) slightly forward. Pull top (5) over bows (8). Pull top (5) down and secure.

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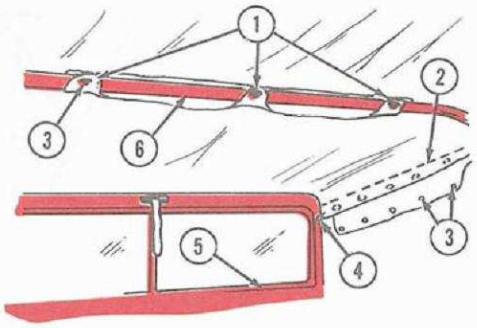
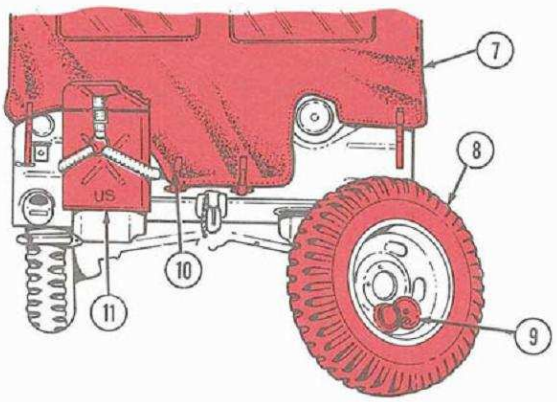


(12) Attach bow brace rods (2) to the windshield (5) and install retainers (4). Wrap flap around bow brace rod (2) and secure five button fasteners (3) on each side of vehicle. Wrap tabs (1) around bow (6) under center of the top and secure button fasteners (3).

NOTE

The horizontal bow brace rod (2) is not to be used as a hand hold while entering or leaving the vehicle.



(13) Secure the rear curtain (7) with four hold down straps (10) across the rear of the vehicle.

(14) Replace gasoline can (11), spare tire and wheel assembly (8) and spare tire retainer clamp assembly (9) on the rear of the vehicle.

NOTE

Always install gasoline can (11) with spout pointing toward spare tire and wheel assembly (8).

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c. Soft Top Stowage.

CAUTION

To prevent mildew or rotting, do not fold or stow soft top (7) when wet.

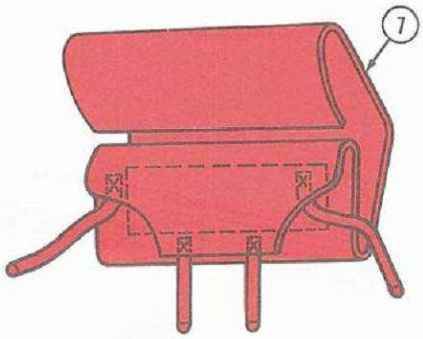
(1) When the soft top (7) is removed and the vehicle is to be operated, top (7) should be folded and rolled as follows:

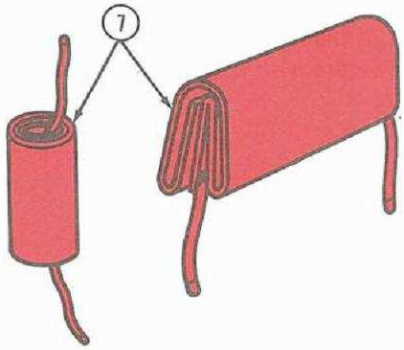
CAUTION

Do not crease or fold rear window.

(a) Lay top (7) on the ground with the inside up.

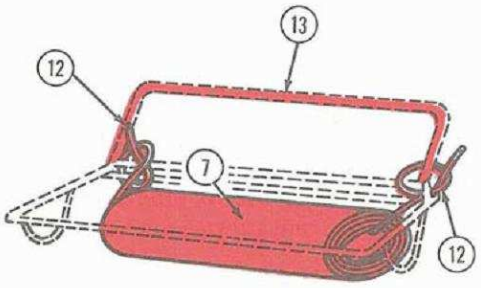
(b) Fold the window end to the seam line and fold the strap end back over the window. Fold the front or beaded edge back to the 2nd fold. Fold the front section over the lower section of the rear window.





(c) Now that the soft top (7) is folded as shown, roll into approximately an eight inch diameter roll with straps (12) extending from each end.

(d) Stow soft top (7) under rear seat and secure with tie straps (12) to rear seat frame (13) behind the hinge.



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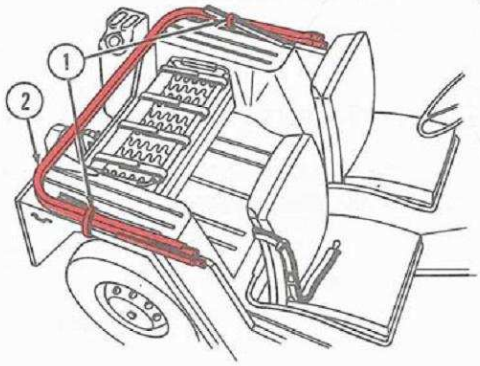
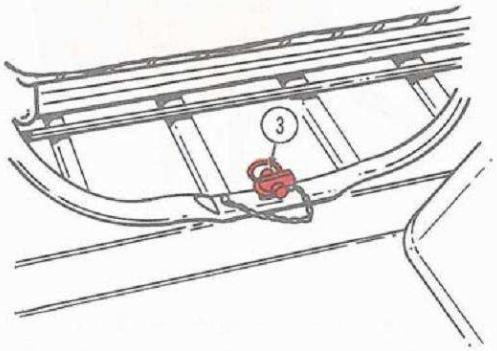


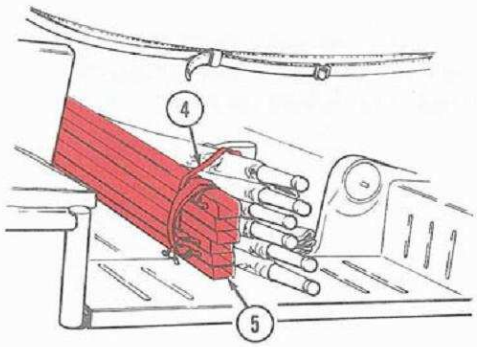
(e) Lower bow assembly (2) to stowage position and secure with straps (1).

d. Installation of Litter Supports (M718 and M718A1).



(1) Remove locking pin (3) from the rear of the right front seat, tilt seat forward and secure with strap.

(2) Remove front and rear retaining straps (4) and remove six litter rails (5) and rail supports from stowage on vehicle floor.



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(3) The litter hardware includes the following:

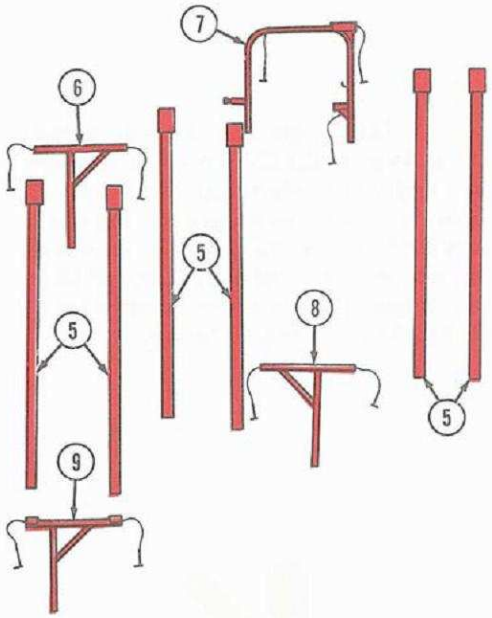
Left front litter rail support (6).

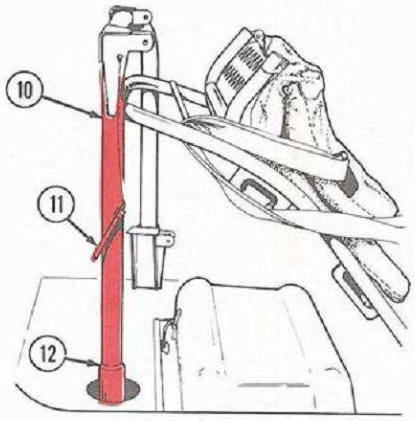
Right front litter rail support (7).

Litter rails (5).

Right rear litter rail support (8).

Left rear litter support (9).





(4) Swing rear leg (10),of inverted U-shape front rail support forward from its stowed position, to the mounting socket (12) nearest to right side of front seat. The other leg of the support should remain in the mounting socket between the seats. Install locking pins (11).

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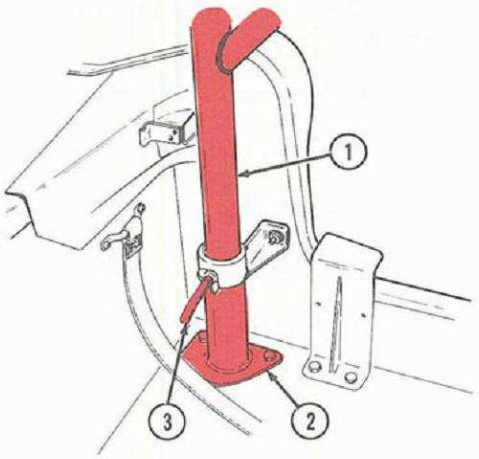
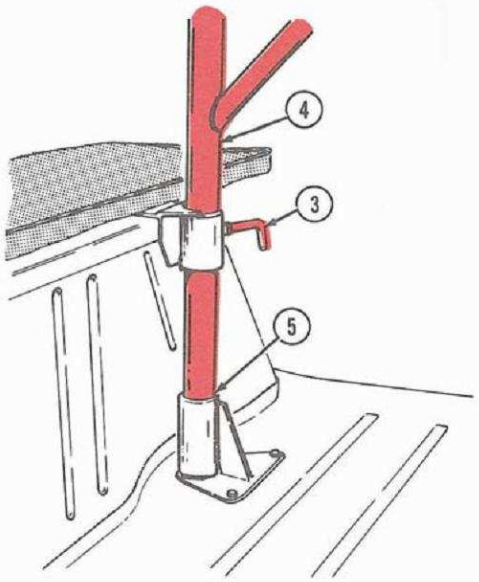
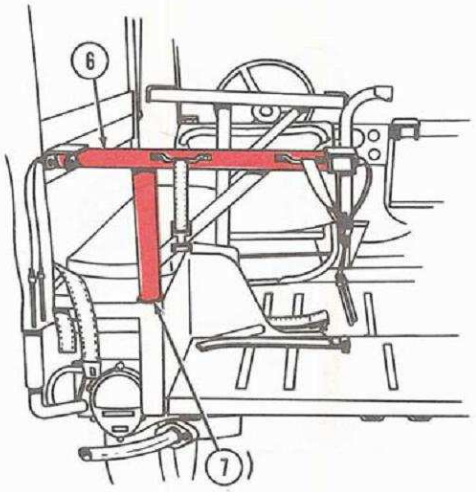
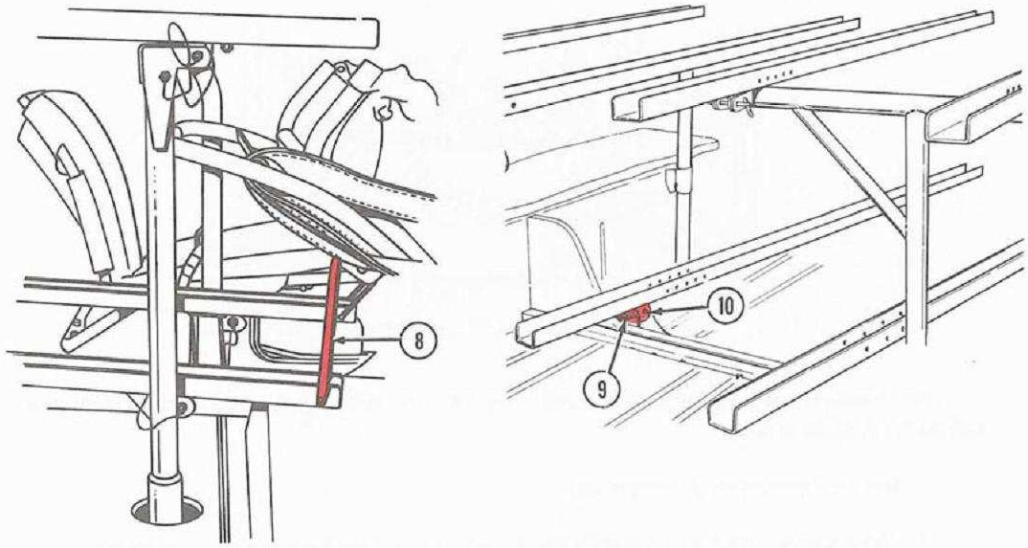
(5) Insert right rear litter rail support (1) in floor socket (2) in front of stowage box and lock in place with locking pin (3). Insert left front rail support (4) in floor socket (5) behind the driver's seat, and lock in place with locking pin (3). Install left rear rail support (6) (with bent shoulder) in socket (7) at left rear of vehicle.







TA 254587

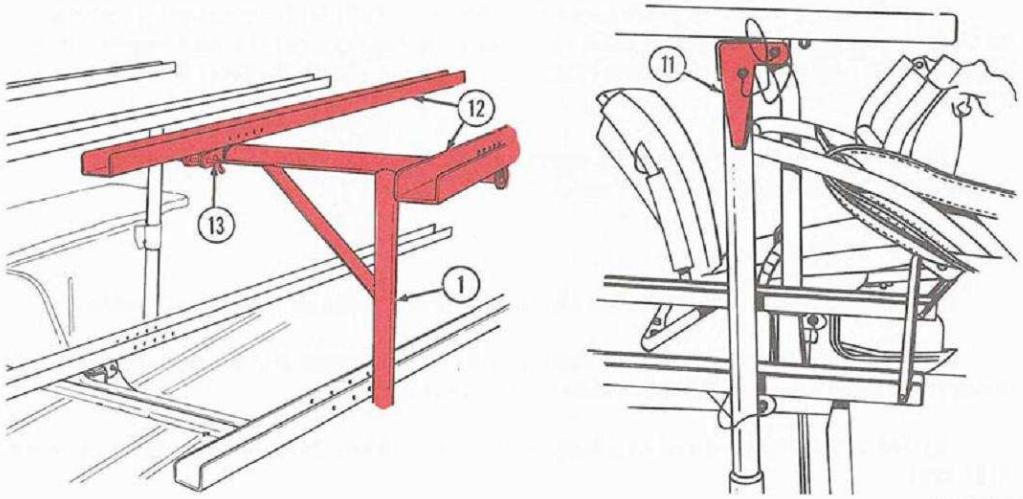


(6) Install two litter rails on the floor brackets (9) and lock them in place with retaining pins (10). The wire litter holders (8) should be in the forward position.

NOTE

All six litter rails are the same.

(7) Install two litter rails (12) to right front (11) and right rear (1) rail supports and lock into position with four retaining pins (13).



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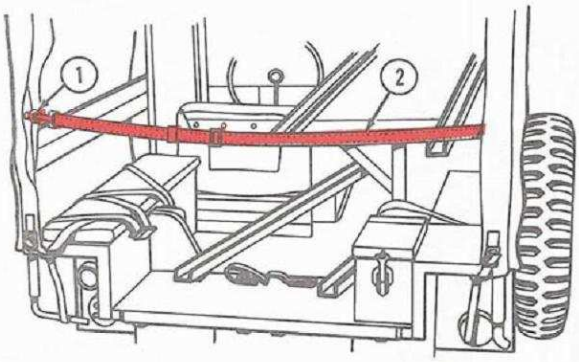

(8) Position rear safety belt (2) and snap into eyebolt (1) provided on bow assembly. Adjust to proper length.

e. Before Operation Instructions.

(1) When new, used or reconditioned material is first received by the using organization it is the responsibility of the officer in charge to determine whether the material has been properly prepared for service by the supplying organization and to be sure it is in condition to perform its function. Reporting will be done in accordance with TM 38-750. The following additional services are to be scheduled by the responsible officer.

(2) New vehicle 1000 mile (1609 km) service: to be scheduled on DD Form 314 for processing at 1000 mile (1609 km) service.

(3) Upon completion of the 1000 mile (1609 km) service, all oil change and lubrication services are to be scheduled and performed by organizational maintenance personnel in accordance with intervals prescribed in LO 9-2320-218-12.

f. Services to Be Performed. If not previously performed, the following services must be accomplished before placing vehicle into service.

(1) Lubricate vehicle in accordance with LO 9-2320-218-12 regardless of interval, excluding gearcase and engine. Check the processing tag for gearcase and engine oil. If tag states that oil is suitable for local climatic operation, check the level but do not change oil.

(2) Services to be performed by operators are designated under preventive maintenance checks and services, page 2-7.

g. Break-In Service.

(1) Perform all before operation checks and inspections as indicated in table 2-1.

(2) Upon receipt of vehicles the following break-in speeds and precautions should be observed during the first 500 miles (804 km) of operation.

(a) Do not exceed a speed of 35 miles per hour (56 km/h) during the first 100 miles (161 km).

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(b) Do not exceed a speed of 50 miles per hour (80 km/h) during the next 400 miles (643 km).

(c) Do not skip gears when shifting.

(d) Avoid rapid acceleration or deceleration.

(e) Avoid engine overheating.

(f) Be careful when using vehicle operating controls. Do not suddenly or forcefully engage operating controls.

(g) Always start out in first gear, regardless of terrain.

2-8. Operating Precautions.

WARNING

Extreme care should be used when driving M151 series vehicles. They have more responsive steering and acceleration than other vehicles. Watch speed, especially on turns. A full right or left turn at speeds over 20 mph (32 km/h) can cause any vehicle to go out of control and/or turn over.

a. The speeds indicated on the instruction plates of the instrument panels are guides only to the mechanical capacity of the vehicle in each gear ratio. Maximum speeds shall be governed by road conditions, weather, visibility and loading, and not by speeds shown on data plate.

b. Do not push in clutch or shift into neutral, when going down hills and grades, except when necessary to change to a lower gear.

c. Do not partially engage (ride) clutch.

d. Do not race engine, especially when not under load.

e. Do not fill cooling system when engine is overheated.

f. Operate with recommended tire pressure.

g. Do not operate starter for more than 10 seconds at a time. Wait at least 15 seconds between attempts to start engine.

h. Disengage front wheel drive when operating on dry hard surface.

i. Bring vehicle to complete stop before shifting into reverse or four wheel drive.

j. When the vehicle is stuck or otherwise under heavy load, do not over-speed engine and slip clutch to gain more torque. Such action will result in damage to clutch, pressure plate and flywheel.

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k. When vehicle is stuck, do not rock vehicle by shifting from first gear to reverse gear while throttle is open.

CAUTION

Do not use the M151A1C, M825, M718, and M718A1 to tow trailers.

When towing a trailer, special care must be exercised when stopping quickly to avoid jack-knifing the trailer.

For proper trailer hook-up and towing procedures, refer to TM 9-2330-251-14.

l. When towing a trailer, exercise care, especially when turning. The added towed load will increase the tendency of the vehicle to steer into the turn. Refer to table 1-6 for proper tire pressures.

m. Vented fuel caps must be used on non-emission control equipped vehicles, and non-vented fuel tank caps must be used on emission control equipped vehicles. They are not functionally interchangeable.

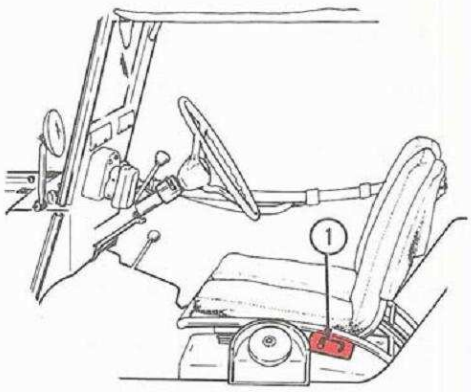
2-9. Before Starting Operations. Before starting engine, perform applicable before operation inspections and services outlined in the Preventive Maintenance Checks and Services, Table 2-1.

2-10. Starting the Engine.

a. For Ambient Temperature of 85° F (29° C) and Below.

(1) Adjust seat for most comfortable and effective position.

(2) To adjust seat, lift seat up, place seat in slotted forward or rearward position (1).



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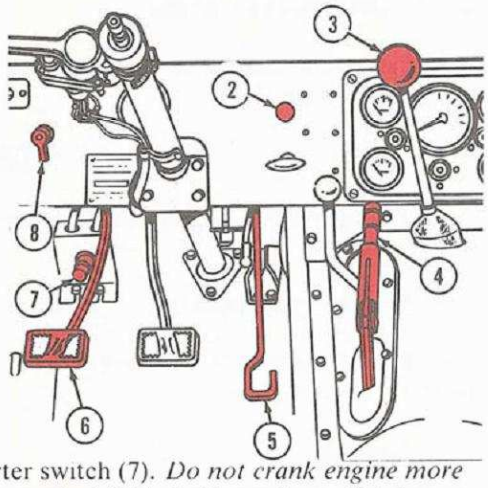
(3) Pull back on parking brake lever (4).

(4) Place transmission shift lever (3) in neutral.

(5) Pull choke control (2) fully out from instrument panel and set by pushing back ⅛ to ¼ inch (3.2 to 6.3 mm).

(6) Depress accelerator (5) fully and release.

(7) Turn ignition switch (8) to "ON" position.



(8) Depress clutch pedal (6) and engage starter switch (7). *Do not crank engine more than ten seconds.* When engine starts, push choke control (2) in half-way immediately until engine warms up and operates smoothly (to assure best start, hand should be kept on choke control during start so that control can be pushed to half-way position without undue time delay). Push choke control (2) in after approximately one-half minute of driving operation.

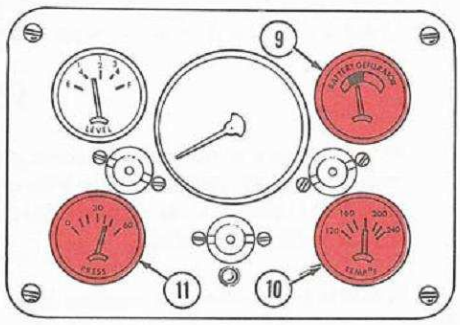
(9) If engine fails to start as directed in step *(8)* above pull choke control (2) out completely and repeat step *(8)* above. *Do not crank engine more than ten seconds.*

(10) If engine fails to start, push choke control (2) fully in, depress accelerator (5) fully and hold, crank engine (*not to exceed ten second intervals*) until it starts and runs smoothly. Release accelerator (5) and pull choke control (2) out half-way until engine warms up and operates smoothly. Push choke control in.

(11) If engine fails to start, check battery indicator (9). If in yellow area, discontinue cranking and notify organizational maintenance.

b. For Ambient Temperatures Above 85° F (29° C). In step *(5)*, pull choke control (2) out approximately one-half inch (12.7 mm) for temperatures slightly in excess of 85°F (29°C), and slowly push choke in. For temperatures above 90°F (32°C), choke operation is not required.

c. Normal Readings. Check panel gages for normal readings. Battery-generator indicator (9) should read in the green area. Coolant temperature gage (10) should show a gradual increase and read between 170°F and 190°F when engine is at normal operating temperature. Oil pressure gage (11) should indicate a minimum of 15 psi at idle.



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2-11. Driving the Vehicle.

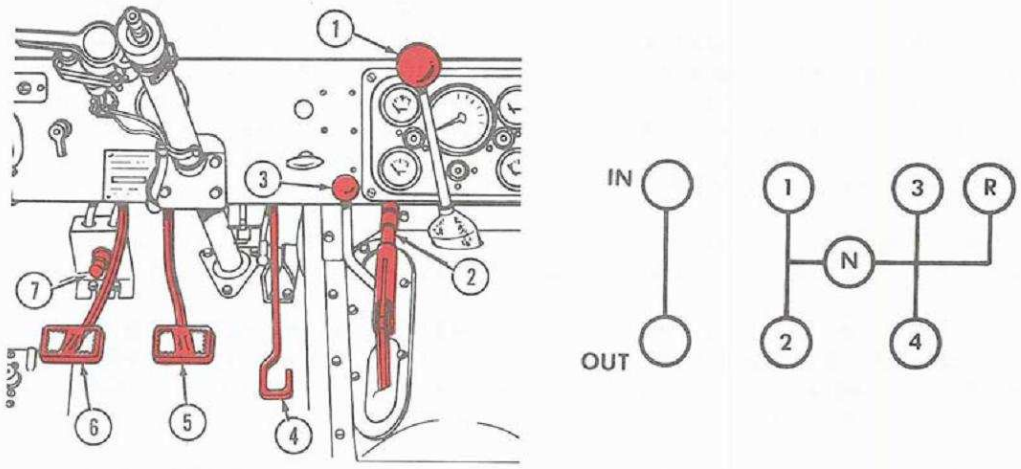
a. Set light switch for stop light operation (day time) or designated lighting (nighttime) as shown on page 2-4.

CAUTION

Do not push in starter switch (7) when pushing in clutch pedal, while engine is running.

b. Push in clutch pedal (6).

c. Place transmission shift lever (1) in 1st gear. Refer to shift pattern on instrument panel instruction plate.



d. Place transfer lever (3) in desired position. Refer to shift pattern on instrument panel instruction plate.

e. Release handbrake lever (2).

f. Slowly release clutch pedal (6). Depress accelerator pedal (4) to increase engine speed.

g. As vehicle speed increases, shift progressively through second and third gears to fourth gear using clutch and decreasing engine speed between each gear.

CAUTION

When terrain conditions indicate need for front wheel drive, shift the transfer lever before encountering the obstacle. Push in clutch pedal, idle the engine and shift the transfer lever. Do not attempt to shift "IN" to front wheel drive while rear wheels are spinning.

h. When it is necessary to engage front wheel drive, stop vehicle and shift transfer lever (3) forward to the "IN" position. Front wheel drive **MUST** be engaged ("IN" position), when operating on all roads other than dry hard surface.

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i. Under normal conditions, on level terrain, front wheel drive can be disengaged without stopping the vehicle by pulling transfer lever (3) backward to "OUT" position.

2-12. Stopping the Vehicle.

a. Release the accelerator pedal (4) and apply brakes (5). Apply brakes slowly to avoid skidding tires.

b. Just before vehicle stops, push in clutch pedal (6) and shift transmission lever (1) into neutral. Release clutch pedal (6). After vehicle is stopped, apply parking brake (2).

2-13. Driving in Reverse.

a. Bring vehicle to complete stop.

CAUTION

Limit reverse speed to 9 mph (14 km/h).

b. Allow engine to return to idle speed. Push in clutch pedal (6) and shift transmission lever (1) to reverse gear. Refer to shift pattern on instrument panel instruction plate.

2-14. Parking the Vehicle.

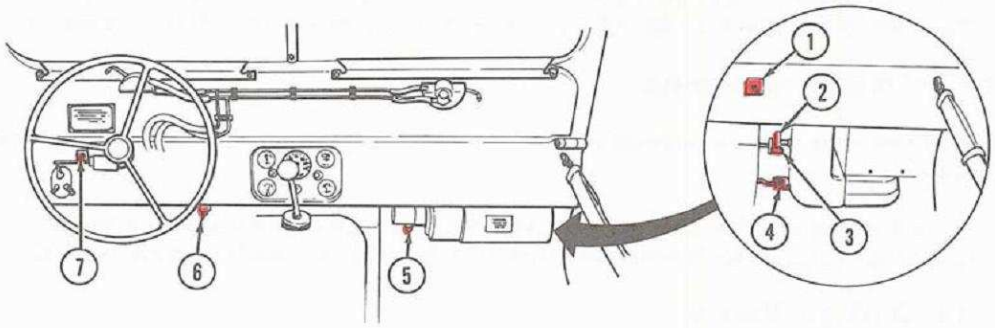
a. Put all switches in "OFF" position.

CAUTION

When operating vehicles with towed load always chock wheels when parking.

b. Apply parking brake, chock wheels if on a steep grade. Refer to paragraph 3-10 for adjustment of handbrake.

TA 254594



2-15. Hot Water Heater -25°F (-32°C). Heater Start and Shut Down.

CAUTION

Failure to observe instructions may result in hazardous operation, unsatisfactory performance, or premature failure of the equipment.

NOTE

Open the cowl ventilator for fresh air operation of heater.

a. Defrost. For maximum defrosting, pull the cowl ventilator up to the full open position on older models, move the defrost lever (3) to the rear detent (open) and the driver heat lever (2) to the forward detent (closed). On later models close the driver heater control (6) mounted under the instrument panel mounted on the steering column and close the crew heat diverter control (5), beneath the blower motor. Move the heater switch to the "HI" position (1) or (7).

b. Driver's Heat. For maximum driver heat, pull cowl ventilator up to full open position. On older models, move the driver heat lever (2) to the rear detent (open) and move the defroster lever (3) to the forward detent (closed). On later models, open driver heat diverter control (6). On all models, move the heater switch to the "HI" position (1) or (7).

c. Crew Heat. For maximum heat, pull the cowl ventilator up to full open position; move the driver's heat lever (2) and defroster lever (3) to the forward detents. Open the door on the bottom of the diverter box (4) or (5). Move heater switch to "HI" position (1) or (7).

d. Combination. For combinations of defrosting, driver heating and crew compartment heating, move the appropriate levers to the middle position.

NOTE

With the vehicle in motion, the heater may be operated with the blower switch in the "OFF" position, due to air forced through the cowl ventilator. When dust, exhaust fumes or water (rain or melted snow) are encountered, close the cowl ventilator and the air in the crew compartment will be recirculated and reheated.

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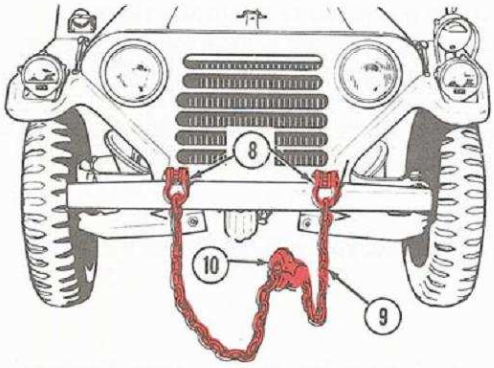
2-16. Towing the Vehicle.

CAUTION

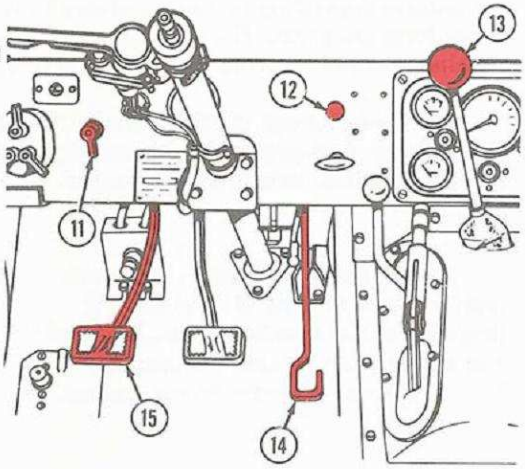
Do not attempt towing with the tow cable or chain attached to ONLY one shackle or wrapped around the center of the bumper.

a. Towing to Start the Engine. The engine may be started by towing the vehicle only after proper approval has been obtained.

(1) Attach towing cable (9) to front lifting shackles (8) on bumper of towed vehicle and to pintle (10) on the towing vehicle.



(2) Push down on clutch pedal (15) and hold. Place vehicle transmission lever (13) into high gear (fourth). Begin towing vehicle. When speed of 5 to 10 mph (8 to 16 km/h) is reached, turn ignition switch (11) on, slowly lift foot from clutch pedal (15), and depress accelerator (14); choke as necessary. After vehicle has started, push clutch pedal (15) down, release accelerator pedal (14), shift transmission lever into neutral, and push choke control (12) in.



(3) After engine has started, remove towing cable from front lifting shackles.

b. Highway Towing.

CAUTION

- In all situations under which a disabled vehicle is to be towed, be sure to place transmission gearshift lever in neutral position and disengage front wheel drive.
- Do not tow a vehicle which has become disabled because of a damaged transfer, axle, or transmission. Notify your organizational maintenance unit.

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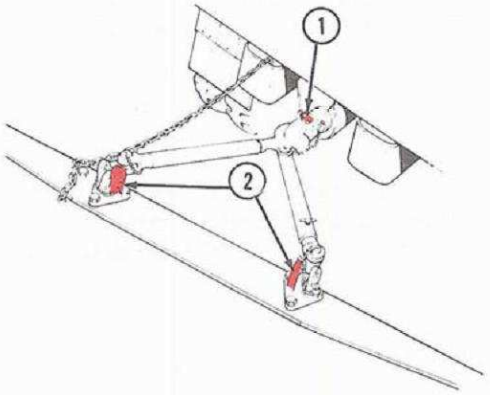
CAUTION

- Do not attempt towing operations with the front or rear wheels off the ground. Notify your organizational maintenance unit. Do not push a disabled vehicle. Use the towing procedure only.
- Use the lifting shackle brackets for all towing operations.

(1) Remove the lifting shackles and attach a tow bar to the lifting shackle brackets (2) of the vehicle to be towed and to the pintle hook (1) of the towing vehicle.

(2) Place the transfer shift lever and the transmission gearshift lever in the neutral position.

(3) Release parking brake control lever.



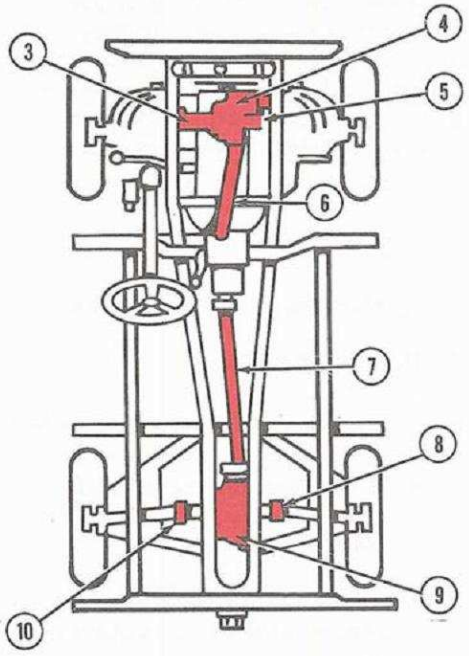
c. Towing Disabled Vehicles. Towing the vehicle when disabled requires varied procedures depending on nature of disability. For this reason, no specific towing procedures are given. The following general procedures apply. Approval must be obtained for towing from the individual designated in authority.

(1) If no damage exists in power train from wheels to transfer case, and front wheel drive can be disengaged and transmission can be placed in neutral position, vehicle may be towed with all wheels on the ground.

(2) If damage is within the transfer case, disconnect front (6) and rear (7) propeller shafts at differentials (4) and (9) and secure end to frame. Vehicle may then be towed with all wheels on the ground.

(3) If damage is in either front or rear wheel drive shafts, universal joints, or differentials, remove front (3) and (5) or rear (8) and (10) wheel drive shafts. Vehicle may then be towed with all wheels on the ground.

(4) To tow vehicle with front wheels off the ground, disengage transmission by moving shift lever to neutral position.



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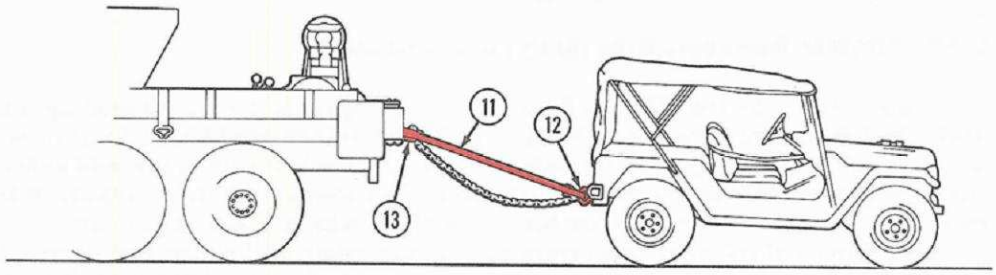
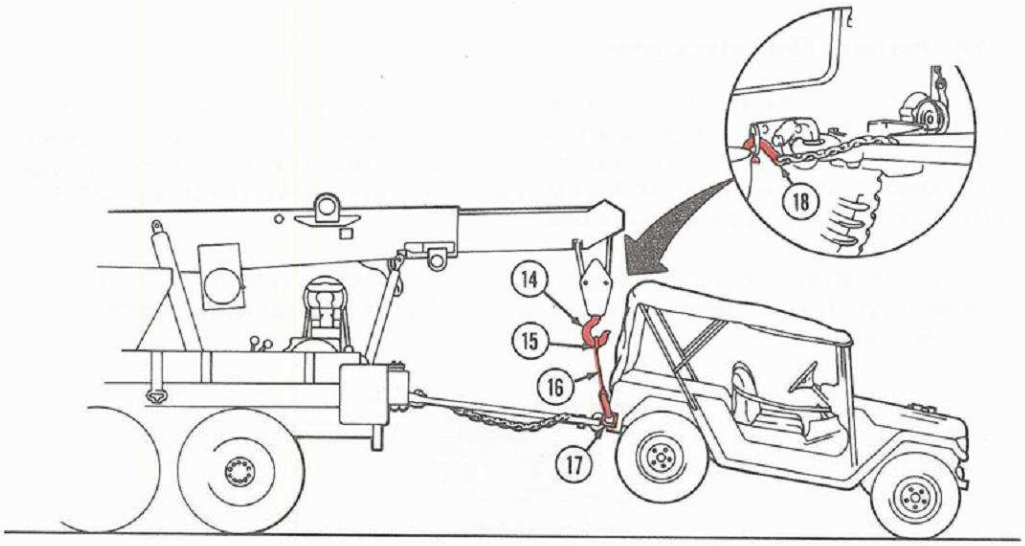
d. Towing Vehicle from Rear. The following procedure is recommended for towing the vehicle from the rear with rear wheels off the ground.



(1) Attach the apex eye of the towbar (11), (Motor Vehicle "V" universal type) to the pintle (12) of the vehicle requiring towing and the towbar arms (yokes) to the wrecker rear lifting eye attaching brackets (13). It will be necessary to remove the wrecker lifting eyes (shackle) prior to attaching the towbar arms.



(2) Remove the spare tire from the vehicle and store in the cargo area. Attach the two hooks of a double leg wire rope (7/16 in. (11 mm) dia. x 60 in. (152 cm) long) sling assembly (16) to the rear lifting eyes (17) and attach the sling assembly ring (15) to the wrecker's hoisting hook (14). It is important that the wrecker's hoisting boom and hook be directly over the position where the sling assembly hooks attach to the vehicle. Failure to do this may result in difficult turning during towing operations. Attach safety chain from wrecker to vehicle safety chain bracket eyes (18).

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(3) Prior to towing vehicle, secure steering wheel to front seats to prevent front wheels from turning, put transmission in neutral position and disengage front wheel drive.

(4) Lift rear wheels from ground.

(5) Proceed with towing operations.

2-17. 106MM Recoilless Rifle (M151A1C and M825).

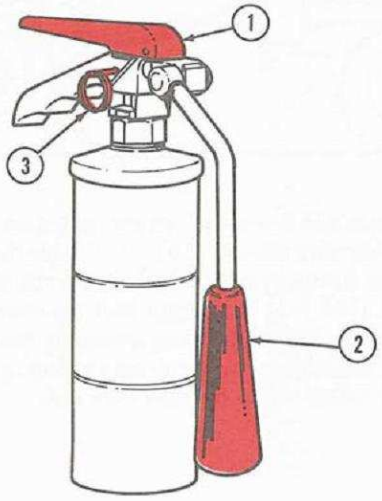
a. Description. The 106 MM recoilless rifle, consisting of the caliber .50 spotting rifle M8C, the 106MM recoilless rifle M80A1, and 106MM rifle mount M79, is designed as a self-propelled mobile weapon system when mounted on the bodies of ¼ ton, 4x4 utility trucks. When mounted on the M151A1, the vehicle becomes an M151A1C vehicle. When mounted on the M151A2, the vehicle becomes a M825 vehicle. These vehicles are provided with overload, heavy duty springs to accommodate the heavier load. More detailed data concerning the 106MM recoilless rifle will be found in TM 9-1000-205-12, Operation and Organizational Maintenance.

b. Ammunition Stowage. Stowage space for six rounds of ammunition is provided at the rear of the vehicles. For handling and stowage of ammunition refer to TM 9-1000-205-12.

2-18. Portable Fire Extinguisher.

a. Description. The portable fire extinguisher used with vehicles is a hand-charged, dry chemical, 2.75 lb. (1.25 kg), valve grip lever type. It is located in a bracket mounted to the left rear fender body panel, directly behind and to the left of the driver's seat and can be used for electrical, fuel, oil, canvas, and rubber fires. On M151A1C and M825 vehicles, it is located on the left front fender.

b. Operating Instructions. Point horn (2) close to base of fire. Pull ring pin (3). Depress trigger (1) for discharge, and keep base of flames covered. Avoid breathing smoke and fumes.



TA 254599

2-19. Normal Fording Operation (21 Inches (53 cm) Maximum).

a. General. In fording, the vehicle may be subjected to water of varying depths from only a few inches (normal fording) to depths sufficient to completely submerge it (deep water fording).

b. Normal Fording. All critical components of the vehicle manufactured with waterproofing protection for fording bodies of water to a depth of 21 inches (53 cm). For greater depths, a deepwater fording kit must be installed (page 2-48).

c. Fording.

(1) Observe the following precautions before fording.

(a) Determine water depth. Do not exceed 21 inches (53 cm).

(b) Make sure engine is operating efficiently.

(2) Place transmission in first gear and engage front wheel drive.

(3) Enter water slowly, but prevent engine stall.

(4) If engine stalls, start in usual manner.

(5) Limit speed to 3 to 4 mph (5 to 6 km/h).

(6) Avoid unnecessary use of the clutch.

(7) Do not rely on brakes until after fording.

d. Operation After Normal Fording.

WARNING

Do not rely on brakes until tested and found reliable.

(1) After leaving the water, disengage front wheel drive if terrain permits. Activate brakes several times to aid in drying out brake linings. On older model vehicles, open the floor drains to release water from inside the vehicle. On later model vehicles, the floor drain openings are permanently open.

(2) Clean all body surfaces that have been exposed to water and touch up paint where necessary. Coat unpainted metal parts with engine lubricating oil (OE).

NOTE

Salt water fording causes rust especially on unpainted surfaces. Remove all salt water and salt deposits from every part of vehicle by rinsing with clear fresh water. Components should be disassembled, dried, and relubricated as soon as possible.

(3) Check lubricants in engine, transmission, differentials, and transfer case. If inspection indicates that water has contaminated the lubricant, notify organizational maintenance to service.

NOTE

Water found in power train components after fording will generally be the result of condensation, rather than seepage.

(4) Clean and lubricate, as specified in LO 9-2320-218-12, as soon as possible after fording operations.

(5) Remove water from brake lining by gradual application of brakes after leaving water, until braking can be accomplished without "grabbing". If there is any evidence of improper brake action, notify organizational maintenance.

(6) Although most instruments are sealed units, sudden cooling of the warm interior air may cause condensation of moisture within the cases or instruments. A period of exposure to warm air after fording should eliminate this condition.

(7) Check battery electrolyte level in each cell of the battery. If overfull, notify organizational maintenance. This is of special importance if vehicle was submerged in salt water.

(8) If water is found in air cleaner, clean and refill with oil.

e. Accidental Submersion. If accidental submersion of vehicle occurs beyond fording capabilities, it must be salvaged and sent to organizational maintenance as soon as possible for complete maintenance.

TA 254601

2-20. Auxiliary Equipment Special Purpose Kits.

a. General. Special purpose kits applicable to M151 series vehicles are listed in Table 2-2.

Table 2-2. M151 Series Special Purpose Kits

KIT NOMENCLATURE	M151	M151A1	M151A2	M151A1C	M825	M718	M718A1
DEEP WATER FORDING	X	X	X				
100 AMP ALTERNATOR	X	X	X	X	X	X	X
180 AMP ALTERNATOR	X	X	X	X	X		
WINTERIZATION -65°F (-54°C)	X	X	X				
HARDTOP	X	X	X				
MACHINE GUN MOUNT	X	X	X				
MOUNTING, M16 RIFLE	X	X	X	X	X		
DOOR AND SIDE CURTAIN	X	X	X				

NOTE

Operation instructions are not required for the 100 AMP alternator and 180 AMP alternator kits.

b. Operating Instructions. The following special purpose kits are covered herein:

(1) Arctic winterization kit -65°F (-54°C)
(2) Hardtop kit
(3) Door and side curtain kit
(4) Deep water fording kit
(5) M4 pedestal gun mount kit
(6) M16 rifle mount kit
(7) Decontamination kit

TA 254602

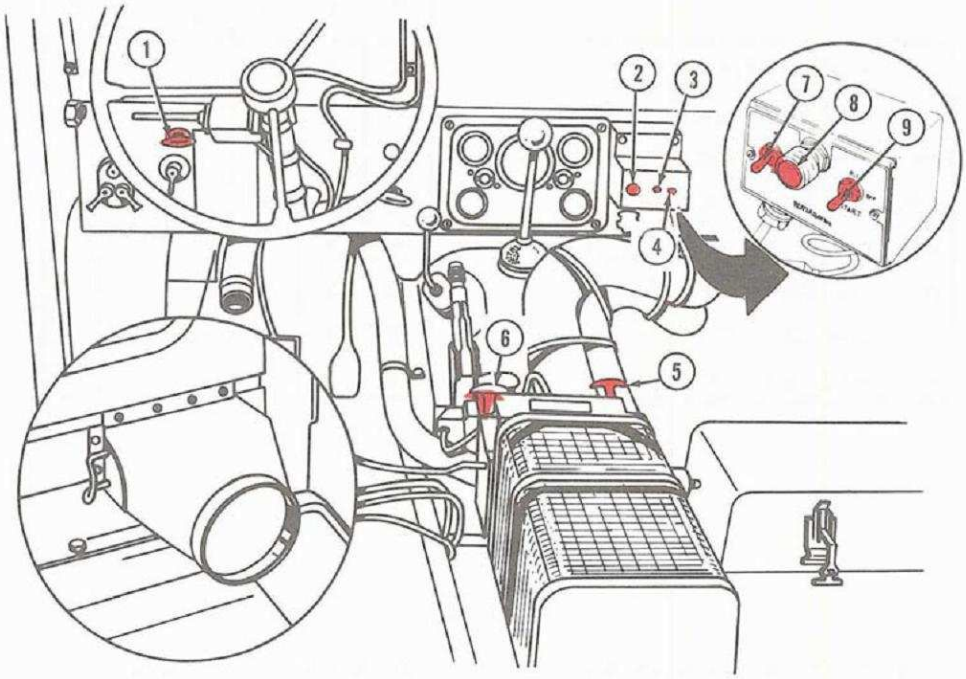
2-21. Winterization Kit -65°F (-54°C).

a. Description. The winterization kit -65°F (-54°C) is a heating system designed for vehicles which operate in sub-zero temperatures. It consists of a fuel burning heater, windshield defroster, automatic temperature control for battery compartment, manually controlled engine oil pan heater, brush guard cover, manual and automatic vehicle heating control (when unattended), and a slave receptacle.

CAUTION

Vehicles equipped with this kit may not be used for deep water fording.

b. Controls and Instruments.



KEY	ITEM AND FUNCTION
1	*Defroster Control Handle* controls the heated air flow to the windshield.
2	*Indicator Light (Older Models)* indicates that combustion is occurring in the heater. The light will go out during the heater "OFF" cycle.
3	*Circuit Breaker Reset Button (Older Models)* is used to reset the circuit breaker in the heater electrical system.
4	*Heater Control Switch (Older Models)* controls fuel flow for high and low heat output and stops fuel flow in the "OFF" position.

TA 254603

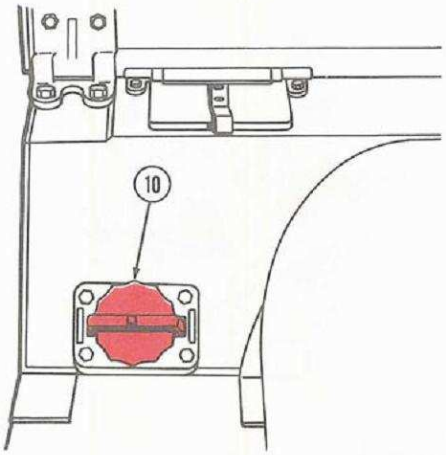
5 *Diverter Actuator Damper Control Handle* is used to control air flow to the defroster and/or crew compartment.

6 *Exhaust Diverter Control Handle* is used to divert heater exhaust gas to a shroud on the engine oil pan for heating the engine.

7 *Heater HI-LO Switch (Later Models)* controls fuel flow and blower speed for high and low heat output.

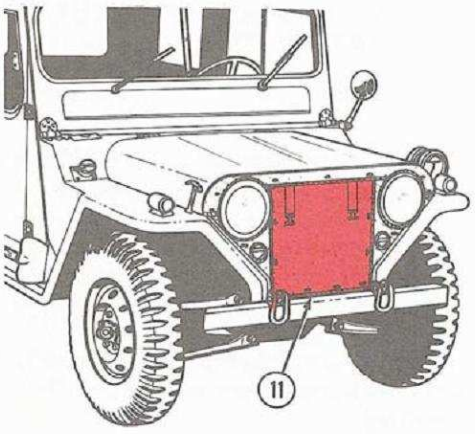
8 *Press-to-Test Indicator Light (Later Models)* indicates that combustion is occurring in the heater. The light will go out during the heater "OFF" cycle.

9 *Heater Control Switch (Later Models)* starts heater when held in "START" position, allows heater to run when put in "RUN" position, and stops fuel flow to heater when put in "OFF" position.



10 *Slave Receptacle* is located on the right front cowl panel, for auxiliary electrical power. The receptacle has an index slot and the female connectors are located off-center for correct connection.

11 *Brush Guard Cover* is mounted on the radiator brush guard with snap fasteners. The cover is to be installed whenever the vehicle is at halt and wind-blown snow could be driven into the engine compartment, or when extremely cold winds would cold soak the engine and make starting difficult. The flap should be positioned to maintain normal engine temperature when the engine is operating. When not in use, the brush guard flap may be rolled up and secured with straps.



TA 254604

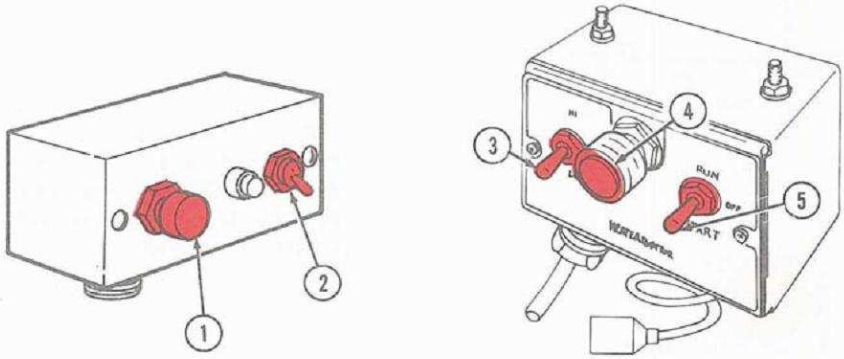
c. Operation of Heater.

NOTE

If heater fails to start, set heater control switch to "OFF" position and wait three minutes before attempting to restart. Notify organizational maintenance if heater fails to start after two attempts.

(1) Starting Heater (Older Models). Move control switch (2) to "ON-HI" or "ON-LO" position. Indicator light (1) will come on within two minutes, indicating normal operation. If heater fails to start within two minutes, move the control switch (2) to the "OFF" position and wait three minutes before attempting to restart.

(2) Starting Heater (Later Models). Set HI-LO switch (3) to "LO" position and hold control switch (5) in "START" position. Indicator lamp (4) will come on within two minutes. As soon as indicator lamp (4) comes on, set control switch (5) to "RUN" position without hesitating at "OFF".



WARNING

Accumulation of oil or grease on the oil pan is a serious fire hazard.

(3) Heating Engine Oil Pan. To heat the engine oil pan, pull exhaust diverter handle (9) up. When engine temperature reaches normal range, push this handle down to its normal operating position.

CAUTION

Excessive heat will crack the windshield. Control the defroster handle (6) manually, regulating hot air flow as required.

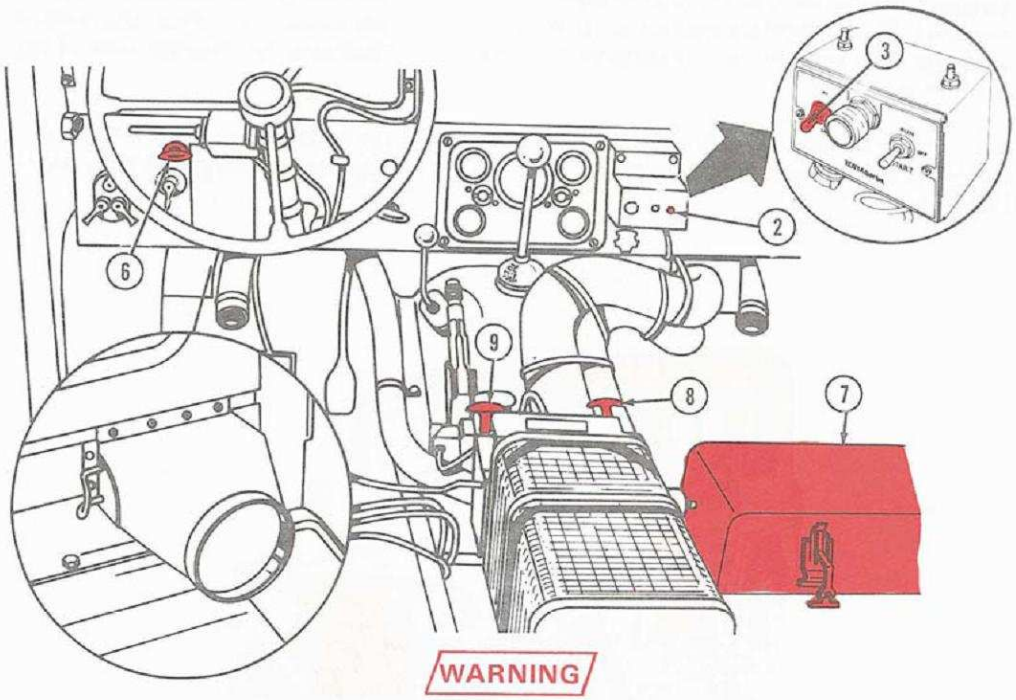
(4) Defrosting. Pull out diverter actuator damper control handle (8). This positions the damper for maximum air to the defroster diverter. Pull out defroster control handle (6) slightly and turn to "ON" position for windshield defrosting.

(5) Control Switch (Older Models). When all areas of the vehicle have warmed sufficiently, the heater control switch (2) may be snapped down to the "ON-LO" position if desired.

TA 254605

(6) Heater HI-LO Switch (Later Models). To increase the temperature inside the vehicle, set the switch (3) in "HI" position. Set the switch (3) in "LO" position when vehicle has warmed sufficiently.

(7) Battery Heater. Battery box heating (7) is automatically controlled. A thermostat in the box controls a damper box actuator at the right hand side of the diverter box.



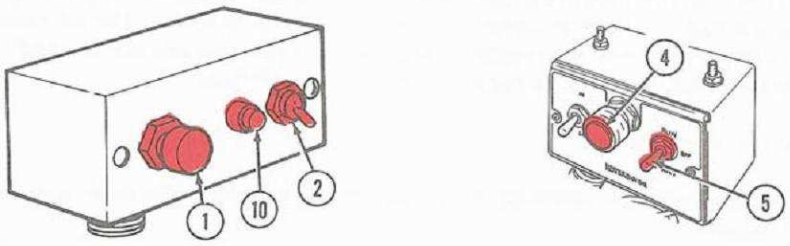
WARNING

Wait until the indicator light (1) or (4) goes out before attempting to restart heater or backfire will result causing severe injury.

CAUTION

On older models, do not stop the heater by pulling the circuit breaker reset button (10).

(8) Stopping the Heater. Stop heater by moving the control switch (2) or (5) to the "OFF" position. The indicator lamp (1) or (4) will stay on, and the blower will continue to deliver air until the combustion chamber has been purged of burning gas and has cooled. Cooling normally requires from two to three minutes.

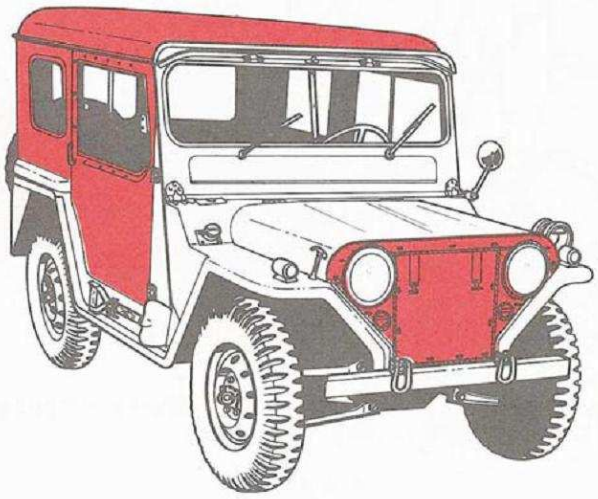


TA 254606

2-22. Hardtop Kit for M151, M151A1, and M151A2 Vehicles.

a. Description. The hardtop kit is an insulated enclosure, fabricated of aluminum, designed for extreme cold-weather operation under arctic conditions. The closure affords crew protection from the effects of arctic windchill, and is supplied in combination with the -65°F (-54°C) winterization kit. The hardtop is equipped with four fixed safety glass windows, including rear and side windows, and two doors having four sliding divided windows. Weathersealing gaskets are provided at all panel joints, door openings, window openings, and body mounting surfaces. The following illustrates the installed view of the hardtop assembly.

b. Controls. Door handles and latches are provided for both doors. The windows in the doors can be opened to provide for ventilation or signaling by sliding the glass panel fore and aft.



2-23. Door and Side Curtain Kit for M151, M151A1, and M151A2 Vehicles.

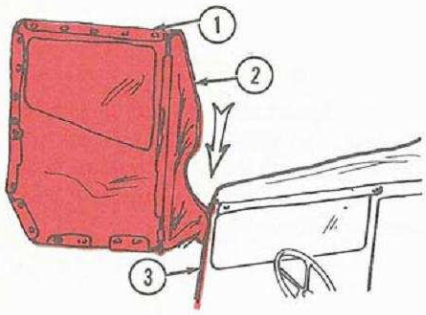
a. Description. The door and side curtain kit provides an enclosure for protection from the elements not as severe as those applicable to the hardtop kit. The kit consists of a left and right hand door and side curtain, door center rods, rod assemblies, and miscellaneous hardware required to install door and side curtains.

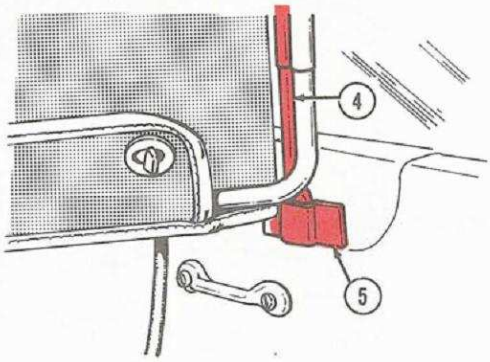
b. Installation Instructions.

(1) Lay the door curtain assembly on a flat surface, assemble the door, and secure with button fasteners.

TA 254607

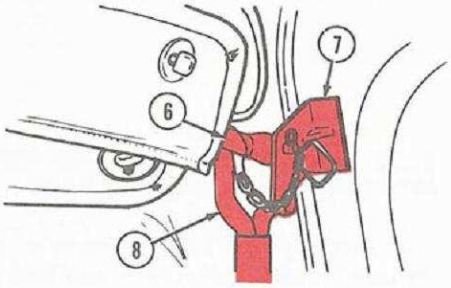
(2) Hold the left hand door (1) above the vehicle, start the beaded edge (2) of the door curtain into the retainer channel (3) of the windshield and slide it the full length of the channel including the body portion.

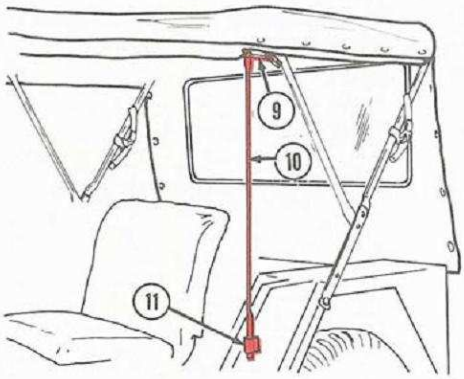




(3) Install bottom of vertical rod (4) assembly into the bracket (5) on the vehicle body.

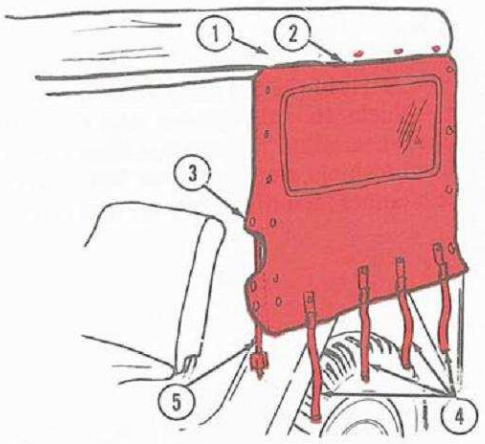
(4) Disconnect the bow brace rod (6) at the windshield end, and slip fitting on the end of the door. Install vertical rod (8) over bracket (7) on windshield and reinstall bow brace rod (6).





(5) Install door center rod (10) in brackets (11) on body of the vehicle with pin (9) on top.

TA 254608



(6) Insert the left rear side curtain (2) between the inner and outer flap of the top curtain and attach using button fasteners (1). Start at rear corner and work forward, and then down the back.

(7) Wrap the curtain flap (3) at forward edge around door center rod (5) and secure with button fasteners (1). Secure straps (4) at bottom edge of curtain.

(8) Install door and side curtain on the right side in the same manner as prescribed above.

(9) To remove the door and side curtain kit, reverse the installation procedure.

2-24. Deep Water Fording (60 Inches (152 cm) Maximum) (M151, M151A1, M151A2, M718, and M718A1).

a. Description. This kit consists of necessary tubes, hoses, fittings and valves to enable the power plant, fuel system, and brake hydraulic system to function when submerged in up to five feet of water during fording operations. An intake tube is installed to furnish engine intake air. This tube also functions as a means of ventilating the brake hydraulic system, engine crankcase, ignition system, and fuel tank. An exhaust tube is furnished to carry the exhaust above water level. A ventilation control valve mounted on the instrument panel operates the fording ventilating system.

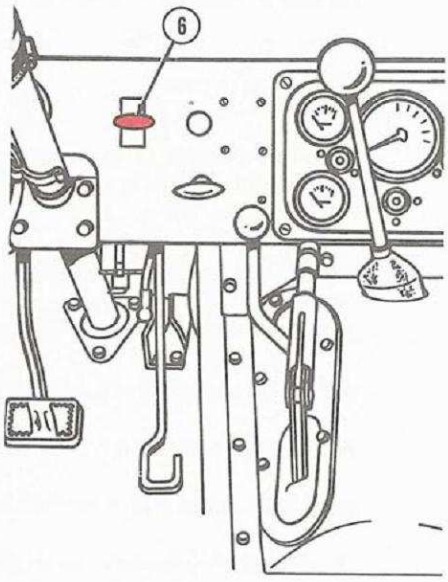
NOTE

For more information concerning fording operations, refer to TM 9-238, Deep Water Fording of Ordnance Materiel.

TA 254609

b. Operating Instructions.

(1) Operations to Be Performed Before Deep Water Fording.



(a) Pull out fording valve (6). (Open floor drains on early models).

(b) On non-emission control equipped vehicles remove fuel filler cap and set valve to the closed position for fording; reinstall filler cap.

NOTE

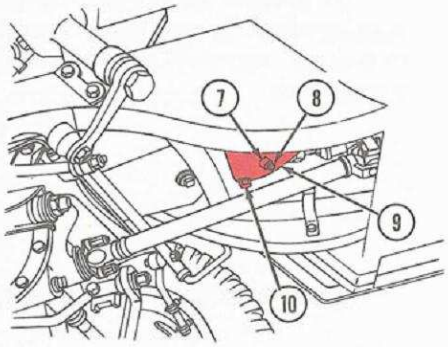
Non-vented cap is used on vehicles with emission control system; no adjustment is necessary.

(c) Secure floatable objects to vehicle.

(d) Remove drain plug (8) from storage boss (7) and install in flywheel housing (9) cover drain plug (10) opening.

NOTE

On models prior to serial number 2C2197, the drain plug is stored in the driver's seat map compartment (rear of seat back).



TA 254610

(2) Deep Water Fording Operation.

WARNING

Do not attempt to ford water deeper than 60 inches (152 cm), as water will enter intake pipe, stalling engine, damaging vehicle and endangering occupants.

(a) Make sure engine is operating efficiently.

(b) Place transmission in first gear and engage front wheel drive.

(c) Enter water slowly, but prevent engine stall.

(d) If engine stalls, start in usual manner.

(e) Limit speed 3 to 4 mph (5 to 6 km/h).

(f) Avoid unnecessary use of the clutch.

(g) Do not rely on brakes until after fording.

(3) Operations to be Performed After Fording.

(a) Push fording valve control in to restore normal venting.

(b) Set fuel tank filler cap valve to "OPEN". Emission control equipped vehicles fuel tank filler cap is non-vented.

(c) Close floor drain valves (early models only).

WARNING

Do not rely on brakes until tested and found reliable.

(d) Activate brakes several times with vehicle moving to dry out linings.

(e) Remove drain plug from flywheel housing cover, as previously installed prior to fording, and stow in flywheel housing storage boss.

CAUTION

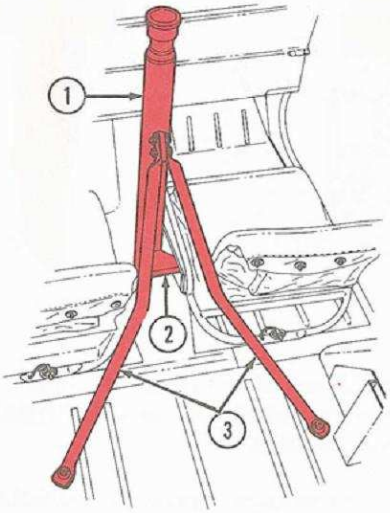
Immediately, or as soon as the tactical situation permits, perform the after fording maintenance.

(f) Perform after-fording maintenance as specified on page 2-39.

TA 254611

2-25. M4 Pedestal Gun Mount.

a. Description. The M4 pedestal gun mount is provided for applicable M151 series vehicles. The pedestal is composed of an upright socket (2), column and handle assembly (1), and supported in place by left and right braces (3) and other miscellaneous mounting hardware. The M4 pedestal gun mount is used to provide mounting facilities for the 7.62MM, M60 machinegun or other weapons as may be specified.

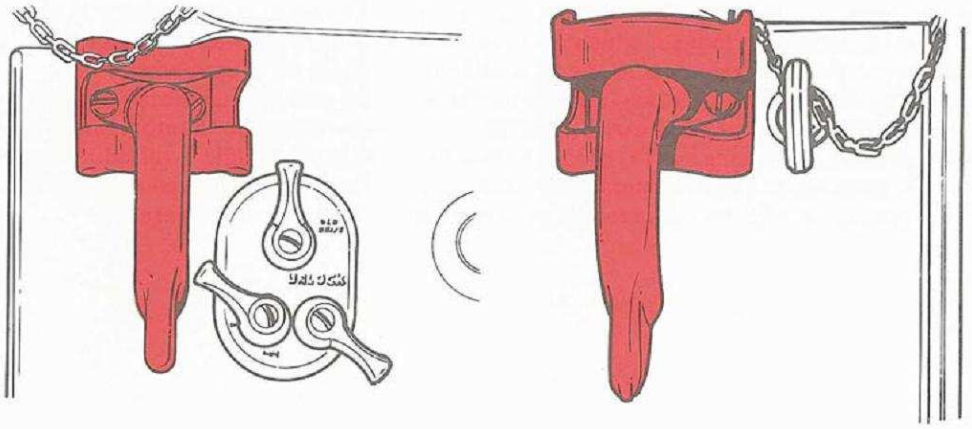


b. Operating Instructions and Controls. For operating instructions refer to the applicable weapons manual. Controls should operate smoothly and freely and should lock the weapon securely when in the traveling position.

2-26. M16 Rifle Mount.

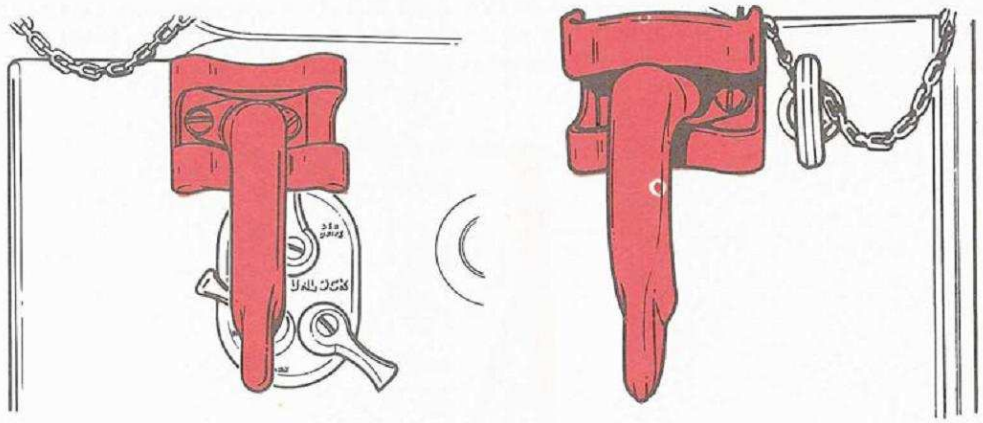
a. Description. M16 rifle mounts are provided for applicable M151 series vehicles. They appear as follows:

(1) Softtop Vehicle.



TA 254612

(2) Hardtop Vehicle.



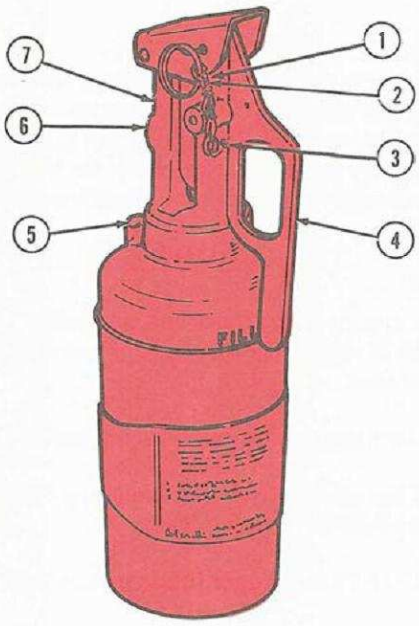
Floor brackets are supplied for left and right sides of the vehicle into which rifles are inserted. Catch assemblies mounted on the left hand and right hand sides of the instrument panel hold the rifles in place.

b. Operating Instructions. For weapons operating instructions, refer to the applicable weapon manual. Rifle mounts should operate smoothly and freely and should lock the weapon securely when in the traveling position.

2-27. Decontamination Kit.

a. Description. The ABC-M11 1½ quart (1.42 liter) DS2 portable decontaminating apparatus is essentially a cylindrical container with a spray head (6) located at the top. In use, the apparatus which has been filled with the DS2 is pressurized just before being used by means of a cylinder (7) of pressurized nitrogen. The apparatus is carried in the vehicle in the mounting bracket which also carries a spare nitrogen filled cylinder in a spring clip. A thumb lever controls the flow of DS2; a handle (4) is used when pressurizing the apparatus. A two branched arming pin (2) pins the handle, preventing the apparatus from being pressurized accidentally and preventing the thumb lines from being depressed. A locking pin (3) holds the handle up after the handle is raised. A lead seal (1) is installed in a filled apparatus as an indication that it has not been pressurized. A drain plug (5) is used by maintenance personnel when draining the apparatus.

TA 254613



b. Operation.

(1) After pressurizing the apparatus, start spraying DS2 by depressing the thumb lever while holding the apparatus 6 to 8 feet (1.8 to 2.4 meters) from the surface to be decontaminated. Interrupt spraying as desired by releasing the thumb lever.

(2) Begin spraying by first covering those parts most likely to be used or touched; door handles, steering wheels, controls, seats, dashboard, radiator covers, gasoline caps, and tires. Exercise care in controlling the spray so that the desired coverage is obtained. A single filling will allow a maximum of 30 to 40 seconds of spraying time.

(3) Whenever possible, those parts that have been sprayed with DS2 should be rinsed with water. Rinsing should not be done until at least 30 minutes after spraying.

(4) When spraying is completed, lower the handle after first depressing the locking pin; then reinstall the arming pin.

(5) At the earliest possible moment, turn in the apparatus for refilling and obtain replacement nitrogen-filled cylinders. For complete details on the decontaminating apparatus, portable, refer to TM 3-4230-204-12 & P.

TA 254614

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-28. General.

a. In addition to the operating procedures described for usual conditions, special instructions for operating and servicing this vehicle under unusual conditions are contained or referred to in this section. In addition to the normal preventive maintenance service, special care in cleaning and lubrication must be observed where extreme temperatures and terrain conditions are present or anticipated.

CAUTION

It is imperative that approved practices and precautions be followed. A detailed study of TM 21-300 and FM 21-305 is essential for use of this vehicle under unusual conditions.

b. Refer to TM 21-300 for instructions on driver selection, training and supervision.

c. Refer to FM 21-305 for special driving instructions for the operation of wheeled vehicles under unusual conditions.

d. Refer to LO 9-2320-218-12 for proper lubricants and lubricating instructions.

e. Be sure to perform the before, during, and after preventive maintenance checks and services listed in table 2-1.

CAUTION

Pay particular attention to your gages and indicators for signs of malfunction, when operating your equipment under unusual conditions.

2-29. Extreme Cold Weather Operation.

a. General.

(1) Extensive preparation is necessary for equipment scheduled for operation in extreme cold weather. Generally, extreme cold will cause lubricants to thicken or congeal; freeze batteries, or prevent them from furnishing adequate current for cold weather starting; crack insulation and cause electrical short circuits; and prevent fuel from vaporizing and properly combining with air to form a combustible mixture for starting. Extreme cold will also cause the various materials or components to become hard, brittle, and easily damaged or broken.

TA 254615

(2) The following documents contain information pertinent to the operation of your vehicle under cold weather conditions:

FM 31-70 — Basic Cold Weather Manual
FM 31-71 — Northern Operations
FM 9-207 — Operation and Maintenance of Ordnance Materiel in Extreme Cold Weather (0°F to -65°F)

b. Moving the Vehicle.

CAUTION

You must be very cautious when driving the vehicle after an extended shutdown. Congealed lubricants may cause failure of parts. Tires may be frozen to the ground or frozen with a flat spot while under-inflated. One or more brakeshoes may be frozen fast. You must take each condition into account in order to prevent damage to the vehicle.

(1) Start the engine (refer to page 2-30) and allow it to warm up thoroughly before placing your vehicle in motion.

(2) Frequently note instrument readings for indication of any malfunction.

(3) Refer to FM 21-305 for special instructions on driving hazards in snow, ice, and unusual terrain encountered under extreme cold conditions.

(4) Place transmission gearshift lever in first gear and 4-wheel drive lever in "IN".

(5) Drive the vehicle at the lowest speed possible for about 100 yards (91 meters). Be careful not to stall the engine. This should lube the gears and flex tires to a point where normal can be expected.

c. Parking the Vehicle.

(1) Park your vehicle in a sheltered area out of the wind whenever possible. If no shelter is available, park your vehicle so that it does not face into the wind.

(2) Park your vehicle on high dry ground if possible. If high dry ground is not available, prepare a footing of brush or planks under all tires. Chock in place if necessary.

(3) Park your vehicle on level ground to relieve distortion or body twist.

(4) Place control levers in the neutral position.

(5) Clean all parts of the vehicle of snow, ice, and mud as soon as possible after operation. Cover and shield the vehicle, but keep the ends of the canvas paulins off the ground to prevent them from freezing to the ground.

(6) If no arctic kit is installed, notify organizational maintenance to remove batteries and store in a warm place. However, it is unnecessary to drain engine oil as it will remain fluid even though unheated.

(7) Refuel immediately in order to reduce condensation in the fuel tank.

(8) Correct tire inflation pressures are prescribed on vehicle data plates and shown in table 1-6.

(9) When drain plugs have been removed or draincocks opened, to remove liquid from the cooling system of any vehicle, drains must be inspected to be sure none are obstructed. The draining of an engine cooling system, to prevent freezing will be done only when no approved antifreeze solution is available.

2-30. Extreme Hot Weather Operation.

a. General. Continuous operation of vehicle at high speeds, or under long, hard pulls in lower gear ratios on steep grades, or in soft terrain may cause the engine to overheat. Be alert for overheating, and halt the vehicle for a cooling-off period whenever necessary and the tactical situation permits.

b. Cooling System. Scale and rust in the cooling system form faster during operation in extremely high temperatures. For this reason, corrosion inhibitor compound should always be added to the cooling system. Use water with iow alkali content. Fill the radiator with rain water whenever possible. Refer to TB 750-651 for use of cleaning compound in the engine cooling system.

WARNING

Use extreme care in removing radiator filler cap when temperature gage reads above 180°F (82°C).

(1) Make frequent inspections of the cooling system for proper coolant level in the radiator, and be sure that hoses are not cracked or leaking.

(2) If your vehicle engine is constantly overheating, inspect the radiator fins. Clean out dirt, sand, or insect accumulation with compressed air.

c. Batteries.

(1) In torrid zones, check level of electrolyte in cells daily. If electrolyte level is low, notify organizational maintenance.

(2) A battery will discharge at a greater rate if left standing for long periods at high temperatures. If necessary to park for several days, notify organizational maintenance to remove batteries and store in a cool place.

d. Vehicle. In hot, damp climates, corrosion will occur on vehicle, especially during rainy seasons. Pitting and paint blistering occur on metal surfaces. Mildew, mold, and fungus grow on fabrics, rubber, and glass. Protect all painted surfaces from corrosion by touchup painting. Electrical cables and terminals should be protected by ignition insulation compound. Make frequent inspections, clean and lubricate often to prevent deterioration.

e. Parking the Vehicle.

(1) Do not park vehicle in the sun for long periods, as heat and sunlight will shorten the life of all rubber, fabric, plastics, and paint used in or on the vehicles. When practical, park under cover to protect vehicle from sun, sand, and dust.

(2) Cover inactive vehicle with tarpaulins if no other suitable shelter is available. When entire vehicle cannot be covered, protect window glass against etching by sand and protect engine compartment against entry of sand.

(3) Correct tire inflation pressures are prescribed on vehicle data plate and shown in table 1-6.

NOTE

When checking tire pressure, do not reduce pressure if tires are hot from driving.

2-31. Operation on Unusual Terrain.

a. General.

CAUTION

Attempted operation with only one wheel of a driving axle equipped with a tire chain may result in serious damage to the tire and/or power train.

(1) Operation on snow or ice-covered terrain or in deep mud may require use of tire chains.

(2) Select a gear ratio low enough to maintain engine speed without causing the wheels to spin. When additional traction is needed, such as on ice, snow, mud or difficult terrain, stop vehicle and engage front axle drive by moving transfer lever forward.

(3) If one or more wheels become mired or begin to spin, it may be necessary for the vehicle to be winched or towed by a companion vehicle, or it may be necessary to jack up the mired wheel and insert planking or matting beneath it.

CAUTION

Do not lower tire pressure to the extent that tire damage will result. Restore to recommended tire pressure as soon as possible after emergency. Refer to vehicle data plates and table 1-6 for correct tire pressures.

(4) Lowering tire pressure, to travel over sand, ice, mud, and snow, will help to increase traction if tire chains are not available.

(5) Operation in sand or dust may require daily cleaning of carburetor air cleaner.

WARNING

Use extreme care in removing radiator filler cap when temperature gage reads above 180°F (82°C).

(6) High altitude operation requires careful maintenance of the cooling system, as the boiling point of the coolant drops in proportion to the altitude.

b. Icy Roads.

(1) General. Skidding and loss of steering control are the chief difficulties encountered on icy roads or terrain. The driver must know at all times the exact direction in which the front wheels are steering. Because of lack of traction, vehicle may continue in a straight direction regardless of which way the wheels are turned, causing the engine to stall, or the rear end may veer sharply to the left or right.

(2) Skidding. When rear end of vehicle skids to either right or left, turn front wheels in the same direction in which rear end is skidding. Decelerate engine, but do not depress clutch. Apply brakes gradually.

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CHAPTER 3
MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

3-1. General. LO 9-2320-218-12 designates lubrication procedures, including locations, intervals, and proper materials. This document is issued with each vehicle and shall be carried on vehicle at all times. If vehicle has no lubrication order, using organization shall request one.

3-2. Service Intervals. Service intervals specified on the lubricating chart are for normal operation and where moderate temperature, humidity, and atmospheric conditions prevail.

3-3. Reports and Records. Report unsatisfactory performance of recommended fuels, lubricants, or preserving materials, using SF 368 Quality Deficiency Report (see TM 38-750).

Section II. TROUBLESHOOTING PROCEDURES

3-4. General.

a. This table lists the common malfunctions which you may find during the operation or maintenance of the M151 series vehicle or its components. You should perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction cannot be corrected, notify your supervisor/organizational maintenance personnel.

NOTE

Before you use this table, be sure you have performed all applicable operating checks.

Table 3-1. Troubleshooting

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

ENGINE

1. Engine cranks, but will not start.

Step 1. Ignition switch is in "OFF" position.

Turn ignition switch to "ON" position.

Step 2. Fuel tank empty.

Fill fuel tank.

Step 3. Combustion chamber flooded with fuel.

Push choke all the way in, open throttle, crank engine (not to exceed 10 seconds) to expel excessive fuel.

Step 4. Other causes.

Notify organizational maintenance.

2. Engine starts but does not continue to run.

Step 1. Fuel level low.

Check fuel level and fill if necessary.

Step 2. Other causes.

Notify organizational maintenance.

3. Engine Overheating.

Step 1. Coolant level low.

a. Check coolant level in radiator and fill to slightly below bottom of filler neck, adding antifreeze solutions as necessary.

b. Check for hose and radiator leaks.

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Table 3-1. Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Step 2. Pressure cap missing or not sealing.

Obtain serviceable cap.

Step 3. Radiator obstructed with brush, leaves, or brush guard.

Clean radiator or remove brush guard.

Step 4. Other causes.

Notify organizational maintenance.

4. Lack of power.

Step 1. Choke not fully open.

Push choke control rod all the way in.

Step 2. Parking brake applied.

Release parking brake.

Step 3. Other causes.

Notify organizational maintenance.

5. Excessive oil consumption.

Step 1. Crankcase overfilled.

Maintain oil at correct level.

Step 2. External leaks.

Notify organizational maintenance.

Step 3. Other causes.

Notify organizational maintenance.

Table 3-1. Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

6. Spark knock or ping. (A sharp metallic knock occuring on acceleration or when operating under heavy load.)

Step 1. Engine overheating.

Refer to malfunction 3.

Step 2. Other causes.

Notify organizational maintenance.

7. Excessive fuel consumption.

Step 1. Leaks.

Inspect fuel system for leaks. Notify organizational maintenance.

Step 2. Choke pulled out.

Push choke control in.

Step 3. Improper driving techniques.

Follow driving instructions FM 21-305.

Step 4. Other causes.

Notify organizational maintenance.

8. Starter will not crank engine.

Step 1. Check battery indicator.

If reading is in yellow or red, notify organizational maintenance.

Step 2. Loose or corroded battery cable connections.

Notify organizational maintenance.

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Table 3-1. Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Step 3. Examine cables for unsatisfactory connections.

Notify organizational maintenance.

Step 4. Other causes.

Notify organizational maintenance.

9. Fuel gage inoperative or operating abnormally.

Step 1. Fuel tank empty.

Fill fuel tank and observe gage.

Step 2. If gage is still inoperative, notify organizational maintenance.

10. Oil pressure gage inoperative or operating abnormally.

Step 1. Engine oil supply low.

Fill crankcase to proper level with grade of oil specified in LO 9-2320-218-12. (Refer to page 2-1 for proper gage readings.)

Step 2. Other causes.

Notify organizational maintenance.

HORN AND PANEL LIGHTS

11. Horn operates continually.

Pull connector apart at horn (right hand rear side of engine compartment). Notify organizational maintenance.

12. Instrument panel lights inoperative.

Step 1. Light switch in incorrect selector position.

Place light switch Auxiliary Lever in proper position.

Step 2. Other causes.

Notify organizational maintenance.

Table 3-1. Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

POWER TRAIN AND STEERING

13. Hard shifting of transmission and front wheel drive transfer.

All causes.

Notify organizational maintenance.

14. Transmission or transfer noisy.

All causes.

Notify organizational maintenance.

15. Lubrication leaks from front or rear differential.

Step 1. Loose drain plug.

Tighten drain plug.

Step 2. Other causes.

Notify organizational maintenance.

16. Abnormal tire wear.

Step 1. Incorrect tire pressure.

Inflate to correct pressure. (See table 1-6.)

Step 2. Use of front wheel drive on hard surfaced road.

Use front wheel drive only when maximum traction is needed.

Step 3. Loose wheel nuts.

Tighten wheel nuts securely. Report to organizational maintenance as soon as possible for purpose of having the wheel nuts properly torqued.

Step 4. Poor driving practice.

Refer to FM 21-305.

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Table 3-1. Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Step 5. Other causes.

Notify organizational maintenance.

17. Wheel wobbles.

Step 1. Loose wheel nuts.

Tighten wheel nuts securely. Report to organizational maintenance as soon as possible for purpose of having the wheel nuts properly torqued.

Step 2. Other causes.

Notify organizational maintenance.

18. Hard steering.

Step 1. Tire pressure low.

Inflate tires to correct pressure. (See table 1-6.)

Step 2. Other causes.

Notify organizational maintenance.

19. Looseness in steering.

Step 1. Incorrect tire pressure.

Inflate tires to correct pressure. (See table 1-6.)

Step 2. Loose wheel nuts.

Tighten wheel nuts securely. Report to organizational maintenance as soon as possible for purpose of having the wheel nuts properly torqued.

Step 3. Other causes.

Notify organizational maintenance.

Table 3-1. Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

ACCESSORIES

20. Windshield wipers inoperative.

Place switch in "ON" position.

If still inoperative, notify organizational maintenance.

21. Windshield washers inoperative.

Step 1. Check reservoir.

Fill as required.

Step 2. Check for loose, broken, or restricted tubing.

Notify organizational maintenance.

HOT WATER HEATER -25°F (-32°C)

22. Cool or cold air at outlets.

Step 1. Engine not fully warmed up.

Wait until engine warms up.

CAUTION

Do not use tools or apply excessive force on shutoff cocks.

Step 2. Shutoff cocks closed.

Open shutoff cocks.

Step 3. Extreme cold weather.

Install brushguard cover.

Step 4. Other causes.

Notify organizational maintenance.

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Table 3-1. Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

WINTERIZATION KIT -65°F (-54°C)

23. No air output.

Step 1. Control box circuit breaker open (older models).

Reset circuit breaker.

Step 2. Other causes.

Notify organizational maintenance.

24. No heat output.

Step 1. Fuel tank empty.

Fill tank as required.

Step 2. Fuel tank filler cap valve closed (non-emission vehicles).

Open valve.

Step 3. Other causes.

Notify organizational maintenance.

25. Indicator light inoperative.

Defective lamp.

Use press-to-test feature. If defective, notify organizational maintenance.

26. Inadequate windshield defrosting.

Step 1. Diverter damper doors closed.

Open damper doors.

Step 2. Hose not connected to nozzle.

Position hose on nozzle and clamp securely.

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Table 3-1. Troubleshooting (Cont'd)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Step 3. Other causes.

Notify organizational maintenance.

27. Excessive smoke from heater exhaust.

Step 1. Restricted screen on air intake.

Clean intake air screen.

Step 2. Other causes.

Notify organizational maintenance.

100/180 AMP. CHARGING SYSTEM

28. Battery not being charged, indicated by battery-generator indicator.

Step 1. Current draw of special electrical equipment exceeds charging rate.

Increase engine speed to increase charging rates.

Step 2. Other causes.

Notify organizational maintenance.

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Section III. MAINTENANCE PROCEDURES

3-5. General. This section contains instructions covering maintenance procedures and functions which the operator can perform.

3-6. Wheel and Tire Replacement.

WARNING

Use care in replacing tires to avoid personnel injury.

a. Removing Wheel and Tire Assembly.

(1) Position vehicle on level ground and stop engine.

CAUTION

Always apply handbrake and chock at least one vehicle wheel before removing wheel. Whenever possible, avoid removing wheel when vehicle is on sloping terrain.

(2) Place gearshift in N (neutral) and set handbrake.

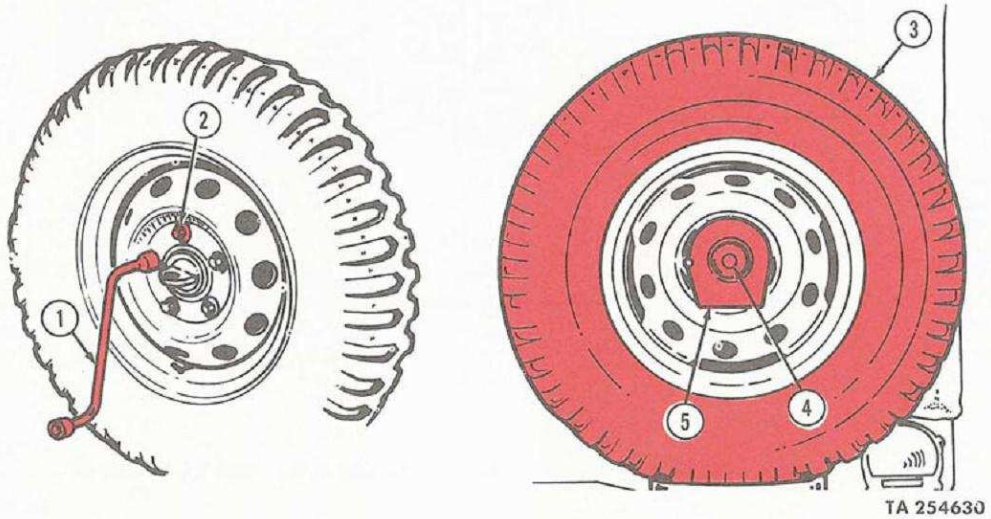
(3) Obtain jack, jack handle, and wheel nut wrench (1) from tool compartment.

NOTE

All wheel nuts have right hand threads.

(4) Loosen wheel nuts (2) with wheel nut wrench (1) but do not remove.

(5) Remove spare tire (3) from vehicle. Remove nut (4) and plate (5) and remove wheel and tire assembly from vehicle.



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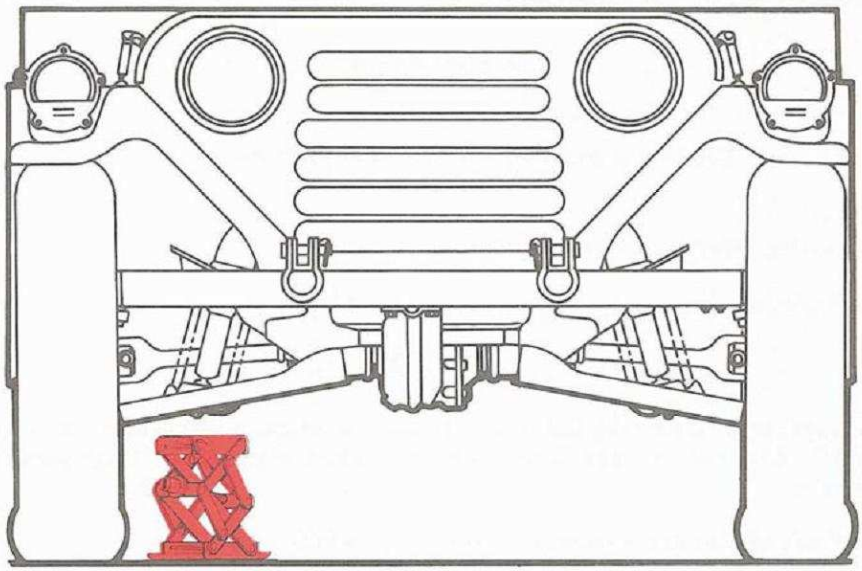
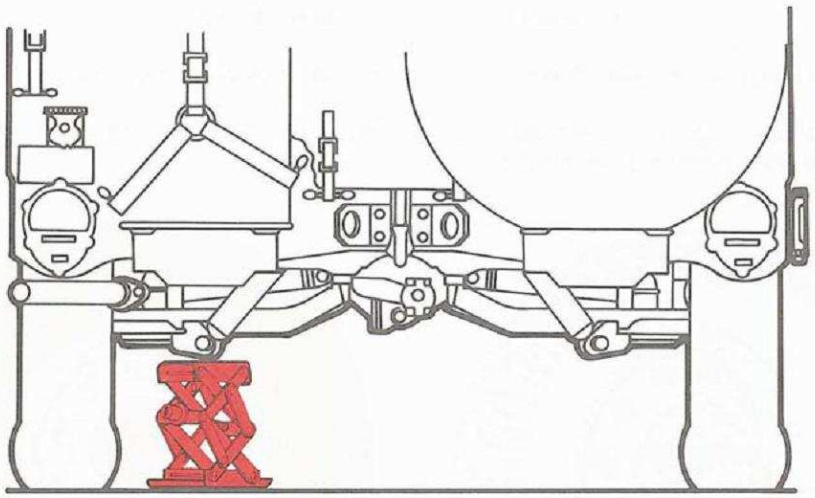
(6) Position jack under vehicle as shown.





(7) Raise wheel off ground, remove wheel nuts and wheel and tire assembly.

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b. Installing Wheel and Tire Assembly.

(1) Position spare wheel and tire assembly on brakedrum and tighten wheel nuts finger tight.

(2) Lower wheel to ground, tighten wheel nuts securely.

NOTE

Report to organizational maintenance as soon as possible for purpose of having the wheel nuts properly torqued.

(3) Stow defective tire, jack, and wrench.

(4) Notify organizational maintenance for repair of defective tire.

3-7. Windshield Washer.

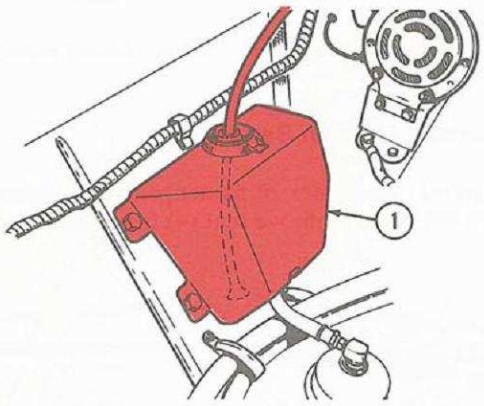
a. Electrical windshield wipers with a manually-operated washer system are on all M151A2, M825, and M718A1 vehicles.

b. Check fluid level in washer reservoir (1) at frequent intervals, especially under adverse weather conditions when the washer will be used more.

c. If fluid is required, water can be added when temperatures are +40° F (+4° C) and above.

NOTE

Reservoir capacity is 3 quarts (2.8 liters).



d. When temperature dips below +40°F (+4°C) cleaning compound (item 30, appendix D) mixed with water in the following proportions should be used.

Temperature range	Cleaning compound	to	Water
+40° F (+4° C)	1	to	2
0° F to -40° F (-18° C to -40° C)	1	to	1
-30° F to -65° F (-34° C to -54° C)	2	to	1

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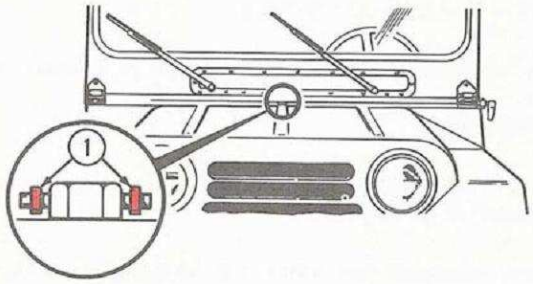
NOTE

The methanol type cleaning compound may get slushy at temperatures below -40°F (-40°C), but will not freeze.

e. If washer system does not work, check strainer attached to end of supply hose inside washer reservoir. If strainer is dirty and/or clogged, clean it out.

f. If washer system still doesn't work, check washer nozzles (1) to see if they are blocked. If nozzles are blocked with dirt and debris, use a fine wire to remove blockage.



3-8. Plastic Window Cleaning.

a. Clean the window of dirt and other particles using soap and water and a soft, clean cloth.

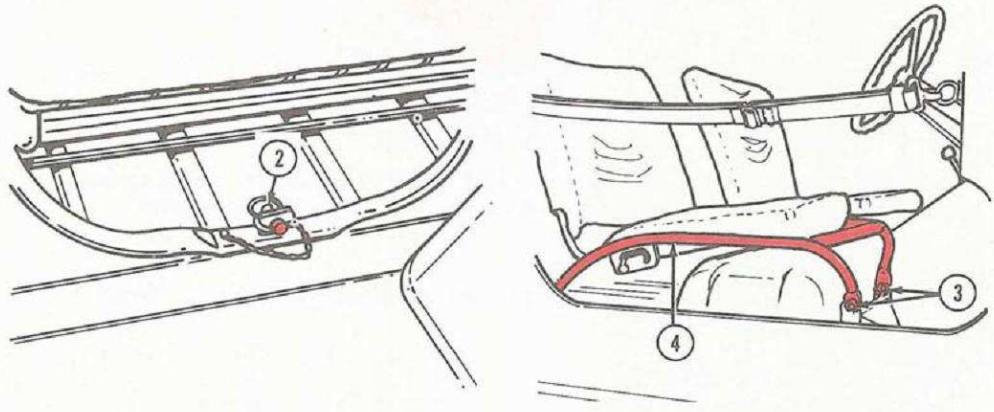
b. Rinse with clean water.

c. Apply cream cleaner (NSN 8520-00-262-7177) to plastic window.

d. Wipe cream cleaner off with dry cloth. Cream cleaner enhances visual clarity after cleaning with soap and water.

3-9. Checking Electrolyte Level in Batteries.

a. Remove locking pin (2) from back of passengers' seat. Remove two retaining pins (3) from front of passengers' seat. Remove seat (4) from vehicle.



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WARNING

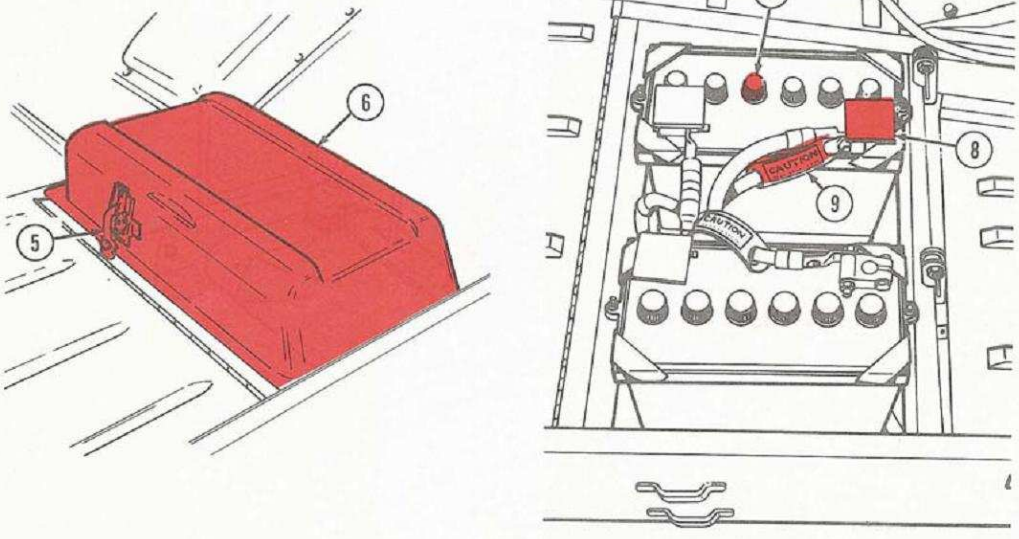
In all parts of this operation, use extreme care to prevent battery compartment cover or tools from touching any electrical connection point and any metal part of the vehicle at the same time. Exercise special care when working near the batteries. Each battery is rated at 12 volts and can cause painful injuries when short circuited. Do not use open flame near batteries.

b. Unhook two latches (5) securing battery compartment cover (6) and remove cover.

c. Unscrew and remove the six filler caps (7) (each battery) and inspect the electrolyte level. If electrolyte level is low, notify organizational maintenance. Make sure the vent-filler caps are clean.

NOTE

- Check battery cables for terminal covers (8) and cable identifying tags (9). If missing, notify organizational maintenance for installation of parts.
- Battery cables must be connected as shown in illustration below. If cables are not properly connected, notify organizational maintenance.



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3-10. Parking Brake Handle Adjustment.

CAUTION

Never turn adjusting knob (2) to eliminate noise caused by vibration of parking brake linkage. Improper adjustment will result.

a. Chock wheels and disengage parking brake.

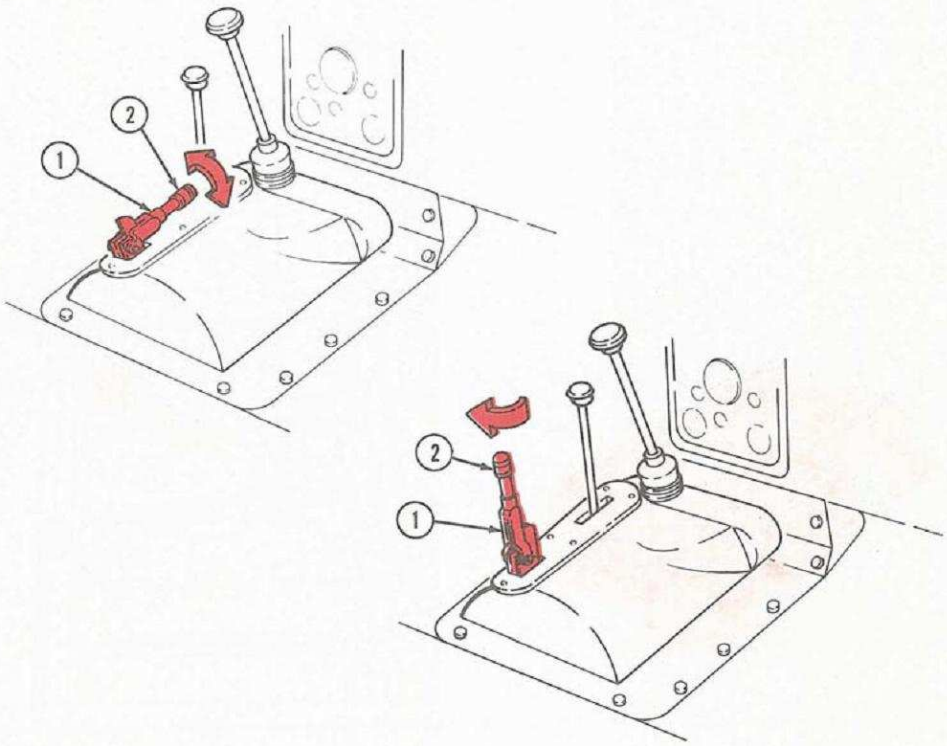
b. Turn adjusting knob (2) on parking brake handle (1) counterclockwise to remove tension.

c. Pull up on parking brake handle (1) to engage.

d. Turn adjusting knob (2) clockwise as tight as possible by hand.

e. Disengage parking brake and turn adjusting knob (2) clockwise two additional turns.

f. Test parking brake ability to hold vehicle by performing stall test (see table 2-1).



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APPENDIX A

REFERENCES

A-1. Scope. This appendix lists all forms, field manuals, and technical manuals for use with this vehicle.

A-2. Forms.

Recommended Changes to Publications ..... DA Form 2028 or DA Form 2028-2
Equipment Inspection and Maintenance Worksheet ..... DA Form 2404
Equipment Daily or Monthly Log ..... DA Form 2408-1
Weapon Record Book ..... DA Form 2408-4
Accident-Identification Card ..... DD Form 518
Quality Deficiency Report ..... SF 368

A-3. Field Manuals.

Operation and Maintenance of Ordnance Materiel in
Extreme Cold Weather (0° to -65° F) ..... FM 9-207
Chemical, Biological, and Radiological (CBR) and Nuclear Defense ..... FM 21-40
Basic Cold Weather Manual ..... FM 31-70
Northern Operations ..... FM 31-71
Manual for the Wheeled Vehicle Driver ..... FM 21-305

A-4. Technical Manuals.

Operator's and Organizational Maintenance Manual:
Decontaminating Apparatus, Portable, DS2, 1½ quart,
ABC-M11 ..... TM 3-4230-204-12 & P
Operation and Maintenance of Ordnance Materiel in
Deep Water Fording of Ordnance Materiel ..... TM 9-238
Operator, Organizational, Direct and
GS Maintenance Manual, 1/4 Ton 2-Wheel Trailer ..... TM 9-2330-251-14
Operator's and Organizational Maintenance Manual:
Rifle Recoilless, 106MM ..... TM 9-1000-205-12
Operation and Organizational, DS and GS Maintenance:
Lead-Acid Storage Batteries ..... TM 9-6140-200-14
The Army Maintenance Management System (TAMMS) ..... TM 38-750
Operator's and Organizational Maintenance Manual:
Radio Set and Antenna ..... TM 11-5820-401-12

A-5. Technical Bulletins.

Security of Tactical Wheeled Vehicles ..... TB 9-2300-422-20
Use of Antifreeze Solutions, and Cleaning Compounds
in Engine Cooling Systems ..... TB 750-651

A-6. Miscellaneous Publications.

Lubrication Order ..... LO 9-2320-218-12

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APPENDIX B
COMPONENTS OF END ITEM LIST

Section I. INTRODUCTION

B-1. Scope. This appendix lists integral components of and basic issue items for the M151 series vehicles to help you inventory items required for safe and efficient operation.

B-2. General. The Components of the End Item List are specified in Section II.

Section II. BASIC ISSUE ITEMS

These are the minimum essential items required to place the M151 series vehicles in operation, to operate it, and to perform emergency repairs. Although shipped separately packed, they must accompany the M151 series vehicle during operation and whenever it is transferred between accountable officers. The illustrations will assist you with hard-to-identify items. This manual is your authority to requisition replacement BII, based on TOE/MTOE authorization of the end item.

B-3. Explanation of Columns.

a. Item Number. The number used to identify item called out in the illustration.

b. National Stock Number. Indicates the NSN assigned to the item and which will be used for requisitioning.

c. Part Number. Indicates the primary number used by the manufacturer, which controls the design and characteristic of the item by means of its engineering drawings, specifications, standards and inspection requirements to identify an item or range of items.

d. Description. Indicates the Federal item name and, if required, a minimum description to identify the item.

e. Usable on Code. Usable on codes are included to help you identify which component items are used on the different models. These codes can be found at the end of the description of an item and are in parentheses to help identify them. If there is no usable on code shown, the item is used on all vehicles. The following codes are used in this list:

Code	Usable On
A	M151, M151A1, M151A1C, and M718
B	M151A2, M718A1, and M825
C	M718 and M718A1
D	M718A1
E	M151A2
F	M151, M151A1, M151A2, M718, and M718A1
G	M151A1C and M825
H	M151, M151A1, M718 and M718A1
I	M151, M151A1 and M151A1C
J	M151 and M151A1
K	M151A1C
L	M151A2, M718, M718A1 and M825
M	M151A1C, M825, M718, and M718A1
N	M151, M151A1 and M151A2
O	M151A1C and M718
P	M151
Q	M151A1
R	M825
S	M718
T	M151, M151A1, M151A2, M151A1C and M825

f. Quantity Required (Qty Req'd). This column lists the quantity of each item required for a complete major item.

g. Quantity. This column is left blank for use during inventory. Under the Rcv'd column, list the quantity you actually receive on your major item. The Date columns are for your use when you inventory the major item at a later date; such as for shipment to another site.

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Section II. BASIC ISSUE ITEMS LIST

ITEM	NATIONAL STOCK NUMBER	PART NO.	DESCRIPTION	QTY REQ'D	QUANTITY RCV'D	QUANTITY DATE	QUANTITY DATE	QUANTITY DATE
1	5120-00-176-3460	11640496	Jack, Scissors, Hand	1				
2	5120-00-176-3459	11640495	Handle, Jack, Used/W Jack, NSN 5120-00-176-3460, 11640496	1				
3	5120-00-176-3439	11644846	Wrench, Socket, Wheel Nut	1				
4	5120-00-223-7397	GGG-P-471	Pliers, Slip Joint	1				
5	5120-00-222-8852	MS15219-1	Screwdriver, Flat Tip, Common	1				
6	5120-00-240-5328	GGG-W-631	Wrench, Adjustable	1				
7	5120-00-220-5167	11630419	Wrench, Drain and Fill Plug	1				
8	5140-00-772-4142	MIL-B-43648-4	Bag, Cotton Duck: 10"x20" W/Flap	1				
9	5140-00-473-6256	MIL-B-43663	Bag, Tool, Cotton Duck: 6"x19", W/Zipper (R)	2				

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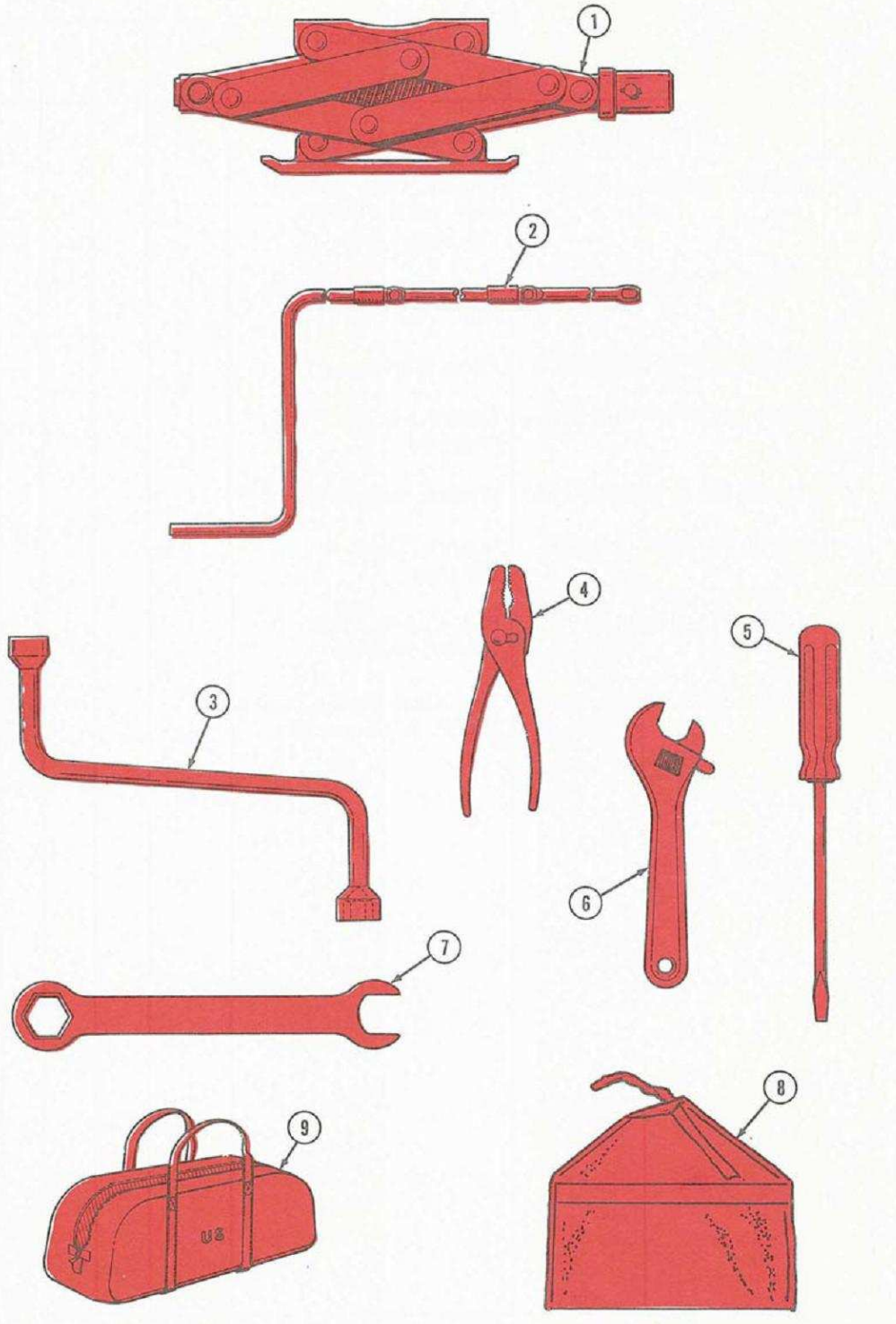

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APPENDIX C

ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

C-1. Scope. This appendix lists additional items you are authorized for the support of the M151 series vehicles.

C-2. General. This list identifies items that do not have to accompany the vehicle and that do not have to be turned in with it. These items are authorized to you by CTA, MTOE, TDA, or JTA.

C-3. Explanation of Listing. National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. If item required differs for different models of this equipment, the model is shown under the "Usable On" heading the description column. These codes are identified as:

Code	Usable On
A	M151, M151A1, M151A1C, and M718
B	M151A2, M718A1, and M825
C	M718 and M718A1
D	M718A1
E	M151A2
F	M151, M151A1, M151A2, M718, and M718A1
G	M151A1C and M825
H	M151, M151A1, M718 and M718A1
I	M151, M151A1 and M151A1C
J	M151 and M151A1
K	M151A1C
L	M151A2, M718, M718A1 and M825
M	M151A1C, M825, M718, and M718A1
N	M151, M151A1 and M151A2
O	M151A1C and M718
P	M151
Q	M151A1
R	M825
S	M718
T	M151, M151A1, M151A2, M151A1C and M825

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Section II. ADDITIONAL AUTHORIZATION LIST

NATIONAL STOCK NUMBER	DESCRIPTION / PART NO. & FSCM	USABLE ON CODE	U/M	QTY. AUTH.
5110-00-293-2336	Axe, Single Bit	All	EA	1
7240-00-222-3088	Can, Gasoline: 5-Gallon	All	EA	1
4210-00-889-2221	Extinguisher, Fire, W/Bracket, MIL-E-52031B	All	EA	1
4210-00-708-0031	Replacement Cylinder, Fire Extinguisher	All	EA	1
4230-00-720-1618	Decontaminating Apparatus: Portable, DS-2, 1½ Qt., ABC-M11, D5-51-269	All	EA	1
2510-01-050-9770	Support, Bracket: Decontaminating Apparatus, 11644841	All	EA	1
5305-00-068-0505	Screw, Cap, Hexagon Head: ¼-28 UNF-2A x ⅝ In. Long, To Attach Decontaminating Apparatus and Support, MS90726-5 (96906)	All	EA	7
5310-00-809-4058	Washer, Flat: For ¼ Screw Size; To Attach Decontaminating Apparatus and Support, MS27183-10 (96906)	All	EA	7
5310-00-877-5796	Nut, Self-Locking, ¼-28 UNF, To Attach Decontaminating Apparatus and Support, MS21044N4 (96906)	All	EA	7
6530-00-783-7905	Litter, Folding, Ridged Pole	C	EA	3
6545-00-952-6975	Splint Set, W/Carrying Bag, 10"x10"x32"	C	EA	1
7240-00-177-6154	Spout, Gasoline Can	All	EA	1
5305-00-988-1724	Screw, ¼ - 20 x ⅝: Fire Extinguisher Bracket Mounting, MS35223-80, MS35206-280 (96906)	All	EA	4

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Section II. ADDITIONAL AUTHORIZATION LIST (Cont'd)

NATIONAL STOCK NUMBER	DESCRIPTION / PART NO. & FSCM	USABLE ON CODE	U/M	QTY. AUTH.
5310-00-209-0786	Washer, Lock, External Tooth: Fire Extinguisher Bracket Attaching, MS35335-33 (96906)	All	EA	4
5310-00-483-8792	Nut, Self-Locking, ¼ x 20 UNC: Fire Extinguisher Bracket Attaching, MS17829-4C (96906)	All	EA	4
5120-00-293-3336	Shovel, Hand: Round Point, D-Handle	All	EA	1
2540-00-177-7235	Tire Chains	All	EA	4
2540-00-933-6960	Cross Chain, Tire Chain Repair	All	EA	25
2540-00-937-0405	Swivel Hook, Tire Chain Repair	All	EA	2
9950-00-148-9546	Warning Device, Highway	*	EA	1
	*Use only where required by local laws.			

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APPENDIX D
EXPENDABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. Scope. This appendix lists expendable supplies and materials you will need to operate and maintain M151 series vehicles.

D-2. Explanation of Columns.

a. Item Number. This number is assigned to each entry in the listing.

b. Level. This column identifies the lowest level of maintenance that requires the listed item.

C — Operator/Crew.

c. National Stock Number. This is the national stock number assigned an item. Use this number to request or requisition that item.

d. Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item listing indicates the part number and the Federal Supply Code for Manufacturer (FSCM) in parenthsis, if applicable. For FSCM codes and abbreviations used, refer to Appendix B on preceding page, as required.

e. Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by an abbreviation (such as EA (each), PT (pint), GAL (gallon)). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

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Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST

ITEM NUMBER	LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
			Antifreeze: Permanent Ethylene Glycol, -65°F (-54°C) Inhibited (O-A-548, Type 1)	
1	C	6850-00-243-1992	1 Gal Container	Gal
2	C	6850-00-224-8730	5 Gal Container	Gal
3	C	6850-00-243-1990	55 Gal Drum	Gal
			Antifreeze: Permanent Type; Arctic Grade, -90°F (-68°C) (0-1-490) (MIL-C-11755)	
4	C	6850-00-174-1806	55 Gal Drum	Gal
			Fluid, Hydraulic, Silicon, Non-Petroleum Base, Automotive (HB) (MIL-B-46176)	
5	C	9150-01-102-9455	1 Gal Container	Gal
			GAA, Grease, Automotive and Artillery (MIL-G-10924)	
6	C	9150-00-065-0029	2¼ Oz. Tube	Oz
7	C	9150-00-935-1017	14 Oz. Cartridge	Oz
8	C	9150-00-190-0904	1 Lb. Can	Lb
9	C	9150-00-190-0905	5 Lb Can	Lb
10	C	9150-00-231-6689	PL-S Lubricating Oil General Purpose Preservative (Water Displacing, Low Temp) (VV-L-800A)	Qt
			Lubricating Oil, Gear Multipurpose, GO 80/90 (MIL-L-2105)	

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Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST (Cont'd)

ITEM NUMBER	LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
11	C	9150-00-754-2635	1 Qt Can	Qt
12	C	9150-00-577-5844	5 Gal Can	Gal
13	C	9150-00-577-5845	55 Gal Drum	Gal
			Lubricating Oil, Gear Multipurpose, GO85/140 (MIL-L-2105C)	
14	C	9150-01-048-4591	1 Qt Can	Qt
15	C	9150-01-035-5395	5 Gal Can	Gal
16	C	9150-01-035-5396	55 Gal Drum	Gal
			Oil, Lubricating, OE/HDO 10 (MIL-L-2104)	
17	C	9150-00-265-9425	1 Qt Can	Qt
18	C	9150-00-265-9428	5 Gal Container	Gal
19	C	9150-00-265-9429	55 Gal Drum	Gal
20	C	9150-00-753-4763	Bulk	Gal
			Oil, Lubricating, OE/HDO30 (MIL-L-2104)	
21	C	9150-00-265-9433	Qt Can	Qt
22	C	9150-00-265-9434	5 Gal Container	Gal
23	C	9150-00-265-9436	55 Gal Drum	Gal
24	C	9150-00-753-4764	Bulk	Gal
			Oil, Lubricating, OEA (MIL-L-46167)	
25	C	9150-00-402-2372	5 Gal Drum	Gal

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Section II. EXPENDABLE SUPPLIES AND MATERIALS LIST (Cont'd)

ITEM NUMBER	LEVEL	NATIONAL STOCK NUMBER	DESCRIPTION	U/M
26	C	9150-00-491-7197	55 Gal Drum Gasoline, Fuel 91 Minimum Research Octane (MIL-G-3056)	Gal
27	C	9130-00-160-1818	Type I Regular	Gal
28	C	9130-00-160-1830	Type II Arctic	Gal
29	C	9130-00-264-4538	Premium Grade	Gal
30	C	6850-00-926-2275	Cleaning Compound (Windshield Washer) Dry Cleaning Solvent SD-2 Federal Specification P-D-680, Type II	Pint
31	C	6850-00-110-4498	1 Pt Container	Pt
32	C	6850-00-274-5421	5 Gal Container	Gal
33	C	6850-00-285-8011	55 Gal Drum	Gal
34	C	6850-00-637-6135	Bulk	Gal

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INDEX (Cont'd)

TA 254651

BY ORDER OF THE SECRETARY OF THE ARMY:

E. C. MEYER
General, United States Army
Chief of Staff

OFFICIAL:
ROBERT M. JOYCE
Major *General, United States Army*
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-38 Operator Maintenance requirements for Truck, 1/4 Ton, 4X4, M151 Series Vehicles.

U.S. GOVERNMENT PRINTING OFFICE : 1983 O - 415-913

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TM 9-2320-218-10	date of TM	OPERATOR'S MANUAL

BE EXACT . . PIN-POINT WHERE IT IS				IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.	
2-10			2-1	Item 2 Tires. Should show how to check tread depth.
2-28	a(3) line 3			Reads: accordance with intervals prescribed in TM9-2320-218-20. Should read: accordance with intervals prescribed in LO9-2320-218-12.
2-29	2-8a			Reads: Do not operate starter for more than 30 seconds at a time. Should read: Do not operate starter for more than 10 seconds at a time.
3-12				Figures show: Wrong jacking points. Should show: Picture of jack in proper position to raise and lower vehicles.

SAMPLE

TA 157115

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBERS: Type your name, rank, and phone

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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE
1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1,000 Millimeters = 39.37 Inches
1 Kilometer = 1,000 Meters = 0.621 Miles

WEIGHTS
1 Gram = 0.001 Kilograms = 1,000 Milligrams = 0.035 Ounces
1 Kilogram = 1,000 Grams = 2.2 Lb
1 Metric Ton = 1,000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE
1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1,000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE
1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

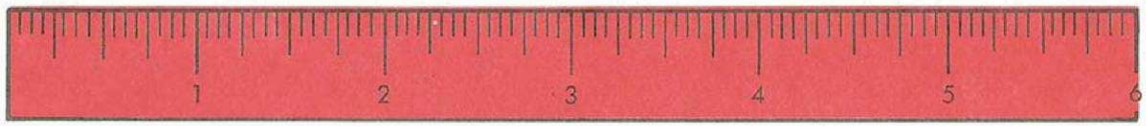
CUBIC MEASURE
1 Cu Centimeter = 1,000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

TEMPERATURE
5/9 (°F -32) = °C
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Cesius
32° Fahrenheit is equivalent to 0° Celsius
9/5 C° +32 = F°

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds Per Square Inch	Kilopascals	6.895
Miles Per Gallon	Kilometers Per Liter	0.425
Miles Per Hour	Kilometers Per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds Per Square Inch	0.145
Kilometers Per Liter	Miles Per Gallon	2.354
Kilometers Per Hour	Miles Per Hour	0.621



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