

For John Petre - From Fred Hackett

TM 9-2320-213-10

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR'S MANUAL

FOR

TRUCK, PLATFORM UTILITY:

1/2-TON, 4 x 4,
M274 (2320-049-4804)

AND

M274A1 (2320-064-6373)

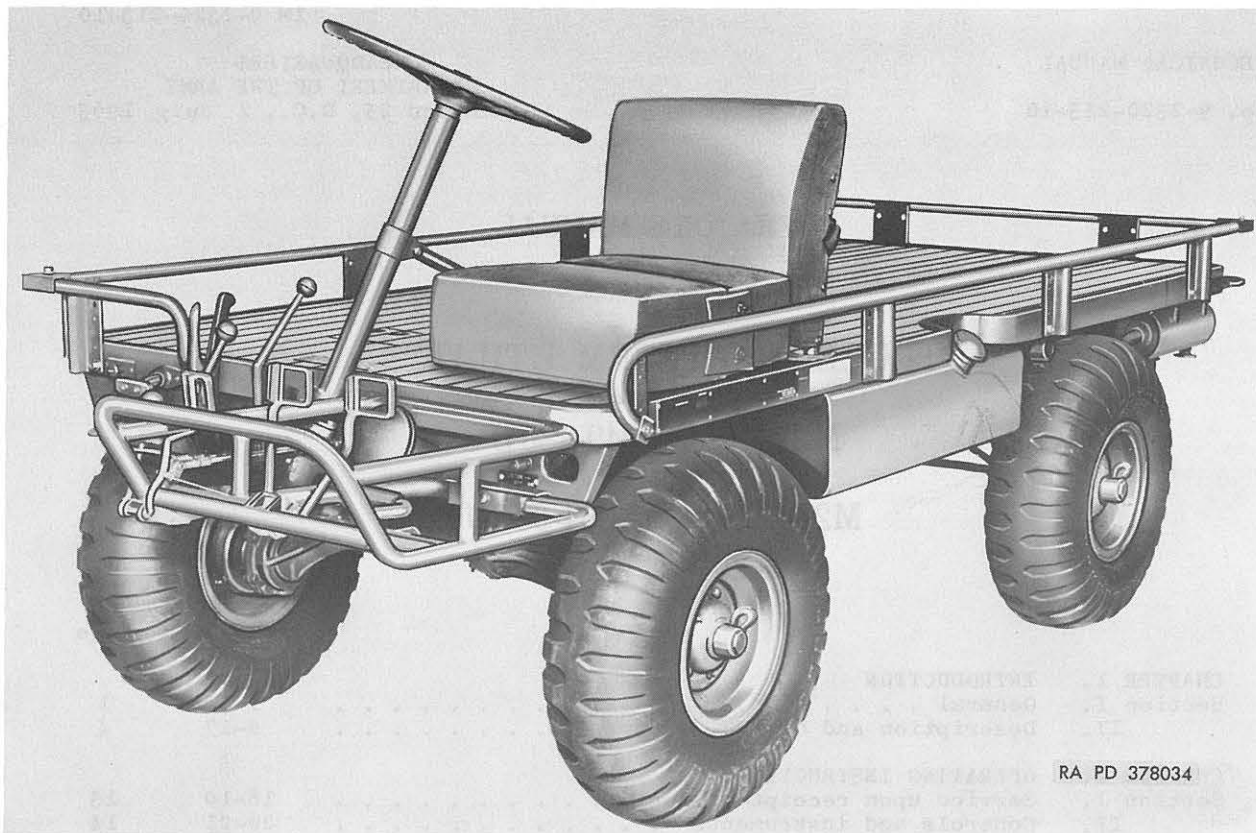
HEADQUARTERS, DEPARTMENT OF THE ARMY

JULY 1963

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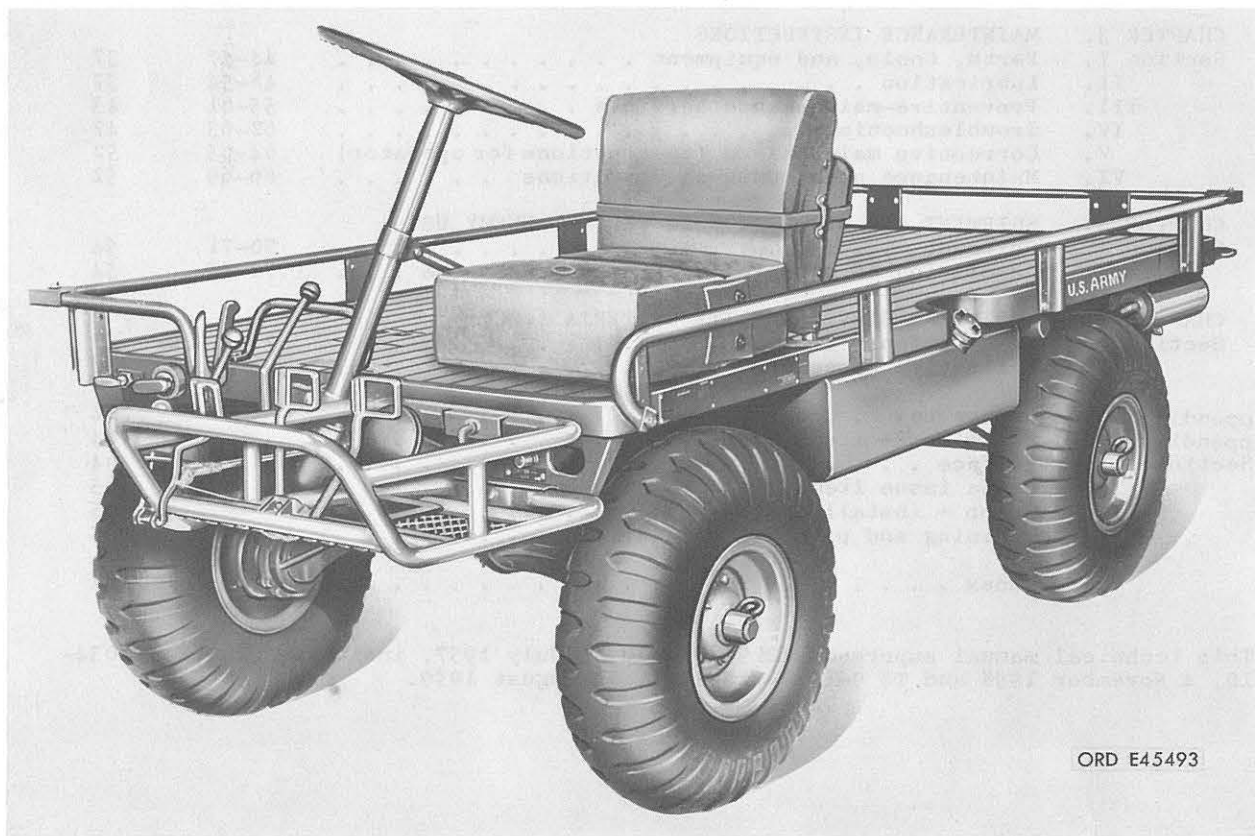
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*This technical manual supersedes TM 9-8034-10, 5 July 1957, including C1, TM 9-8034-10, 4 November 1958 and TB 9-2320-213-10/1, 26 August 1959.



RA PD 378034

Figure 1. 1/2-ton, 4 x 4 platform utility truck M274 - left front view.



ORD E45493

Figure 2. 1/2-ton, 4 x 4 platform utility truck M274A1 - left front view.

Section II. DESCRIPTION AND DATA

6. Overall Vehicle Description

a. The 1/2-ton, 4 x 4 platform utility truck M274 (figs. 1, 3, 5, and 7) and the M274A1 (figs. 2, 4, 6, and 8) are designed as infantry ammunitions, light cargo, personnel, and weapons carriers. These vehicles will operate over all types of roads, cross-country terrain, and in all types of weather. Both vehicles will ford up to 18 inches of water.

b. The M274 and M274A1 vehicles are basically the same in general appearance and are constructed mostly of aluminum making them light weight and suitable for air lift operations. Each vehicle is essentially a platform mounted on two axles and four wheels. Power is provided by a four-cylinder, air-cooled, horizontal-opposed gasoline engine. The engine is mounted under the platform at the rear of the vehicle. There is no spring suspension on either vehicle. Shock is absorbed by the four low-pressure tires. Both vehicles are equipped with four-wheel drive, two-speed gear transfer, and a three-speed forward and one reverse-speed transmission. A quick change mechanism allows for either two- or four-wheel steering to be used as desired.

c. A handrail is attached to the plat-

form and can be raised to accommodate payload or lowered for shipping or storage. The driver's seat and footrest may be detached and stowed beneath the platform when vehicle is disabled and being towed.

d. The M274 and M274A1 vehicles can be manually turned on either side or upside down for ease of maintenance, repair, or lubrication operations.

e. The steering wheel, column, and gear assembly on the M274 and M274A1 vehicles, can be moved forward and lowered so that the operator, following on foot, can drive from a standing or crouched position while operating vehicle in reverse.

7. Differences Between Models

a. General. Throughout this manual, where differences between vehicle models exist the models, as applicable, will be cited. When no models are cited it will be assumed that no difference exists between the models in the area and the instructions apply to both models of the vehicle.

b. Illustrations. The illustrations throughout this manual depict both the M274 and M274A1 vehicles and will be identified only when differences between ve-

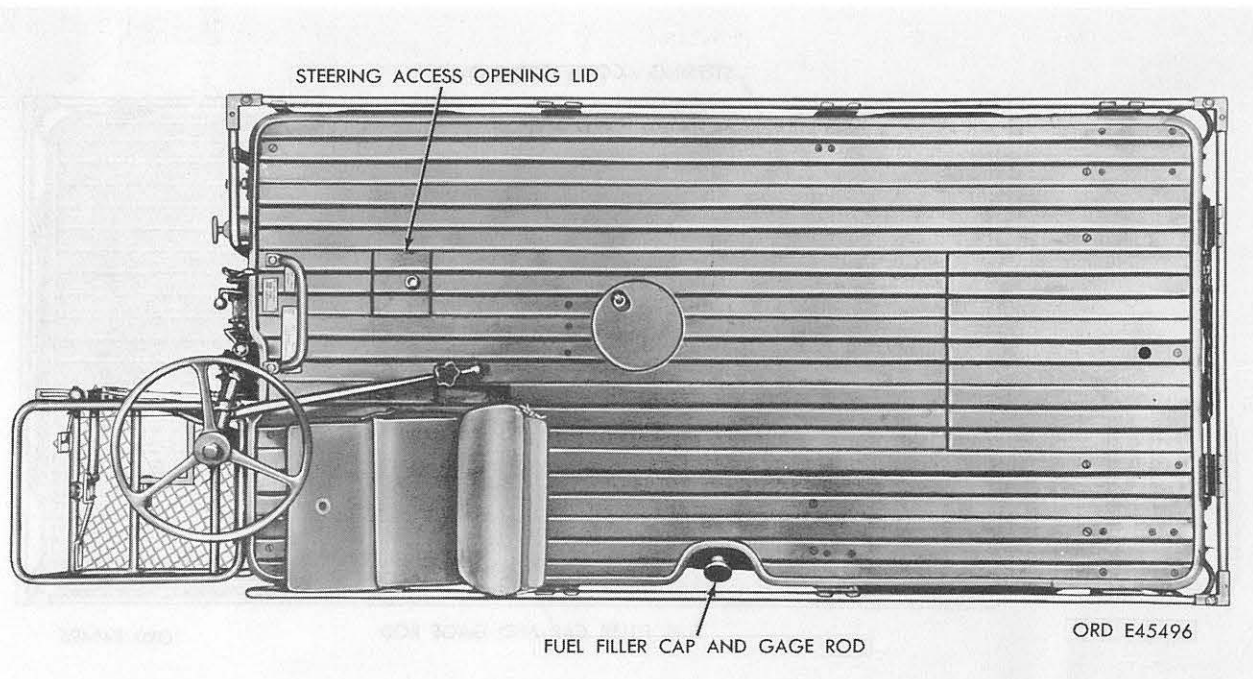


Figure 6. 1/2-ton, 4 x 4 platform utility truck M274A1 - top view.

hicles are pertinent to the instruction or procedure. Illustrations will also assist the using organization personnel in visually identifying the vehicle and its components.

c. Identification. The M274A1 vehicle (figs. 2, 4, 6, and 8) differs from the M274 vehicle (figs. 1, 3, 5, and 7) in the following areas ((1) through (14) below).

- (1) Transmission and transfer gear shift levers on the M274A1 vehicle are protected by a guard which prevents cargo from bumping shift levers during sudden stops or when declining steep grades. The M274 vehicle is not equipped with this guard.
- (2) Floor of heavy gage expanded screen welded underneath the driver's footrest on the M274A1 vehicle. The M274 vehicle does not have this screen.
- (3) The M274A1 vehicle driver's seat can be adjusted to two positions. Seat also has a publication stowage envelope. The M274 vehicle driver's seat has only one position and is not equipped with stowage envelope.

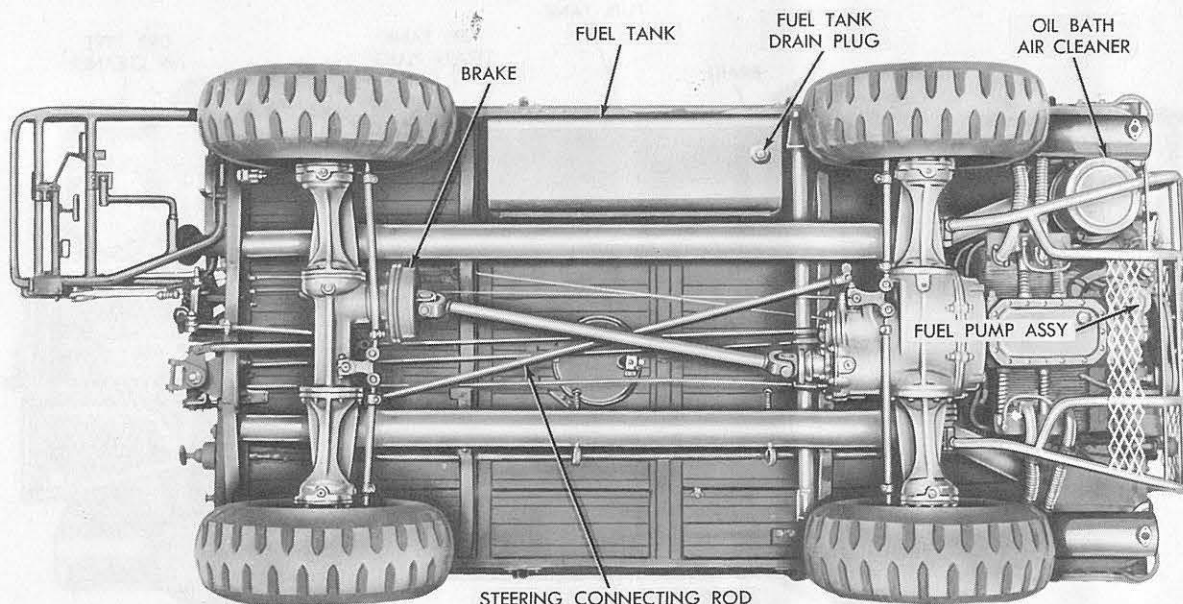
- (4) Emergency starting crank and wheel nut wrench for the M274A1 vehicle is stowed on the engine guard at the rear of the vehicle. The starting crank is stowed on the footrest of the M274 vehicle.

- (5) Fuel primer pump used on the M274A1 vehicle is mounted on the side of engine oil cooler. The M274 vehicle primer pump is located underneath the platform above the engine.

- (6) Fuel filter assembly is located near fuel pump assembly on the M274A1 vehicle. The M274 vehicle fuel filter is located in the same area except different fuel tubes are used.

- (7) The M274A1 vehicle blower is driven by two impeller drive belts. The blower on the M274 vehicle is driven by one impeller drive belt.

- (8) A diaphragm type carburetor is used on the M274A1 vehicle whereas on the M274 vehicle a float type is used.



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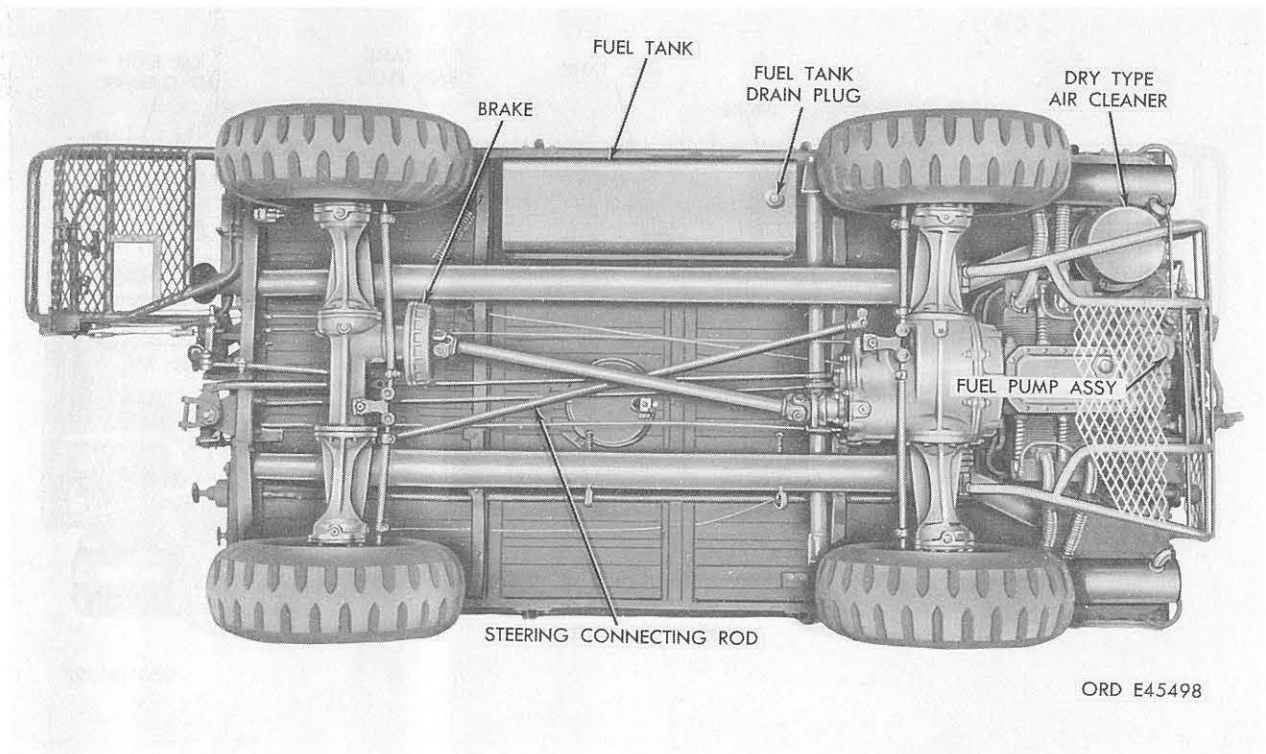
Figure 7. 1/2-ton, 4 x 4 platform utility truck M274 - bottom view.

- (9) A dry type air cleaner with replaceable element is used on the M274A1 vehicle. An oil bath type is used on the M274 vehicle.
- (10) The M274A1 vehicle has positive crankcase ventilation which is connected and vented through the exhaust system. The M274 vehicle crankcase breather system is vented through to the atmosphere.
- (11) A mechanical governor is used on the M274A1 vehicle whereas on the M274 vehicle a velocity type is used.
- (12) The carburetor, governor, and engine hour meter used on the M274A1 vehicle is enclosed by a protection well and cover. This enclosure prevents water and dirt from contacting these vital engine components. The M274 vehicle carburetor and governor are not protected from the elements.
- (13) The M274A1 brake has a larger lining area and uses two brake shoes. The M274 vehicle has a one band brake. Both brakes are mechanically operated.

- (14) Numerous other changes have been made on the engine, transmission, brakes, and other components that are not apparent externally. The foregoing changes are external differences which can be readily recognized by organizational and field maintenance personnel.

d. Component Part Nomenclature. Nomenclature of the M274 and M274A1 vehicle components listed in TM 9-2320-213-20P, TM 9-2320-213-34P, and TM 9-2805-211-35P will be identified in this manual by the basic noun or noun phrase. When two different components having the same noun are used, a suitable modifier will be added to differentiate between them. Some items having Federal nomenclature, which is not in accepted usage, will be changed for clarity and are listed below.

| Manual Nomenclature | Federal Nomenclature |
|---------------------|--|
| Brake pedal | Pedal and shaft assembly |
| Carburetor | Float carburetor assembly |
| Driver's seat | Seat back rest assembly and vehicular seat cushion, front half and rear half |



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Figure 8. 1/2-ton, 4 x 4 platform utility truck M274A1 - bottom view.

| | |
|---|---|
| Emergency starting crank and wheel nut wrench | Starting and wheel nut handcrank assem- bly |
| Engine hour meter | Hour totalizing me- ter |
| Fuel shutoff valve | Fuel line shutoff plug valve |
| Fuel tank drain plug | Pipe plug |
| Hand throttle | Hand throttle lever assembly |
| Headed shoulder pin | Steering gear arm lock pin |
| Oil level gage rod and cap | Liquid level rod gage |
| Spring pin | Steering gear hous- ing locating pin |

8. Engine

a. The engine for both the M274 vehicle (fig. 9) and M274A1 vehicle (fig. 10) are basically the same. The engine is a four-cylinder, air-cooled, horizontal-opposed, four-cycle, internal-combustion type with the valves in the cylinder heads. The engine is located at the rear of vehicle under the platform. The engine is rated at 17 horsepower.

b. The engine is lubricated by a force feed system. The lubrication system includes an oil filter with a replacement type element. An oil cooler is also provided.

c. The engine is cranked by a manual hand-pull type starter located in the flywheel housing between engine flywheel and rear end of engine.

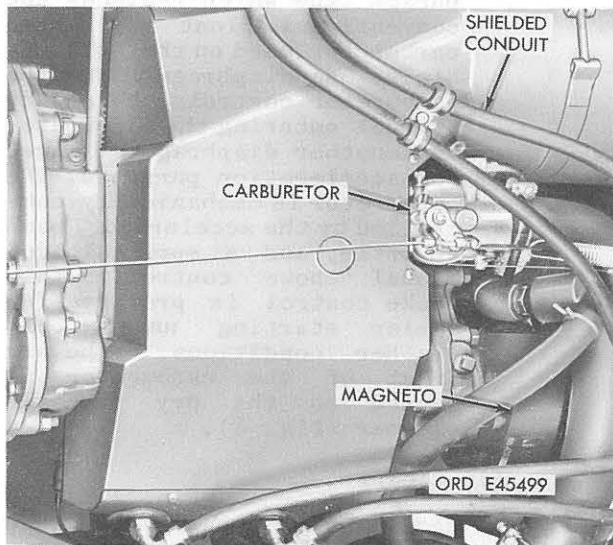


Figure 9. Top view of M274 engine with engine access cover removed.

9. Engine Cooling System

a. The engine is cooled by a belt driven blower assembly (fig. 11). The blower used on the M274A1 vehicle is driven by two impeller drive belts while on the M274 vehicle only one impeller drive belt is used.

b. The blower circulates air around the cylinders, cylinder heads, and oil cooler (fig. 11). The air is confined in the metal shroud and covers (figs. 9 and 10) keeping it in close contact with the cooling fins on cylinders and cylinder heads during circulation. Part of the circulated air is diverted to the oil cooler (fig. 11) to keep engine oil at desired operating temperatures.

10. Fuel System

a. General. The fuel system of the M274 and M274A1 vehicles is composed mainly of fuel tank, fuel pump assembly, carburetor, air cleaner, fuel filter assembly (fig. 11), and a fuel primer pump (fig. 11). The M274A1 vehicle is equipped with a carburetor fuel return tube.

b. Fuel Tank. The fuel tank (figs. 7 and 8) is located on the left side of vehicle and has a fuel capacity of 8 gallons. The fuel filler cap and gage rod (fig. 6) used on the M274A1 vehicle has a vent valve within the cap. This valve is to be closed only when vehicle is turned upside down for lubrication. At the bottom of fuel tank, a drain plug (figs. 7 and 8) is provided for draining the tank.

c. Fuel Pump. The fuel pump (figs.

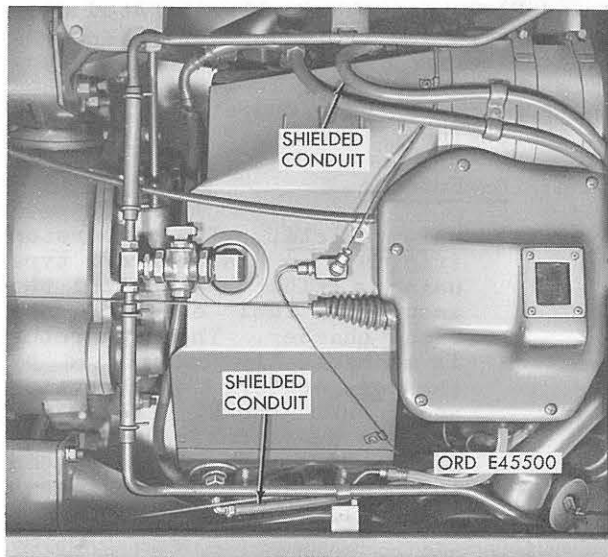


Figure 10. Top view of M274A1 engine with engine access cover removed.

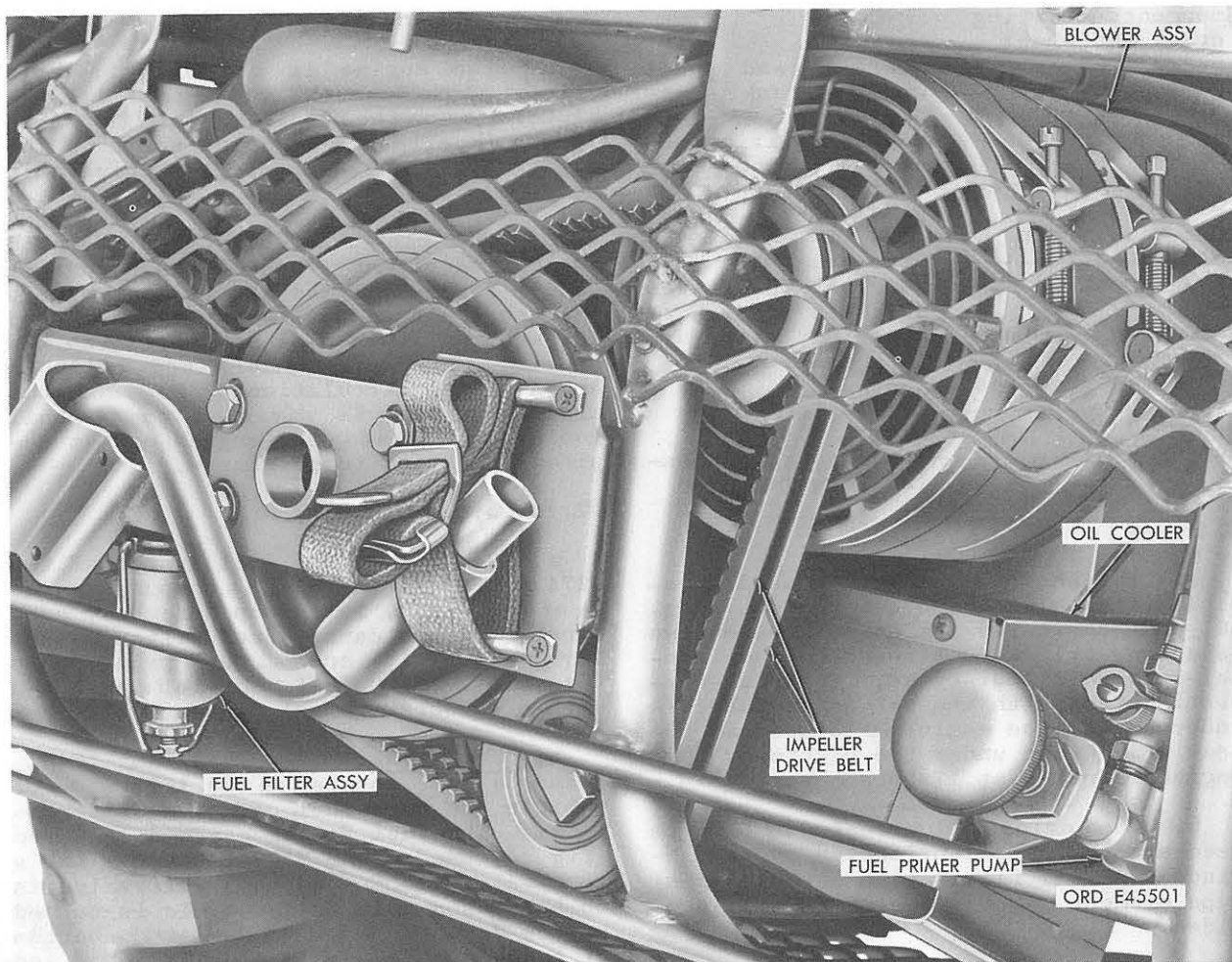


Figure 11. Blower, impeller drive belts, fuel filter assembly, and fuel primer pump locations - M274A1 vehicle.

7 and 8) is a mechanically operated diaphragm type and is located on left front side of engine. The purpose of the fuel pump is to draw fuel from the fuel tank and force it to the carburetor as required by the engine.

d. Carburetor.

- (1) M274 vehicle. The carburetor (fig. 9) is a side-draft type using a float to control the amount of fuel entering the float chamber. The carburetor is mechanically controlled by the accelerator, hand throttle, and manual choke. For water fording operations, the air inlet of the carburetor is vented to the oil bath type air cleaner (fig. 7).
- (2) M274A1 vehicle. The carburetor (fig. 12) is a side-draft dia-

phragm type which replaces the conventional float bowl type carburetor used on the M274 vehicle. One diaphragm within the carburetor controls the amount of fuel entering the carburetor and another diaphragm is used for acceleration purposes. The carburetor is mechanically controlled by the accelerator, hand throttle, and a spring-loaded manual choke control. This choke control is provided for easier starting under cold weather conditions. The air inlet of the carburetor is vented to the dry type air cleaner (fig. 8).

e. Air Cleaner.

- (1) M274 vehicle. The air cleaner (fig. 7) is an oil bath type located at the right rear corner

of vehicle under the platform. Purpose of the air cleaner is to filter the air entering the carburetor.

- (2) M274A1 vehicle. The air cleaner (fig. 8) is a dry type with a replaceable element. The air cleaner is located at the right rear corner of vehicle under the platform. Air entering the carburetor is filtered by this air cleaner.

f. Fuel Filter Assembly. Both M274 and M274A1 vehicles are equipped with a fuel filter assembly (fig. 11) located between the fuel tank and fuel pump. This filter serves as a final filter before fuel is pumped into the carburetor.

g. Fuel Primer Pump. Both M274 and M274A1 vehicles are equipped with a hand-operated fuel primer pump. The pump (fig. 11) used on the M274A1 vehicle is located at the lower right side of the engine and attached to the engine oil cooler. The pump used on the M274 vehicle is mounted underneath the platform above the engine. The purpose of the pump is to provide a means for priming the engine with fuel for cold weather starting. Fuel is drawn from the fuel tank (fig. 8) and forced into the intake manifold by the pump.

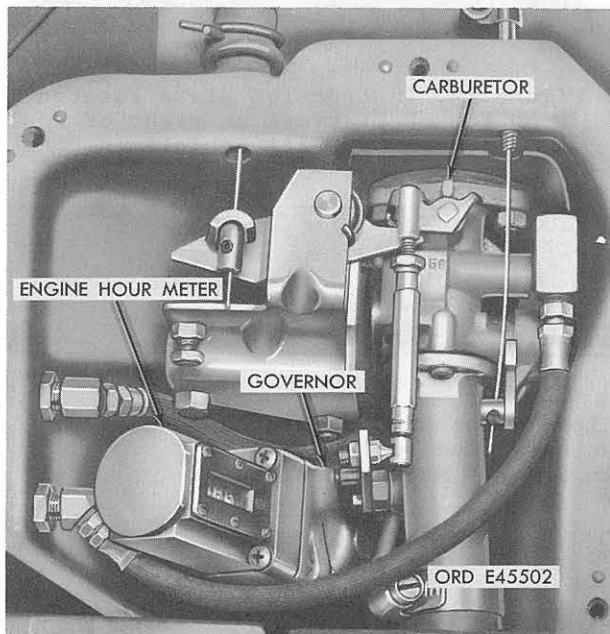


Figure 12. Location of carburetor, engine hour meter, and governor - M274A1 vehicle.

11. Engine Governor and Hour Meter

- a. Governor (M274 Vehicle). The en-

gine for the M274 vehicle is equipped with a pneumatic type governor which provides maximum engine speed control. The governor is mounted between the carburetor mounting flange and intake manifold. The governor controls engine speed by the change in the velocity of air passing through the intake manifold as engine load increases or decreases.

b. Governor (M274A1 Vehicle). The engine for the M274A1 vehicle is equipped with a mechanical governor (fig. 12) which provides positive maximum engine speed control. The governor is located on the accessory bracket. The operation of the governor is based on the centrifugal force of rotating weights. When engine speed increases, the weights fly outward, pulling with them suitable linkage to change the setting of the carburetor throttle opening.

c. Engine Hour Meter (M274 Vehicle). The engine hour meter for the M274 vehicle (fig. 13) is located on top of the crankcase accessory case behind the fan drive pulley. The meter is driven by the engine and records the number of hours engine has been operated.

d. Engine Hour Meter (M274A1 Vehicle). The engine hour meter for the M274A1 vehicle (fig. 12) is located on top of engine and is driven by the governor (fig. 12). The meter records the number of hours engine has been operated.

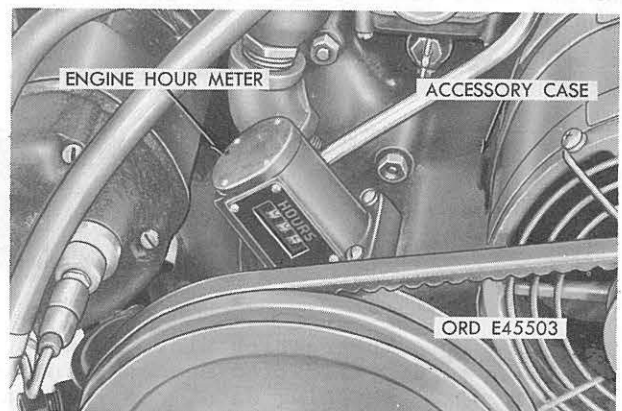


Figure 13. Location of engine hour meter - M274 vehicle.

12. Electrical System

The electrical system is composed of an ignition switch, magneto assembly, spark plugs, and radio shielded spark plug conduit assemblies. Service lights, blackout lights, or running lights are not provided on these vehicles.

13. Brake System

a. M274 Vehicle. A single brake (fig. 7), of the external expanding type, is used. It is located on the rear end of the front axle. The brake is mechanically operated by either the foot pedal or the handbrake lever through cables and mechanical linkage.

b. M274A1 Vehicle. The brake (fig. 8) on the M274A1 vehicle is similar to the brake used on the M274 vehicle except that it provides a larger brake lining area which improves braking ability.

14. Suspension and Steering System

a. Suspension. There is no spring suspension used on either the M274 or M274A1 vehicles. Shock is absorbed by the four low pressure tires.

b. Steering System. Four-wheel steering can be adapted, if desired, by connecting the steering connecting rod (figs. 7 and 8) to the steering bellcrank lever.

15. Wheels and Tires

The vehicle is equipped with four aluminum wheels and four low pressure military tread type tires with inner tubes.

16. Name, Caution, and Instruction Plates

a. Three instruction plates are used on the M274 vehicle and five are used on the M274A1 vehicle.

b. The instruction plates (figs. 14

and 15) are mounted on top of the platform and provide official nomenclature of the vehicle, transmission shifting instructions, transfer shifting instructions, and a caution in regard to towing.

c. The instruction plates (figs. 16 and 17) are mounted on the left front edge of the platform and give various identification numbers, lubrication data, vehicle dimensions, shipping data, weights, manual numbers, lubrication order number, date of vehicle delivery, final inspection mark, allocation of responsibility, and other data.



Figure 14. Instruction plate located on top of platform at right of driver - M274 vehicle.



Figure 15. Instruction plate located on top of platform at right of driver - M274A1 vehicle.

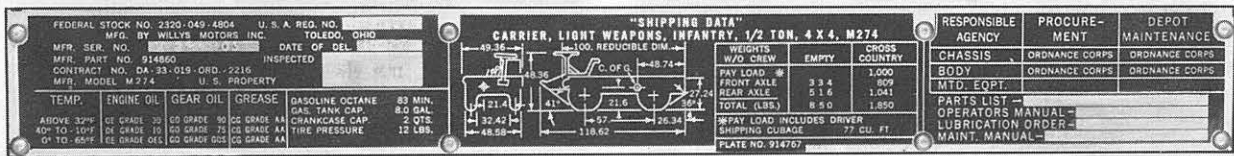


Figure 16. Instruction plate located on left front edge of platform showing identification numbers, lubricant data, fuel data, weight, shipping data, and lubrication order - M274 vehicle.

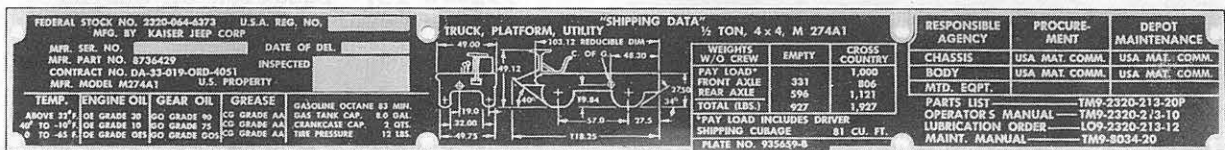


Figure 17. Instruction plate located on left front edge of platform showing identification numbers, lubricant data, fuel data, weight, shipping data, and lubrication order - M274A1 vehicle.

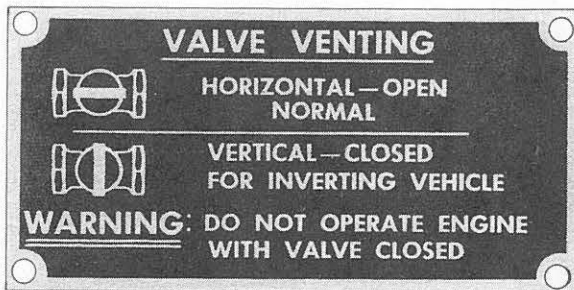
d. The caution plate (fig. 18) located on top of the platform, at right of driver's seat on the M274A1 vehicle, cautions maintenance personnel of explosive magnesium alloys of which the vehicle is constructed.



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Figure 18. Caution plate located on top of platform at right of driver's seat - M274A1 vehicle.

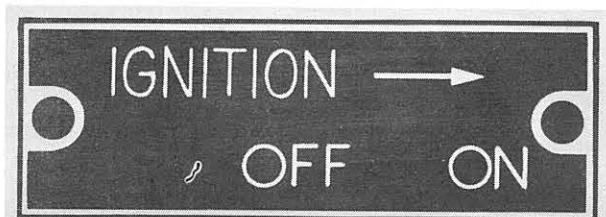
e. The instruction plate (fig. 19) located on top of platform, at right of driver's seat on the M274A1 vehicle, provides operator with instructions for operating crankcase vent valve.



ORD E45508

Figure 19. Vent valve instruction plate located on top of platform at right of driver's seat - M274A1 vehicle.

f. The instruction plate (fig. 20), located below the ignition switch on the M274 and M274A1 vehicle, shows the position to which the switch lever must be moved to turn the ignition ON or OFF.



RA PD 378041

Figure 20. Instruction plate located below ignition switch.

17. Tabulated Data

a. General.

| | | |
|---------------------|-------|---|
| Crew | _____ | 1 |
| Towing capacity | _____ | Not a prime mover |
| Cruising range: | | |
| 5 mph in high gear | _____ | |
| on highway | _____ | approximately 150 miles |
| 25 mph in high gear | _____ | |
| on highway | _____ | approximately 100 miles |
| Speeds: | | |
| Number | _____ | 3 forward, 1 reverse with high or low range |
| High | _____ | High range 25 mph, low range 13 mph |
| Intermediate | _____ | High range 14 mph, low range 7 mph |
| Low | _____ | High range 8 mph, low range 4 mph |
| Reverse | _____ | High range 8 mph, low range 4 mph |

| | | |
|---|-------|----------|
| Fording depth (limiting factor, air intake) | _____ | 18 in. |
| Shipping cubage | _____ | 81 cu ft |
| Weight: | | |
| Curb, fully equipped, unloaded, less operator | _____ | 900 lb |
| Cross, fully equipped, highway loaded | _____ | 2075 lb |
| Allowance for operator | _____ | 175 lb |

| | | |
|-------------------|-------|---------|
| Payload capacity: | | |
| Cross country | _____ | 1000 lb |
| Highway | _____ | 1000 lb |

b. Engine.

| | | |
|---------------------|-------|--------------------------------|
| Number of cylinders | _____ | 4 |
| Type | _____ | Horizontal-opposed, air-cooled |
| Horsepower | _____ | 17 at 3200 rpm |
| Piston displacement | _____ | 53 cu in. |

c. Dimensions.

| | | |
|-------------------------------------|-------|-------------|
| Wheelbase | _____ | 57 in. |
| Tread | _____ | 40.5 in. |
| Turning radius: | | |
| Right | _____ | 9 ft 2 in. |
| Left | _____ | 9 ft 10 in. |
| Length: | | |
| Less footrest and rear rail | _____ | 103.12 in. |
| With footrest and rear rail mounted | _____ | 118.25 in. |
| Platform | _____ | 95.96 in. |
| Ground clearance: | | |
| At front of steering arm | _____ | 12 in. |
| Under engine | _____ | 11.5 in. |
| At rear axle | _____ | 12.25 in. |

Under propeller
shaft—15.2 in.
Gradeability:
Side slope—40%
Longitudinal slope—60%
Angle of approach—40 deg
Angle of departure—34 deg
Width:
Over platform—46.6 in.
Over side rails—49 in.
Height loaded:
Over platform—27.50 in.
Over driver's seat—42.24 in.
Over steering wheel—49.12 in.
Lowest operable
(over steering
wheel)—36.68 in.

d. Capacities.

Crankcase oil—2 qt
Fuel tank—8 gal.
Transmission and rear
axle lubricant—2 qt
Front axle lubricant—6 oz

e. Fuel.

Minimum octane rating—83
Recommended fuel—Spec. MIL-G-3056,
type I and II

Consumption:

5 mph in high gear
on highway—17.8 mpg
25 mph in high gear
on highway—12.8 mpg

f. Tires.

Size—7.50 x 10
Ply—4
Pressure—12 psi

g. Brakes.

Type—Internal expand-
ing-mechanical
Brake lining area:
M274 vehicle—16-13/32 sq in.
M274A1 vehicle—20-15/16 sq in.

CHAPTER 2

OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF VEHICLE

18. General

a. When new, used, or reconditioned vehicles are first received by the using organization, it is the responsibility of the using organization to determine whether the vehicle has been inspected and prepared for service by the supporting Ordnance unit. This will be indicated on DA Forms 2408-5, 2408-6, 2408-7, and 2408-8, which are a record of all services and corrective maintenance. If not previously performed, the following services must be accomplished before placing the vehicle into service:

- (1) Lubricate vehicle in accordance with lubrication order regardless of interval, excluding gear cases and engine. Check processing tag for gear case and engine oil. If tag states that oil is suitable for 40 hours of operation and is of the proper viscosity for local climatic operation, check the level, but do not change the oil.
- (2) Schedule second "S" service on DA Form 2403, Preventive-Maintenance Roster and arrange for an oil change after 40 hours of operation.

b. Services to be performed by the organizational-maintenance personnel upon receipt of vehicles are designated in TM 9-8034-20 and changes thereto. Whenever practicable, the operator, crew, or user will assist organizational-maintenance

personnel in performing their services.

19. Break-in Operations

a. General. Prior to operating the vehicle, the operator or user must become familiar with the vehicle controls and operation contained in paragraphs 20 through 36.

b. Break-in. When break-in of a new or rebuilt vehicle is to be accomplished in normal service, the operator is cautioned to exercise special care in performing all before-operation checks and inspections (table I). The following cautions must be exercised during break-in.

- (1) Avoid rapid acceleration and deceleration.
- (2) Avoid skipping the intermediate gear range in shifting gears.
- (3) Clashing of transmission and transfer gears must be avoided.
- (4) Avoid sudden or forced engagement of operating controls.
- (5) Avoid sudden stops unless in an emergency.
- (6) Avoid prolonged operation of vehicle under other than normal weather and terrain conditions.
- (7) Avoid turning wheels when vehicle is at halt and when loaded unless absolutely necessary.

Section II. CONTROLS AND INSTRUMENTS

20. General

This section describes, locates, illustrates, and furnishes the driver with sufficient information, pertaining to the various controls and instruments, for proper operation of the M274 and M274A1 vehicles.

21. Driving Controls

a. General. Location of all the various operating controls for the M274 and M274A1 vehicles are shown in figures 21 and 24.

b. Steering Wheel and Column. The steering wheel is mounted at the upper end of the steering column, at the front of the vehicle. To provide for vehicle steering either while driving from the seat or from a standing or crouching position on the ground, the column may be secured in

any one of three positions. Figure 23 shows column and wheel in extreme rear position used in normal driving. Figure 24 shows column and wheel in intermediate position for driving from a standing position. Figure 25 shows the column and wheel in extreme forward position for driving from crouched position.

c. Steering Linkage. The vehicle may be used with either two- or four-wheel steering. The access opening lid (figs. 5 and 6) is located to the right of driver's seat. Four-wheel steering is used only under adverse terrain conditions.

d. Transfer Gear Shift Lever. The transfer gear shift lever (fig. 21), located at front of platform at driver's right, enables the driver to select either a high-speed range for good driving conditions, or a low-speed range for rough or hilly driving conditions. The gears are in low-speed range when the shift lever

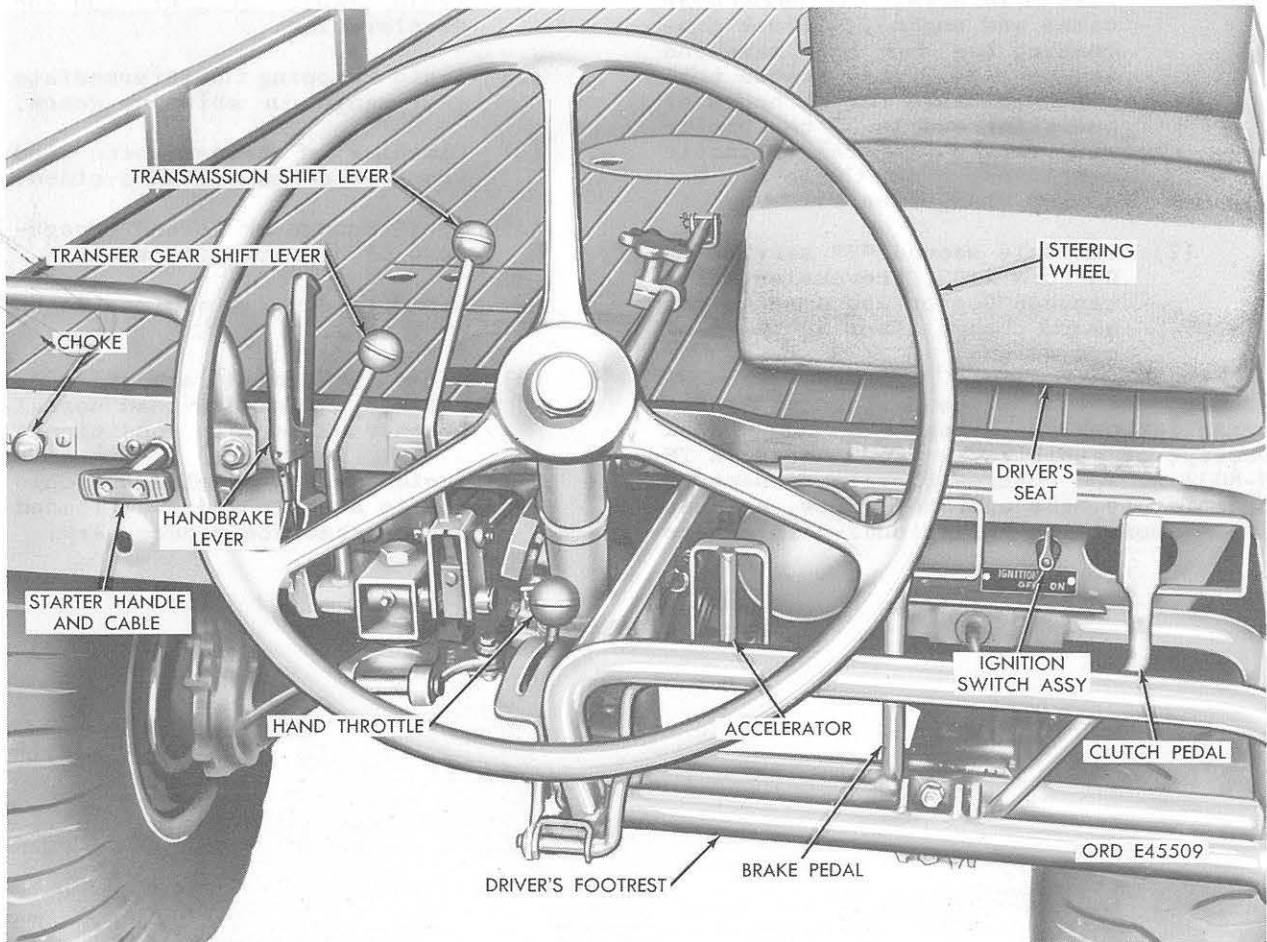


Figure 21. Driving controls as seen from standing position while driving vehicle backward.

the valve handle is parallel to the valve body and tubing the valve is turned on. When the valve handle is at right angles to the body and tubing, it is closed. The valve is used to shut off fuel supply from the fuel tank in performing maintenance and repairs and should remain in completely open position during normal use of the vehicle.

p. Oil Level Gage Rod and Cap. The oil level gage rod and cap (figs. 30 and 31) is located at the rear of the vehicle, below the platform, and to the right of the air cleaner. The gage consists of a metal gage rod attached to the underside of the oil filling tube cap. The gage rod is graduated and marked EMPTY and FULL.

q. Engine Hour Meter (M274 Vehicle). The engine hour meter (fig. 13) records the number of hours engine has been operated. The hour meter is driven by the engine and is located on top of crankcase accessory case behind fan drive pulley.

r. Engine Hour Meter (M274A1 Vehicle). The engine hour meter (fig. 12) records the number of hours engine has been operated. It is located on top of engine and is driven by the governor (fig. 12).

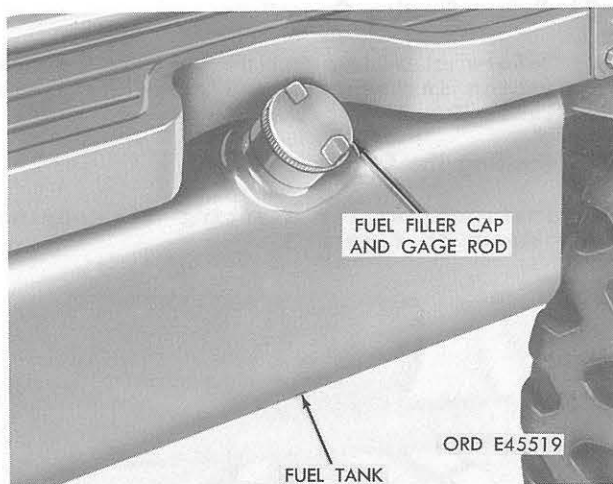


Figure 32. Location of fuel filler cap and gage rod.

s. Fuel Filler Cap and Gage Rod. The fuel filler cap and gage rod (fig. 32) consists of a metal gage rod attached to the underside of the fuel tank filler cap. The gage rod is graduated and marked 1/4, 1/2, and 3/4 FULL.

Section III. OPERATION UNDER USUAL CONDITIONS

22. General

This section contains instructions for the mechanical steps necessary to operate this vehicle under conditions of moderate temperature, humidity, and terrain. For operation under other usual conditions, refer to paragraphs 37 through 43. Refer to paragraph 21 for information on controls.

23. Operating Precautions

- a. Do not drive vehicle at maximum speed over rough terrain.
- b. Do not disengage clutch when descending hills, except when necessary to shift to a lower gear.
- c. Do not partially engage (ride) clutch.
- d. Do not race engine, especially when not under load.
- e. Operate with proper tire pressure.

f. When towing vehicle or using it as a trailer, pull steering gear locking pin and place gear in the inoperative position, put steering linkage in two-wheel steer, and place both transmission and transfer in neutral (N).

g. Bring vehicle to complete stop before shifting into reverse gear.

h. Always keep vehicle under control.

i. When vehicle is stuck when loaded to capacity, do not "rev" up engine and slip clutch to gain more torque. Such action can result in damage to clutch disk, pressure plate, and flywheel clutch surface.

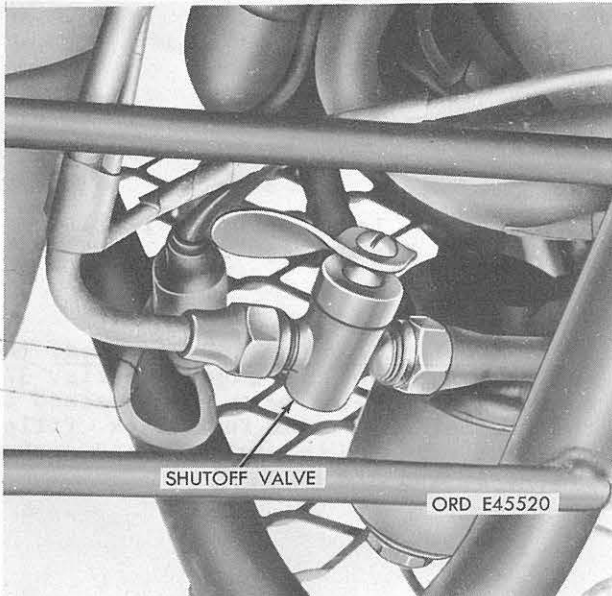
j. When vehicle is stuck, do not rock vehicle by shifting from first gear to reverse gear while accelerator is partially depressed. Such action will damage transmission gear teeth. The operator must wait each time, before shifting gears to an opposite direction gear, for the engine to return to idle speed and for the transmission gears to stop revolving.

24. Before Starting Operations

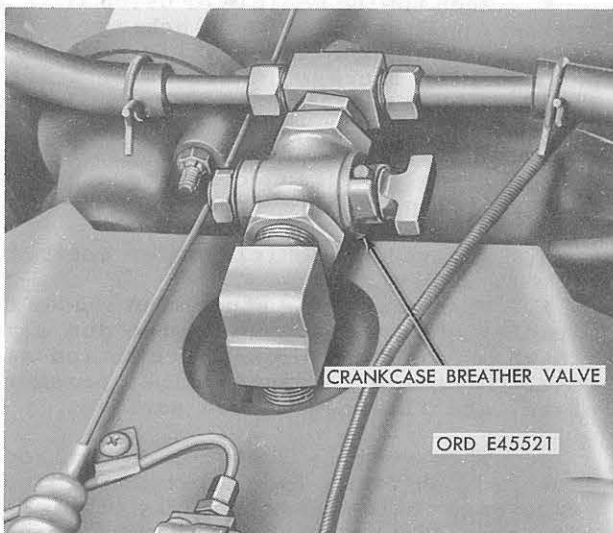
Before starting engine perform before operation inspections and services shown in table I.

25. Starting the Engine

Instructions for starting the engine are shown in figure 33.



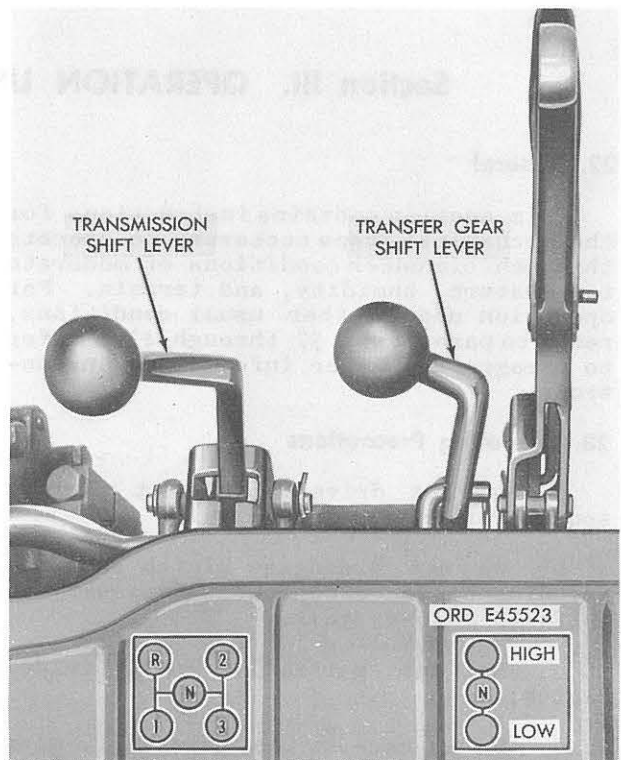
Step 1. Make sure fuel shutoff valve is turned to ON position as shown.



Step 2. Remove engine access cover and make sure engine crankcase breather valve is turned to ON position (when handle is parallel to valve body). Install engine access cover.

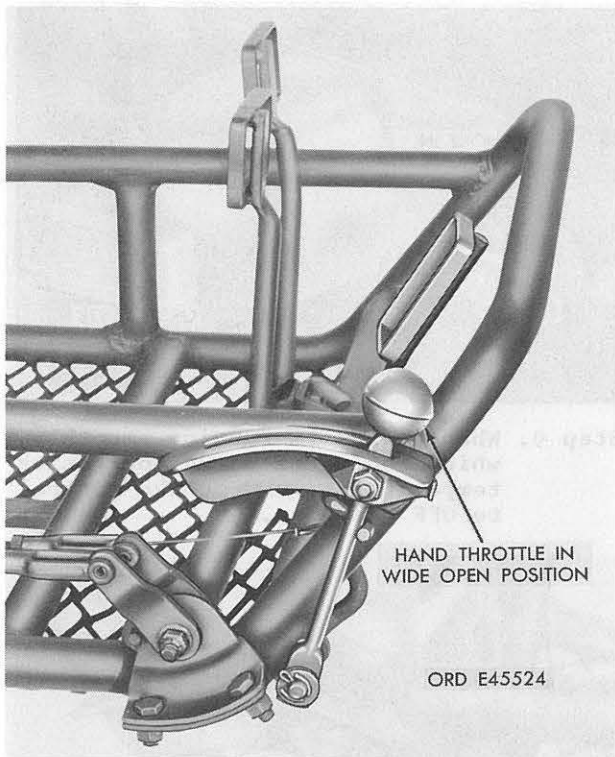


Step 3. Apply handbrake lever by pulling it toward front of vehicle.

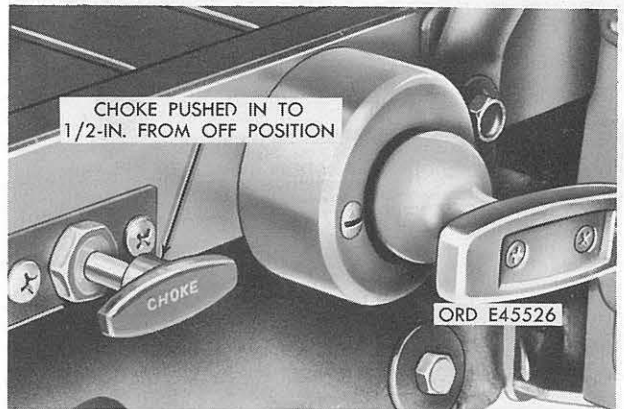


Step 4. Place transmission shift lever in neutral (N) position.

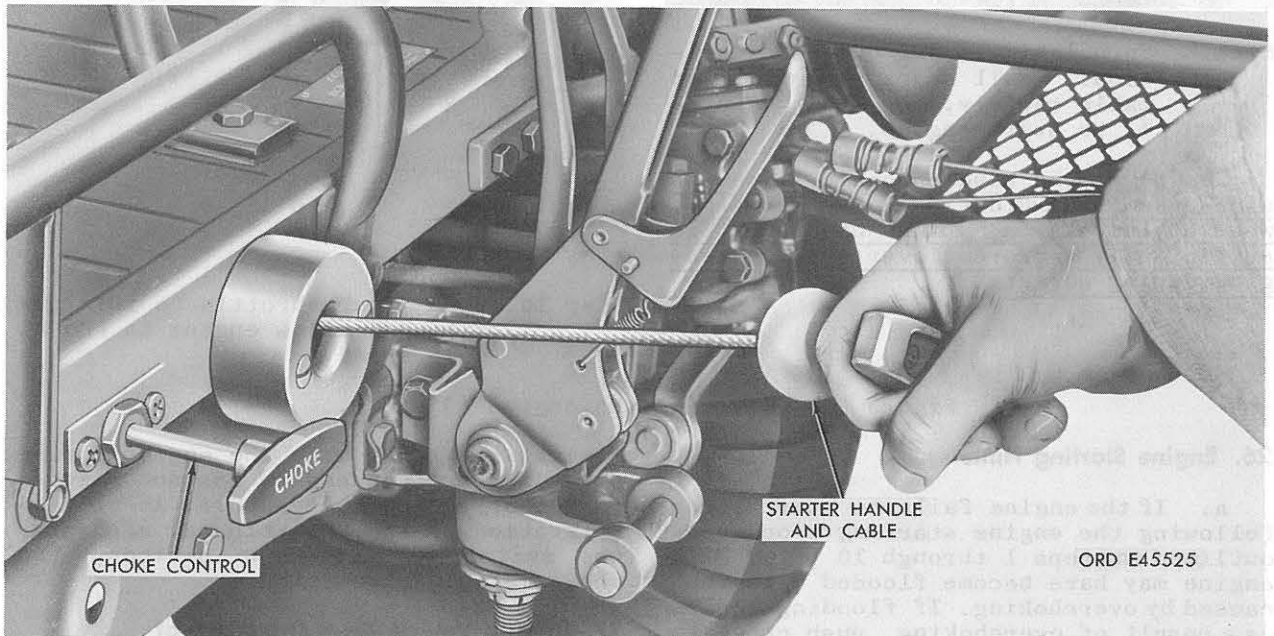
Figure 33. Starting the engine (1 of 3).



Step 5. Advance hand throttle to wide-open position.



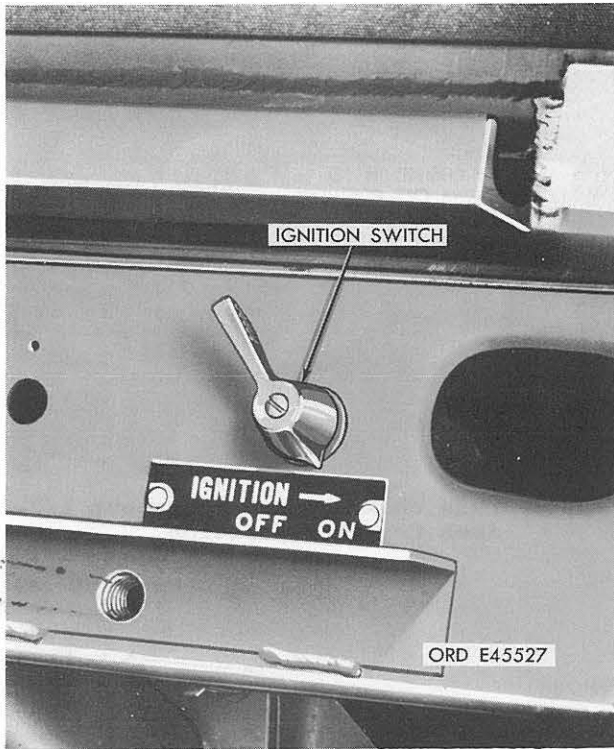
Step 7. Push choke control in about 1/2-inch from OFF position.



Step 6. If engine is cold, pull choke out to full choke position. Pull starter handle and cable rapidly to limit of its travel twice. Allow handle and cable to rewind each time slowly.

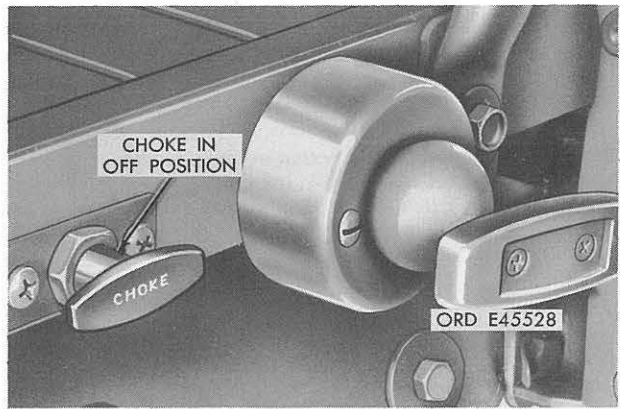
Caution: Do not let go of starter handle and cable when it is pulled out to limit of its travel. Rapid rewind of sheave may cause cable to snap and break.

Figure 33. Starting the engine (2 of 3).

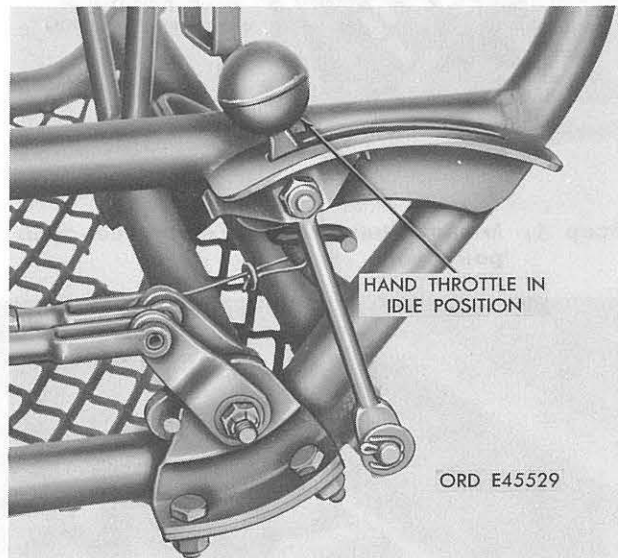


Step 8. Turn ignition switch to ON position. Pull starter handle and cable rapidly, as shown in step 6, to start engine.

Caution: The hand throttle is set in wide-open position during engine starting. When engine starts, close hand throttle sufficiently to prevent over speeding engine during warmup.



Step 9. When engine is running smoothly, which indicates normal operating temperature, push choke control to OFF position.



Step 10. Push hand throttle to idle position to allow engine to run at idle speed.

Figure 33. Starting the engine (3 of 3).

26. Engine Starting Hints

a. If the engine fails to start after following the engine starting procedures outlined in steps 1 through 10 (fig. 33), engine may have become flooded with fuel caused by overchoking. If flooding occurs as a result of overchoking, push choke to OFF position. Advance hand throttle to wide-open position. Pull starter handle and cable rapidly 5 to 10 times to start engine.

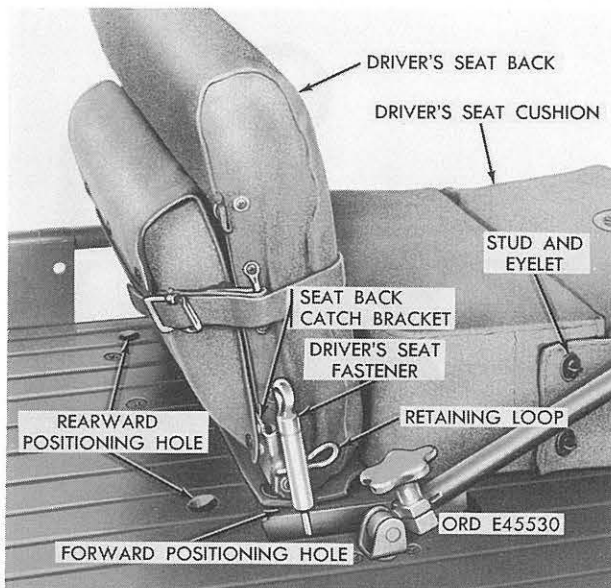
b. Operators must learn to adjust the choke and hand throttle simultaneously when engine starts. Pushing the choke all the way into OFF position, as soon as en-

gine starts, will stop the engine during cold weather when engine has not reached normal operating temperature. Abrupt acceleration of the throttle may also stop the engine during warmup periods, when choke is in OFF position.

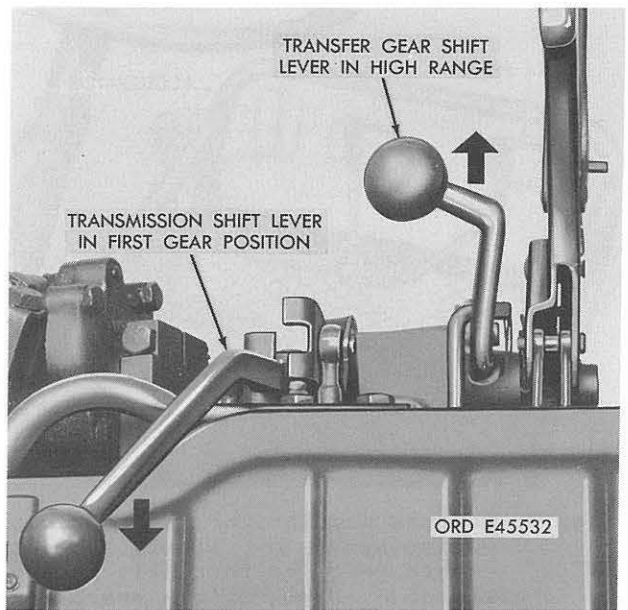
27. Driving Vehicle From Driver's Seat

Warning: Exercise extreme care when first handling this vehicle. You may not be familiar with operating controls. Drive vehicle slowly at first until you are accustomed to the way vehicle handles.

Instructions for driving vehicle from driver's seat are shown in figure 34.

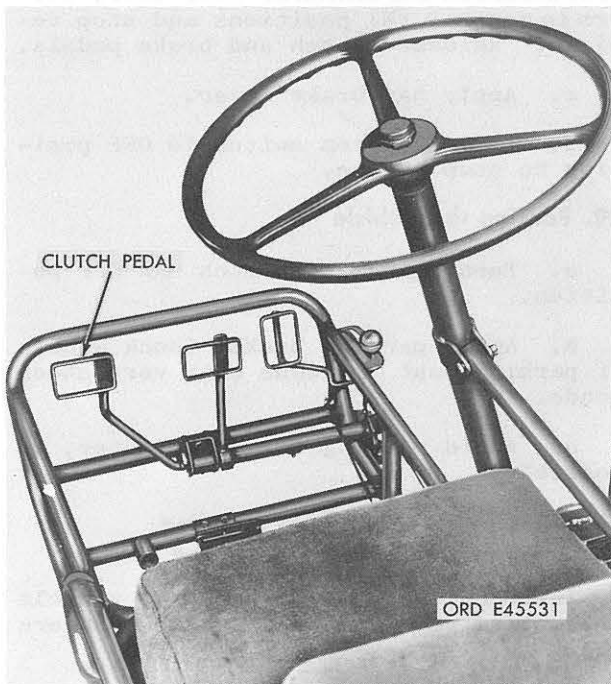


Step 1. Start engine following steps 1 through 10, figure 33. While engine is warming up, adjust driver's seat forward or rearward using the two sets of holes provided in platform. Unhook driver's seat fastener. Position seat as desired. Hold seat in forward position by hooking seat fastener in seat back catch bracket or in rearward position by hooking seat fastener in catch retaining loop.

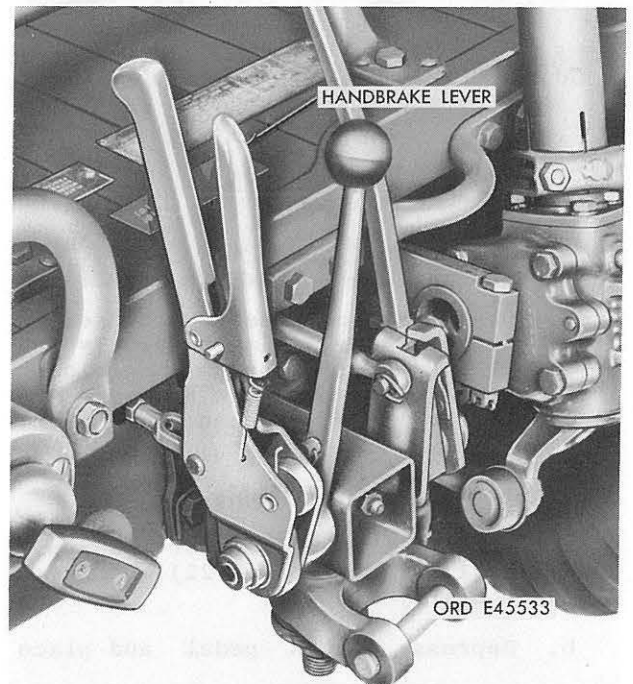


Step 3. Position transfer gear shift lever in HIGH or LOW range. Position transmission shift lever in first gear. Refer to shifting diagrams, figures 26 and 27.

Caution: The transfer gears must not be shifted from neutral (N) into either HIGH or LOW range, except when vehicle is at a standstill and transmission shift lever is in neutral (N).

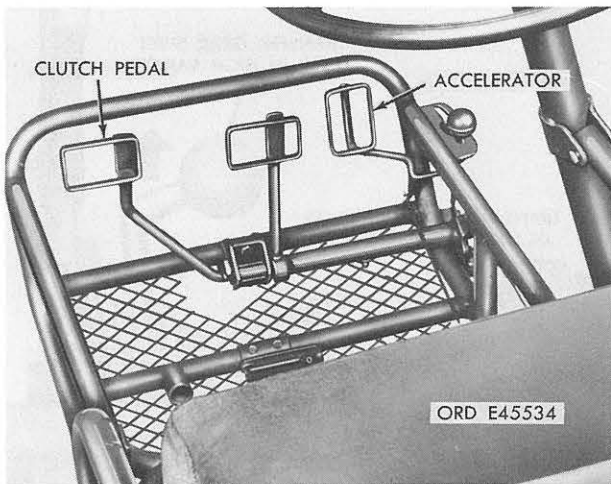


Step 2. Depress clutch pedal.

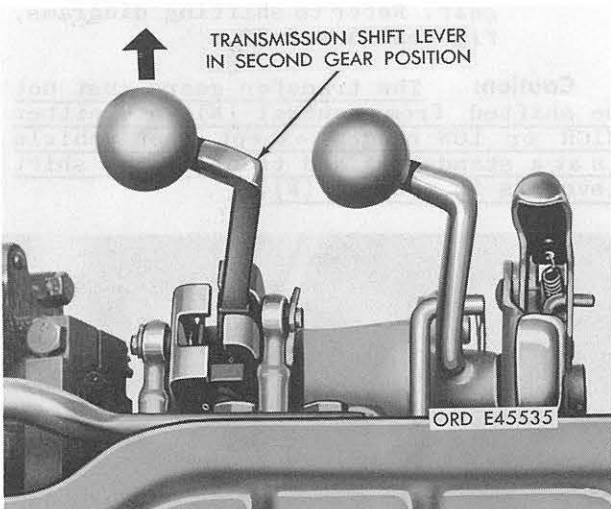


Step 4. Release handbrake lever.

Figure 34. Driving vehicle from driver's seat (1 of 2).



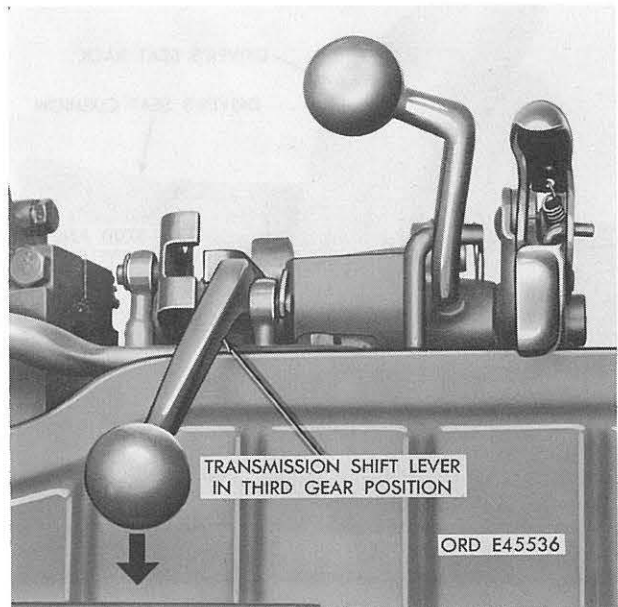
Step 5. Depress accelerator to increase engine speed and slowly let out clutch pedal to partially engage clutch. When vehicle starts to move slowly forward, increase engine speed and release clutch pedal to fully engage clutch.



Step 6. As vehicle speed increases in first gear, simultaneously release accelerator, depress clutch pedal, and position transmission shift lever in second speed gear.

28. Stopping Vehicle and Engine

- a. Release the accelerator and apply brake pedal (figs. 21 and 22) until vehicle is nearly stopped.
- b. Depress clutch pedal and place



Step 7. Shift from second speed gear to third speed gear using clutch and decreasing engine speed between shift. Release clutch and depress accelerator as necessary to keep vehicle rolling at a safe speed.

Figure 34. Driving vehicle from driver's seat (2 of 2).

transmission and transfer gear shift levers in neutral (N) positions and stop vehicle. Release clutch and brake pedals.

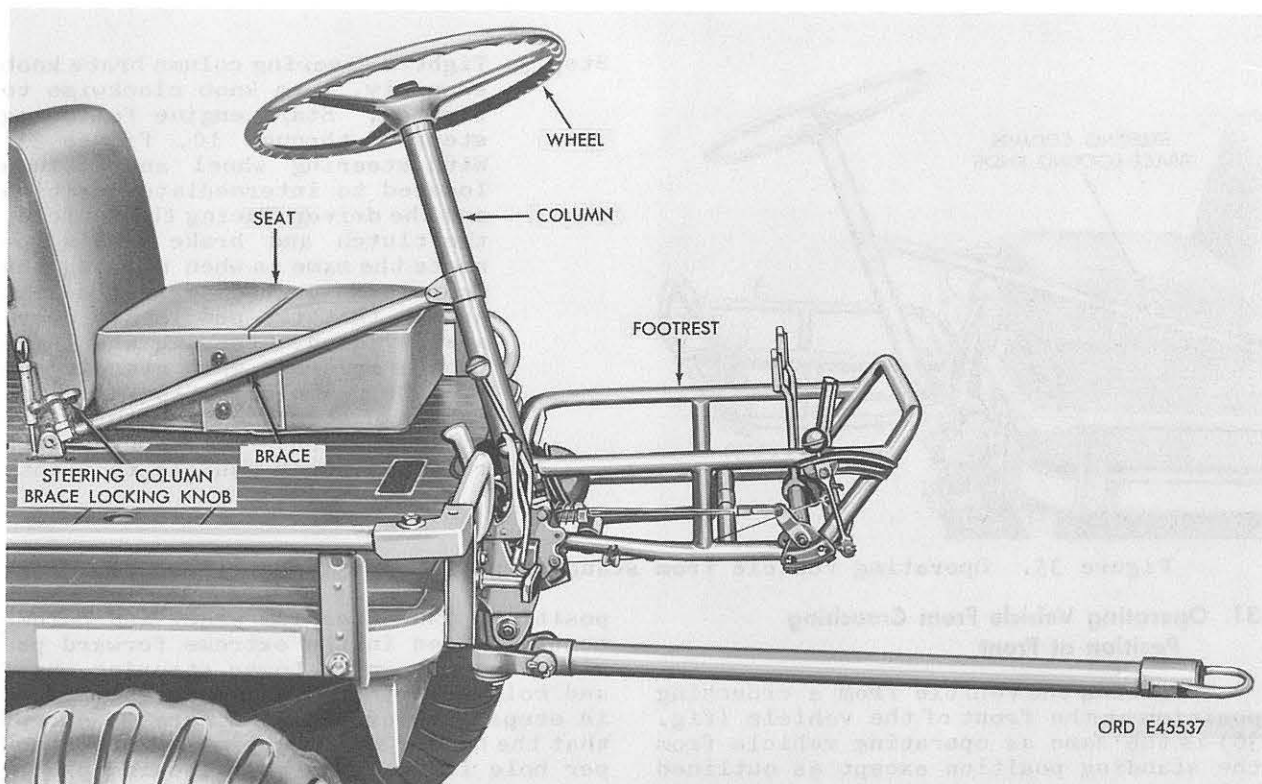
- c. Apply handbrake lever.
- d. Turn ignition switch to OFF position to stop engine.

29. Parking the Vehicle

- a. Turn ignition switch to OFF position.
- b. Apply parking brake. Chock wheels if parking must be done on a very steep grade.
- c. Avoid parking in mud or water, if possible.

30. Operating Vehicle From Standing Position From the Front of the Vehicle

Instructions for driving the vehicle from standing at front of the vehicle are shown in figure 35.

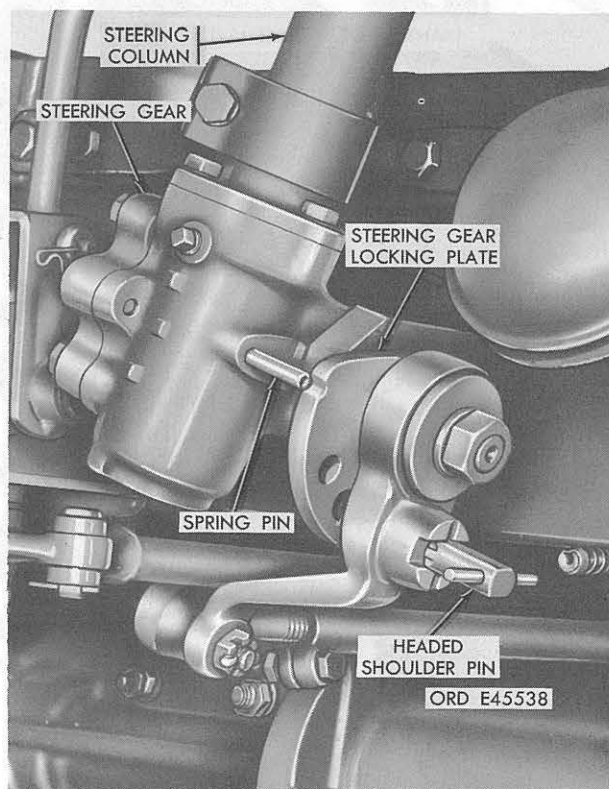


ORD E45537

Step 1. Loosen steering column brace locking knob by turning knob counterclockwise.

Step 2. Pull out and hold headed shoulder pin while pulling steering column to intermediate position. Release headed shoulder pin and move the steering column forward or back slightly to allow pin to enter center hole in steering gear locking plate. Turn steering wheel slightly in either direction until spring pin in steering gear aligns with notch in steering gear locking plate.

Warning: When driving the vehicle from a standing position in front of the vehicle, the transmission shift lever must be in reverse (R) speed position at all times. Transfer gear shift lever may be in either LOW range or HIGH range as desired. Maximum speed in LOW range will be held to 4 mph and maximum speed in HIGH range will be held to 8 mph.



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Figure 35. Operating vehicle from standing position at front (1 of 2).

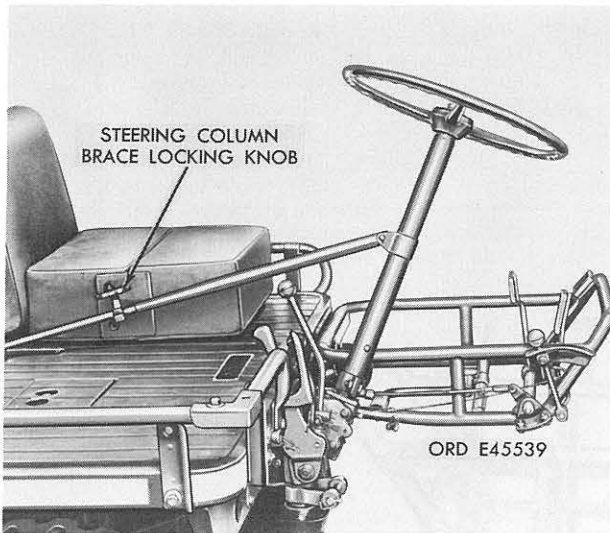


Figure 35. Operating vehicle from standing position at front (2 of 2).

31. Operating Vehicle From Crouching Position at Front

Operating the vehicle from a crouching position at the front of the vehicle (fig. 36) is the same as operating vehicle from the standing position except as outlined below. To operate vehicle from crouching

Step 3. Tighten steering column brace knob securely. Turn knob clockwise to tighten. Start engine following steps 1 through 10, figure 33. With steering wheel and column lowered to intermediate position and the driver facing the vehicle, the clutch and brake pedals operate the same as when driving the vehicle from the driver's seat except that the pedals are operated by hand. Steering wheel action is reversed when standing to operate vehicle. Clockwise rotation of steering wheel turns vehicle to left. Counterclockwise rotation turns vehicle to right.

position, the steering wheel and column must be placed in the extreme forward position as shown. Lower steering wheel and column in the same way as instructed in steps 1 through 4 of figure 35 except that the headed shoulder pin must enter upper hole in steering gear locking plate.

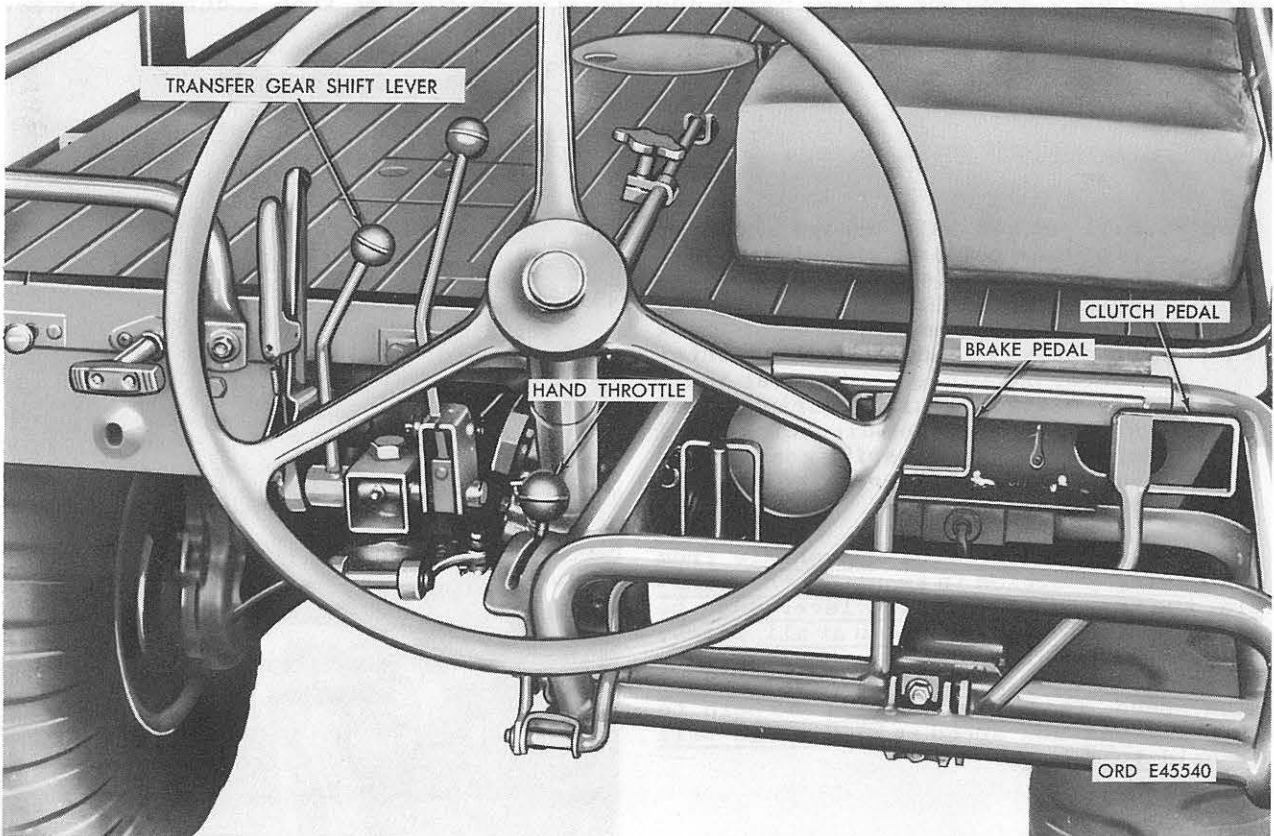


Figure 36. Operating vehicle from crouching position at front.

32. Connecting or Disconnecting Four-Wheel Steering

a. Steering Access Opening Lid (M274 Vehicle). To gain access to steering connections, remove steering access opening lid (fig. 37) by turning locknut using wrench end of emergency starting crank and wheel nut wrench (fig. 28).

Note. It is not practical to attempt to connect or disconnect the rear steering when the platform is loaded.

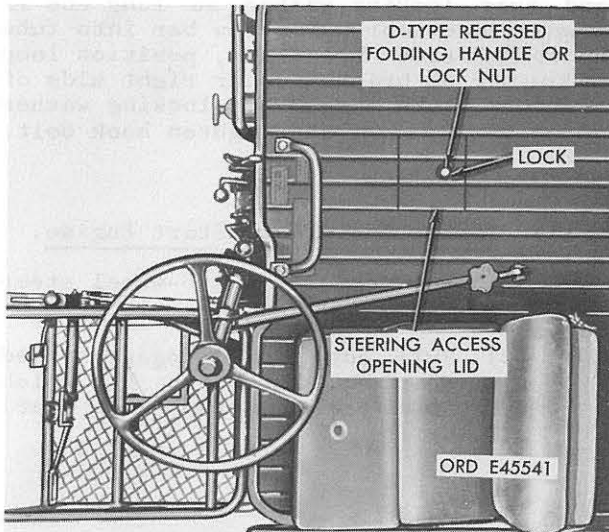


Figure 37. Location of two- or four-wheel steering access opening lid.

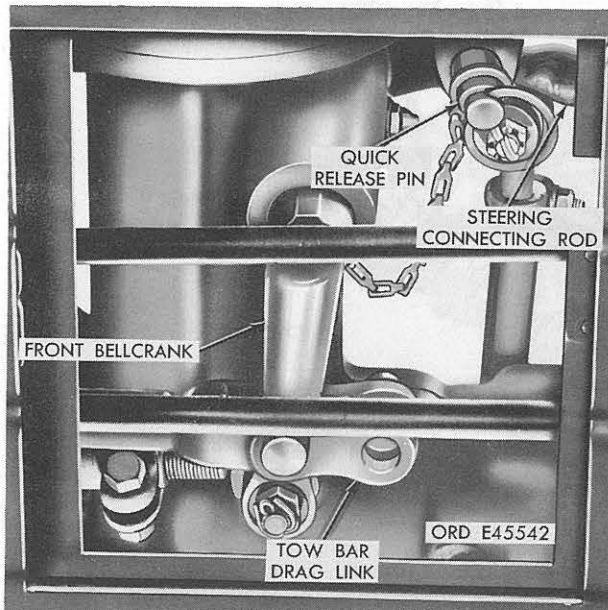


Figure 38. Steering access opening lid removed showing two-wheel steering connected.

b. Steering Access Opening Lid (M274A1 Vehicle). To gain access to steering connections, turn D-type recessed folding handle (fig. 37) and remove lid.

c. Connecting Four-wheel Steering (fig. 38). Turn steering wheel in direction necessary to place front wheels to a straight ahead position. To change from two- to four-wheel steering, pull out quick release pin securing front end of steering connecting rod to anchor. Swing the end to align with hole through rear end of tow bar link (fig. 39) and insert pin. The pin is held in place by a spring-loaded ball. The quick release pin on the M274 vehicle is not chained to the front bellcrank.

d. Disconnecting Four-wheel Steering. To change from four- to two-wheel steering, pull out quick release pin securing the front end of steering connecting rod to tow bar drag link (fig. 39), swing the end of the lever to right to align with hole in anchor (fig. 38), and insert pin.

33. Tow Bar Installation and Stowage

a. General. The tow bar (fig. 40) is used as a tongue when the vehicle requires towing or is used as a trailer. When not in use, tow bar is stowed beneath and across platform forward of rear wheels. Rear end of bar is held in a tube fastened to the platform and the front end is held to a bracket by a hook bolt and cotter pin.

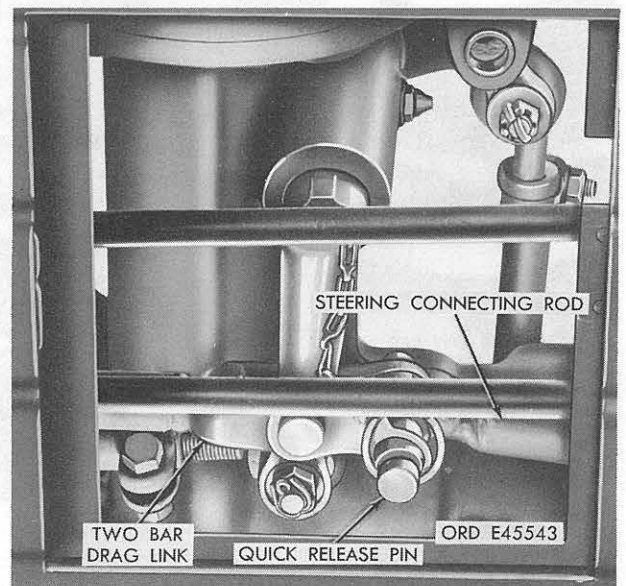


Figure 39. Steering access opening lid removed showing four-wheel steering connected.

b. Installation. To install tow bar in towing position on tow bar bellcrank, loosen hook bolt (fig. 40), turn locking washer 180 degrees, and pull tow bar from beneath platform. Tighten hook bolt on

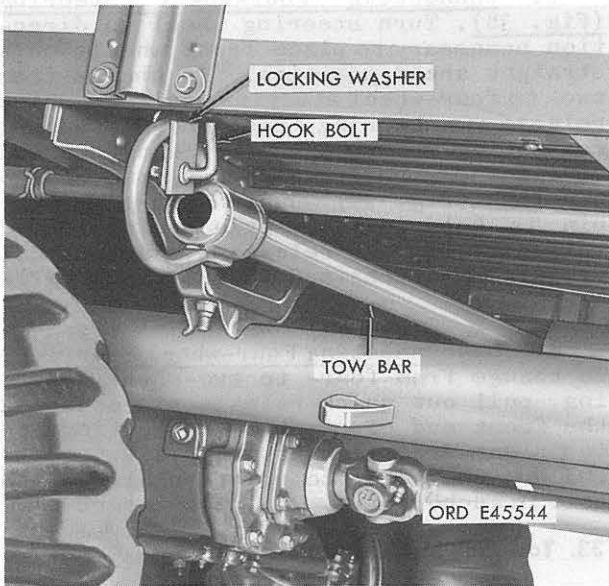


Figure 40. Tow bar stowed under platform.

washer. Remove retaining clip from headed straight pin (fig. 41) in tow bar bellcrank and remove pin. Position tow bar on tow bar bellcrank as shown in figure 41. Push headed straight pin through tow bar and bellcrank and secure with retaining clip.

c. Stowage. To stow tow bar, remove retaining clip from headed straight pin (fig. 41) securing tow bar on tow bar bellcrank and remove pin and tow bar. Install pin in bellcrank and secure with retaining clip. Loosen tow bar hook bolt (fig. 40) and turn locking washer so long end is down. Slide rear end of tow bar into tube under left side of platform, position loop of tow bar on bracket under right side of platform, turn long end of locking washer up against loop, and tighten hook bolt.

34. Towing Vehicle

a. Towing Vehicle to Start Engine.

- (1) Put vehicle in two-wheel steer (par. 32d).
- (2) Pull out and disengage headed shoulder pin (fig. 35) which locks position of steering gear.

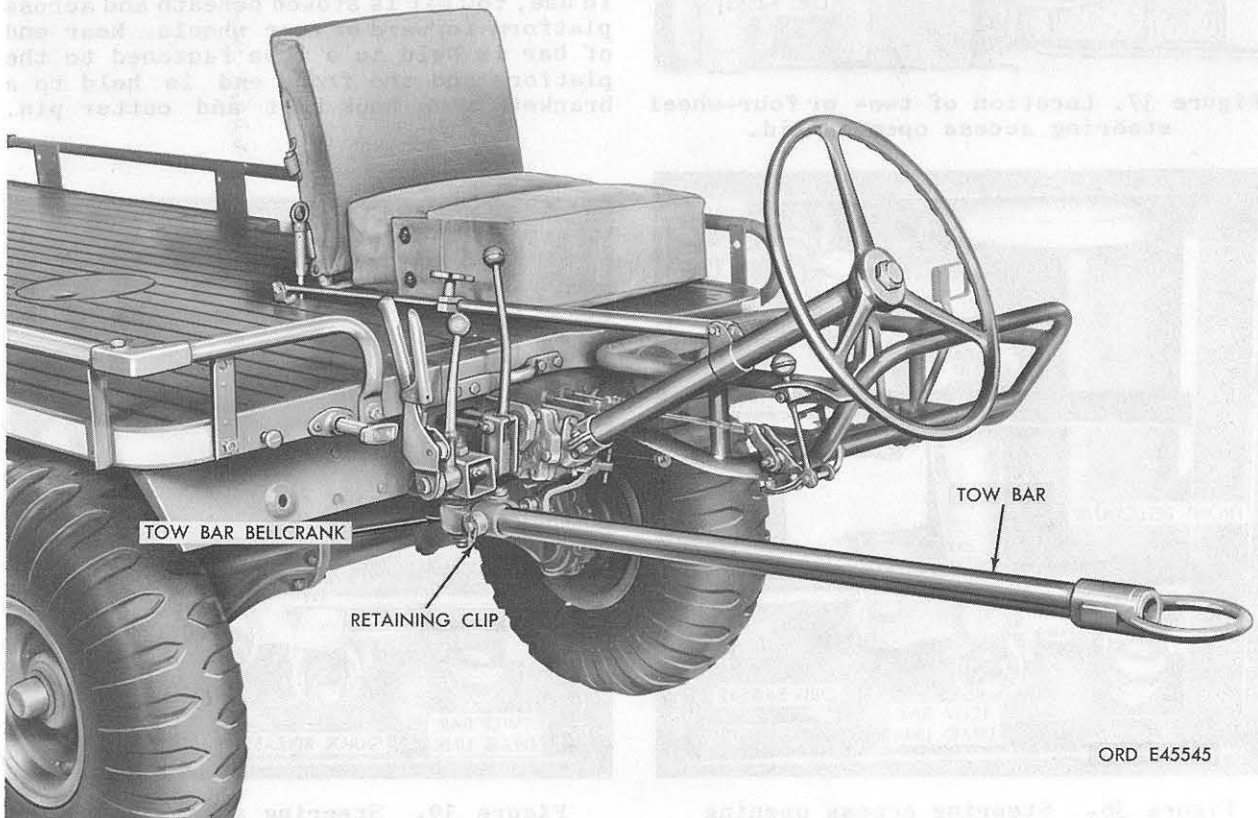


Figure 41. Tow bar connected for towing vehicle.

- (3) Install tow bar in towing position (par. 33b).
- (4) Check to see that fuel line shutoff valve is open (fig. 31).
- (5) Turn ignition switch ON (step 8, fig. 33).
- (6) Place the transfer gear shift lever in HIGH range and transmission shift lever in third speed gear (step 7, fig. 34).
- (7) With the clutch disengaged, start towing and as soon as both vehicles have reached operating speed, gradually engage the clutch. When engine starts, shift transmission shift lever into neutral (N) position and stop the vehicles. Shift transfer gear shift lever into neutral (N) position and apply handbrake lever.
- (8) Disconnect and stow tow bar (par. 33c).

b. Towing as a Trailer or as a Disabled Vehicle.

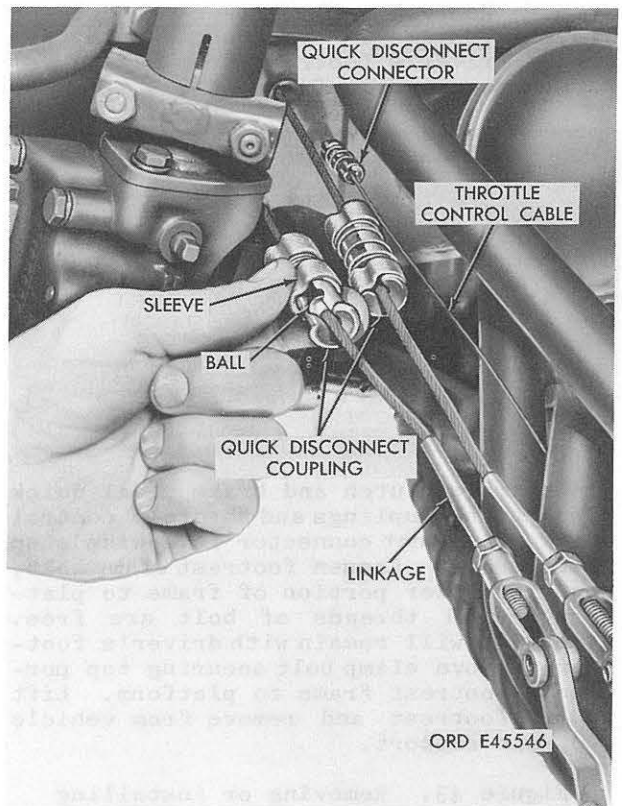
Caution: Towing vehicle with gears engaged, for purposes other than starting engine, may turn engine crankshaft at a dangerous overspeed and cause serious engine damage.

- (1) Put vehicle in two-wheel steer (par. 32d) and remove footrest (par. 36).
- (2) Install tow bar in towing position (par. 33b).
- (3) See that transmission and transfer gear shift levers are in neutral (N) positions as shown in step 4 of figure 33.
- (4) Pull out and disengage headed shoulder pin to render steering gear inoperative.

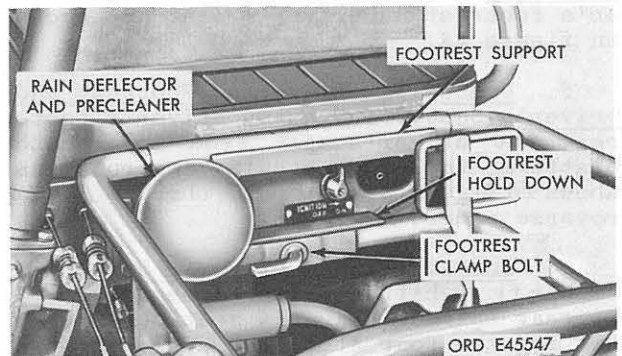
35. Stowing Driver's Footrest and Driver's Seat

a. General. When vehicle is to be towed, prepared for shipment, or stored the driver's footrest and driver's seat will be stowed under the platform on the right frame tube.

b. Removal of Driver's Footrest (M274 Vehicle). Instructions for removing footrest from M274 vehicle are shown in figure 42.



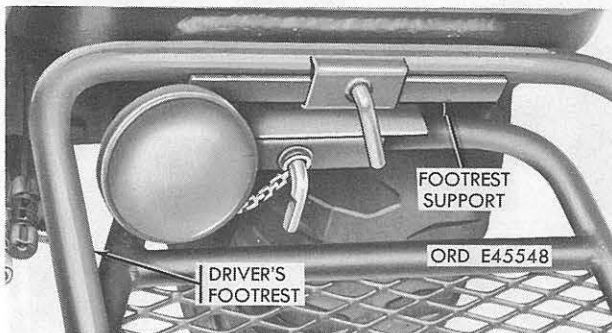
Step 1. Separate clutch and brake pedal quick disconnect couplings. Separate throttle control cable quick disconnect connector. To separate, push sleeve at one end toward sleeve at other end against pressure of spring. This will uncover socket in coupling or connector and expose ball on end of linkage. Lift ball end of linkage out of socket and allow sleeve to snap back into original position.



Step 2. Loosen footrest clamp bolt until threads of bolt are free. Lift up on footrest and remove from vehicle footrest support.

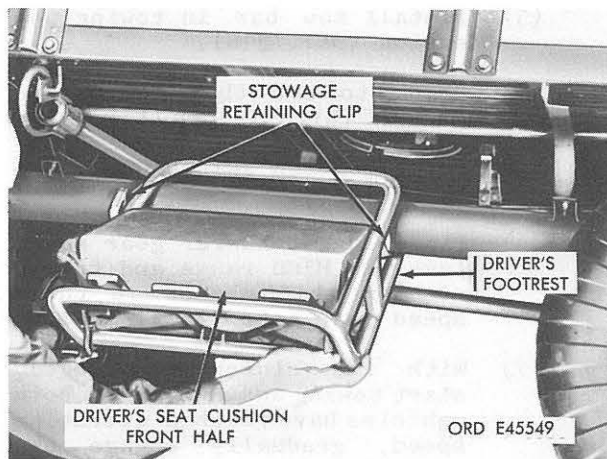
Figure 42. Removing or installing driver's footrest - M274 vehicle.

c. Removal of Driver's Footrest (M274A1 Vehicle). Instructions for removing driver's footrest from M274A1 vehicle are shown in figure 43.



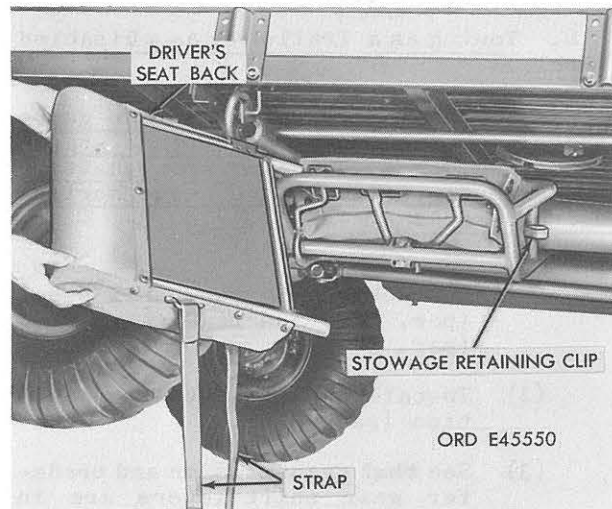
Separate clutch and brake pedal quick disconnect couplings and throttle control quick disconnect connector following step 1, figure 42. Loosen footrest clamp bolt, securing lower portion of frame to platform, until threads of bolt are free. Clamp bolt will remain with driver's footrest. Remove clamp bolt securing top portion of footrest frame to platform. Lift up on footrest and remove from vehicle footrest support.

Figure 43. Removing or installing driver's footrest - M274A1 vehicle.



Step 1. Position front half of driver's seat cushion against pedals in front end of driver's footrest. Turn the two stowage retaining clips on right frame tube to vertical position and slide footrest with front half of seat cushion over tube between clamps.

d. Removal of Driver's Seat. Unhook driver's seat fastener (step 1, fig. 34) from retaining loop or bracket. Lift up on driver's seat back frame and remove from driver's seat cushion and locating holes in platform. Remove seat cushion. Separate front half of seat cushion from rear half of cushion by unlocking four studs and eyelets (step 1, fig. 34).



e. Stowing Driver's Footrest and Driver's Seat. Instructions for stowing driver's footrest and driver's seat are shown in figure 44.

Step 2. Pull out clips, turn 90 degrees and hook over vertical tubes of driver's footrest. Loosen strap attached to seat back and around manual stowage envelope. Push seat back between footrest and platform as shown in step 3.

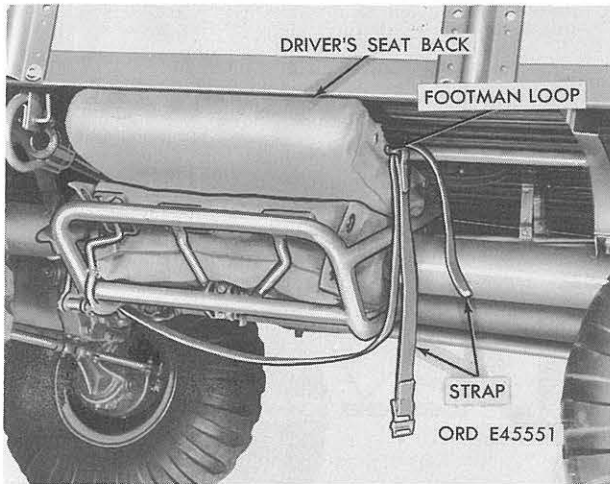
f. Unstowing Driver's Footrest and Driver's Seat. To unstow driver's footrest and driver's seat from underneath platform, follow the stowing instructions shown in figure 44, steps 1 through 5, in reverse order.

g. Installation of Driver's Seat. Assemble front half of driver's seat cushion to rear half of driver's seat cushion by locking the four studs and eyelets (step 1, fig. 34).

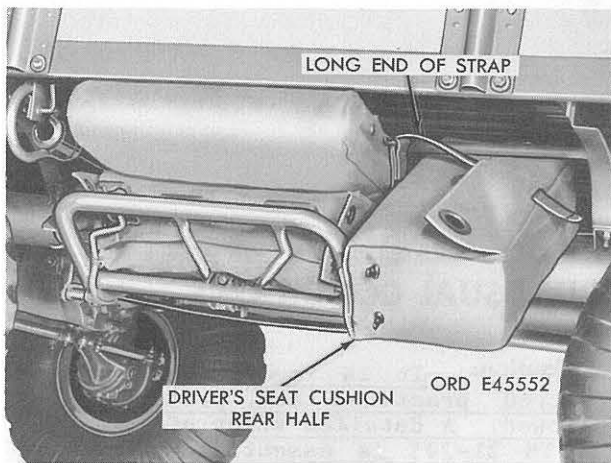
Figure 44. Stowing or unstowing driver's footrest and driver's seat (1 of 2).

h. Installation of Driver's Footrest (M274A1 Vehicle). To install driver's

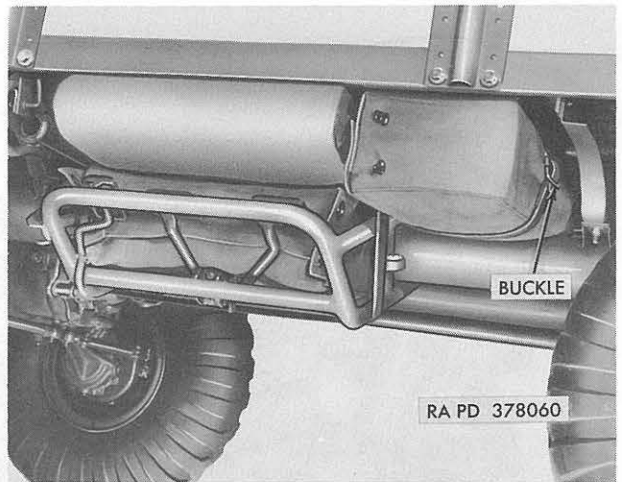
footrest on the M274A1 vehicle, reverse the removal instructions which accompany figure 43.



Step 3. Push long strap through footman loop, and arrange straps as shown.



Step 4. Position rear half of seat cushion in front of driver's footrest and seat back and push end of long strap through slot in holddown flat of cushion.



Step 5. Tighten strap securely and place loose end of strap through buckle as shown.

Figure 44. Stowing or unstowing driver's footrest and driver's seat (2 of 2).

i. Installation of Driver's Footrest (M274 Vehicle). To install driver's footrest on the M274 vehicle, follow the removal instructions shown in figure 42 in reverse order.

36. Lowering Handrail

The handrail on the M274 and M274A1 vehicles is secured to the edge of the vehicle platform by assembled washer screws. Two sets of screw holes are provided in the handrail upright mounting brackets for attachment. The lower set of screw holes is used to attach the handrail in raised position shown in figures 1 through 4. The upper set of screw holes is used to attach the handrail in the lowered position as shown in figure 45. To change position of handrail, use the socket end of the emergency starting crank and wheel nut wrench (figs. 28 and 29) to loosen or tighten screws.

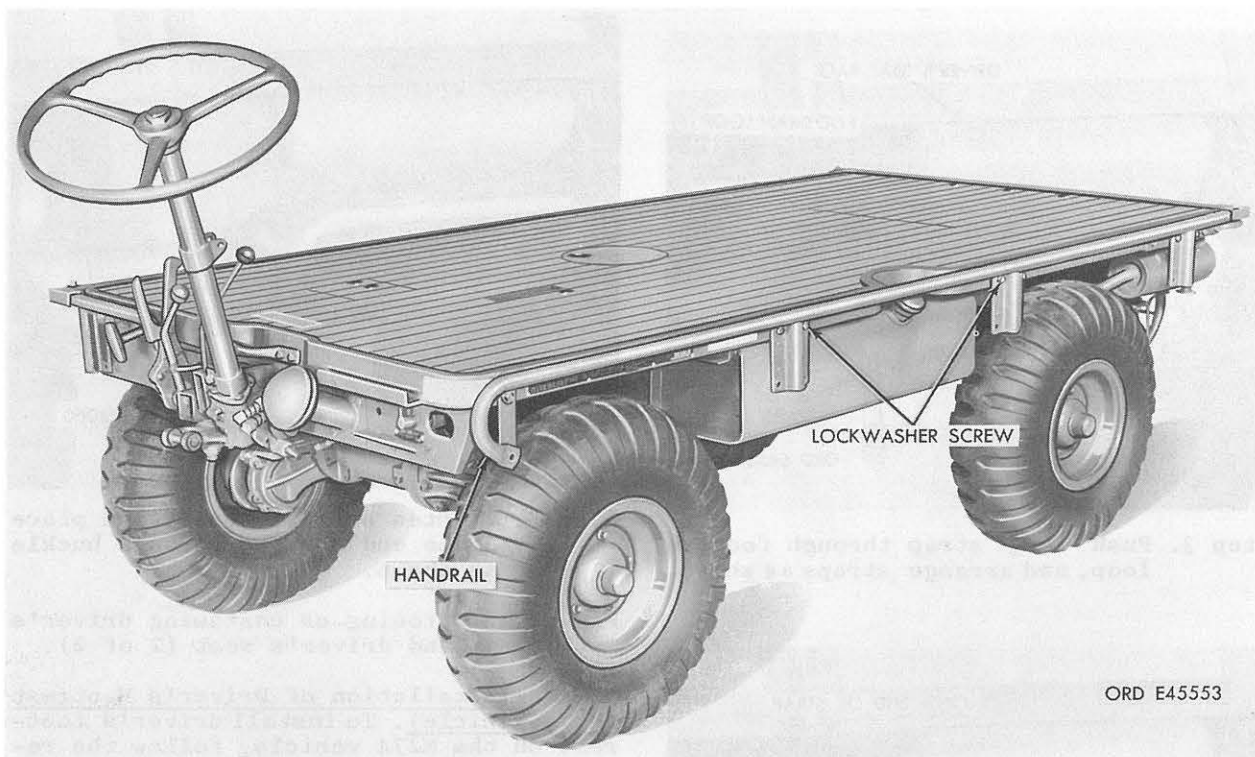


Figure 45. Handrail in lowered position.

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

37. General Conditions

a. In addition to the operating procedures described for usual conditions, special instructions of a technical nature 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 extremes of temperature, humidity, and terrain conditions are present or are anticipated. Proper cleaning, lubrication, and storage and handling of fuels and lubricants not only insure proper operation and functioning, but also guard against excessive wear of the working parts and deterioration of the vehicle.

b. TM 21-300 contains very important instructions on driver selection, training, and supervision; TM 21-305 prescribes special driving instructions for operating wheeled vehicles under unusual conditions.

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

c. Refer to LO 9-2320-213-12 for lubrication under unusual conditions; refer to paragraphs 48 through 53 for preventive-maintenance checks and maintenance procedures to be performed by the operator.

d. When chronic failure of materiel results from subjection to extreme conditions, report of the condition should be made on DA Form 2407 (par. 3).

38. Extreme Cold-weather Conditions

a. General Problems.

- (1) Extensive preparation of materiel scheduled for operation in extreme cold weather is necessary. Generally, extreme cold

will cause lubricants to thicken or congeal, crack insulation and cause electrical short circuits, prevent fuel from vaporizing, and properly combining with air to form a combustible mixture for starting, and will cause various construction materials to become hard, brittle, and easily damaged or broken.

- (2) For description of operations in extreme cold, refer to FM 31-70, FM 31-71, and TM 9-207.

Caution: It is imperative that the approved practices and precautions be followed. TM 9-207 contains information which is specifically applicable to this vehicle as well as to all other vehicles. It must be considered an essential part of this manual, not merely an explanatory supplement to it.

b. Cold-weather Engine Starting Procedures.

- (1) The M274 and M274A1 vehicles are equipped with a fuel primer pump (fig. 46) which aids in starting engine during cold-weather.

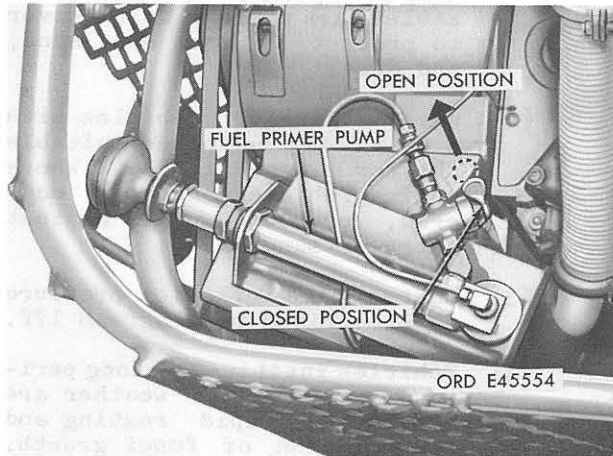


Figure 46. Operating fuel primer pump.

- (2) To operate primer pump (fig. 46), pull and push pump handle two strokes to prime engine intake manifold with fuel.

- (3) Push handle on primer pump in to closed position before attempting to start engine.

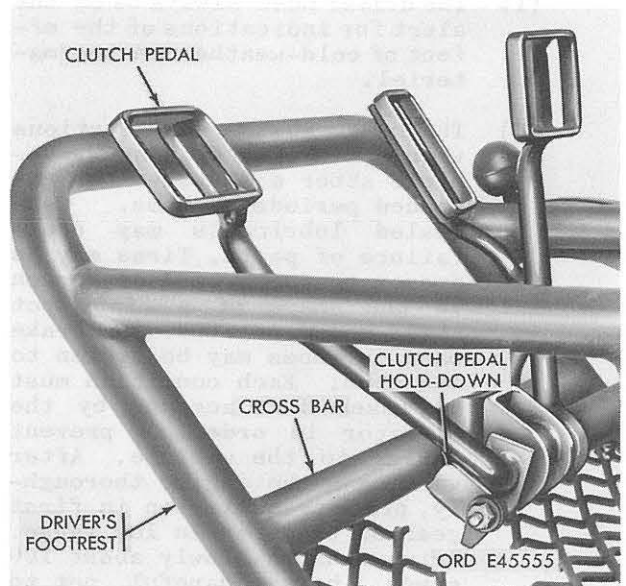


Figure 47. Clutch pedal lock down hold-down clutch pedal in released position - M274A1 vehicle.

- (4) Depress clutch pedal and position clutch pedal lock down against driver's footrest cross bar as shown in figure 47. The lock down will hold clutch pedal in released position and disengage engine from transmission to improve cranking ability during cold-weather starting.
- (5) Start engine as directed in paragraph 25.
- (6) When engine fails to start after the first attempt, repeat procedures in paragraphs (2) and (3), above.

c. Winterization Equipment. TM 9-207 contains general information on winterization equipment and vehicle processing.

d. Fuels and Lubricants (Storage, Handling, and Use). Refer to TM 9-207 for detailed instructions on storage, handling, and use.

39. Extreme Cold-weather Operation

a. General.

- (1) The driver must always be on the alert for indications of the effect of cold-weather on the materiel.
- (2) The driver must be very cautious when starting or driving the vehicle after a shutdown for extended periods of time. Congealed lubricants may cause failure of parts. Tires may be frozen to the ground or frozen in the shape of a flat spot while underinflated. The brake band or shoes may be frozen to the drum. Each condition must be taken into account by the operator in order to prevent damage to the vehicle. After warming up the engine thoroughly, place transmission in first gear and transfer in low range. Drive vehicle slowly about 100 yards, being careful not to stall the engine. This should heat gears and tires to a point where normal operation can be expected.
- (3) The driver should refer to TM 21-305 for special instructions on driving hazards in snow, ice, and unusual terrain encountered under extreme cold-weather conditions.

b. At Halt or Parking.

- (1) When halted for short shutdown periods, park the vehicle in a sheltered spot out of the wind. If no shelter is available, park so that the engine does not face into the wind. For long shutdown periods, if high, dry ground is not available, prepare a footing of planks or brush. Chock in place if necessary.
- (2) When preparing the vehicle for shutdown period, place control levers in the neutral position to prevent them from possible freezing in an engaged position. Freezing may occur when water is present due to condensation.
- (3) Clean all parts of the vehicle of snow, ice, and mud as soon as possible after operation. Refer to table II for detailed

after-operation procedures. If covers are not installed, be sure to protect all parts of the engine and engine accessories against the entrance of loose, drifting snow during halt.

- (4) Refuel immediately in order to reduce condensation in the fuel tank. Prior to refueling, remove fuel tank drain plug (fig. 7) and drain off any accumulated water.
- (5) Correct tire inflation pressure prescribed in paragraph 17f.

40. Extreme Hot-weather Operation

a. General. Continuous operation of the vehicle at high speeds, long hard pulls, or in low gear ratios on steep grades or in soft terrain, may cause the vehicle to overheat. Avoid the continuous use of low gear ratios whenever possible. Halt the vehicle for a cooling-off period whenever necessary and the tactical situation permits.

b. At Halt or Parking.

- (1) Do not park the vehicle in the sun for long periods, as the heat and sunlight will shorten the life of the tires. If possible, park vehicle under cover to protect it from sun, sand, and dust.
- (2) Cover inactive vehicles with paulins if no other suitable shelter is available. Where entire vehicle cannot be covered, protect engine against entry of sand.
- (3) Correct tire inflation pressure is prescribed in paragraph 17f.
- (4) Vehicles inactive for long periods in hot humid weather are subject to rapid rusting and accumulation of fungi growth. Make frequent inspections and clean and lubricate to prevent excessive deterioration.

41. Operation on Desert or in Extreme Dust Conditions

Observe the precautions given in extreme hot-weather conditions (par. 40) and in addition inspect and service engine oil filter, carburetor, air cleaner, breathers, and vents frequently.

42. Operation on Unusual Terrain

a. General.

- (1) Select a gear ratio low enough to maintain engine speed without causing the wheels to spin. Vehicles must be placed in transfer low range before attempted operation on ice, snow, or in deep mud, to maintain vehicle momentum through or over difficult terrain. As soon as the vehicle is returned to normal driving conditions, place the transfer in high range.
- (2) 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. Do not jam sticks or stones under a spinning wheel, as this only forms an effective block and will wear the tire tread unnecessarily.
- (3) Skidding and the loss of steering and traction are the chief difficulties encountered on icy roads. When rear end skidding occurs, instantly turn front wheel in the same direction that the rear end is skidding. Decelerate the engine and do not declutch. Apply brakes very gradually.
- (4) The operator must know at all times the exact direction in which front wheels are steering. The vehicle may, on ice-covered or slippery terrain, continue in a straight-ahead direction even though the front wheels are turned to the right or left.
- (5) When traveling over crusted surfaces, avoid breaking through. Canvas or planking may be used as a road bed on short stretches to ensure against this possibility.
- (6) Operation in sand or dust requires daily cleaning of carburetor air cleaner and engine oil filter.

b. Recommended Tire Pressure. Recommended tire pressure under all types of road and terrain conditions is prescribed in paragraph 17f.

c. After-operation Procedures. Remove accumulations of ice, snow, and mud from under the platform, steering knuckles and arms, brake, transmission breather, air cleaner, and ignition switch electrical connections.

Caution: Exercise care when removing such accumulations in order to prevent damage to the affected parts.

43. Fording Operations

a. General. In fording, vehicles may be subjected to water of varying depth. Factors to be considered are spray-splashing precautions, normal fording capabilities, and accidental complete submersion. It is important that water does not enter the rain deflector and precleaner (fig. 48) during fording operations. Submersion of the rain deflector and precleaner would allow water to enter the air intake system and stall engine.

b. Normal Fording. Fording of bodies of water up to a maximum depth of 18 inches (fig. 48), is based on the standard vehicle with normal waterproofing protection provided for critical units as manufactured, without a deep-water fording kit. Observe the following precautions:

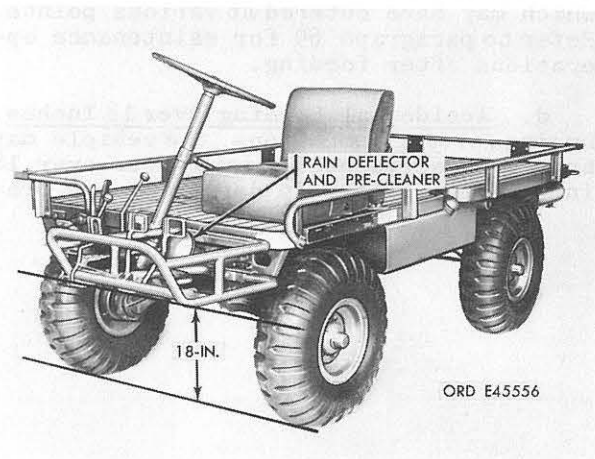


Figure 48. Determining depth of water.

- (1) Do not exceed known fording limits of vehicle (b, above).
- (2) The engine must be operating at maximum efficiency before attempting to ford.
- (3) Shift transmission and transfer into lowest speed positions. Speed up engine to overcome the possibility of a stall. Enter

the water slowly. Should the engine stall, it may be started in the usual manner as directed in paragraph 25.

- (4) All normal fording should be at speeds which will avoid forming a bow wave. Avoid using the clutch if possible because frequent use while submerged may cause the clutch to slip. The brake will usually be lost but in some cases may grab after emergence. Applying the brake a few times after dry land has been reached will help dry out the brake lining.
- (5) If accidental complete submerision occurs, d below, the vehicle will be salvaged, temporary preservation applied as outlined in paragraph c below, and then sent to the organizational maintenance unit as soon as possible for necessary permanent maintenance.

c. After-fording Operations. At the earliest opportunity, check the engine oil level and check for presence of water in the crankcase. Heat generated by driving will evaporate or force out most water which may have entered at various points. Refer to paragraph 69 for maintenance operations after fording.

d. Accidental Fording Over 18 Inches. During fording operations, the vehicle may be driven accidentally into water over 18 inches deep. The rain deflector and pre-

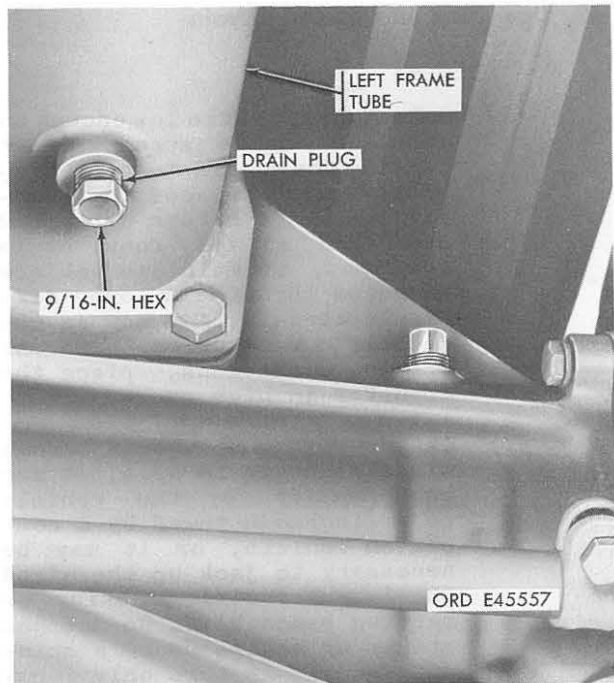


Figure 49. Location of water drain plug at rear end of left frame tube - M274A1 vehicle.

cleaner (fig. 48) may have been momentarily submerged in water, allowing water to enter the air intake system and collect in the left frame tube (fig. 49). In this event, as a precaution, remove drain plug at rear end of left frame tube using emergency starting crank and wheel nut wrench (figs. 28 and 29). Drain water from tube and install plug.

CHAPTER 3

MAINTENANCE INSTRUCTIONS

Section I. PARTS, TOOLS, AND EQUIPMENT

44. General

Tools and equipment issued to the driver are for use in operating and maintaining the vehicle. They are not to be used for purposes other than prescribed in this manual. The only tool allocated for operation of the vehicle is the emergency starting crank and wheel nut wrench (figs. 28 and 29). When this tool is not in use, it should be stowed on the driver's footrest on the M274 vehicle (fig. 28) and on the rear of engine guard on the M274A1 vehicle (fig. 29).

45. Repair Parts

No repair parts are authorized to first

echelon maintenance for the 1/2-ton, 4 x 4, platform utility truck M274 or M274A1.

46. Common Tools

Standard and commonly used tools and equipment having general application to this materiel are authorized for issue by tables of allowances and tables of organization and equipment.

47. Special Tools and Equipment

No special tools and equipment are required for first echelon maintenance of the 1/2-ton, 4 x 4, platform utility truck M274 or M274A1.

Section II. LUBRICATION

48. Lubrication Chart

Caution: If the M274A1 vehicle is turned on its side or back to be lubricated, close fuel filler cap and gage rod vent valve (fig. 50) to prevent fuel from spilling. After lubrication is completed on either vehicle, return vehicle to normal position and remove spark plugs. Hand crank engine 10 to 15 times to expel any oil that may have accumulated in engine cylinders. Install spark plugs. Open vent valve on filler cap.

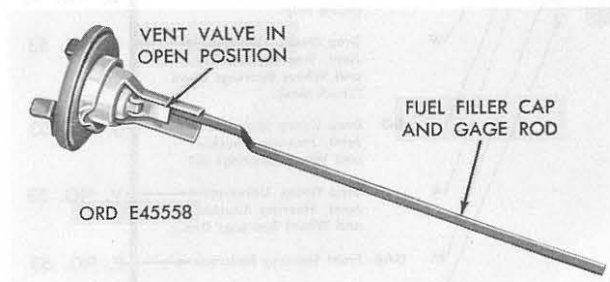


Figure 50. Location of fuel filler cap and gage rod vent valve—M274A1 vehicle.

The lubrication chart (figs. 51 and 52) prescribes cleaning and lubricating procedures as to locations, intervals, and proper materials for the M274 and M274A1 vehicles. Lubrication which is to be performed by Ordnance maintenance personnel is listed on the lubrication chart in the NOTES.

49. General Lubrication Instructions Under Usual Conditions

a. General. Any special lubricating instructions required for specific mechanisms or parts are covered in the pertinent section.

b. Usual Conditions. Service intervals specified on the lubrication chart are for normal operation and where moderate temperature, humidity, and atmospheric conditions prevail.

c. Points of Application. Lubricating fittings and oil holes are shown in figures 53 through 55 and are referenced to the lubrication chart. Wipe these devices and the surrounding surfaces clean before and after lubricant is applied.

d. Reports and Records.

- (1) Report unsatisfactory performance of prescribed petroleum fuels, lubricants, or preserving materials, on Maintenance Request, DA Form 2407 and pre-

pare in accordance with TM 38-750.

- (2) Maintain a record of lubrication of the vehicle in the equipment log book on DA Form 2408-2.

LUBRICATION CHART

TRUCK, PLATFORM UTILITY: 1/2-TON, 4x4 M274 AND M274A1

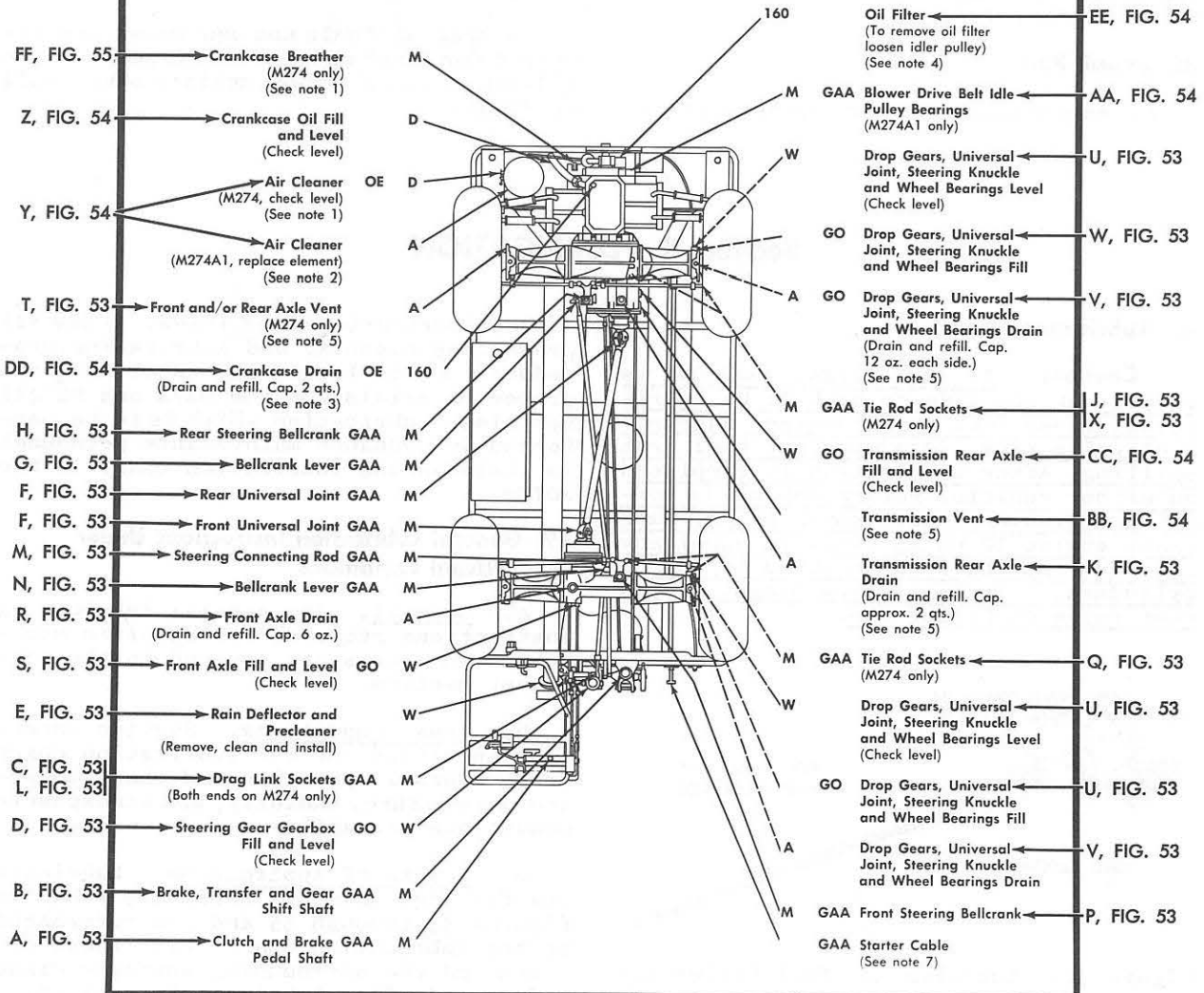
References: TM 9-2320-213-10, TM 9-8034-20

Lubrication will be performed only as prescribed by this order except as required under unusual conditions as described in referenced TM.

Clean fittings before lubricating. Clean parts with THINNER, PAINT, MINERAL SPIRITS (TPM) or DRY-CLEANING SOLVENT (S.D). Dry before lubricating. Lubricate dotted arrow points on both sides of the equipment.

LUBRICANT • INTERVAL

INTERVAL • LUBRICANT



ORD E45559

Figure 51. Lubrication chart - front.

KEY

| LUBRICANTS | EXPECTED TEMPERATURES | | | FOR ARCTIC OPERATION Refer to TM 9-207 | LUBRICANTS | INTERVALS |
|--|-----------------------|----------------|--------------|---|---|---|
| | above +32°F | +40°F to -10°F | 0°F to -65°F | | | |
| OE—Lubricating oil, internal combustion engine, transmission | OE 30 | OE 10 | OES | | OES—Lubricating oil, internal combustion engine | D—Daily W—Weekly M—Monthly |
| GO—Lubricating oil, gear | GO 90 | GO 75 | GOS | | GOS—Lubricating oil, gear | A—Annually or 2d Semiannual (S) P.M. Service Whichever Occurs First 160 —160 Hours |
| GAA—Grease, automotive and artillery | GAA | GAA | GAA | | | |

NOTES

CAUTION: Before turning M274 vehicle on its side or back to be lubricated, remove oil bath air cleaner reservoir. Shut off fuel filler cap vent valve (M274A1 only). After lubrication, return vehicle to normal position and remove spark plugs. Hand crank engine several times in order to expel any oil that may have accumulated in engine cylinders. Install spark plugs and air cleaner reservoir. This caution also applies to the M274A1 vehicle, except for removing or installing air cleaner reservoir, since this is the dry type. Also, open fuel filler cap vent valve (M274A1).

- AIR CLEANERS AND BREATHERS (M274 VEHICLE)**—(Oil bath type). Daily replenish to bead level with OE, crankcase grade. Monthly, clean oil reservoir and refill with OE as above whenever crankcase oil is changed. For desert or extremely dusty operation, disassemble. Clean all parts and refill with OE once every operating day or more frequently if required (baffle type). For normal operation, clean, reoil at indicated intervals with OE. For desert or extremely dusty operation, clean and reoil once every operating day or more frequently if required.
- AIR CLEANER (M274A1 VEHICLE)**—(Dry type). Annually replace air cleaner element. Remove all dust and dirt particles from air cleaner using a clean dry cloth. For desert or extreme dusty operation, replace element monthly or more frequently if required. See instructions on air cleaner for cleaning.
- CRANKCASE**—Drain crankcase every 160 hours. Drain only after engine has been running previously and is at operating temperature. Remove sump assembly and clean. Refill to FULL mark on oil level gage. Run engine a few minutes to fill engine oil passages, stop engine, recheck oil level and add oil if necessary.
- OIL FILTER**—Every 160 hours, while crankcase is being drained, remove, clean, and inspect element; clean inside of case; and install element.
- GEAR CASES**—Drain annually. Drain only when hot after operation. Fill to level plug before operation. Clean transmission vent and axle housing vent weekly (M274 only) after operation in mud and water.
- OIL CAN POINTS**—Weekly, lubricate brake clutch throttle disconnects and cables, hand throttle, shifting control rods and support brackets, steering locking and sector joint, storage clips, access cover locks, clamp screw tow bar, steering column brace, tow bar bellcrank, and tow bar drag link with OE.
- LUBRICATED AT TIME OF DISASSEMBLY BY ORDNANCE PERSONNEL**—Starter cable (M274 only).

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Figure 52. Lubrication chart - rear.

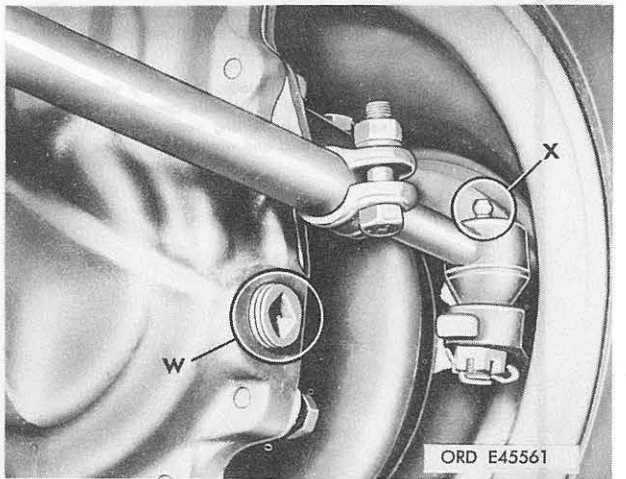
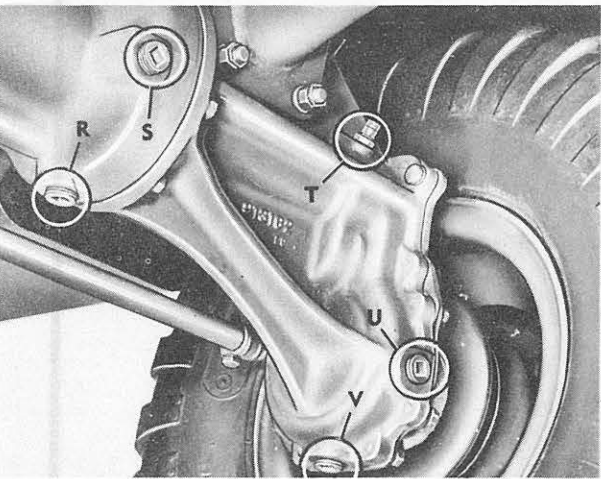
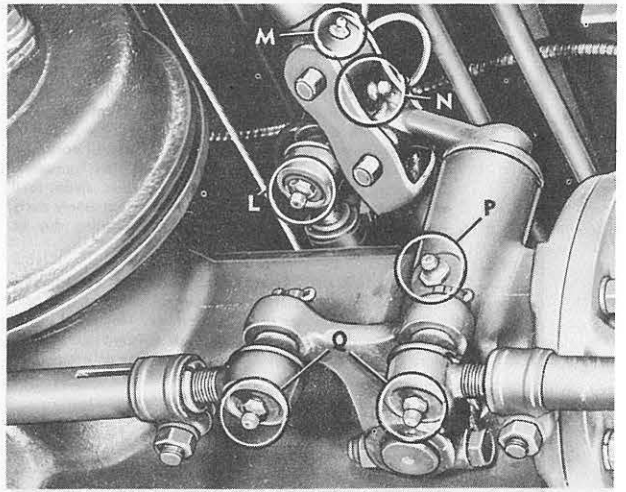
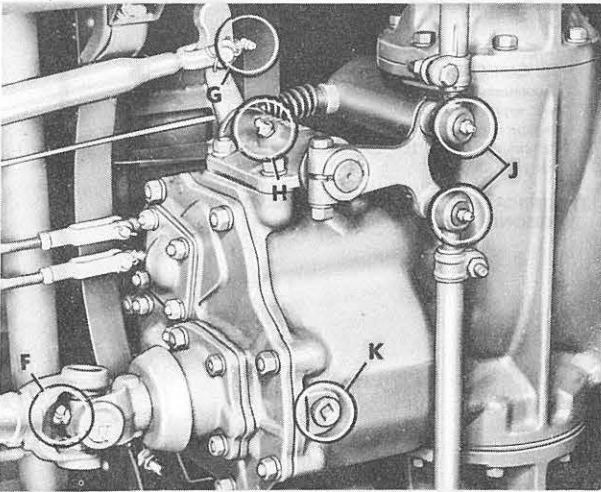
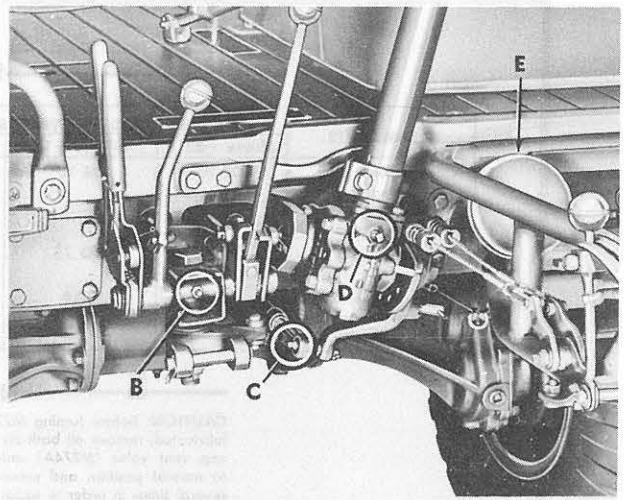
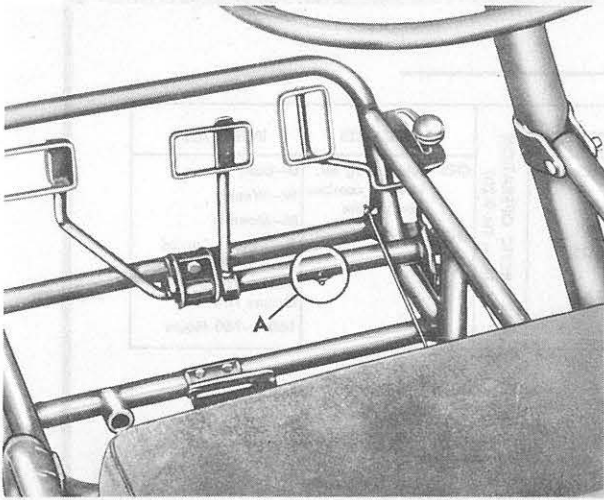


Figure 53. Lubrication points A to X.

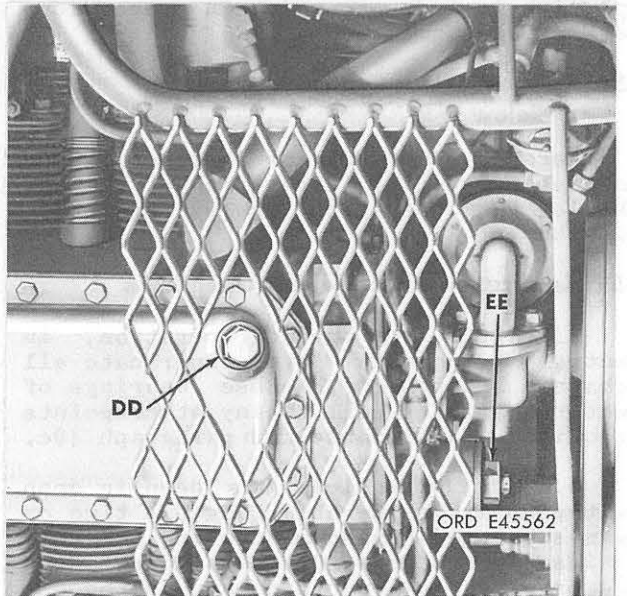
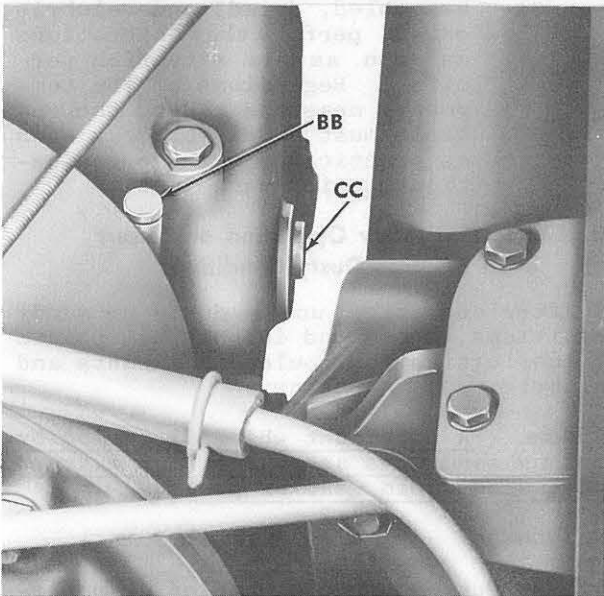
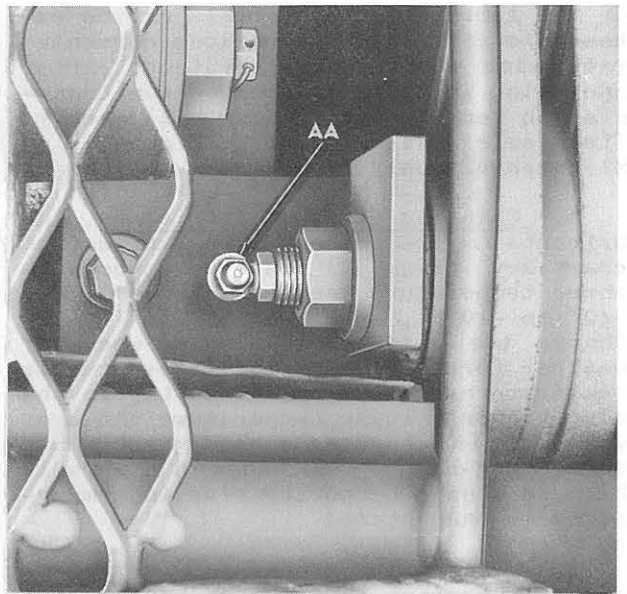
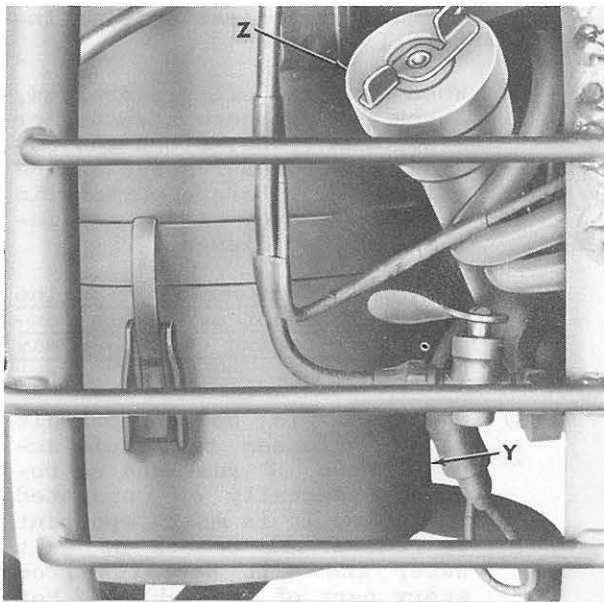


Figure 54. Lubrication points Y to EE.

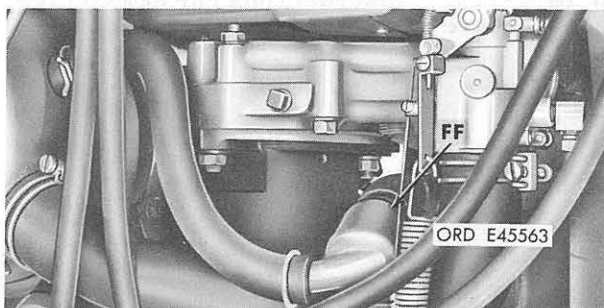


Figure 55. Lubrication point FF.

50. General Lubrication Instructions Under Unusual Conditions

a. Unusual Conditions. Reduce service intervals specified on the lubrication chart, i.e., lubricate more frequently, to compensate for abnormal or extreme conditions, such as high or low temperatures, prolonged periods of high speed operation, continued operation in sand or dust, immersion in water, or exposure to moisture. Any one of these operations or conditions may cause contamination and quickly destroy the protective qualities

of the lubricants. Intervals may be extended during inactive periods commensurate with adequate preservation. After operation in mud and water, clean transmission vent (point BB, fig. 54) weekly. Clean axle vents (point T, fig. 53) on M274 vehicle only.

b. Changing Grade of Lubricants. Lubricants are prescribed in the lubrication chart key (fig. 52) in accordance with three temperature ranges: above +32°F., +40° to -10°F., and from 0° to -65°F. Change the grade of lubricants whenever weather forecast data indicates that air temperatures will be consistently in the next higher or lower temperature range or when sluggish starting caused by lubricant thickening occurs. No change in grade will be made when a temporary rise in temperature is encountered.

c. Maintaining Proper Lubricant Levels. Lubricant levels must be observed closely and necessary steps taken to replenish in order to maintain proper levels at all times.

51. Lubrication for Continued Operation Below 0°F.

Refer to TM 9-207 for instructions on necessary special lubrication of the vehicle for operation in extreme cold-weather.

52. Lubrication After Fording Operations

a. After any fording operation, in water 12 inches or over, lubricate all chassis points to cleanse bearings of water or grit as well as any other points required in accordance with paragraph 49c.

b. If the vehicle has been in deep water for a considerable length of time or was submerged beyond its fording capabilities, precautions must be taken as soon as practicable to avoid damage to the engine and other vehicle components as follows:

- (1) Perform a complete lubrication

service regardless of time interval (par. 48).

- (2) When engine oil is drained, check for presence of water or sludge; if found, flush the engine with preservative engine oil PE-30. Before putting in new oil, remove, clean, and install filter element.

Note. If preservative engine oil PE-30 is not available, engine lubricating oil OE-30 may be used.

- (3) Operation in bodies of salt water increases the rapid accumulation of rust and corrosion, especially on unpainted surfaces. It is most important to remove all traces of salt water and salt deposits from every part of the vehicle. For assemblies which have to be disassembled, dried, and relubricated, perform these operations as soon as the situation permits. Regardless of the temporary measures taken, the vehicle must be delivered as soon as practicable to the organizational maintenance unit.

53. Lubrication After Operation on Desert or in Extreme Dusty Conditions

After operation under dusty or sandy conditions, clean and inspect all points of lubrication for fouled lubricants and relubricate as necessary.

Note. A lubricant which is fouled by dust and sand acts as an abrasive mixture and causes rapid wear of parts.

54. Painting

Instructions for preparation of materiel for painting, methods of painting, and materials to be used are contained in TM 9-213. Instructions for camouflage painting are contained in FM 5-20.

Section III. PREVENTIVE-MAINTENANCE SERVICES

55. General

The purpose of preventive-maintenance services is to detect first signs of electrical and mechanical failures of assemblies in the vehicle, and to be sure that appropriate corrective action is taken before expensive and time-consuming repairs or replacements are required. The system of preventive-maintenance services is based on frequent inspections and services accomplished by operators, company battalion, or regimental maintenance personnel under active supervision by all commanders and leaders.

56. Responsibility

Operators and crew chiefs are personally responsible for assigned materiel.

57. Outline

The system of preventive-maintenance services is divided into two types of recorded services. The daily service, performed by the user, operator, or crew (first echelon) whenever the vehicle is operated, and the semiannual "S" service, performed by organizational-maintenance personnel (second echelon), assisted by the operator or crew. The services prescribed in this section are designated as first-echelon services and are limited to maintenance by the user, operator, or crew. These services include proper care, operation, cleaning, preservation, adjustment, and lubrication as prescribed herein and in the lubrication order.

58. Intervals

The hours that materiel operates is the principal criterion for the frequency of preventive-maintenance services. On these vehicles, the semiannual "S" service is performed at 600 hours or six-month intervals, whichever occurs first. Operation under adverse conditions, such as extreme temperatures, dust, or mud, may require preventive-maintenance services to be performed more frequently. Notify the individual designated in authority when assigned equipment of materiel has been subjected to adverse conditions.

59. General Procedures for All Services and Inspections

a. The following general procedures apply to first echelon preventive-maintenance services and to all inspections, and are just as important as the specific procedures.

b. Inspections to see if items are in good condition, correctly assembled or stored, secure, not excessively worn, not leaking, and adequately lubricated apply to most items in the preventive-maintenance and inspection procedures. Any or all of these checks that are pertinent to any item (including supporting, attaching, or connecting members) will be performed automatically, as general procedures, in addition to any specific procedures given.

- (1) Inspection for "good condition" is usually an external visual inspection to determine whether the unit is damaged beyond safe or serviceable limits. "Good condition" is explained further as meaning: not bent or twisted, not chafed or burred, not broken or cracked, not bare or frayed, not dented or collapsed, not torn or cut, not deteriorated.
- (2) Inspection of a unit to see that it is correctly assembled or stowed is usually a visual inspection to see that the unit is in its normal position in the vehicle and that all its parts are present and in their correct relative position.
- (3) Inspection of a unit to determine that it is "secure" is usually an external, visual examination or a check by hand or wrench for looseness. Such inspection must include any brackets, lock washers, lock nuts, locking wires, or cotter pins as well as any connecting tubes, hoses, or wires.
- (4) "Excessively worn" means worn beyond serviceable limits or to a point likely to result in failure if the unit is not replaced before the next scheduled services. Excessive wear of mating parts or linkage connection is usually evidenced by too much play (lash or lose motion). It includes illegibility as applied to markings, data and caution plates, and printed matter.
- (5) Such expressions as "adjust if necessary" or "replace if necessary" are not used in the specific procedures. It is understood that whenever inspection

reveals the need of adjustment, repair, or replacement, the necessary action will be taken.

c. Any special cleaning instructions required for specific mechanisms or parts are contained in the pertinent section, General cleaning instructions are as follows:

- (1) Use dry-cleaning solvent or mineral spirits paint thinner to clean or wash grease or oil from all metal parts.
- (2) A solution of one part grease-cleaning compound to four parts of dry-cleaning solvent or mineral spirits paint thinner may be used for dissolving grease and oil from engine blocks, body, and other parts. After cleaning, use cold water to rinse off any solution which remains.
- (3) After the parts are cleaned, rinse and dry them thoroughly. Apply a light grade of oil to all polished metal surfaces to prevent rusting.
- (4) When authorized to install new parts, remove any preservative materials, such as rust-preventive compound, etc.; prepare parts as required (oil seals, etc.); and for those parts requiring lubrication, apply the lubricant prescribed in the lubrication chart.

d. General precautions in cleaning are as follows:

- (1) Dry-cleaning solvent or mineral spirits paint thinner is flammable and should not be used near an open flame. Fire extinguishers should be provided when these materials are used. Use only in well-ventilated places.
- (2) These cleaners evaporate quickly and have a drying effect on the skin. If used without gloves, they may cause cracks in the skin and, in the case of some individuals, a mild irritation or inflammation.
- (3) Avoid getting petroleum products, such as dry-cleaning solvent, mineral spirits paint thinner, engine fuels, or lu-

bricants, on rubber parts as they will deteriorate rubber.

- (4) The use of Diesel fuel oil, gasoline or benzene (benzol) for cleaning is prohibited.

e. Name plates, caution plates, and instruction plates are made of aluminum. When they are found to be in a corroded condition, they should be thoroughly cleaned and coated with clear lacquer.

60. Preventive-maintenance Instructions for Operator

a. Purpose. To ensure mechanical efficiency, it is necessary that the vehicle be systematically inspected at intervals every day it is operated, so defects may be discovered and corrected before they result in serious damage or failure. Maintenance services will be performed at these designated intervals. Any damage or unsatisfactory operating characteristics beyond the scope of the driver or operator to correct must be reported at the earliest opportunity to the designated individual in authority.

b. Daily Preventive-maintenance Services. Each vehicle will be inspected each day that it is operated. This inspection and service is divided into three parts, as indicated in (1) through (3), below.

- (1) Before-operation service. This is a brief inspection to ascertain that the materiel is ready for operation; it is mainly a check to see if conditions affecting the readiness of the vehicle have changed since the last after-operation service.
- (2) During-operation service. This service consists of detecting any unsatisfactory performance. While driving, the driver should be alert for any unusual noises or odors, steering irregularities, or any other indications of malfunction of any part of the vehicle. Every time he applies the brakes, shifts gears, or turns, the driver should instinctively consider it a test and note any unusual or unsatisfactory performance.
- (3) After-operation service. This service consists of investigating any deficiencies noted during operation and repeating part of the before-operation service.

This is basic daily service for tactical materiel. It consists of correcting, insofar as possible, any operating deficiencies that have been noted. Thus

the materiel is prepared to operate upon a moment's notice.

c. Procedures. Follow the procedures in numerical order given in table I.

Table I. Preventive-maintenance Checks and Services

| Interval and Sequence Number | | | Items to be inspected | Procedure | Paragraph Reference |
|------------------------------|------------------|-----------------|-----------------------|--|---------------------|
| Before Operation | During Operation | After Operation | | | |
| 1 | | | Oil Level | Check engine oil level and add as required to correspond with expected temperatures. See lubrication chart (point Z, fig. 54). Inspect for oil leaks around engine. Report any oil leaks to organizational-maintenance personnel. | |
| 2 | | | Fuel Leaks | Check for fuel leaks around fuel filter and connecting lines and fittings. Report any fuel leaks to organizational-maintenance personnel. | |
| 3 | | | Shielded Conduits | Remove engine access cover and inspect spark plug shielded conduits for frayed insulation and make sure they are properly secured by electrical clamps. Remove any obstructions, brush, or leaves that may cause an air restriction and affect engine cooling. Clean the engine hour meter sight window and record engine operating hours. | |
| 4 | | | Tires | Visually inspect tires for sufficient air pressure. Inflate as necessary. Remove penetrating objects such as nails, glass, etc. Check for missing valve caps or unusual wear. Report unusual wear to organizational-maintenance personnel. | |
| 5 | | | Fuel Level | Check fuel level in fuel tank, using fuel filler cap and gage rod. Replenish fuel tank to FULL mark on gage. | |
| 6 | | | Vent Valve | Check to make sure fuel filler cap and gage rod vent valve (fig. 50) is in OPEN position as shown (M274A1). | |
| 7 | | | Oil and Fuel Leaks | Check under vehicle for axle, transmission, transfer, and drop axle oil leaks and fuel tank gasoline leaks. Look for fresh oil or fuel spots on ground which will help in determining possible location of leak. Some seepage around oil seals is normal. Remove any debris from under vehicle, especially around drive shaft, brake drum, and controls. | |

Table I. Preventive-maintenance Checks and Services

| Interval and Sequence Number | | | Items to be inspected | Procedure | Paragraph Reference |
|------------------------------|------------------|-----------------|----------------------------|---|---------------------|
| Before Operation | During Operation | After Operation | | | |
| 8 | | | Visual Damage | Visually inspect the following for security of mounting or damage: platform, handrail, driver's seat, publications, forms, wheel nuts, and emergency starting and wheel nut wrench and also the secure stowage of tow bar. | |
| | 9 | | Steering Brakes and Clutch | Check operation of steering, brakes, and clutch. Be alert for any unusual noises and operating faults such as wheel shimmy or wander. | |
| | 10 | | Shift Levers | Check operation of transmission shift lever. Make sure lever does not bind and selection of gears can be made in an easy manner. Check operation of handbrake and ability to hold vehicle on an incline. | |
| | 11 | | Under-carriage | Check for damage under the vehicle, especially for bent tie rods and exhaust pipes. Check for oil and grease leaks. Remove any accumulation of mud, brush, or debris from under vehicle. Investigate and correct or report any faults noted during operation. | |
| | 12 | | Platform | Check general condition of platform. Check security of all locking and fastening devices. Wash or wipe off exterior of vehicle with clean, soft cloth. | |

61. Driver Participation in Performance of Second Echelon Preventive-maintenance

When practical, the driver will accompany the vehicle when it is returned to the second echelon for the semiannual "S" preventive-maintenance service. He

may thus relate to second-echelon maintenance personnel, first hand information on any unusual noises or peculiar operating conditions. Also, he will assist in the performance of these periodic maintenance services.

Section IV. TROUBLESHOOTING

62. Scope

a. This section contains troubleshooting information for locating and correcting some of the troubles which may develop in the vehicle. Troubleshooting is the systematic isolation of defective components by means of an analysis of trouble symptoms, testing to determine the defective component, and applying the remedies. In the majority of cases, the driver can only note trouble symptoms, by detecting strange or unusual noises or other irregularities, and report them to organizational-maintenance personnel for further action.

b. Standard automotive theories and principles of operation apply in troubleshooting this vehicle. The driver must pay careful attention to any symptoms of trouble, unusual noises, odors, or handling, or any observable defective condition, and report them to organizational-maintenance personnel if the remedy is beyond his responsibility. The greater the number of symptoms that can be de-

tected and evaluated, the easier and quicker the defect can be isolated and corrected.

63. Troubleshooting Table

a. The troubleshooting malfunction (symptoms), probable causes, and corrective actions that can ordinarily be performed by the driver are listed in table II. In emergency situations where the services of organizational-maintenance personnel are not available and where immediate corrective action must be taken to operate the vehicle, the driver may perform such additional actions of which he is capable.

b. The driver must bear in mind the importance of detecting and reporting any symptoms of trouble that occur during operation of the vehicle. Many symptoms of serious and costly trouble are apparent only during operation, and if not detected and reported by the driver, may go undetected until they result in complete failure.

Table II. Troubleshooting

| Engine | | |
|--|--|---|
| Malfunction | Probable cause | Corrective action |
| 1. Engine fails to start when cranked. | <ul style="list-style-type: none"> a. Fuel tank empty. b. Fuel shutoff valve turned to OFF position. c. Ignition switch in OFF position. d. Defective magneto ground thermo contact. e. Engine cylinders flooded with fuel caused by overchoking. f. No fuel reaching carburetor, plugged fuel lines, or other causes. | <ul style="list-style-type: none"> a. Fill tank with fuel. b. Turn fuel shutoff valve to ON position (par. 25). c. Turn ignition switch to ON position (par. 25). d. Notify organizational-maintenance personnel. e. Open throttle wide and crank engine with magneto switch turned to ON position. If necessary notify organizational-maintenance personnel to clean or replace spark plugs. f. Notify organizational-maintenance personnel. |

Table II. Troubleshooting - Continued

Engine - Continued

| Malfunction | Probable cause | Corrective action |
|---|---|--|
| 2. Engine fails to stop when ignition switch is turned off. | a. Engine overheated. | a. Push hand throttle to idle position. Pull choke out to full choke position, to flood engine cylinders with fuel. Notify organizational-maintenance personnel. |
| | b. Ignition switch defective or other causes. | b. Notify organizational-maintenance personnel. |
| 3. Engine misfires or stalls at idle speed. | a. Fouled spark plugs. Incorrect ignition firing order. Spark plug shielded conduit connected wrong at magneto cap or at spark plugs or other causes. | a. Notify organizational-maintenance personnel. |
| | b. Contaminated fuel. | b. Drain fuel tank and refill with correct fuel. |
| 4. Loss of power. | a. Late ignition timing. | a. Notify organizational-maintenance personnel. |
| | b. Incorrect governor setting or other causes. | b. Notify organizational-maintenance personnel. |

Fuel System

| | | |
|----------------------------------|---------------------------------|---|
| 5. Fuel not reaching carburetor. | a. No fuel in tank. | a. Fill fuel tank with proper fuel. |
| | b. Other causes. | b. Notify organizational-maintenance personnel. |
| 6. Leak in fuel system. | a. Loose fuel line connections. | a. Tighten loose connections. |
| | b. Other causes. | b. Notify organizational-maintenance personnel. |

Exhaust System

| | | |
|-----------------------------|---------------------------------------|---|
| 7. Excessive exhaust noise. | a. Loose exhaust pipe connections. | a. Notify organizational-maintenance personnel. |
| | b. Defective muffler or other causes. | b. Notify organizational-maintenance personnel. |

Cooling System

| | | |
|-------------------------|--|---|
| 8. Engine runs too hot. | a. Engine air shroud assembly dirty or damaged. | a. Clean if dirty. If damaged, notify organizational-maintenance personnel. |
| | b. Blower belts loose, damaged blower fan blades, or other causes. | b. Notify organizational-maintenance personnel. |

Table II. Troubleshooting - Continued

| Starting System | | |
|---|--|---|
| Malfunction | Probable cause | Corrective action |
| 9. Starter cable fails to rewind. | a. Rewind spring broken. | a. Notify organizational-maintenance personnel. |
| | b. Starter cable kinked, frayed, or broken. | b. Notify organizational-maintenance personnel. |
| 10. Pulling starter cable fails to turn engine. | a. Pawl broken or stuck. | a. Notify organizational-maintenance personnel. |
| | b. Starter cable kinked, frayed, broken, or other causes. | b. Notify organizational-maintenance personnel. |
| Ignition System | | |
| 11. Ignition faulty while engine is running. | a. Faulty spark plugs. | a. Notify organizational-maintenance personnel. |
| | b. Faulty spark plug shielded conduits or other causes. | b. Notify organizational-maintenance personnel. |
| Radio Interference | | |
| 12. Radio interference caused when engine is running. | a. Loose connections in spark plug shielded conduits. | a. Notify organizational-maintenance personnel. |
| | b. Shielding or shielded conduits broken and spark jumping across to ground. | b. Notify organizational-maintenance personnel. |
| Clutch | | |
| 13. Clutch slips. | a. Improper clutch pedal adjustment. | a. Notify organizational-maintenance personnel. |
| | b. Clutch driven disk facings burned or worn or other causes. | b. Notify organizational-maintenance personnel. |
| 14. Clutch grabs. | a. Clutch driven disk facings saturated with oil, grease, or water. | a. Notify organizational-maintenance personnel. |
| | b. Clutch pressure plate out of adjustment or other causes. | b. Notify organizational-maintenance personnel. |
| 15. Clutch rattles. | a. Clutch release bearing carrier return spring unhooked or broken. | a. Notify organizational-maintenance personnel. |
| | b. Clutch driven disk torsion drive springs broken or other causes. | b. Notify organizational-maintenance personnel. |

Table II. Troubleshooting - Continued

Axles, Including Transmission and Transfer

| Malfunction | Probable cause | Corrective action |
|------------------------|---|---|
| 16. Excessive noise. | <p>a. Insufficient or incorrect lubricant.</p> <p>b. Broken or worn parts in transmission or transfer and/or other causes.</p> | <p>a. Check transmission, transfer axle, and drop axle lubricant level. Fill to correct level with lubricant specified in lubrication chart (figs. 51 and 52). Coordinate with organizational-maintenance personnel.</p> <p>b. Notify organizational-maintenance personnel.</p> |
| 17. Slips out of gear. | <p>a. Damaged transmission poppets, springs, or interlock.</p> <p>b. Misalignment between engine flywheel housing and transmission housing mating surfaces or other causes.</p> | <p>a. Notify organizational-maintenance personnel.</p> <p>b. Notify organizational-maintenance personnel.</p> |
| 18. Hard shifting. | <p>a. Controls binding.</p> <p>b. Clutch driven disk binding on transmission input shaft splines, or pressure plate faulty. Check other causes.</p> | <p>a. Check under vehicle and inspect for bent shift rods and binding condition. Notify organizational-maintenance personnel.</p> <p>b. Notify organizational-maintenance personnel.</p> |

Propeller Shaft

| | | |
|-----------------------------------|---|---|
| 19. Excessive vibration or noise. | <p>a. Foreign material on shaft.</p> <p>b. Universal joint bearings lack lubricant.</p> <p>c. Other causes.</p> | <p>a. Clean propeller shaft.</p> <p>b. Lubricate bearings as specified in lubrication chart (figs. 51 and 52) or LO 9-2320-213-12.</p> <p>c. Notify organizational-maintenance personnel.</p> |
|-----------------------------------|---|---|

Brakes

| | | |
|------------------|---|---|
| 20. Brake drags. | <p>a. Improper brake cable adjustment.</p> <p>b. Brake cable return spring broken or missing and/or other causes.</p> | <p>a. Notify organizational-maintenance personnel.</p> <p>b. Notify organizational-maintenance personnel.</p> |
|------------------|---|---|

Table II. Troubleshooting - Continued

Brakes - Continued

| Malfunction | Probable cause | Corrective action |
|--------------------------|--|--|
| 21. Brakes fail to hold. | a. Brake lining saturated with water. | a. Drive vehicle slowly and apply and release brake pedal several times to dry brake lining. If brakes fail to hold after drying, notify organizational-maintenance personnel. |
| | b. Brake adjustment too loose or other causes. | b. Notify organizational-maintenance personnel. |

Wheels and Tires

| | | |
|-------------------------|---|---|
| 22. Wheel wobbles. | a. Wheel bent. | a. Replace wheel and tire assembly (par. 64). |
| | b. Wheel loose on wheel hub. | b. Tighten wheel nuts (par. 77). |
| 23. Abnormal tire wear. | a. Excessive use of four-wheel steering or four-wheel drive on hard surfaced roads. | a. Do not use four-wheel steering or four-wheel drive except when required and necessary. |
| | b. Wheels out of alignment or other causes. | b. Notify organizational-maintenance personnel. |

Steering

| | | |
|-------------------------|---|---|
| 24. Steering difficult. | a. Lack of lubrication. | a. Lubricate vehicle as specified in lubrication chart (figs. 51 and 52). |
| | b. Low tire pressure (below 12 psi). | b. Inflate tires to 12 psi. |
| | c. Steering gear damaged or other causes. | c. Notify organizational-maintenance personnel. |

Engine Hour Meter

| | | |
|--------------------|------------------------|---|
| 25. Not operating. | a. Internal damage. | a. Notify organizational-maintenance personnel. |
| | b. Drive gear damaged. | b. Notify organizational-maintenance personnel. |

Section V. CORRECTIVE MAINTENANCE (INSTRUCTIONS FOR OPERATOR)

64. Changing Wheel and Tire Assembly

a. The M274 and M274A1 vehicles are not equipped with a spare wheel and tire assembly.

b. When a damaged wheel or a damaged tire requires replacement, obtain a spare wheel and tire assembly and raise vehicle so wheel clears ground.

c. Remove wheel nuts using emergency starting crank and wheel nut wrench (figs. 28 and 29). Install replacement wheel and tire assembly and secure wheel to wheel

hub using five wheel nuts. Tighten nuts.

65. Correcting Tire Valve Leaks

a. When tire valve continuously leaks air, check valve core with drop of water or saliva for leakage. If leaking, obtain a screwdriver-type cap and tighten core with end of cap or replace core if necessary.

b. Check all valves for presence of caps. If any are missing, install new valve cap.

c. Maintain tire pressure of 12 psi.

Section VI. MAINTENANCE UNDER UNUSUAL CONDITIONS

66. Extreme Cold-weather Maintenance Problems

a. The importance of maintenance must be impressed on all concerned. Maintenance of mechanical equipment in extreme cold is exceptionally difficult in the field. Even shop maintenance cannot be completed with normal speed, because the equipment must be allowed to thaw out and warm up before the mechanic can make satisfactory repairs. In the field, maintenance must be undertaken under the most difficult of conditions. Bare hands stick to cold metal. Fuel in contact with the hands results in supercooling due to evaporation, and the hands can be painfully frozen in a matter of minutes. Engine oils, except sub-zero grade, are unpourable at temperatures below -40°F . Ordinary greases become solid.

b. These difficulties increase the time required to perform maintenance. At temperatures below -40°F ., maintenance requires up to five times the normal amount of time. The time required to warm up a vehicle so that it is operable at temperatures as low as -50°F . may approach two hours. Vehicles in poor mechanical condition probably will not start at all, or only after many hours of laborious maintenance and heating. Complete winterization, diligent maintenance, and well-trained crews are the key to efficient arctic-winter operations.

c. Refer to TM 9-207 for a general discussion of extreme cold maintenance procedures, application of anti-freeze

compounds and arctic-type lubricants, handling of storage batteries in extreme cold, and de-winterization procedures.

Caution: It is imperative that the approved maintenance procedures be followed. TM 9-207 contains general information which is specifically applicable to this vehicle as well as to all other vehicles. It must be considered an essential part of this technical manual, not merely an explanatory supplement to it.

67. Extreme Hot-weather Maintenance

a. Cooling System. Clean all leaves, paper, and debris from around blower and engine guard. Clean between engine and shroud if dirt has accumulated. Remove all mud from cylinder cooling fins. Keep blower drive belts in proper adjustment as described in TM 9-8034-20 and changes thereto.

b. Platform and Underbody.

- (1) In hot, damp climates, corrosive action will occur on all parts of the vehicle and will be accelerated during the rainy season. Evidences will appear in the form of rust and paint blisters on metal surfaces and mildew, mold, or fungus growth on fabrics and glass.
- (2) Protect all exposed metal surfaces with a film of engine lubricating oil (OE) crankcase

grade, on unfinished exposed metal surfaces. Cables and terminals should be protected by ignition-insulation compound.

- (3) Make frequent inspections of idle, inactive vehicles. Remove corrosion from exterior metal surfaces with abrasive paper or cloth and apply a protective coating of paint, oil, or suitable rust preventive.

68. Maintenance of Materiel After Operation on Unusual Terrain

a. Mud. Thorough cleaning and lubrication of all parts affected must be accomplished as soon as possible after operation in mud, particularly when the mud was of liquid consistency. Clean air-intake system and engine cooling fins. Clean entire engine compartment and all components therein.

b. Sand or Dust. Clean engine and engine compartment. Lubricate completely to force out lubricants contaminated by sand or dust. Air cleaners and fuel and oil filters must be cleaned frequently. The air-intake system and engine cooling fins must be checked when operating in dusty terrain. The oil cooler air passages and engine cooling fins must be cleaned by organizational-maintenance personnel with compressed air if engine overheating indicates that the air flow is restricted. All vents on the vehicle must be covered with a cloth at all times. When halted, the engine compartment openings should be covered to protect the engine against entrance of sand or dust.

69. Maintenance of Materiel After Fording

a. General. Although the vehicle unit housings are sealed to prevent the free flow of water into the housings, it must be realized that, due to the necessary design of these assemblies, some water may enter, especially during submersion. The following services should be accomplished on all vehicles that have been exposed to some depth of water or completely submerged, especially in salt water. Precautions should be taken as soon as practicable to halt deterioration and avoid damage before the vehicle is driven extensively in regular service.

b. Platform and Underbody. Remove frame tube drain plugs (fig. 49) and drain water. Clean all exposed painted surfaces and touchup paint where necessary. Coat unpainted metal parts with preservative lubricating oil. Lubricate vehicle

thoroughly as directed in the lubrication chart (figs. 51 and 52) or LO 9-2320-213-12. Do more than the usual lubrication job, making sure lubricant is forced into each lubrication point to force out any water present.

c. Engine, Transmission, Transfer, Axles, and Drop Gear Housings. Check engine oil level and the lubricant level in transmission, transfer, axles, and drop gear housings. Should there be evidence that water has entered, drain, flush, and refill with correct lubricant. Remove and clean engine oil filter.

d. Condensation. Although most units are sealed, the sudden cooling of the warm interior air upon submersion may cause condensation of moisture within the cases of instruments. A period of exposure to warm air after fording should eliminate this condition. Cases which can be opened may be uncovered and dried.

e. Aluminum or Magnesium Parts. If materiel remains in salt water for any appreciable length of time, aluminum or magnesium parts which were exposed to the water will probably be unfit for further use and must be replaced. Notify organizational-maintenance personnel for necessary replacement action.

f. Organizational Maintenance Action Following Accidental Submersion. As soon as practicable and before extensive further use, the vehicle will be delivered to organizational-maintenance personnel who will accomplish the following:

- (1) Wheels and brakes. All sealed joints will be inspected for evidence of water seepage and if found, complete disassembly, cleaning, relubrication, and assembly will be accomplished. The brake system will be inspected for presence of water. Dry out brake linings and clean rust and scum from the brake drum faces.
- (2) Fuel system. Drain fuel tank of any accumulated water, clean fuel filter and lines as necessary. If water is found in the air cleaner, clean, dry, and replace filter.
- (3) Magneto. Remove the magneto cap and check to determine if any water has entered the breaker. If water is present, drain, clean, thoroughly dry, and lubricate magneto as required.

CHAPTER 4

SHIPMENT AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT

70. Domestic Shipping Instructions

When shipping the 1/2-ton, 4 x 4, platform utility truck M274 or M274A1, the officer in charge of preparing shipments will be responsible for the vehicle being shipped in a serviceable condition, and properly processed for shipment, including preparation of Army shipping documents.

Note. Refer to TM 9-8034-20 and changes thereto for complete storage and shipment instructions.

71. Loading and Blocking Instructions

The operator, crew, or driver may assist, as required, in loading and blocking the vehicle on railroad cars.

Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

72. General

a. Destruction of the 1/2-ton, 4 x 4, platform utility truck M274 or M274A1 when subject to capture or abandonment in the combat zone will be undertaken by the using organization only when, in the judgment of the unit commander concerned, such action is necessary in accordance with orders of, or policy established, by the Army commander.

b. The information which follows is for guidance only. Certain procedures outlined below require the use of explosives and incendiary grenades which normally may not be authorized items for the vehicle. The issue of these and related materiel, and the conditions under which destruction will be effected, are command decisions in each case, according to the tactical situation. Of the several means of destruction, those most generally applicable are -

Mechanical

Requires axe, or similar implement.

Burning

Requires gasoline, oil, incendiary grenades, or other flammables.

Demolition

Requires suitable explosives or ammunition. Refer to FM 5-25.

Gunfire

Includes artillery, machine guns, rifles using rifle grenades, and launchers using anti-tank rockets. Under some circumstances hand grenades may be used.

In general, destruction of essential parts, followed by burning, will usually be sufficient to render the vehicle useless. However, selection of the particular method of destruction requires imagination and resourcefulness in the utilization of the facilities at hand under the existing conditions. Time is usually critical.

c. If destruction to prevent enemy use is resorted to, the vehicle must be so badly damaged that it cannot be restored to a usable condition in the combat zone, either by repair or cannibalization. Adequate destruction requires that all parts essential to the operation of the vehicle, including essential spare parts, be destroyed or damaged beyond repair. However, when lack of time and personnel prevents destruction of all parts, priority is given to the destruction of those parts most difficult to replace. On the M274 and M274A1 vehicles the priority order for destruction of components is as follows: carburetor, magneto, fuel pump, fuel tank, engine crankcase, tires, axle gears, and frame. Equally important, the same essential parts must be destroyed on all like vehicles so the enemy cannot con-

| | |
|--|--|
| Both starting methods function properly; proper performance and function of engine and hour meter; no unusual noise or vibration | Crank not available or starting cable does not function; engine performance or function inadequate; unusual noise or vibration; or hour meter missing or does not function |
|--|--|

| | |
|-----------|------------------------|
| Condition | Unable to start engine |
|-----------|------------------------|

| | | | |
|-------|----|---|-----|
| Value | 10 | 0 | RED |
|-------|----|---|-----|

Item 4. Clutch Assembly - Operation

Operate vehicle to determine if clutch grabs, chatters, or slips. Determine clutch pedal free travel. Clutch grab, chatter, or slippage which cannot be corrected by pedal and linkage adjustment makes the vehicle "RED."

| | | | |
|-----------|---|--|--|
| Condition | Operates properly with proper free travel | Operates properly; no adjustment remaining | Operates improperly; no adjustment remaining |
|-----------|---|--|--|

| | | | |
|-------|----|---|-----|
| Value | 10 | 2 | RED |
|-------|----|---|-----|

Item 5. Steering Assembly - Inspection and Operation

Operate vehicle in 2 and 4 wheel steering to determine steering adjustment and function. During operation, observe for shimmy and/or wander as a result of wear. Manually check tie rods for condition. Check steering housing for secureness. Check rear wheel steering rod, anchor pin, and steering gear for condition.

| | | |
|-----------|---|--|
| Condition | Operates properly in 2 and 4 wheel steering; adjustment correct; no wear detectable; rear wheel steering rod, anchor pin and steering gear secure | Operates properly only in 2 wheel steer; adjustment correct; detectable wear; bent or damaged rear wheel steering rod; missing anchor pin, or loose rear steering gear |
|-----------|---|--|

| | | |
|-------|----|---|
| Value | 10 | 2 |
|-------|----|---|

Item 6. Front Axle Assembly and Propeller Shafts - Inspection and Operation

Operate vehicle to detect unusual noises or vibrations. Manually check U-joints to determine movement as a result of wear. Check suspension to determine function.

| | | |
|-----------|---|--|
| Condition | Operates properly; no unusual noise, vibration or detectable U-joint wear | Operates but has detectable noise, vibration or U-joint wear |
|-----------|---|--|

Item 7. Rear Axle-transmission Assembly and Propeller Shafts - Inspection and Operation

Operate vehicle in all gears and through all ranges to detect unusual noises or vibrations. Manually check U-joints to determine movement as a result of wear. Check suspension to determine function.

| | | |
|-----------|---|--|
| Condition | Operates properly; no unusual noise, vibration or detectable U-joint wear | Operates but has detectable noise, vibration or U-joint wear |
|-----------|---|--|

| | | |
|-------|----|---|
| Value | 10 | 2 |
|-------|----|---|

Item 8. Brakes - Inspection and Operation

Operate brake system to determine function. Check flexible linkage on both hand and foot operated systems for condition, function, and adjustment.

| Condition | Operates properly with proper adjustment | Operates properly but no adjustment remaining; or damaged linkage |
|-----------|--|---|
| Value | 10 | 0 |

b. Information to be Determined From Equipment Log Book.

Item 9. Vehicle Operating Time (hours)

Determine the present hour meter reading. If there has been an hour meter change, add the hours at the time of change(s) to the present hour meter reading to find the total hours the vehicle has been operated since new or since depot overhaul.

| Hours | 0-25 | 26-150 | 151-275 | 276-350 | 350-400 | Over 400 |
|-------|------|--------|---------|---------|---------|----------|
| Value | 8 | 10 | 8 | 6 | 4 | 2 |

Item 10. Vehicle Age

Determine the age of the vehicle in years (1 yr, 5 mos. counts as 1 yr., and 1 yr. 6 mos. to 2 yr. 5 mos. counts as 2 yrs., etc.) by comparison of present date and date of manufacture or depot overhaul.

| Years | 0 - 1 | 1 - 3 | 3 - 4 | Over 4 |
|-------|-------|-------|-------|--------|
| Value | 10 | 6 | 2 | 1 |

Item 11. Engine Oil Consumption

Compute the quarts of oil added per 50 hours since last oil change. If less than 50 hrs. have been accumulated since last oil change, use data between the previous two oil changes. Do not consider the amount of oil used in making the oil change.

| Qts./50 hours | 0 - 1 | 1 - 2 | 2 - 3 | 3 - 4 | Over 4 |
|---------------|-------|-------|-------|-------|--------|
| Value | 10 | 7 | 4 | 2 | 0 |

Item 12. Engine Hours

Determine the hours of engine operation since installed in the vehicle.

| Hours | 0-125 | 126-260 | 261-325 | 326-400 | Over 400 |
|-------|-------|---------|---------|---------|----------|
| Value | 10 | 8 | 6 | 4 | 1 |

Item 13. Front Axle Assembly and Drive Hours

Determine the hours of operation on front axle assembly since installed in the vehicle.

| Hours | 0-125 | 126-260 | 261-325 | 326-400 | Over 400 |
|-------|-------|---------|---------|---------|----------|
| Value | 10 | 8 | 6 | 4 | 1 |

Item 14. Rear Axle-transmission Assembly and Drive Hours

Determine the hours of operation of rear axle-transmission assembly since installed in the vehicle.

| Hours | 0-125 | 126-260 | 261-325 | 326-400 | Over 400 |
|-------|-------|---------|---------|---------|----------|
| Value | 10 | 8 | 6 | 4 | 1 |

c. Rating.

- (1) Add the fourteen (14) values and record on DA Form 2404.
- (2) Were any RED values recorded during the evaluation?
- (3) Have all urgent MWO's been applied?
- (4) Obtain the vehicle color rating by applying (1), (2), and (3), (above) to the table below:

| Total value | 113-140 | 69-112 | Any urgent MWO not applied; Any RED value; or Total value below 68 |
|-------------|---------|--------|--|
| Rating | GREEN | AMBER | RED |

Note. If any zero values are recorded on DA Form 2404, the vehicle cannot be rated GREEN.

APPENDIX I

REFERENCES

1. Publication Indexes and General References

Indexes should be consulted frequently for latest changes or revisions of references given in this appendix and for new publications relating to materiel covered in this technical manual. Refer to TM 9-2320-218-20 for a complete listing of applicable references.

2. Forms

The following forms pertain to this materiel. (Refer to DA Pamphlet 310-2 for index of blank forms.)

| | |
|--|------------------|
| Standard Form 46, U. S. Government Motor Vehicle Operator's Identification Card | |
| Standard Form 91, Operator's Report of Motor-Vehicle Accident (card) | |
| Standard Form 94, Statement of Witness | |
| Claim for Personal Property | DA Form 1089 |
| Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8, or 9 (cut sheet) | DA Form 2028 |
| Equipment Utilization Record | DA Form 2400 |
| Organizational Control Record for Equipment | DA Form 2401 |
| Equipment Inspection and Maintenance Worksheet | DA Form 2404 |
| Maintenance Request Register | DA Form 2405 |
| Equipment Status and Deadline Report | DA Form 2406 |
| Maintenance Request | DA Form 2407 |
| Equipment Log Book Assembly - Instructions for General Equipment | DA Form 2408 |
| Equipment Daily or Monthly Log | DA Form 2408-1 |
| Equipment Maintenance Record (Organizational) | DA Form 2408-3-1 |
| Equipment Modification Record | DA Form 2408-5 |
| Equipment Maintenance Record (Support Echelons - Field and Depot) | DA Form 2408-6 |
| Equipment Transfer Record | DA Form 2408-7 |
| Equipment Acceptance Record | DA Form 2408-8 |
| Equipment Component Register | DA Form 2408-10 |
| Accident Identification Card | DD Form 518 |

3. Other Publications

The following publications contains information pertinent to major item materiel and associated equipment.

a. Camouflage.

| | |
|--|----------|
| Camouflage, Basic Principles | FM 5-20 |
| Camouflage of Vehicles | FM 5-20B |

b. Decontamination.

| | |
|--------------------------------------|----------|
| Decontamination | TM 3-220 |
| Defense Against CBR Attack | FM 21-40 |

c. Demolition of Materiel to Prevent Enemy Use.

| | |
|-------------------------------------|-----------|
| Demolition Materiel | TM 9-1946 |
| Explosives and Demolition | FM 5-25 |

d. General.

| | |
|---|-----------|
| Basic Arctic Manual | FM 31-70 |
| Driver's Manual | TM 21-305 |
| Driver's Selection and Training | TM 21-300 |

| | |
|---|------------|
| Operation and Maintenance of Ordnance Materiel in Extreme | |
| Cold Weather (0° to -65°F.) | TM 9-207 |
| Lubrication of Ordnance Materiel | TM 9-273 |
| Motor Transportation, Operations | FM 25-10 |
| Mountain Operations | FM 70-10 |
| Operations in the Arctic | FM 31-71 |
| Use of Anti-freeze Solutions in Engine Cooling System in | |
| Operating Vehicles | TB ORD 651 |

e. Maintenance and Repair.

| | |
|--|------------------|
| Care and Maintenance of Pneumatic Tires | TM 9-1870-1 |
| Cleaning of Ordnance Materiel | TM 9-208-1 |
| Cooling Systems: Vehicles and Powered Ground Equipment | TM 9-2858 |
| Lubrication Order for 1/2-Ton, 4 x 4, Platform Utility | |
| Truck M274 and M274A1 | LO 9-2320-213-12 |
| Materials Used for Cleaning, Preserving, Abrading, and | |
| Cementing Ordnance Materiel and Related Materials In- | |
| cluding Chemicals | TM 9-247 |
| Organizational Maintenance for 1/2-ton, 4 x 4, Platform | |
| Utility Truck M274 and M274A1 | TM 9-8034-20 |
| Painting Instructions for Field Use | TM 9-2851 |
| Deep-Water Fording of Ordnance Materiel | TM 9-238 |
| Storage Batteries, Lead-Acid Type | TM 9-6140-200-15 |

APPENDIX II

BASIC ISSUE ITEMS LIST

Section I. PREFACE

1. General

a. This appendix is a list of Basic Issue Items required for the first echelon operation and maintenance of the major end item. It includes Basic Issue and Troop Installed items with authorized quantities thereof.

Basic Issue Items. These items consist of accessories, attachments, component assemblies, tools, supplies, and repair parts accompanying the equipment.

Troop Installed Items. These items are installed on the vehicle by the using troops.

Together this listing of items comprise a complete assemblage of repair parts, tools, equipment and adjunct materiel required by the end item for the effective performance of its mission.

b. Items of equipment procured, stored, and issued by Technical Services other than the Ordnance Corps are issued initially with the vehicle. Replacement will be requisitioned from the appropriate Technical Service in accordance with the current regulations.

c. This appendix also includes miscellaneous items and cleaning and preserving materials required for the maintenance of the equipment but not issued with the vehicle. These materials will be stocked on an "as required" basis at organizational level. Refer to paragraph 5 of this manual for an explanation of abbreviations used in this appendix.

2. Explanation of Columns

a. Illustrations. This column indicates the figure number of the illustration that depicts the item. When more than one item appears on an illustration, the item number is also indicated.

b. Source, Maintenance, and Recoverability Code. This column lists the numerical code of the technical service, other than Ordnance, maintaining control responsibility of the item and the expendability and recoverability of the item.

c. Federal Stock Number. This column lists the Federal Stock Number which has been assigned by the Cataloging Division, Armed Forces Supply Support Center.

d. Description. This column lists the Federal item name (shown in capital letters) and any additional description required.

3. Codes and Symbols

a. Technical Service Basic Number Code.

5 - Corps of Engineers

10 - Quartermaster Corps

12 - Adjutant General's Office

b. Recoverability Code.

NR Indicates an item that is non-expendable and recoverable and is economically repairable.

| (1) ILLUST | | (2) SOURCE, MAINT AND RECOVERABILITY CODE | | | | (3) FEDERAL STOCK NO | (4) DESCRIPTION | (5) UNIT OF ISSUE | (6) QTY AUTH |
|------------------|-------------------|---|---------------|-----------------------------|-----------------------|-----------------------------------|--|-------------------------|--------------------|
| (a) FIG NO | (b) ITEM NO | (a) TECHNICAL SERVICE NO. | (b) SOURCE | (c) MAINTENANCE LEVEL | (d) RECOVERABILITY | | | | |
| | | | | | NR NR | 2320-049-4804 2320-046-6373 | <p align="center">Section II. BASIC ISSUE ITEMS LIST MAJOR COMBINATION</p> <p>TRUCK, PLATFORM UTILITY: 1/2-ton, 4 x 4, M274 (8736054) TRUCK, PLATFORM UTILITY: 1/2-ton, 4 x 4, M274A1 (8736429)</p> <p align="center">COMPONENTS OF MAJOR ITEM (INSTALLED IN POSITION)</p> <p>The items listed under this heading are issued as components of the vehicle w/e. Replacement items will be requisitioned separately under their individual stock numbers. When the basic vehicle is turned in, all other components of the vehicle will also be turned in.</p> <p>The following items under the subheadings below are installed, in position on the VEHICLE, prior to the issue of the vehicle to the using troops.</p> <p align="center">COMPONENTS OF MAJOR ITEM (STOWED)</p> <p>The following items under the subheadings below are <u>stowed</u> on the VEHICLE prior to the issue of the vehicle to the using troops.</p> <p align="center">TOOLS AND EQUIPMENT</p> <p>CRANK, HAND: Starting wheel and nut, assy (8336133) ----- TOW BAR, MOTOR VEHICLE: (8336026) -----</p> <p align="center">PUBLICATIONS</p> <p>EQUIPMENT LOG BOOK (BINDER) (appropriate forms as listed in TM 38-750, appendix II, are to be provided with this binder) MANUAL, TECHNICAL: (operator's) TM 9-2320-213-10 (driver's seat manual stowage pocket) COVER: weapons log book (binder) and publications ----- ORDER, LUBRICATION: LO 0-2320-213-12 (driver's seat manual stowage pocket)</p> <p align="center">Section III. TROOP—INSTALLED ITEMS</p> <p align="center">None</p> <p align="center">Section IV. CLEANING AND PRESERVING MATERIALS</p> <p>Only containers with minimum quantities and in some cases maximum quantities are listed herein. Refer to the appropriate supply manual for the Federal Stock Number of materials in intermediate size containers if desired.</p> <p>DRY CLEANING SOLVENT: Petroleum distillate, Fed P-S-661 lb Type 1. 100 deg F. flash point, Stoddard solvent for dry-cleaning clothes and washing and cleaning machine parts: 1-gal can ----- 55-gal drum -----</p> <p>GREASE, AUTOMOTIVE AND ARTILLERY: (Military Symbol GAA) Spec MIL-G-10924A efficient temperature range -65° to +125°F; for chassis wheel bearings, water pumps and all automotive and artillery components. 1-lb can, Type V, Class 2 or Type III ----- 5-lb can, Type V, Class 2 ----- Spec MIL-G-10924 Amend 2; for chassis lubrication only</p> | | |
| | | 10 | | P | 0 | 2990-630-5593 | CRANK, HAND: Starting wheel and nut, assy (8336133) ----- | ea | 1 |
| | | 10 | X2 | | 0 | 2540-561-9126 | TOW BAR, MOTOR VEHICLE: (8336026) ----- | ea | 1 |
| | | 10 | | | | 7510-889-4394 | EQUIPMENT LOG BOOK (BINDER) (appropriate forms as listed in TM 38-750, appendix II, are to be provided with this binder) | ea | 1 |
| | | 12 | | | | | MANUAL, TECHNICAL: (operator's) TM 9-2320-213-10 (driver's seat manual stowage pocket) | ea | 1 |
| | | 12 | 12 | | | 1015-722-8906 | COVER: weapons log book (binder) and publications ----- ORDER, LUBRICATION: LO 0-2320-213-12 (driver's seat manual stowage pocket) | ea | 1 |

| (1) ILLUST | | (2) SOURCE, MAINT AND RECOVERABILITY CODE | | | | (3) FEDERAL STOCK NO | (4) DESCRIPTION | (5) UNIT OF ISSUE | (6) QTY AUTH |
|------------------|-------------------|---|---------------|-----------------------------|-----------------------|-----------------------------------|---|--------------------------|------------------------|
| (a) FIG NO | (b) ITEM NO | (a) TECHNICAL SERVICE NO. | (b) SOURCE | (c) MAINTENANCE LEVEL | (d) RECOVERABILITY | | | | |
| | | | | | | 9150-248-3476 | 1-lb can ----- LUBRICATING OIL, GENERAL PURPOSE: Preservative, Spec MIL-L-644; whenever general purpose low temperature lubricating oil is required. (Military Symbol PL-Special) | | |
| | | | | | | 9150-185-0629 | 2-oz can, Type V, Class 6 ----- | | |
| | | | | | | 9150-231-6689 | 1-qt can, Type V, Class 4 ----- | | |
| | | | | | | 9150-281-2060 | 55-gal drum (18 gage) Type II ----- LUBRICATING OIL, INTERNAL COMBUSTION ENGINE: Spec MIL-L-2014; for crankcase lubrication of internal combustion engine under all conditions of service when ambient temperatures are above -20°F. | | |
| | | | | | | 9150-265-9425 | 1-qt can, Type I (Military Symbol OE-10) ----- | | |
| | | | | | | 9150-265-9433 | 1-qt can, Type I (Military Symbol OE-30) ----- LUBRICATING OIL, INTERNAL COMBUSTION ENGINE: Sub-zero; Spec MIL-L-10295; in lubricating of internal combustion engines operating in temperatures from 0°F. to -65°F. and wherever a general purpose, low temperature lubricating oil is required. | | |
| | | | | | | 9150-242-7602 | 1-qt can, Type I (Military Symbol OES) ----- LUBRICATING OIL, GEAR: Spec MIL-L-2015; universal gear type; for lubrication of automotive gear units, steering gears, and fluid lubricated universal joints of automotive equipment. Grade 75: For general use below 0°F. (Military Symbol G0-75) | | |
| | | | | | | 9150-240-2242 | 5-gal drum ----- | | |
| | | | | | | 9150-240-2244 | 55-gal drum (18 gage) ----- Grade 90: For general use above 0°F. (Military Symbol G0-90) | | |
| | | | | | | 9150-240-2250 | 5-gal drum ----- | | |
| | | | | | | 9150-240-2252 | 55-gal drum (18 gage) ----- LUBRICATING OIL, GEAR: Sub-zero, Spec MIL-L-10324, for lubrication of automotive gear units of automotive equipment operating in temperature ranges from 0°F. to -65°F. (Military Symbol GOS) | | |
| | | | | | | 9150-261-7904 | 1-qt can, Type V, Class 4 ----- | | |
| | | | | | | 9150-257-5443 | 55-gal drum (18 gage) Type II ----- THINNER, PAINT, MINERAL SPIRITS: (Spec Fed TT-T-291, Grade 1) | | |
| | | | | | | 8010-242-2089 | 1-gal can ----- | | |
| | | | | | | 8010-246-6116 | 55-gal drum ----- | | |

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NG: State AG (3)

USAR: None.

For explanation of abbreviations used, see AR 320-50.