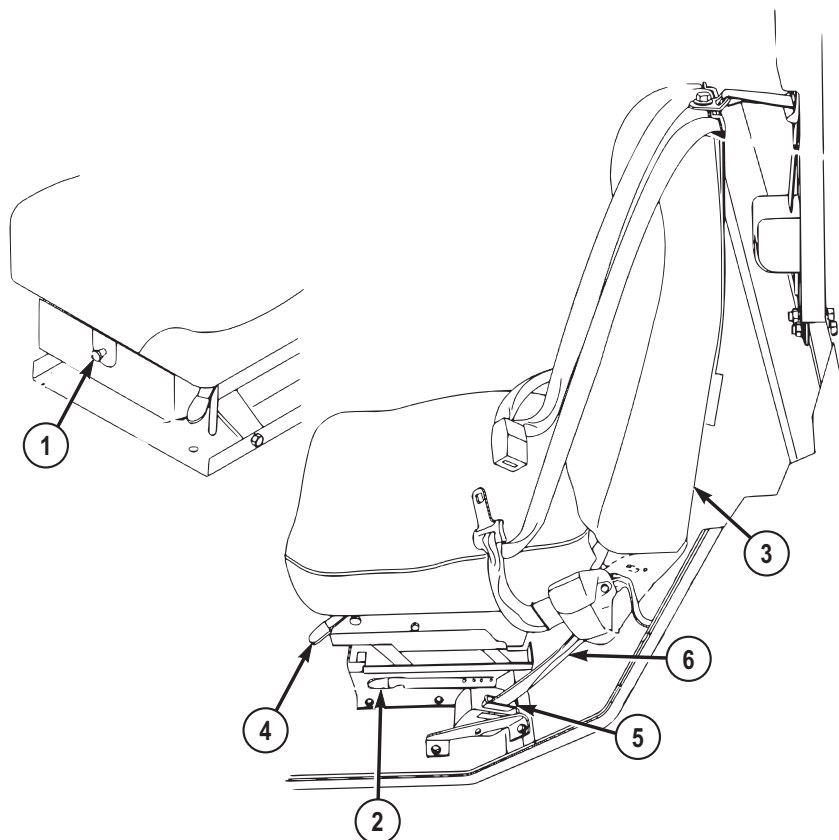


**ADJUST AIR-RIDE SEAT - Continued***Figure 1.*

2. Move lever (2) away from seat (3) and slide seat (3) forward or backwards.
3. Move lever (2) towards seat (3) to lock seat (3) in place.
4. Pull up lever (4) and lift self off seat (3) to raise, or pull up lever (4) and push down on seat (3) to lower.
5. Release lever (4) to lock seat (3) in place.
6. Adjust all vehicle mirrors as necessary once driver's seat is properly adjusted.

**NOTE**

If vehicle is bounced too hard, seat tether may lock seat in down position.  
Park vehicle (WP 0065) and perform Steps (7) through (10) to free seat.

7. Push in knob (1) to decrease seat ride firmness.

**ADJUST AIR-RIDE SEAT - Continued**

8. Move lever (2) away from seat (3), and slide seat (3) backwards to relieve tension on retractor (5).
9. Feed some seat tether (6) into retractor (5) until it releases.
10. Perform Steps (1) through (5) as required to reset seat (3) to desired position.

**END OF TASK****END OF WORK PACKAGE**



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## OPERATOR MAINTENANCE OPERATE FOUR-POINT SEATBELT

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### INITIAL SETUP:

Not Applicable

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### OPERATE FOUR-POINT SEATBELT

1. Insert seatbelt flat metal end (1) into buckle (2) until click is heard.

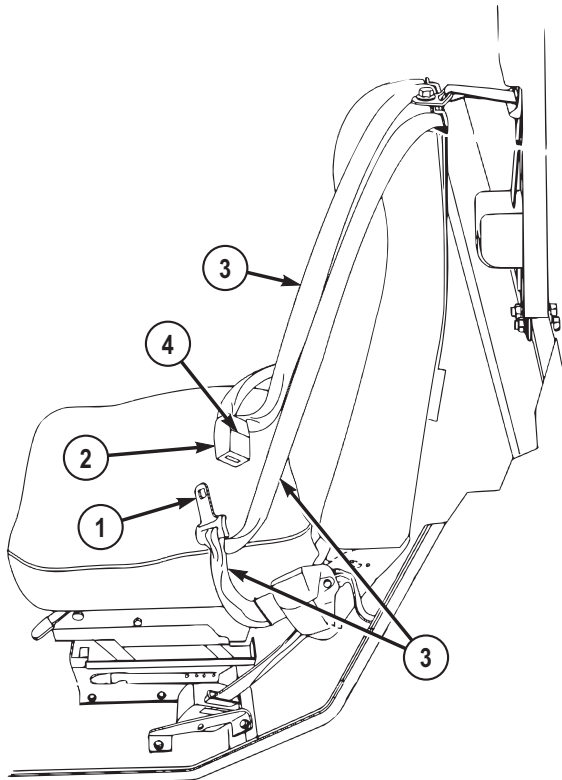


Figure 1.



**OPERATE FOUR-POINT SEATBELT - Continued**

2. To release seatbelt (3), push in button (4) on buckle (2).

**END OF TASK**

**END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE INSTALL/REMOVE TIRE CHAINS

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### INITIAL SETUP:

#### Personnel Required

Operator and Assistant - - (2)

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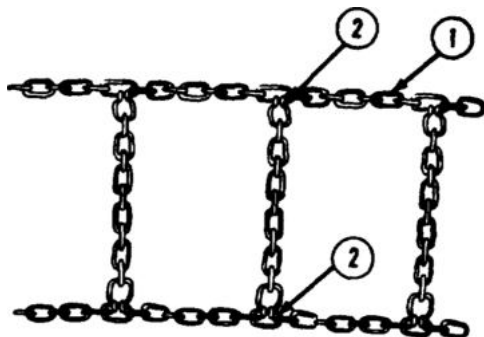
### INSTALL TIRE CHAINS

#### CAUTION

When tire chains are used, they must be used on all four rear wheels. Chains must not be used when driving on hard surfaces where there is no wheel slippage. Improper use of tire chains may result in equipment damage.

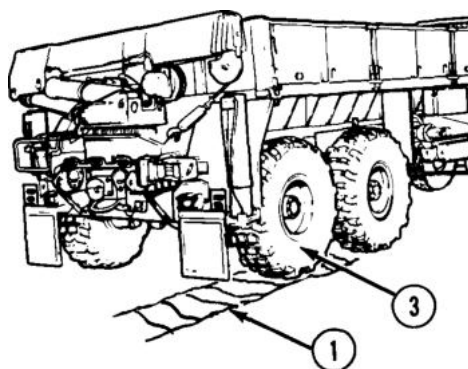
#### NOTE

- This procedure is a two soldier task.
  - Tire chains on No. 3 and No. 4 axle tires are all installed the same. Passenger side No. 4 axle shown.
  - Maximum speed limit for vehicles driving with chains in city or on highway is 10 mph (16 km/h).
  - Maximum speed limit for vehicles driving with chains off-road is 15 mph (24 km/h).
1. With aid of an assistant, place tire chain (1) on ground with cross chain connecting links (2) facing down.

**INSTALL TIRE CHAINS - Continued***Figure 1.***NOTE**

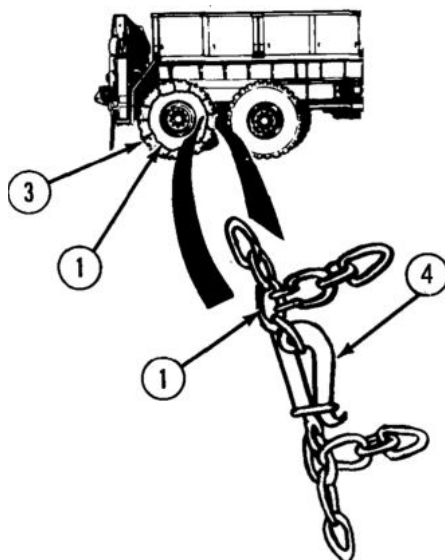
Assistant shall ensure vehicle is stopped when only tire in contact with tire chains is tire being equipped.

2. Move vehicle onto tire chain (1) while assistant guides vehicle so tire (3) is about one-third of way on tire chain.

*Figure 2.***NOTE**

Ensure only tire in contact with tire chains is tire being equipped.

3. Park vehicle. (WP 0065)
4. With aid of an assistant, wrap tire chain (1) around tire (3).

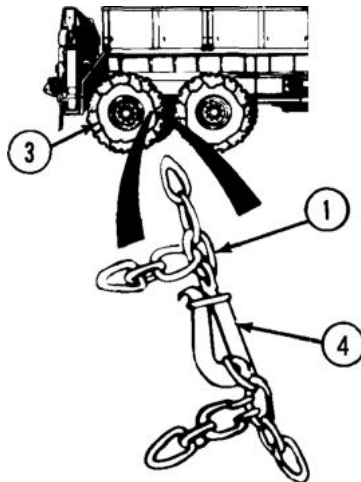
**INSTALL TIRE CHAINS - Continued***Figure 3.*

5. With aid of an assistant, connect and secure inside and outside clamps (4) so tire chain (1) is as tight as possible.
6. With aid of an assistant, repeat Steps (1) through (5) on remaining tires of No. 3 and No. 4 axles.
7. Drive vehicle forward (WP 0059) about 15 ft. (4.6 m) and then drive vehicle in reverse (WP 0060) about 15 ft. (4.6 m) as guided by assistant.
8. Park vehicle. (WP 0065)

**NOTE**

Tire chains on No. 3 and No. 4 axle tires are all tightened up the same.  
Passenger side No. 4 axle shown.

9. With aid of an assistant, disconnect inside clamp (4) of tire chain (1) on tire (3).

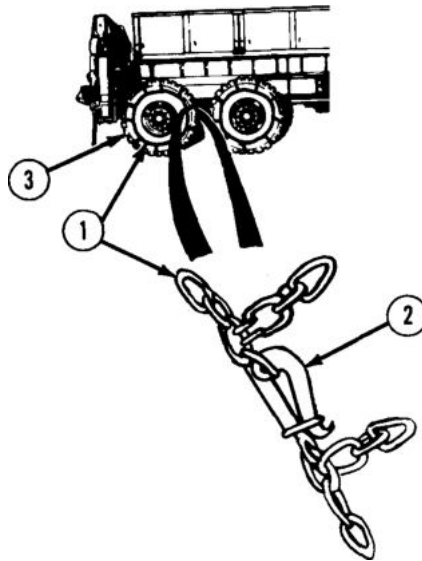
**INSTALL TIRE CHAINS - Continued***Figure 4.*

10. With aid of an assistant, take up slack in tire chain (1).
11. With aid of an assistant, connect inside clamp (4).
12. With aid of an assistant, disconnect outside clamp (4) of tire chain (1) on tire (3).
13. With aid of an assistant, take up slack in tire chain (1).
14. With aid of an assistant, connect outside clamp (4).
15. With aid of an assistant, take up slack in tire chains on other three rear tires by repeating Steps (10) through (15).

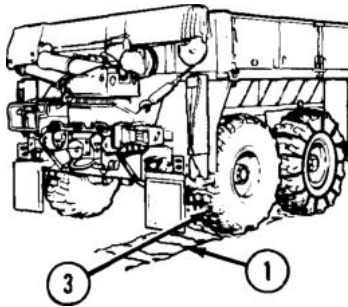
**REMOVE TIRE CHAINS****NOTE**

- This procedure is a two soldier task.
- Tire chains on No. 4 axle tires are both removed the same. Passenger side shown.

1. Move vehicle into position so tire chain (1) and clamps (2) on tire (3) are at 4 o'clock position while assistant guides vehicle.

**REMOVE TIRE CHAINS - Continued***Figure 5.*

2. Park vehicle. (WP 0065)
3. With aid of an assistant, disconnect inside and outside clamps (2) of tire chain (1).

*Figure 6.*

4. With aid of an assistant, unwrap tire chain (1) from tire (3) and spread tire chain out on ground behind vehicle.
5. Drive vehicle forward (WP 0059) off tire chain (1) while assistant guides vehicle.
6. With aid of an assistant, repeat Steps (2) through (5) for opposite side tire.

**REMOVE TIRE CHAINS - Continued****NOTE**

Tire chains on No. 3 axle tires are both removed the same. Passenger side shown.

7. Move vehicle into position so tire chain (4) and clamps (5) on tire (6) are at 8 o'clock position while assistant guides vehicle.

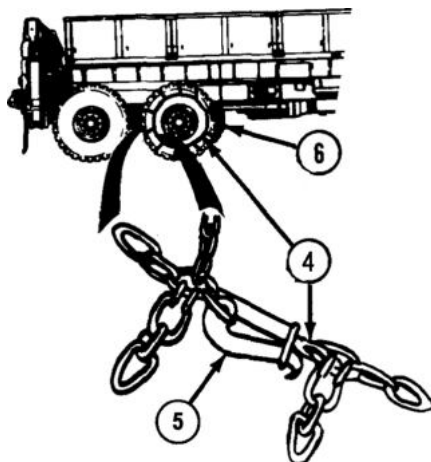


Figure 7.

8. Park vehicle. (WP 0065)
9. With aid of an assistant, disconnect inside and outside clamps (5) of tire chain (4).
10. With aid of an assistant, unwrap tire chain (4) from tire (6) and spread tire chain out on ground in front of tire.

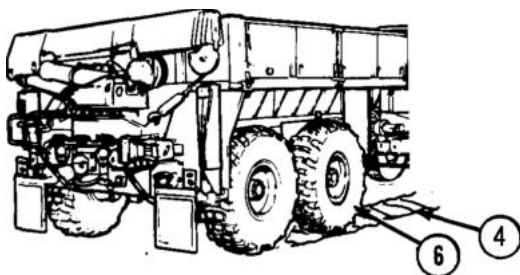


Figure 8.

11. Drive vehicle forward (WP 0059) off tire chain (4) while assistant guides vehicle.

**REMOVE TIRE CHAINS - Continued**

12. With aid of an assistant, repeat Steps (7) through (11) for opposite side tire.

**END OF TASK****END OF WORK PACKAGE**





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## OPERATOR MAINTENANCE FORD WATER OBSTACLE

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### INITIAL SETUP:

Not Applicable

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### WARNING



Do not ford water unless depth is known. Water deeper than 4 ft. (1.2 m) may enter vehicle. Failure to comply may result in injury or death to personnel.

### NOTE

After vehicle fords water obstacle, service all lubrication points below fording depth and check submerged gearboxes for presence of water upon return from mission (refer to lubrication instructions (WP 0154) for more information).

### CAUTION

Towing a trailer may affect maximum fording depth (refer to applicable trailer operators manual). Do not ford water obstacle deeper than maximum depth allowed by either vehicle or trailer (whichever depth is less). Failure to comply may result in damage to equipment.

1. Ensure depth of fording site is not more than 4 ft. (1.2 m).
2. Ensure bottom at fording site is firm enough that 4 ft. (1.2 m) maximum fording depth will not be exceeded and vehicle will not become mired.
3. Stop vehicle at edge of water.
4. If brakes have been used heavily and are hot, allow drums and shoes to cool before entering water if possible.
5. Ensure engine is operating correctly before entering water.
6. Set TRANSFER CASE shift lever (1) to LO, 8X8 DRIVE indicator (2) will illuminate.

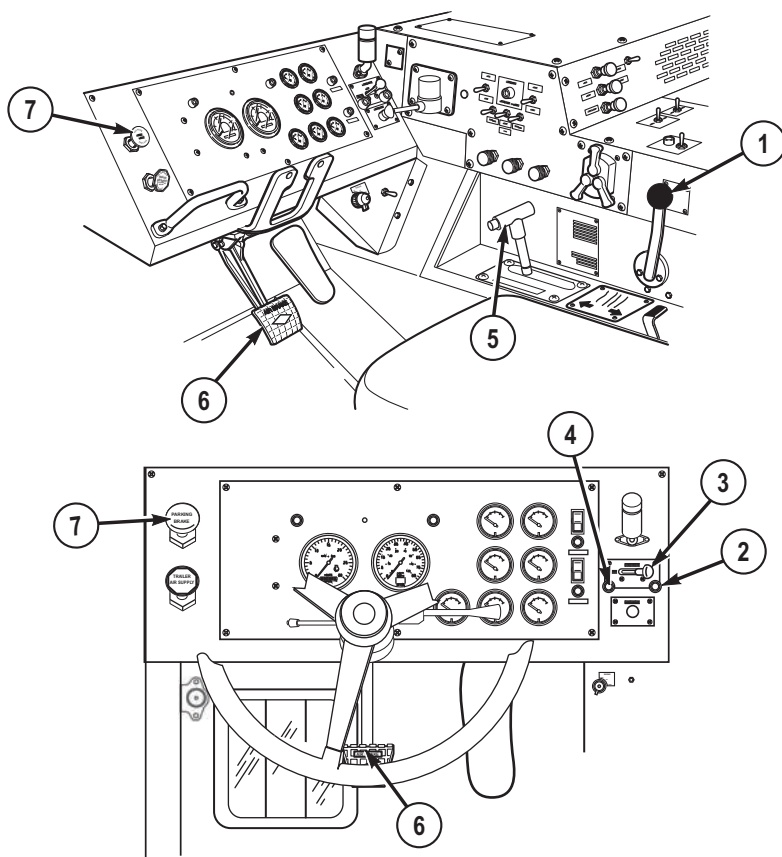


Figure 1.

7. Set TRACTION CONTROL lever (3) to INTER-AXLE DIFF. LOCK for added traction, INTER-AXLE LOCK indicator light (4) will come on.
8. Set transmission range selector (5) to 1 (1st gear range).
9. Drive vehicle slowly into water.
10. If engine stops, immediately attempt to restart engine. If engine will not start, tow or winch vehicle from water with another vehicle as soon as possible.
11. Drive vehicle at 3 to 4 mph (5 to 6 km/h) or less, through water.
12. Unless absolutely necessary, do not stop while in water.
13. If vehicle accidentally enters water deeper than 4 ft. (1.2 m), do the following:
  - a. Apply service brake pedal (6) and hold to stop vehicle.
  - b. Set transmission range selector (5) to R (reverse).

- c. Release service brake pedal (6).
  - d. Slowly back vehicle out of deep water.
14. After leaving water, lightly press service brake pedal (6) and hold while driving slowly to dry out brake linings.
  15. When clear of fording area, stop vehicle.
  16. Apply and release PARKING BRAKE control (WP 0054) (7) several times to remove water from brake components.
  17. Remove water and clean deposits from all vehicle parts as soon as possible.
  18. Deliver vehicle to field level maintenance as soon as possible.

**END OF TASK**

**END OF WORK PACKAGE**



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## OPERATOR MAINTENANCE INTERIM NUCLEAR, BIOLOGICAL, AND CHEMICAL (NBC) DECONTAMINATION PROCEDURES

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### INITIAL SETUP:

Not Applicable

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### INTRODUCTION AND PROCEDURES

#### NOTE

To reduce the effects of contamination in an NBC-contaminated environment, the HEMTT series vehicle should be operated with all windows, doors, and stowage boxes closed.

1. The HEMTT series vehicle is capable of being operated by personnel wearing nuclear, biological, or chemical (NBC) protective clothing without special tools or supporting equipment. Refer to FM 3-11.5 (WP 0164) for information on decontamination procedures. Specific procedures for the HEMTT series vehicle are as follows:
  - a. Rubber sleeves and other rubber items, rope, and gaskets will absorb and retain chemical agents. Replacement of these items is the recommended method of decontamination.
  - b. Lubricants or fluids may be present on the external surfaces of the HEMTT series vehicle or its components due to leaks or normal operation. These fluids will absorb NBC agents. The preferred method of decontamination is removal of these fluids using conventional decontamination methods in accordance with FM 3-11.5. (WP 0164)
  - c. Continued decontamination of the external HEMTT series vehicle surfaces with supertropical bleach (STB)/decontamination solution number 2 (DS2) will degrade clear plastic (e.g., hydraulic fluid reservoir sight glass) to the point where looking through it will become impossible. This problem will become more evident for soldiers wearing protective masks. Therefore, the use of STB or DS2 decontamination in the area of clear plastic should be minimized. Clear plastic should be decontaminated with warm, soapy water.
  - d. External surfaces of the HEMTT series vehicle and related equipment such as the remote control units that are marked with painted or stamped lettering will not withstand repeated decontamination with STB or DS2 without degradation of this lettering. Therefore, the recommended method of decontamination for these areas is washing with warm, soapy water.

**INTRODUCTION AND PROCEDURES - Continued****NOTE**

Replacement of hardware, as well as conventional methods of decontamination, are the preferred methods of decontamination for the areas listed below.

2. Areas that will entrap contaminants, making efficient decontamination extremely difficult include the following:
  - a. Exposed heads of screws.
  - b. Areas adjacent to and behind exposed hydraulic lines.
  - c. Hinged areas or access doors on the stowage boxes.
  - d. Retaining chains for lynchpins and lockpins.
  - e. Areas around the tie downs, lifting rings, crevices around access doors, external valves and drains, and exposed hydraulic connectors.
  - f. Areas behind knobs, levers, externally-mounted equipment, specification and advisory data plates, and roller and locking mechanisms.
  - g. Winch cable and winch hook assembly.
3. Conventional methods of decontamination should be used on all areas listed in Steps (1) and (2), while stressing the importance of thoroughness, and the probability of some degree of continuing contact, including vapor hazard.
4. For additional NBC information, refer to FM 3-11.3 (WP 0164) and FM 3-11.4. (WP 0164)

**END OF TASK****END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE SELF-RECOVER VEHICLE USING SELF-RECOVERY WINCH

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### INITIAL SETUP:

#### Personnel Required

Operator and Assistant - - (2)

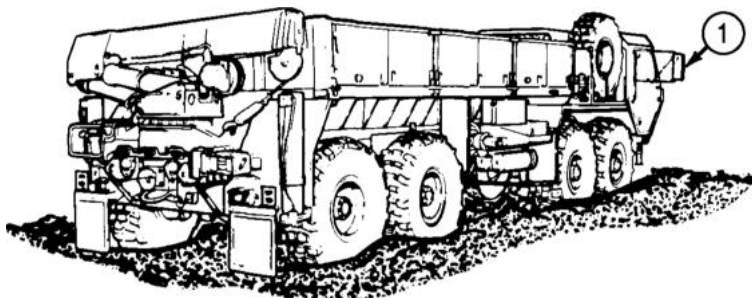
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### WINCH MIRED VEHICLE FORWARD

#### NOTE

- For additional information on vehicle self-recovery, refer to FM 4-30.31. (WP 0164)
- Vehicle self-recovery is a two soldier task. Soldiers must communicate by hand signals.

1. Shut off engine. (WP 0066)
2. Adjust mirror (1) so assistant can be clearly seen during procedure.



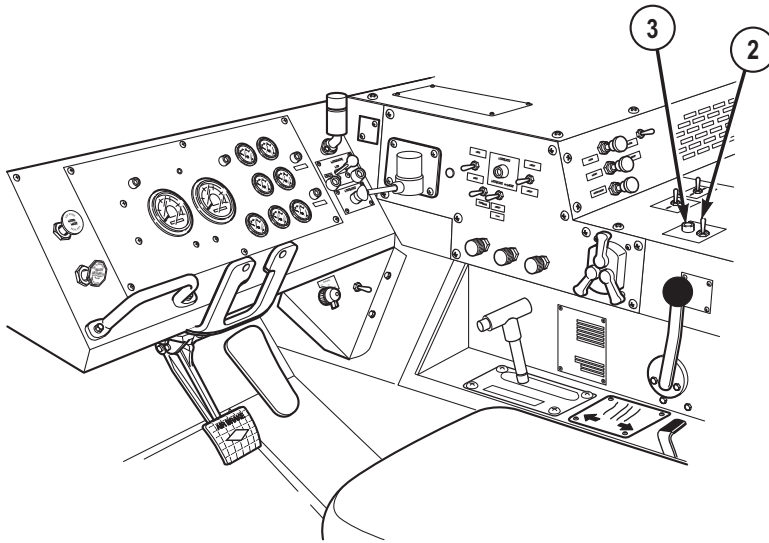
*Figure 1.*

#### CAUTION

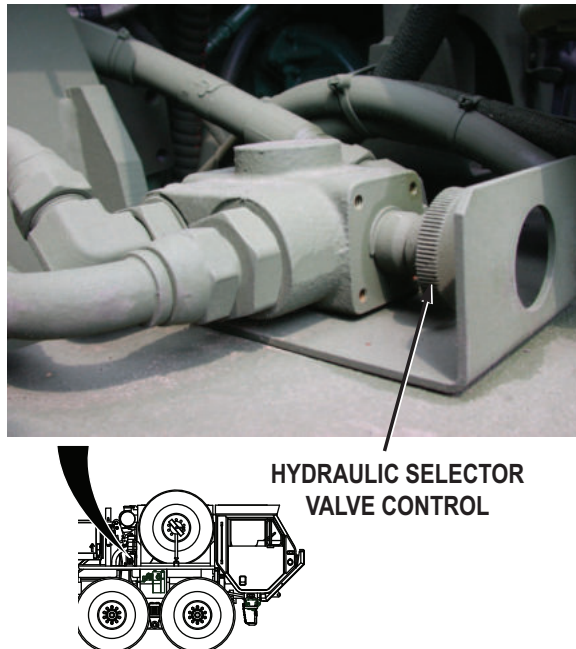
PTO ENGAGE switch must be in OFF position before moving hydraulic selector valve control to prevent equipment damage.

3. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.



**WINCH MIRED VEHICLE FORWARD - Continued***Figure 2.*

4. Pull out hydraulic selector valve control.

**WINCH MIRED VEHICLE FORWARD - Continued**

*Figure 3.*

5. Start engine. (WP 0053)
6. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.

## WINCH MIRED VEHICLE FORWARD - Continued

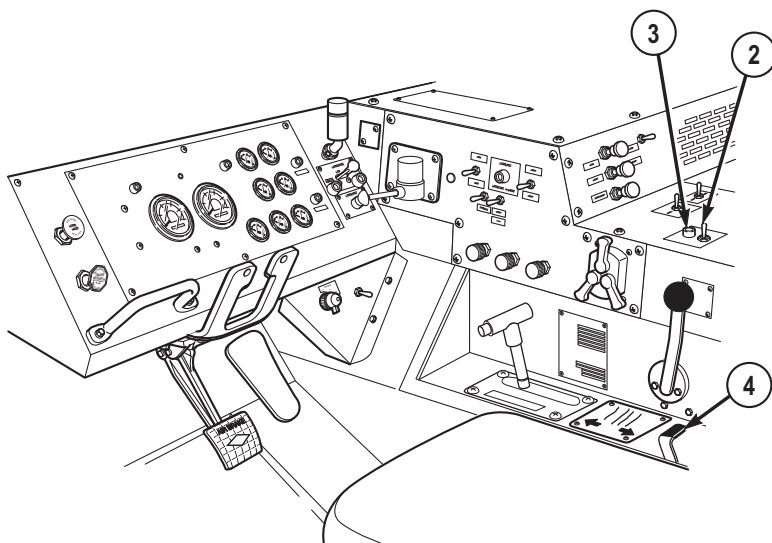


Figure 4.

7. Move winch shift lever (4) to OUT position to pay out small amount of cable.
8. Release winch shift lever (4) to center position.
9. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.
10. Remove cotter pin (5) from pin (6).

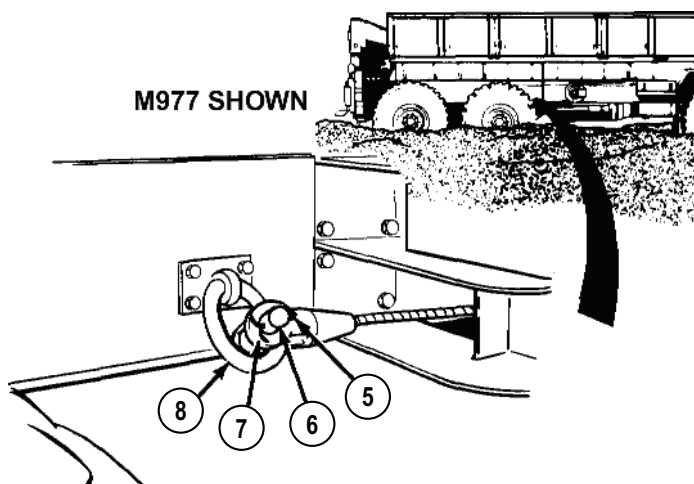


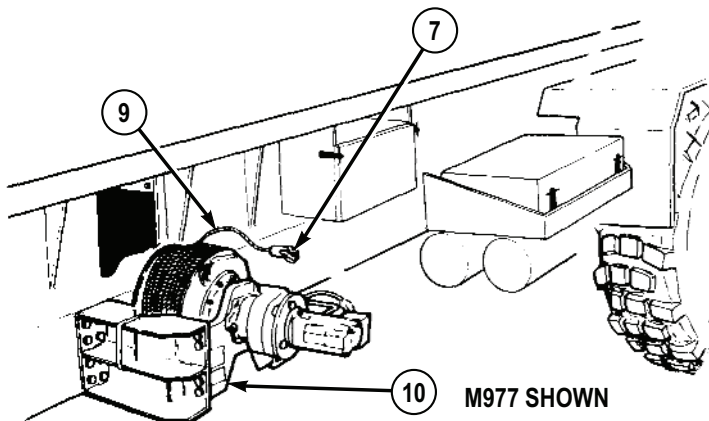
Figure 5.

**WINCH MIRED VEHICLE FORWARD - Continued**

11. Remove pin (6) from clevis (7) and disconnect clevis (7) from tie down ring (8).

**WARNING**

- Always wear protective gloves when handling winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.
  - Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.
12. Route winch cable (9) around, and over top of winch (10) toward front of vehicle (as shown).



*Figure 6.*

13. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.

## WINCH MIRED VEHICLE FORWARD - Continued

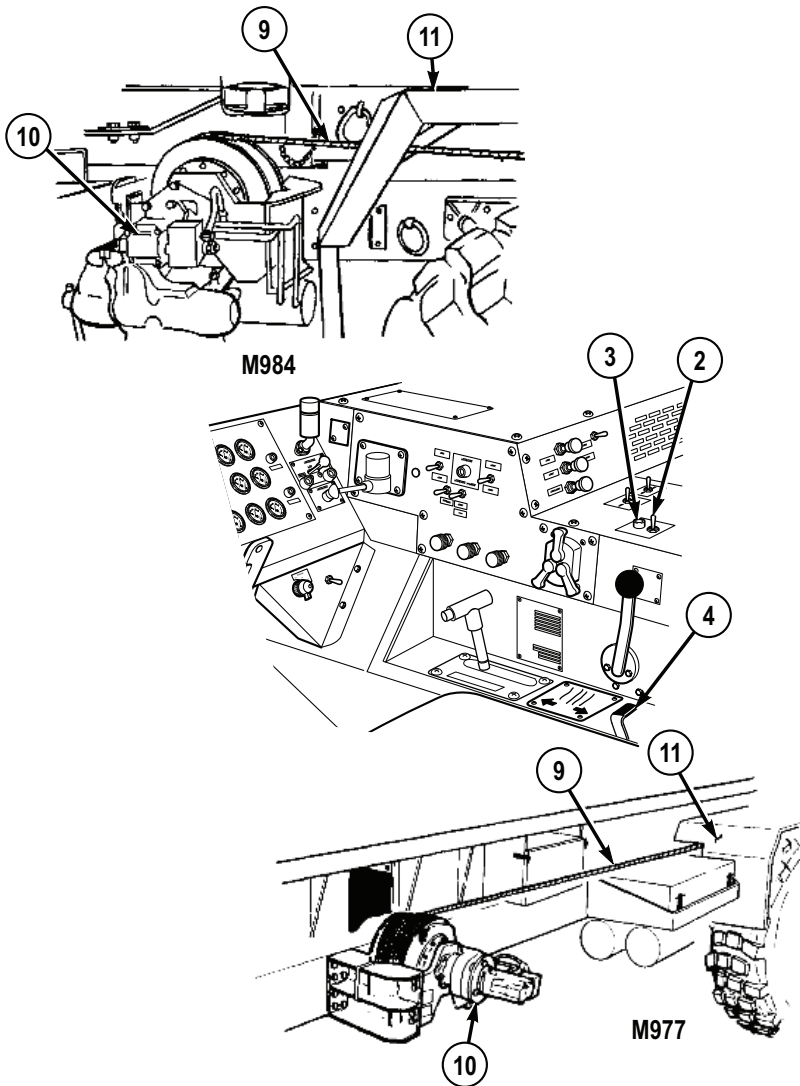


Figure 7.

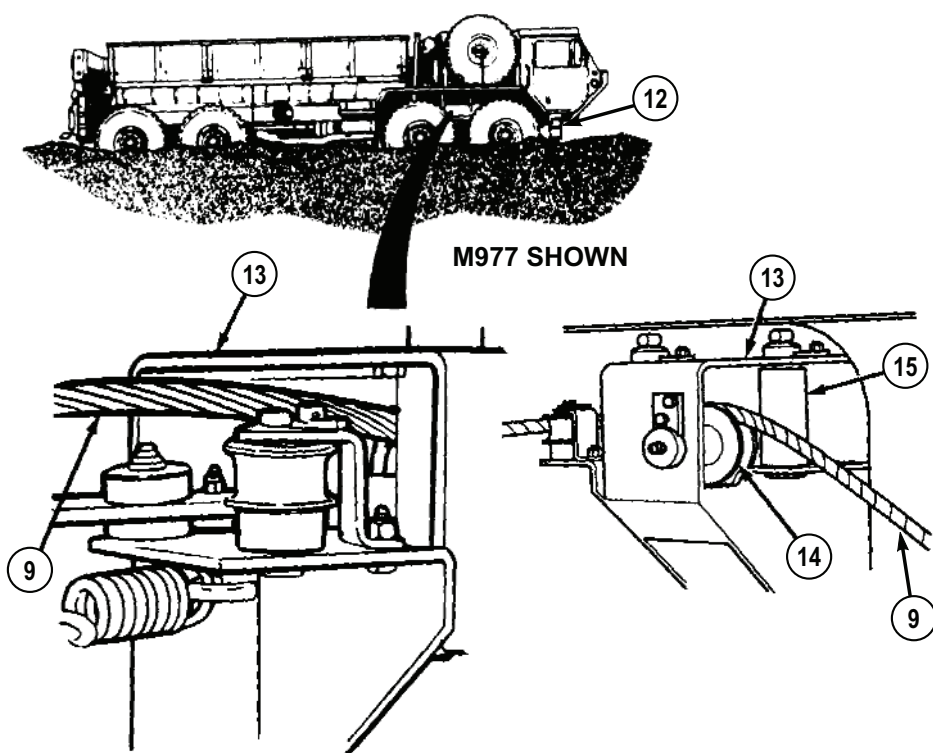
14. Move winch shift lever (4) to OUT and pay out winch cable (9), while assistant routes cable (9) through notch in fender (11).

**NOTE**

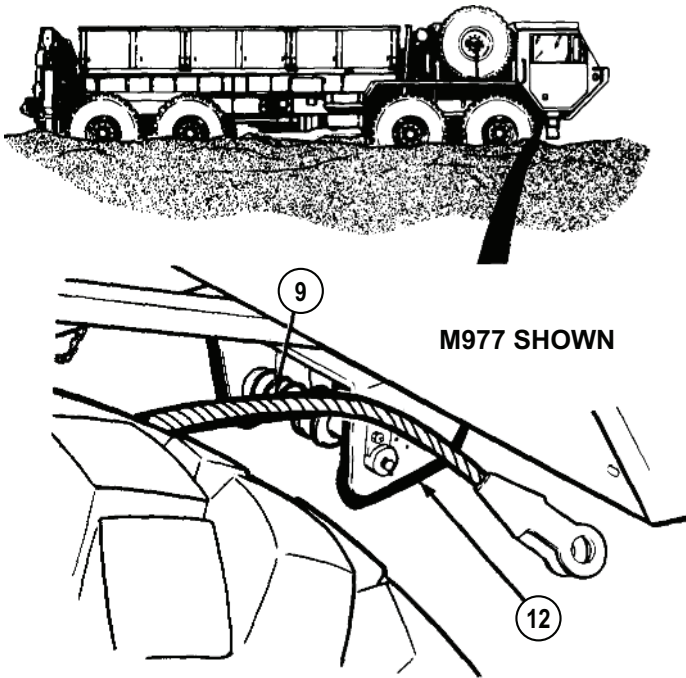
- Do not place cable between tensioning device pulleys at this time.

**WINCH MIRED VEHICLE FORWARD - Continued**

- When pulling cable through tensioning device, push sheave towards frame rail to allow clevis to pass through.
15. Pay out cable (9) while assistant pulls cable (9) until it is 6 in. to 1 ft. (15 cm to 30 cm) past the front roller guide (12).

*Figure 8.*

16. Stop paying out cable (9).
17. Assistant routes cable (9) through cable guide (13), over sheave (14), between roller (15), and side of cable guide (13).
18. Pay out winch cable (9) as assistant routes cable over first axle and 1 ft. (30 cm) past front roller guide assembly (12).

**WINCH MIRED VEHICLE FORWARD - Continued**

*Figure 9.*

19. Release winch shift lever (4) to center position.

## WINCH MIRED VEHICLE FORWARD - Continued

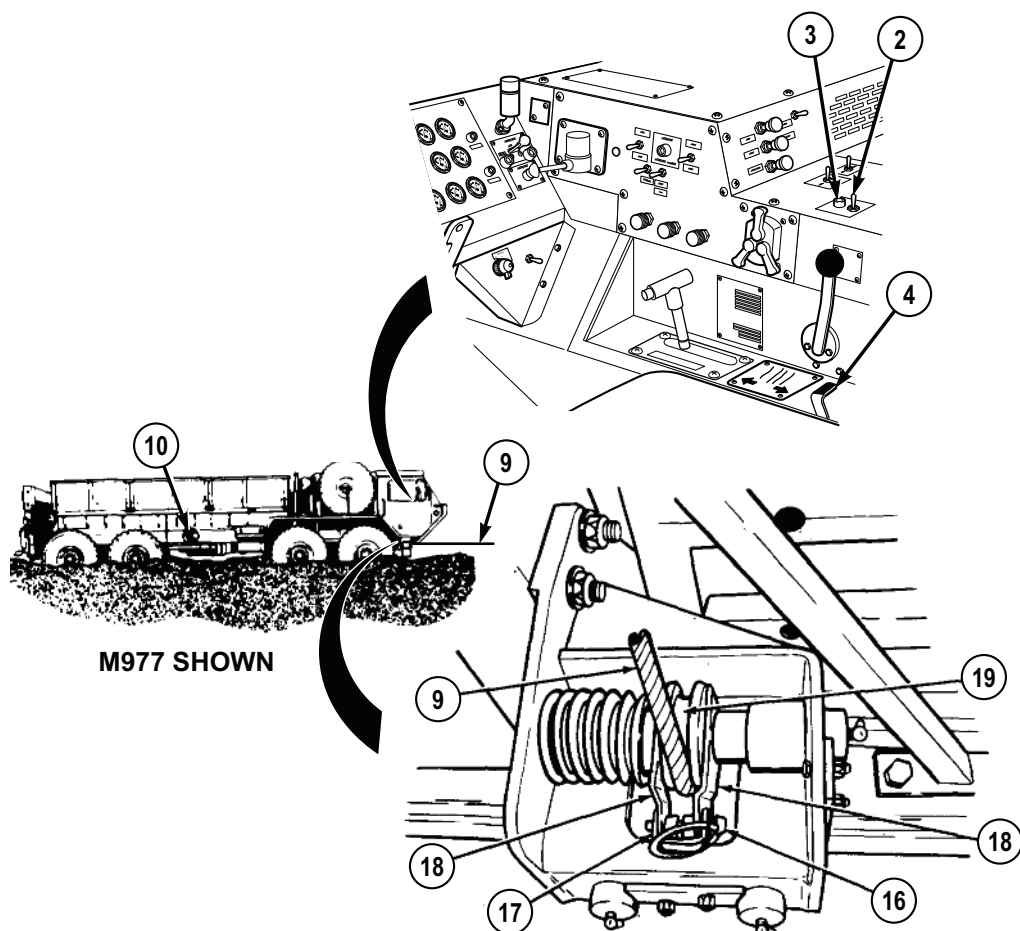


Figure 10.

20. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.
21. Remove quick release pin (16) and guide bracket (17). Move cable guide brackets (18) apart so cable (9) can be placed against bottom of sheave (19).
22. Move cable guide brackets (18) together and install guide bracket (17) and quick release pin (16).
23. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.
24. Move winch shift lever (4) to OUT and pay out winch cable (9) while assistant pulls cable to tree, another heavy vehicle (WP 0100), or another heavy object refer to FM 4-30.31. (WP 0164)



**WINCH MIRED VEHICLE FORWARD - Continued**

- 25. When winch cable (9) is let out to heavy object, release winch shift lever (4) to center position.
- 26. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.
- 27. If snatch block must be used for self-recovery operation, attach self-recovery winch cable (9) to snatch block (WP 0099) and connect end of self-recovery winch cable to mired vehicle left front towing eye. (WP 0100) Attach snatch block to tree, another vehicle, or heavy object refer to FM 4-30.31. (WP 0164)

**CAUTION**

There must always be at least five wraps of cable on winch. If load is applied with less than five wraps of cable on winch, cable may come loose on drum.

- 28. Check that there are at least five wraps of winch cable (9) left on winch (10). If there are not at least five wraps of winch cable left on self-recovery winch, stop using self-recovery winch and continue with Step (54) of this procedure.

**CAUTION**

Do not go over winch pull capacity or winch may be damaged.

- 29. Ensure weight of mired vehicle and amount of winch cable (9) left on self-recovery winch (10) does not go over pull capacity (refer to FM 4-30.31 (WP 0164) and Self-Recovery Winch Pull Capacity table below). If pull will go over capacity, stop using self-recovery winch and continue with Step (54) of this procedure.

**Table 1. Self-Recovery Winch Pull Capacity.**

Cable Layer	Maximum Line Pull
1st layer (five wraps)	20,000 lbs (9 080 kg)
2nd layer	18,173 lbs (8 251 kg)
3rd layer	16,663 lbs (7 565 kg)
4th layer	15,361 lbs (6 974 kg)
5th layer	14,254 lbs (6 471 kg)

**NOTE**

If winch cable will be connected to another vehicle acting as a stationary anchor, refer to FM 4-30.31 (WP 0164) or Connect/Disconnect Self-

**WINCH MIRED VEHICLE FORWARD - Continued**

Recovery Winch Cable to Another Vehicle (WP 0100) for connecting procedures.

30. If it is determined using self-recovery winch (10) will not go over winch pull capacity, connect winch cable (9) to heavy object.
31. Ensure winch shift lever (4) is at center position.
32. Ensure PTO ENGAGE switch (2) is set to OFF position. Indicator light (3) will go out.

**WARNING**

- Always wear protective gloves when handling winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.
  - Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.
33. Pull back and hold tension pulley lever (20).

## WINCH MIRED VEHICLE FORWARD - Continued

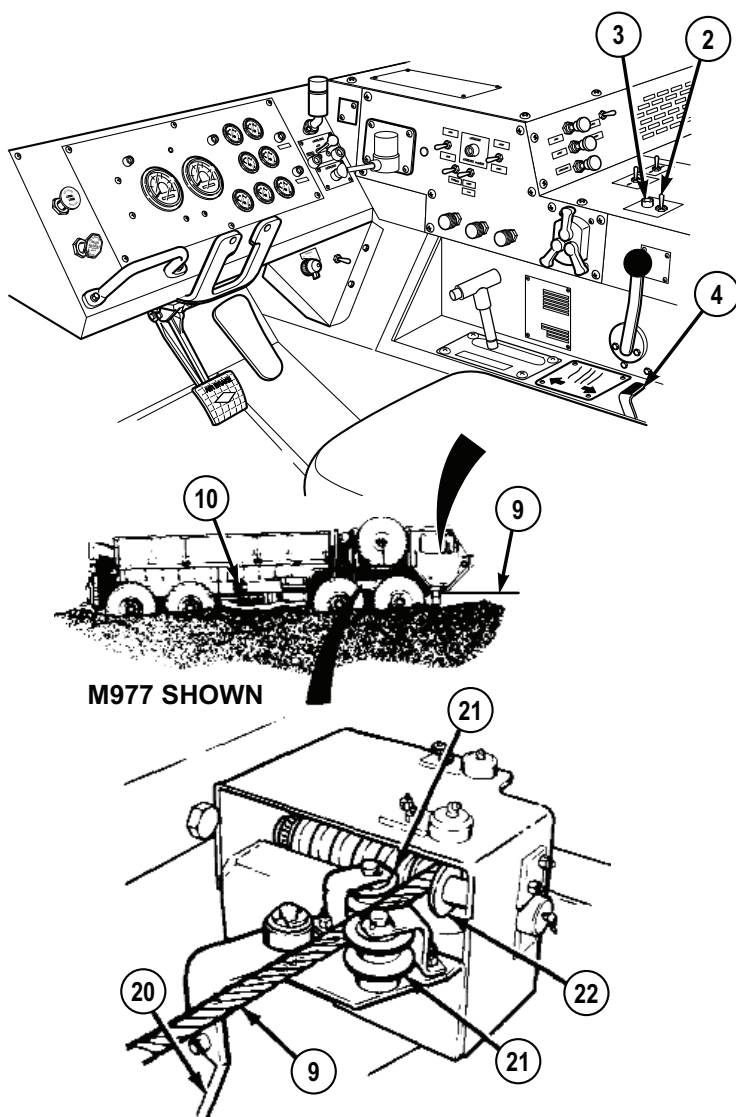


Figure 11.

34. Put winch cable (9) between tensioning device pulleys (21).
35. Release tension pulley lever (20).
36. Check that winch cable (9) rests inside grooves of both tensioning device pulleys (21) and sheave (22).

**WINCH MIRED VEHICLE FORWARD - Continued**

37. Check that winch cable (9) is not caught on vehicle or any other objects.

**WARNING**

Keep all personnel clear of area near winch cable when tension is on cable. Failure to comply may result in injury or death to personnel.

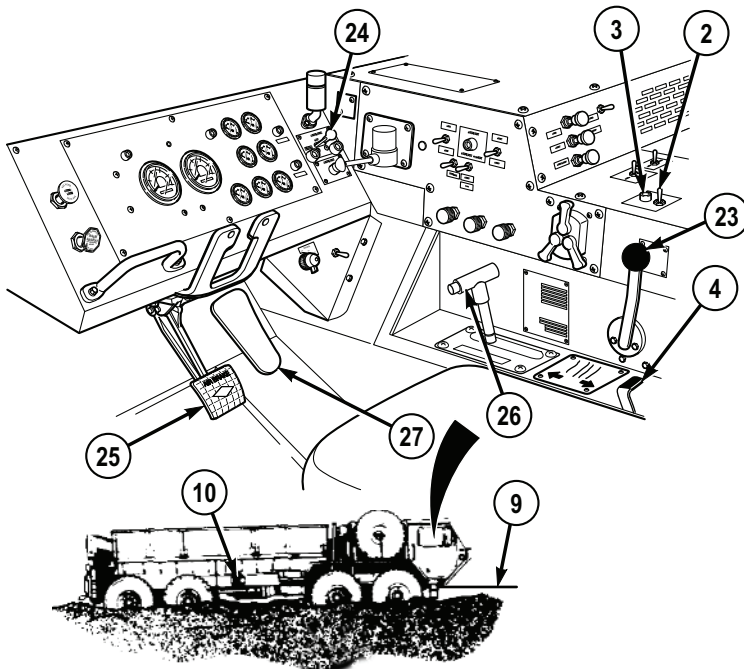
38. Ensure all personnel are clear of self-recovery winch (10) and winch cable (9).  
39. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.  
40. Move winch shift lever (4) to IN until slack is out of cable.  
41. Release winch shift lever (4) to center position.

**WARNING**

Keep all personnel clear of area near winch cable when tension is on cable. Failure to comply may result in injury or death to personnel.

**CAUTION**

- Self-recovery winch is not designed to winch mired vehicle by itself. Mired vehicle drive system power must always be used with winch to self-recover vehicle, or damage to equipment can result.
  - If winch does not move mired vehicle, stop using winch, overheat damage may result.
42. Ensure TRANSFER CASE shift lever (23) is set to LO.

**WINCH MIRED VEHICLE FORWARD - Continued****M977 SHOWN***Figure 12.*

43. Ensure TRACTION CONTROL lever (24) is set to INTER-AXLE DIFF. LOCK.
44. Apply service brake pedal (25).
45. Set transmission range selector (26) to 1 (1st gear range).
46. Release service brake pedal (25).
47. Move winch shift lever (4) to IN and apply slight pressure to throttle pedal (27).

**NOTE**

Keep winch cable tight at all times so cable does not get tangled with vehicle.

48. Adjust position of throttle pedal (27) to change engine speed as needed to keep winch cable (9) tight and vehicle moving.
49. When mired vehicle is on solid ground, release winch shift lever (4) to center position.
50. Park vehicle. (WP 0065)

**WINCH MIRED VEHICLE FORWARD - Continued**

51. Set winch shift lever (4) to OUT and pay out winch cable (9) until all tension is off cable.
52. When all tension is off winch cable (9), release winch shift lever (4) to center position.
53. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.

**NOTE**

If winch cable is connected to another vehicle, refer to Connect/ Disconnect Self-Recovery Winch Cable to Another Vehicle (WP 0100) for disconnecting procedures.

54. Disconnect winch cable (9) from heavy object.
55. If snatch block was used, disconnect end of winch cable (10) from vehicle and remove snatch block from winch cable and from tree, other vehicle, or heavy object refer to FM 4-30.31. (WP 0164)

**CAUTION**

Do not reel clevis end of winch cable through roller guides. Clevis may catch on roller guide and cause cable or roller guide to break.

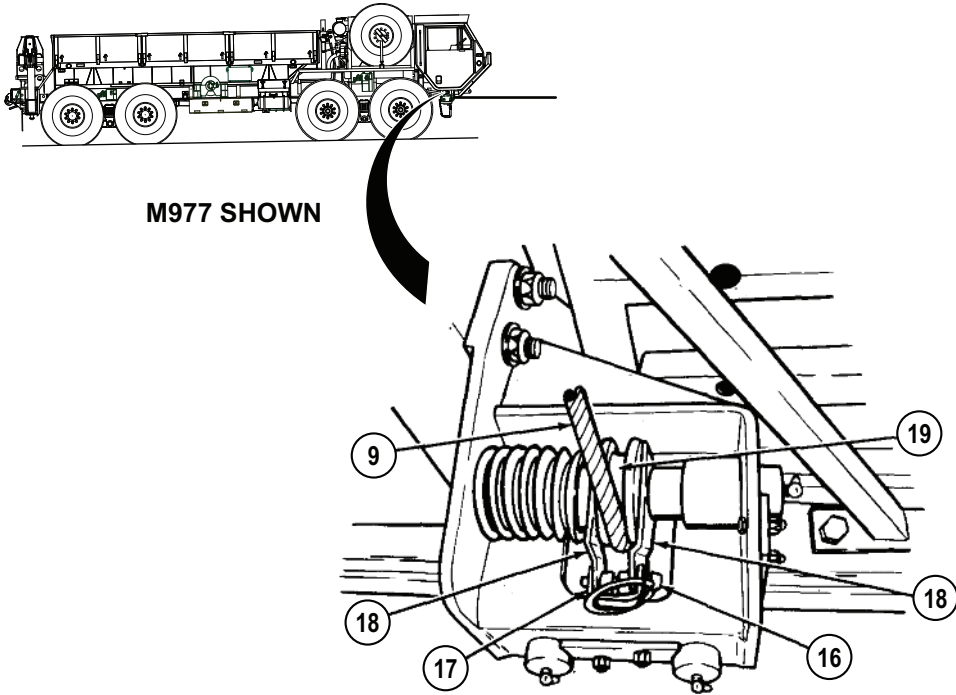
56. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.
57. Move winch shift lever (4) to IN.

**WARNING**

- Always wear protective gloves when handling winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.
  - Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.
58. Reel in winch cable (9) while assistant uses tire iron extension handle to guide cable (9) onto self-recovery winch (10) so cable wraps are level across face of self-recovery winch (10).
  59. When end of cable (9) is near front of vehicle, release winch shift lever (4) to center position.
  60. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.

**WINCH MIRED VEHICLE FORWARD - Continued**

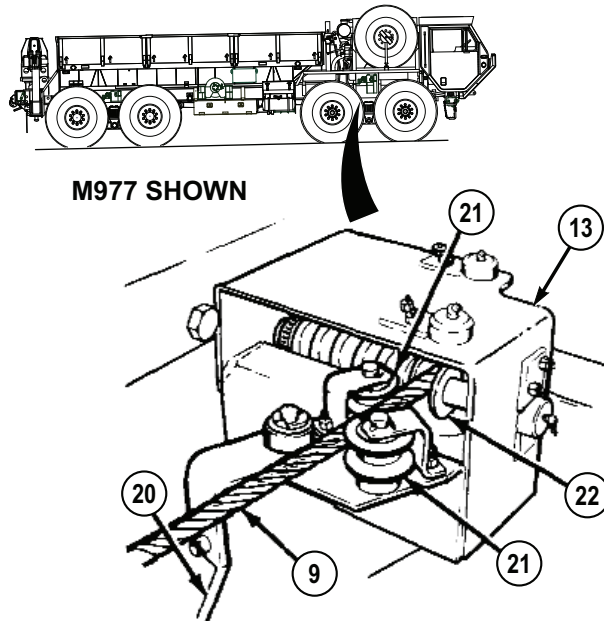
61. Remove quick release pin (16) and guide bracket (17). Move cable guide brackets (18) apart so winch cable (9) can be removed from sheave (19).



**M977 SHOWN**

*Figure 13.*

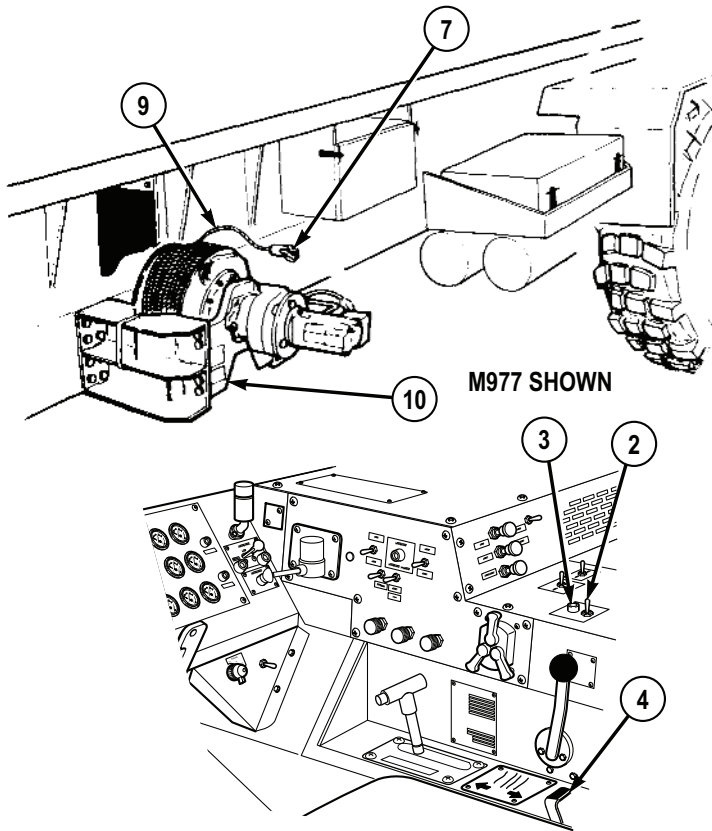
62. Move cable guide bracket (18) together. Install guide bracket (17) and quick release pin (16).
63. Pull back and hold tension pulley lever (20).

**WINCH MIRED VEHICLE FORWARD - Continued***Figure 14.*

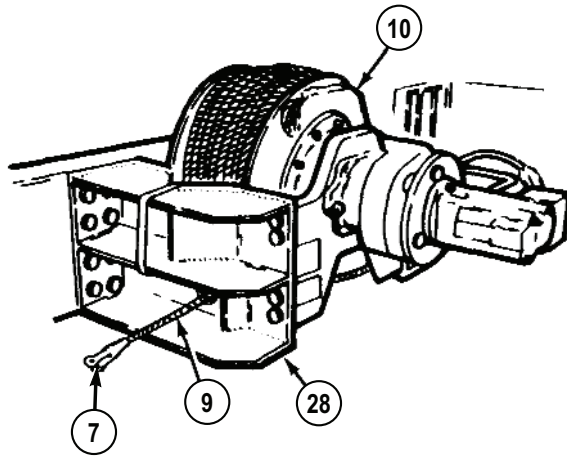
64. Lift winch cable (9) out of tensioning device pulleys (21).
65. Release tension pulley lever (20).
66. Pull winch cable (9) back and out of cable guide (13).
67. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.



## WINCH MIRED VEHICLE FORWARD - Continued

*Figure 15.*

68. While assistant guides winch cable (9), move winch shift lever (4) to IN.
69. When clevis (7) is approximately 2 ft. (61 cm) from winch (10), release winch shift lever (4) to center position.
70. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.
71. Assistant routes end of winch cable (9) down along front face of winch (10).

**WINCH MIRED VEHICLE FORWARD - Continued***Figure 16.*

72. Assistant routes end of winch cable (9) under winch (10) and out through hole in bottom of rear winch frame (28).
73. Assistant connects clevis (7) at end of winch cable (9) to tie down ring (8) with pin (6) and cotter pin (5).

## WINCH MIRED VEHICLE FORWARD - Continued

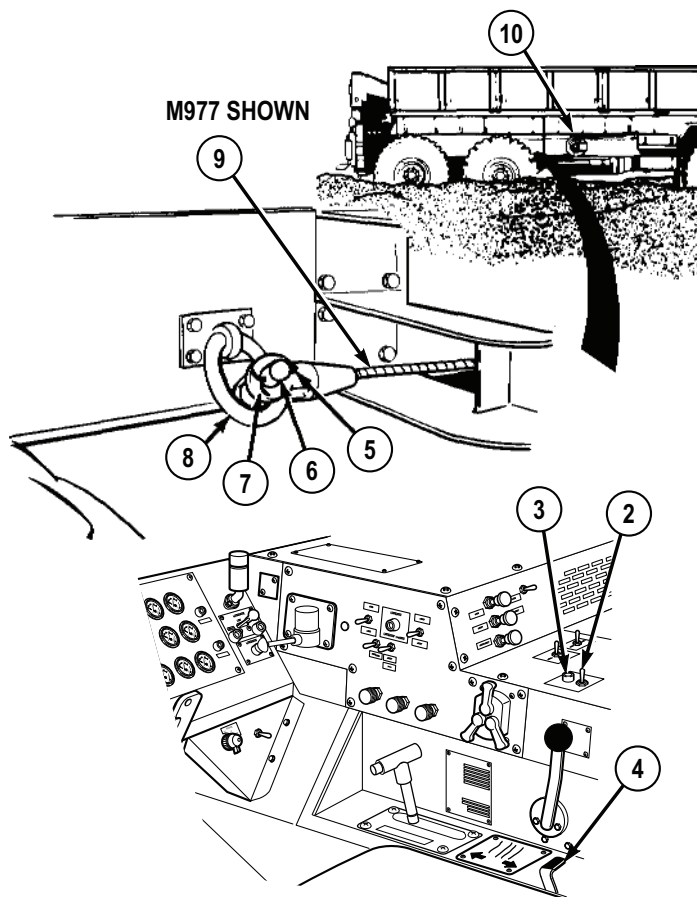


Figure 17.

74. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.

**WARNING**

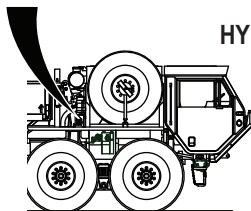
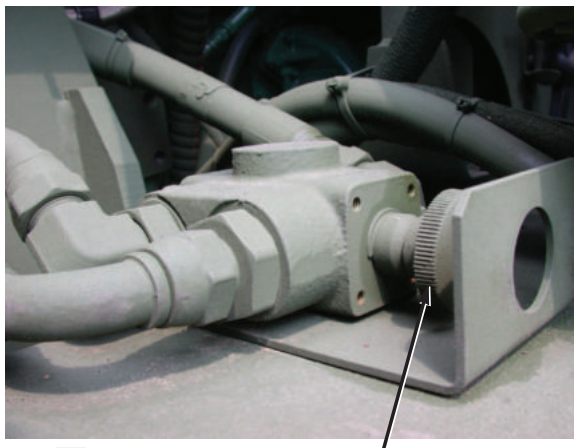
Keep all personnel clear of area near winch cable when tension is on cable. Failure to comply may result in injury or death to personnel.

75. Order all personnel to stand clear of area near winch (10).

**WINCH MIRED VEHICLE FORWARD - Continued****CAUTION**

Do not reel in winch cable too tightly. If too much tension is applied, cable or tie down ring can break, or winch may be damaged.

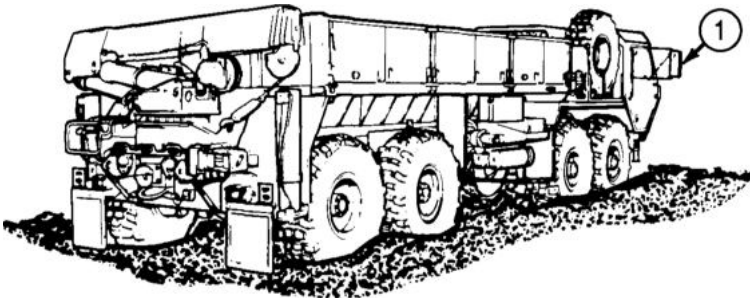
76. Once assistant and all other personnel are clear of area, move winch shift lever (4) to IN and take all slack out of winch cable (9).
77. When winch cable (9) is tight, release winch shift lever (4) to center position.
78. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.
79. Shut off engine. (WP 0066)
80. Push in hydraulic selector valve control.



**HYDRAULIC SELECTOR  
VALVE CONTROL**

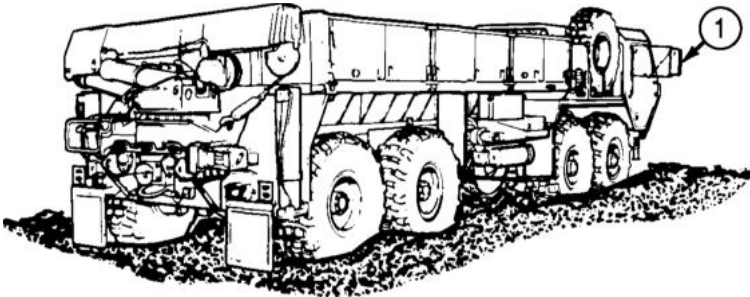
*Figure 18.*

81. Adjust mirror (1) for driving.

**WINCH MIRED VEHICLE FORWARD - Continued***Figure 19.***WINCH MIRED VEHICLE TO THE REAR****NOTE**

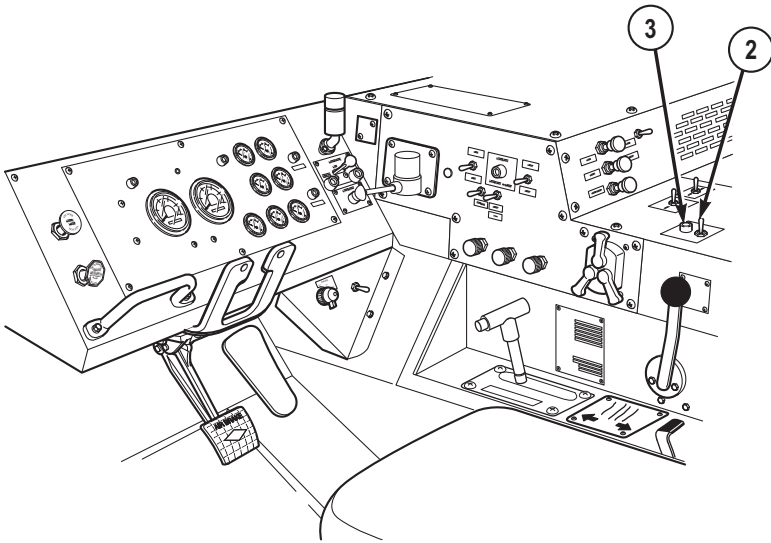
- For additional information on vehicle self-recovery refer to FM 4-30.31. (WP 0164)
- Vehicle self-recovery is a two soldier task. Soldiers must communicate by hand signals.

1. Shut off engine. (WP 0066)
2. Adjust mirror (1) so assistant can be clearly seen during procedure.

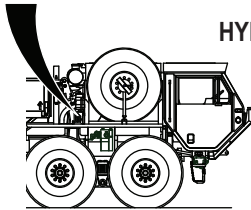
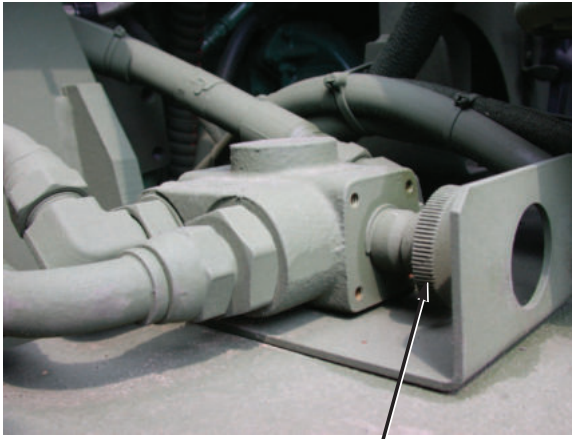
*Figure 20.***CAUTION**

PTO ENGAGE switch must be in OFF position before moving hydraulic selector valve to prevent equipment damage.

3. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.

**WINCH MIRED VEHICLE TO THE REAR - Continued***Figure 21.*

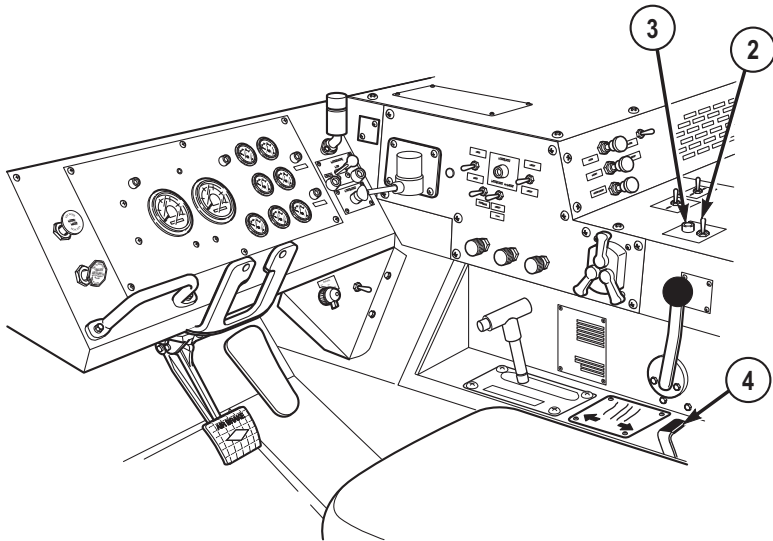
4. Pull out hydraulic selector valve control.

**WINCH MIRED VEHICLE TO THE REAR - Continued**

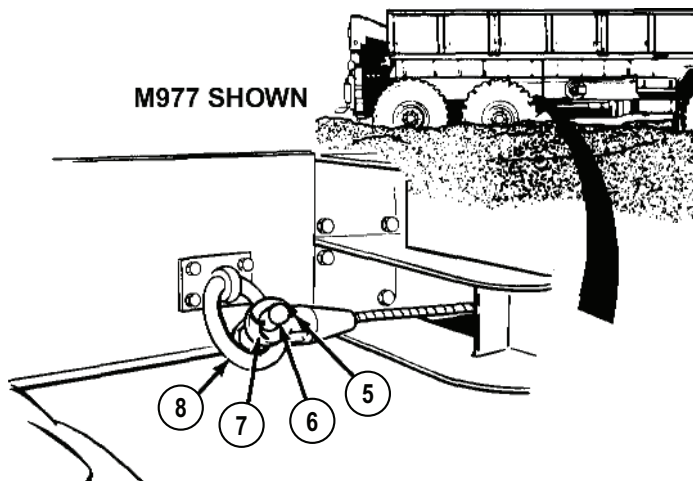
**HYDRAULIC SELECTOR  
VALVE CONTROL**

*Figure 22.*

5. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.

**WINCH MIRED VEHICLE TO THE REAR - Continued***Figure 23.*

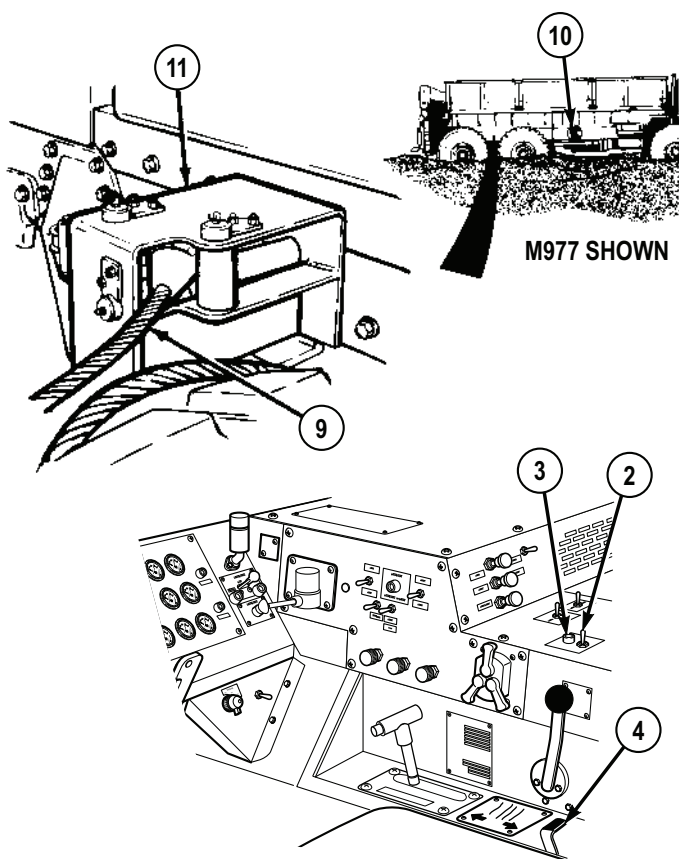
6. Move winch shift lever (4) to OUT position to pay out small amount of cable.
7. Release winch shift lever (4) to center position.
8. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.
9. Remove cotter pin (5) from pin (6).

*Figure 24.*



**WINCH MIRED VEHICLE TO THE REAR - Continued**

10. Remove pin (6) from clevis (7) and disconnect clevis from tie down ring (8).
11. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.

*Figure 25.*

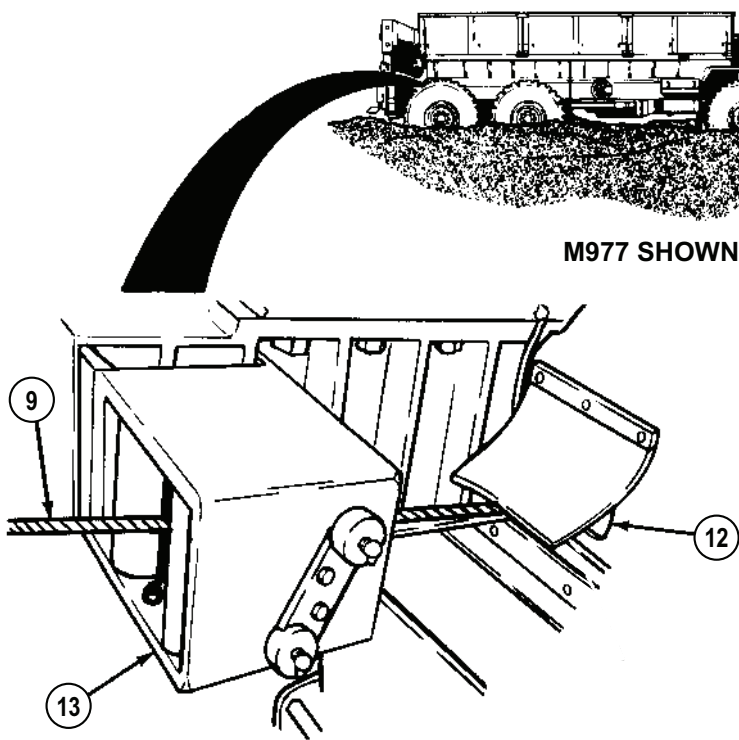
**WINCH MIRED VEHICLE TO THE REAR - Continued****WARNING**

- Always wear protective gloves when handling winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.
  - Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.
12. Move winch shift lever (4) to OUT while assistant pulls winch cable (9) from self-recovery winch (10) toward rear of vehicle.

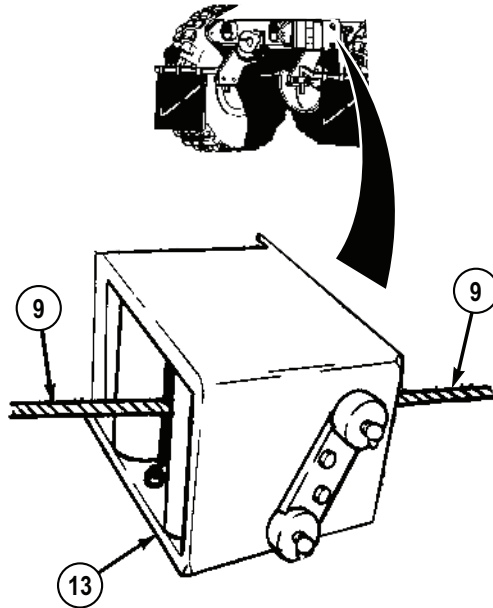
**NOTE**

- Do not place cable between tensioning device pulleys at this time.
  - When pulling cable through tensioning device, push sheave towards frame rail to allow clevis to pass through.
13. Continue to pay out winch cable (9) while assistant routes cable through cable guide (11).
14. Continue to pay out winch cable (9) while assistant routes cable through hole (12) in fender and through roller guide (13).

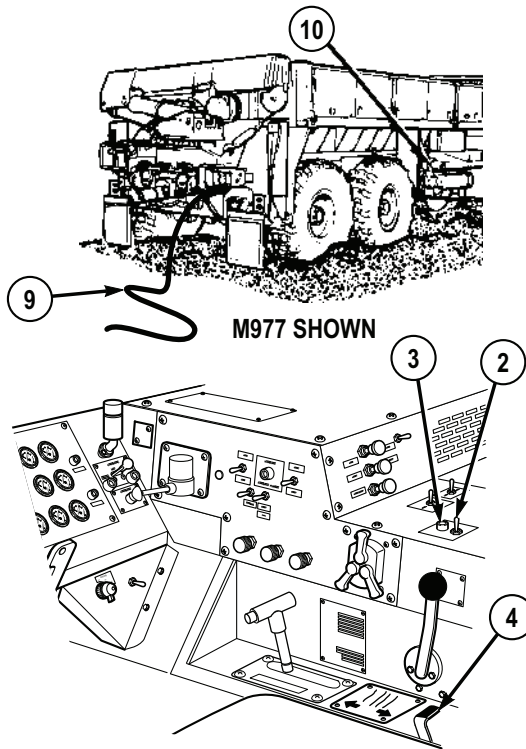
## WINCH MIRED VEHICLE TO THE REAR - Continued

*Figure 26.*

15. Continue to pay out winch cable (9) while assistant routes cable roller guide (13).

**WINCH MIRED VEHICLE TO THE REAR - Continued***Figure 27.*

16. Pay out winch cable (9) while assistant pulls cable to tree, another vehicle, or heavy object refer to FM 4-30.31. (WP 0164)
17. When winch cable (9) is let out to tree, another vehicle, heavy object, release winch shift lever (4) to center position.
18. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.

**WINCH MIRED VEHICLE TO THE REAR - Continued***Figure 28.*

19. If snatch block must be used for self-recovery operation, attach self-recovery winch cable (9) to snatch block (WP 0099) and connect end of self-recovery winch cable to mired vehicle left rear towing eye. (WP 0100) Attach snatch block to a tree, another vehicle, or heavy object refer to FM 4-30.31. (WP 0164)

**CAUTION**

There must be at least five wraps of cable on winch. If load is applied with less than five wraps of cable on winch, cable may come loose on drum.

20. Check that there are at least five wraps of winch cable (9) left on winch (10). If there are not at least five wraps of winch cable left on winch (10), stop using self-recovery winch (10) and continue with Step (46) of this procedure.

**CAUTION**

Do not go over winch pull capacity or winch could be damaged.

**WINCH MIRED VEHICLE TO THE REAR - Continued**

21. Ensure weight of mired vehicle and amount of winch cable (9) left on winch (10) does not go over pull capacity refer to FM 4-30.31 (WP 0164) and Self-Recovery Winch Pull Capacity table below). If pull will go over capacity, stop using self-recovery winch and continue with Step (46) of this procedure.

**Table 2. Self-Recovery Winch Pull Capacity.**

Cable Layer	Maximum Line Pull
1st layer (five wraps)	20,000 lbs (9 080 kg)
2nd layer	18,173 lbs (8 251 kg)
3rd layer	16,663 lbs (7 565 kg)
4th layer	15,361 lbs (6 974 kg)
5th layer	14,254 lbs (6 471 kg)

**NOTE**

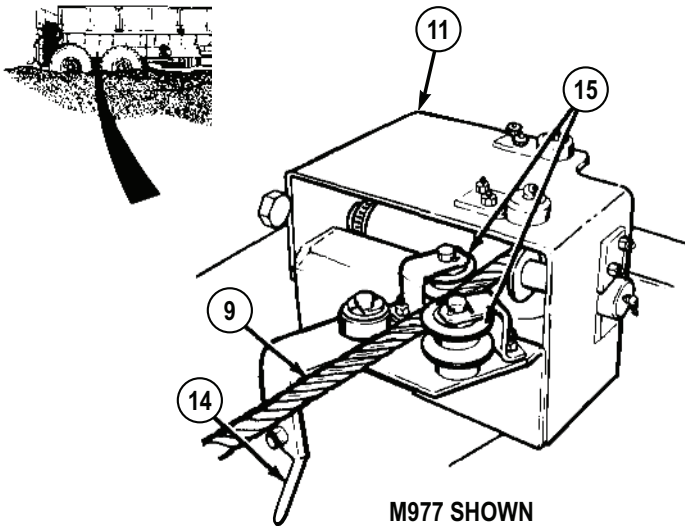
If winch cable will be connected to another vehicle acting as a stationary anchor, refer to FM 4-30.31 (WP 0164) or Connect/Disconnect Self-Recovery Winch Cable to Another Vehicle (WP 0100) for connecting procedures.

22. If it is determined using self-recovery winch (10) will not go over winch pull capacity, connect winch cable (9) to heavy object.
23. Ensure winch shift lever (4) is at center position.
24. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.

**WARNING**

Do not operate winch while personnel are working on or around tensioning device. Failure to comply may result in injury or death to personnel.

25. Pull back and hold tension pulley lever (14).

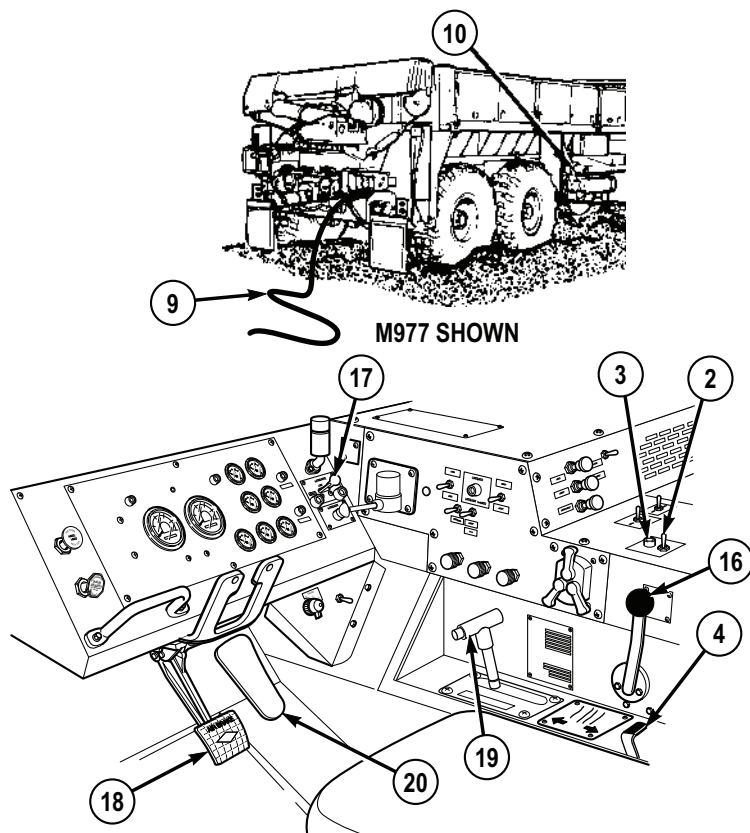
**WINCH MIRED VEHICLE TO THE REAR - Continued***Figure 29.*

26. Route winch cable (9) between pulleys (15).
27. Release tension pulley lever (14).
28. Ensure winch cable (9) rests inside grooves of both pulleys (15).
29. Ensure winch cable (9) is not caught on vehicle or any other objects.

**WARNING**

Keep all personnel clear of area near winch cable when tension is on cable. Failure to comply may result in injury or death to personnel.

30. Ensure all personnel are clear of winch (10) and winch cable (9).

**WINCH MIRED VEHICLE TO THE REAR - Continued***Figure 30.*

31. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.
32. Move winch shift lever (4) to IN until slack is out of winch cable (9).
33. Release winch shift lever (4) to center position.

**WARNING**

Keep all personnel clear of area near winch cable when tension is on cable. Failure to comply may result in injury or death to personnel.



**WINCH MIRED VEHICLE TO THE REAR - Continued****CAUTION**

- Self-recovery winch is not designed to winch mired vehicle by itself. Mired vehicle drive system power must always be used with winch to self-recover vehicle, or damage to equipment can result.
- If winch does not move mired vehicle, stop using winch, overheat damage may result.

34. Ensure that TRANSFER CASE shift lever (16) is set to LO.
35. Ensure TRACTION CONTROL lever (17) is set to INTER-AXLE DIFF. LOCK.
36. Apply service brake pedal (18).
37. Set transmission range selector (19) to R (reverse).
38. Release service brake pedal (18).
39. Slightly press throttle pedal (20) and move winch shift lever (4) to IN.

**NOTE**

Keep winch cable tight at all times so cable does not get tangled with vehicle.

40. Adjust position of throttle pedal (20) to change engine speed as needed to keep winch cable (9) tight and mired vehicle moving.
41. When mired vehicle is on solid ground, release winch shift lever (4) to center position.
42. Park vehicle. (WP 0065)
43. Set winch shift lever (4) to OUT and pay out winch cable (9) until all tension is released.
44. When all tension is off winch cable (9), release winch shift lever (4) to center position.
45. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.

**NOTE**

If winch cable is connected to another vehicle, refer to Connect/ Disconnect Self-Recovery Winch Cable to Another Vehicle (WP 0100) for disconnecting procedures.

46. Disconnect winch cable (9) from heavy object.
47. If snatch block was used, disconnect end of winch cable (9) from vehicle. (WP 0100) Remove snatch block from winch cable (WP 0099) and tree, another vehicle, or heavy object refer to FM 4-30.31. (WP 0164)

**WINCH MIRED VEHICLE TO THE REAR - Continued****CAUTION**

Do not reel clevis end of winch cable through roller guides. Clevis may catch on roller guide and cause cable or roller guide to break.

48. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.
49. Set winch shift lever (4) to IN.
50. When end of cable is near rear of vehicle, release winch shift lever (4) to center position.
51. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.

**WARNING**

- Always wear protective gloves when handling winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.
  - Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.
52. Pull clevis (7) end of winch cable (9) forward through roller guide (13) and hole (12) in fender.

## WINCH MIRED VEHICLE TO THE REAR - Continued

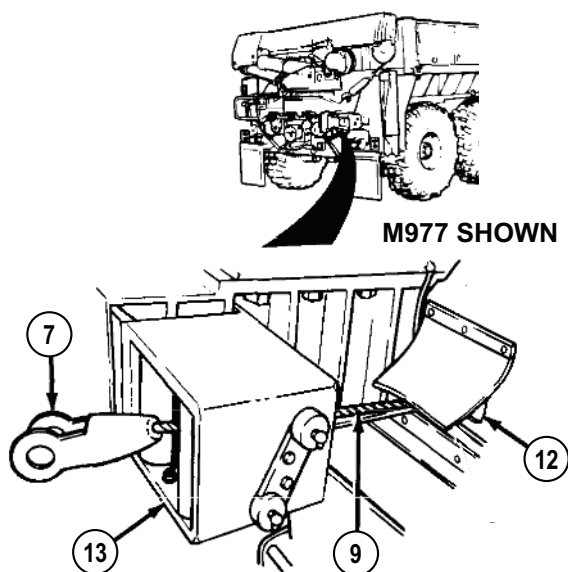


Figure 31.

**WARNING**

- Always wear protective gloves when handling winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.
- Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.

53. Pull clevis (7) end of winch cable (9) forward through roller guide (13).

## WINCH MIRED VEHICLE TO THE REAR - Continued

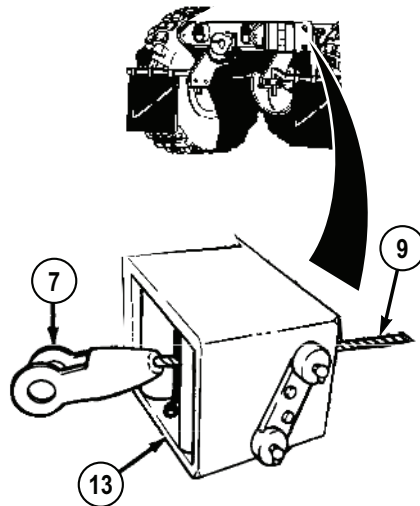


Figure 32.

54. Pull back and hold tension pulley lever (14).

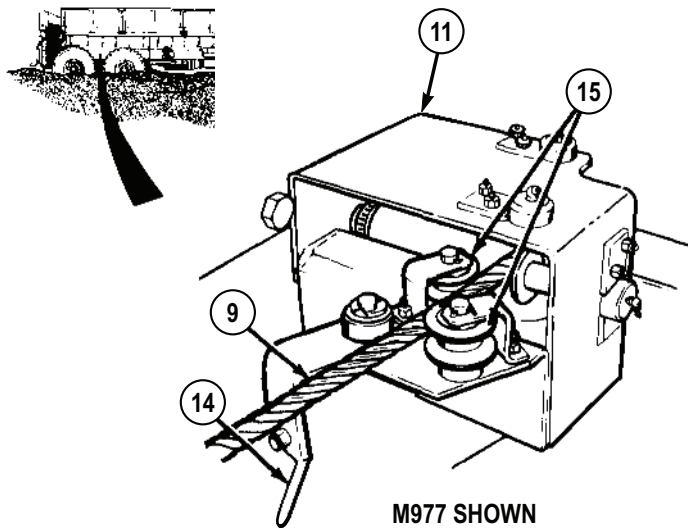
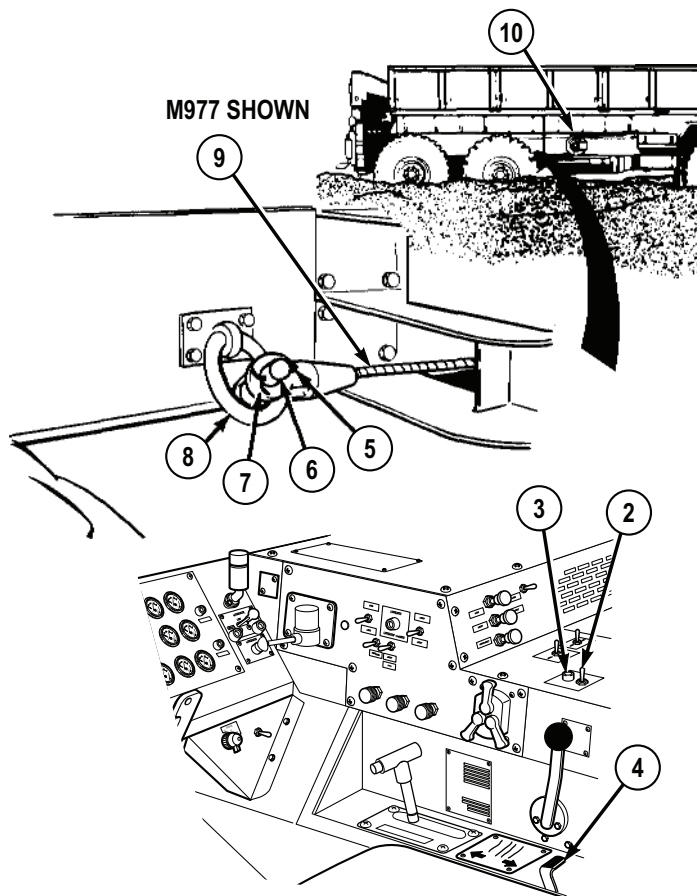


Figure 33.

55. Lift winch cable (9) out of pulleys (15).

**WINCH MIRED VEHICLE TO THE REAR - Continued**

56. Release tension pulley lever (14).
57. Pull winch cable (9) forward and out of cable guide (11).
58. Set PTO ENGAGE switch (2) to ON position. Indicator light (3) will illuminate.

*Figure 34.*

59. Move winch shift lever (4) to IN position to reel in cable while assistant guides winch cable (9) to tie down ring (8).
60. When clevis (7) is approximately 2 ft. (61 cm) from winch (10), release winch shift lever (4) to center position.
61. Assistant connects clevis (7) to tie down ring (8) with pin (6) and cotter pin (5).

**WINCH MIRED VEHICLE TO THE REAR - Continued****WARNING**

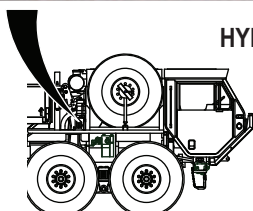
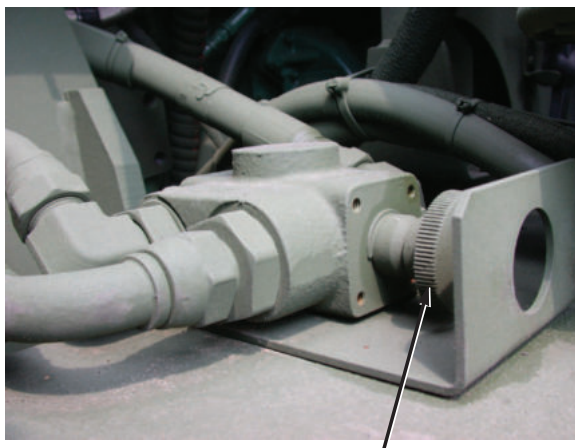
Keep all personnel clear of area near winch cable when tension is on cable. Failure to comply may result in injury or death to personnel.

62. Order all personnel to stand clear of area near winch (10).

**CAUTION**

Do not reel in winch cable too tightly. If too much tension is applied, cable or tie down ring can break, or winch may be damaged.

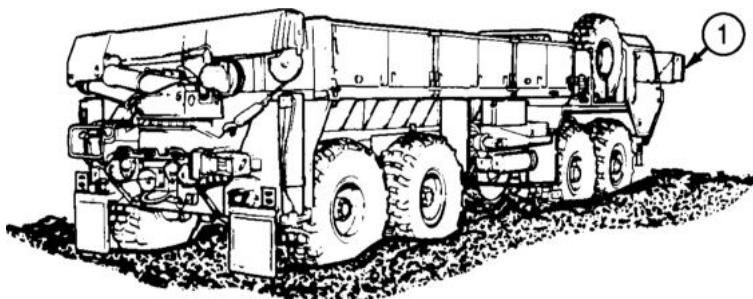
63. Once assistant and all other personnel are clear of area, move winch shift lever (4) to IN and take all slack out of winch cable (9).
64. When cable is tight, release winch shift lever (4) to center position.
65. Set PTO ENGAGE switch (2) to OFF position. Indicator light (3) will go out.
66. Shut off engine. (WP 0066)
67. Push in hydraulic selector valve control.

**WINCH MIRED VEHICLE TO THE REAR - Continued**

**HYDRAULIC SELECTOR  
VALVE CONTROL**

*Figure 35.*

68. Adjust mirror (1) for driving.



*Figure 36.*

**END OF TASK**

**END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE SNATCH BLOCK INSTALLATION/REMOVAL

---

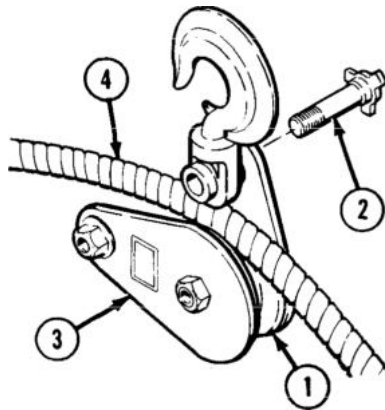
### INITIAL SETUP:

Not Applicable

---

### ATTACH SNATCH BLOCK TO SELF-RECOVERY WINCH CABLE

1. Remove snatch block (1) from stowage.



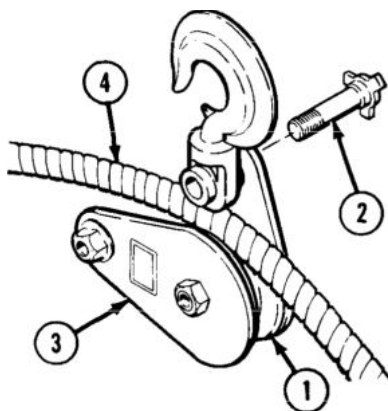
*Figure 1.*

2. Remove screw (2).
3. Move plate (3) to side to open snatch block (1).
4. Place winch cable (4) in snatch block (1).
5. Close plate (3) and align holes.
6. Install screw (2).
7. Ensure screw (2) is tight and winch cable (4) can be moved freely through snatch block (1).
8. Continue with self-recovery operation (WP 0098).



**REMOVE SNATCH BLOCK FROM SELF-RECOVERY WINCH CABLE**

1. Check that there is enough slack in winch cable (1).



*Figure 2.*

2. Remove screw (2).
3. Move plate (3) to side to open snatch block (4).
4. Take winch cable (1) out of snatch block (4).
5. Close plate (3) and align holes.
6. Install screw (2).
7. Stow snatch block (4) in stowage box.
8. Continue with self-recovery operation (WP 0098).

**END OF TASK**

**END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE**  
**CONNECT/DISCONNECT SELF-RECOVERY WINCH CABLE TO ANOTHER VEHICLE**

---

**INITIAL SETUP:**

Not Applicable

---

**CONNECT CABLE TO VEHICLE**

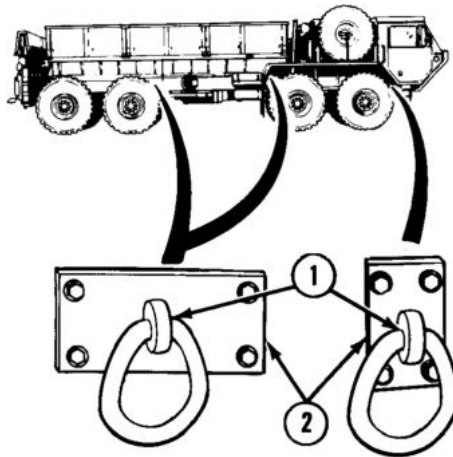
**CAUTION**

When attaching self-recovery winch cable to another vehicle, that vehicle must be used only as an anchor point or damage to equipment can result.

**NOTE**

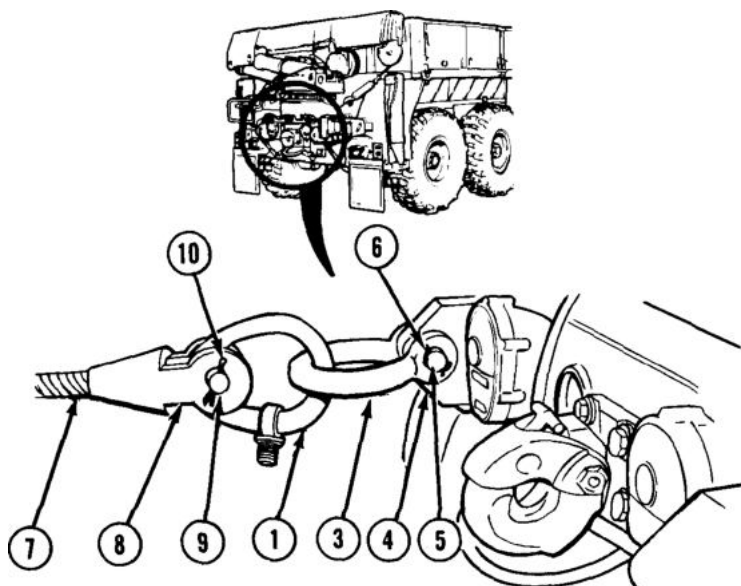
There are three tie down rings on each side of vehicle.

1. Unscrew one tie down ring (1) from mounting plate (2).



*Figure 1.*

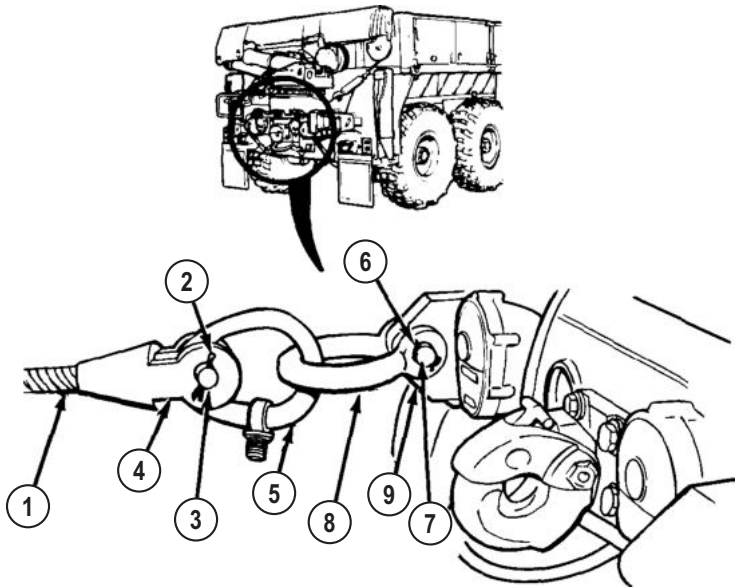
2. Remove lifting shackle (3) from stowage.

**CONNECT CABLE TO VEHICLE - Continued***Figure 2.*

3. Insert lifting shackle (3) through tie down ring (1).
4. Connect lifting shackle (3) to left front of left rear tow eye (4) with pin (5).
5. Install cotter pin (6).
6. Connect self-recovery winch cable (7) with clevis (8) to tie down ring (1) with pin (9).
7. Install cotter pin (10).
8. Continue with self-recovery winch operation. (WP 0098)

**DISCONNECT CABLE FROM VEHICLE**

1. Ensure there is enough slack in winch cable (1).

**DISCONNECT CABLE FROM VEHICLE - Continued**

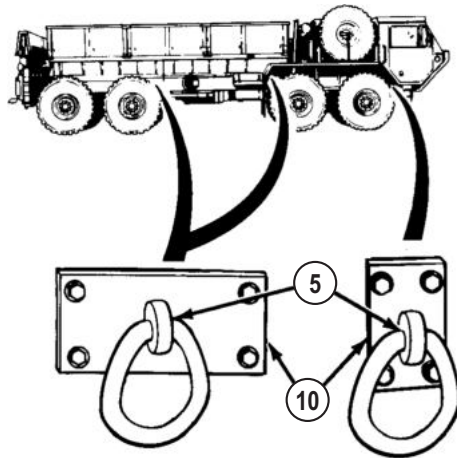
*Figure 3.*

2. Remove cotter pin (2).
3. Remove pin (3) and disconnect clevis (4) from tie down ring (5).
4. Remove cotter pin (6).
5. Remove pin (7) and disconnect lifting shackle (8) from tow eye (9).
6. Remove tie down ring (5) from lifting shackle (8).
7. Stow lifting shackle (8).

**NOTE**

There are three tie down rings on each side of vehicle.

8. Install tie down ring (5) into mounting plate (10).

**DISCONNECT CABLE FROM VEHICLE - Continued***Figure 4.*

9. Continue with self-recovery winch operation. (WP 0098)

**END OF TASK**

**END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE TOW DISABLED VEHICLE

---

### INITIAL SETUP:

Not Applicable

---

### TOW DISABLED VEHICLE

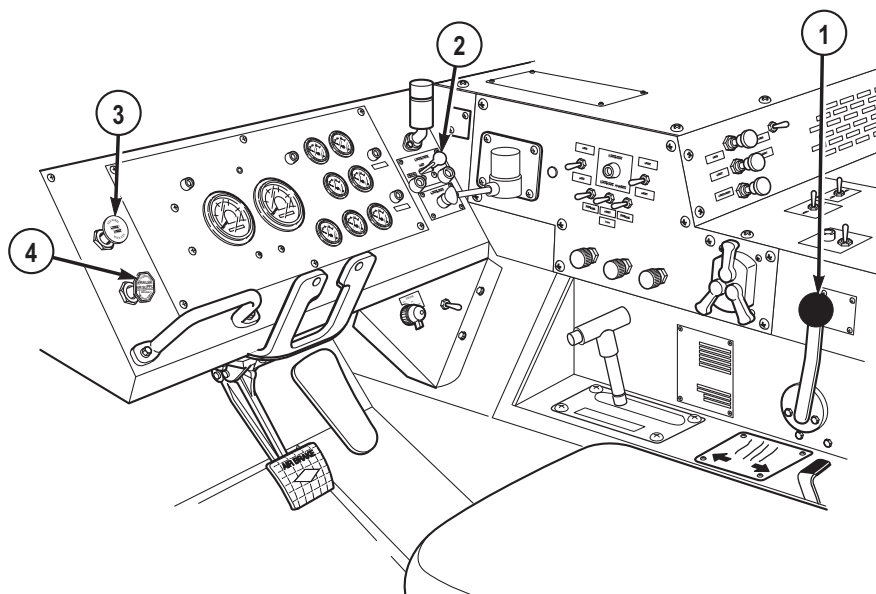
#### CAUTION

- When towing another vehicle, do not go over GCWR given in equipment data (WP 0006). Failure to comply may result in damage to equipment.
- Propeller shaft must be removed by field level maintenance before towing disabled vehicle or equipment may be damaged.

#### NOTE

Disabled vehicles must be prepared and moved in accordance with FM 21-305 . If instructed to do so, manually release spring brakes (WP 0117) as part of preparing disabled vehicle for towing.

1. Install and operate portable beacon lights. (WP 0086)
2. Set TRANSFER CASE shift lever (1) to NEUT (neutral) position.
3. Set TRACTION CONTROL lever (2) to OFF.

**TOW DISABLED VEHICLE - Continued**

*Figure 1.*

4. Push in PARKING BRAKE control on disabled vehicle (refer to operator's manual).
5. Push in TRAILER AIR SUPPLY control (4) on recovery vehicle.
6. Transport disabled vehicle.

**END OF TASK**

**END OF WORK PACKAGE**

---

## OPERATOR MAINTENANCE CONNECT/DISCONNECT TOW BAR

---

### INITIAL SETUP:

#### Personnel Required

Operator and Assistant(s) - - - (3)

---

### CONNECT TOW BAR

#### WARNING



Do not use 10-ton tow bar with self-guided coupler (normally found on some M1120 LHS and M1977 CBT models). Self-guided coupler is not compatible with 10-ton tow bar. Failure to comply may result in injury or death to personnel

#### WARNING



Tow bar is heavy. Do not attempt to lift or move tow bar without the aid of two assistants and a lifting device. Failure to comply may result in injury or death to personnel.

#### NOTE

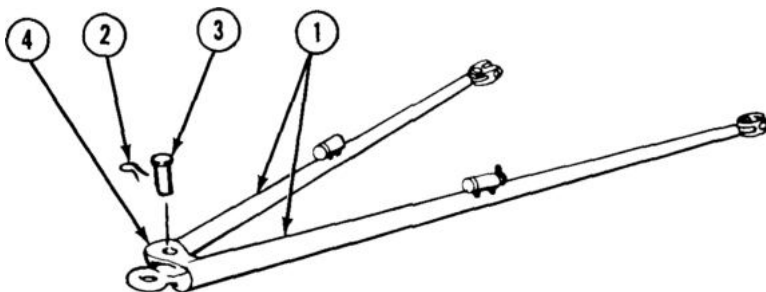
- This procedure is a three soldier task.
  - The 10-ton tow bar should always be used in conjunction with two 16 ft. (5 m) safety chains.
  - Allow ample distance between towing vehicle and disabled vehicle to connect 10-ton tow bar.
1. Align rear of towing vehicle near front of disabled vehicle.



**CONNECT TOW BAR - Continued****WARNING**

Tow bar is heavy. Do not attempt to lift or move tow bar without the aid of two assistants and a lifting device. Failure to comply may result in injury or death to personnel.

2. With aid of two assistants and a lifting device, remove tow bar (1) from stowage.



*Figure 1.*

3. Remove cotter hairpin (2) and pin (3) from tow bar (1).
4. Separate tow bar (1) at pivot point (4).

**NOTE**

Towing eyes on all models of HEMTT series vehicles are same in appearance, operation, and location. HEMTT M977 shown.

5. Position legs of tow bar (1) in front of disabled vehicle with spare pins (5) facing up.

## CONNECT TOW BAR - Continued

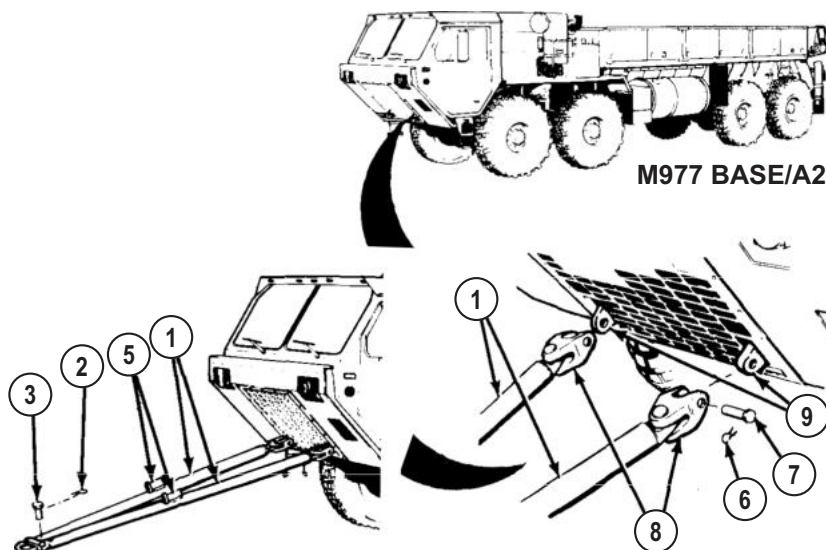


Figure 2.

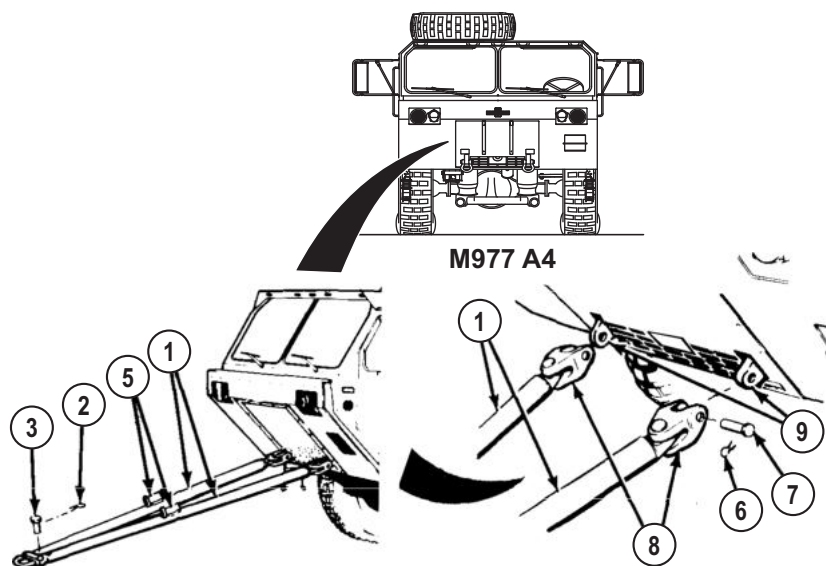


Figure 3.

6. Remove two cotter hairpins (6) and pins (7) from tow bar shackles (8).

**CONNECT TOW BAR - Continued****WARNING**

Tow bar is heavy. Do not attempt to lift or move tow bar without the aid of two assistants and a lifting device. Failure to comply may result in injury or death to personnel.

7. While two assistants hold one leg of tow bar (1) and align shackle (8) with towing eye (9), install pin (7) and cotter hairpin (6).
8. Repeat Step (7) for other leg of tow bar (1).
9. Align legs of tow bar (1) at pivot point (4) and install pin (3) and cotter hairpin (2).

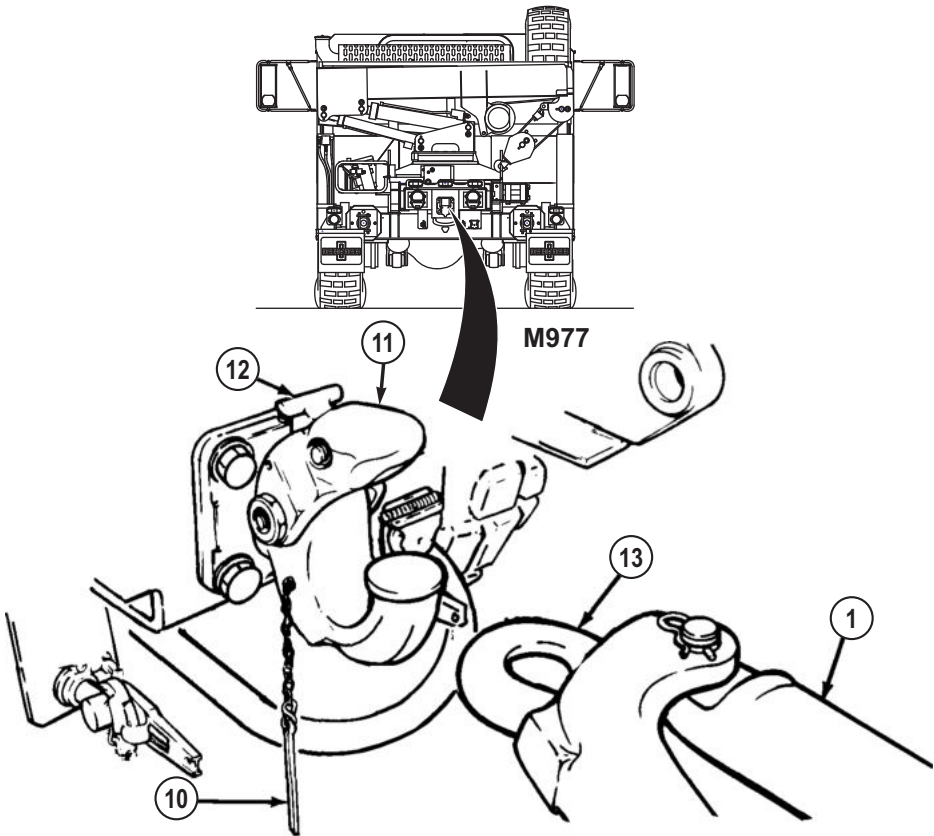
**WARNING**

Do not use 10-ton tow bar with self-guided coupler (normally found on some M1120 LHS and M1977 CBT models). Self-guided coupler is not compatible with 10-ton tow bar. Failure to comply may result in injury or death to personnel

**NOTE**

Pintle hook on all models of HEMTT series vehicles are same in appearance, operation, and location. HEMTT M977 shown.

10. Position the towing vehicle so pintle hook is aligned with tow bar lunette eye.
11. Remove cotter pin (10) from pintle hook (11).

**CONNECT TOW BAR - Continued***Figure 4.*

12. Pull latch (12) away from vehicle and hold.
13. Lift top of pintle hook (11) and let go of latch (12). Pintle hook (11) will be locked open.

**WARNING**

Tow bar is heavy. Do not attempt to lift or move tow bar without the aid of two assistants and a lifting device. Failure to comply may result in injury or death to personnel.

**CONNECT TOW BAR - Continued****WARNING**

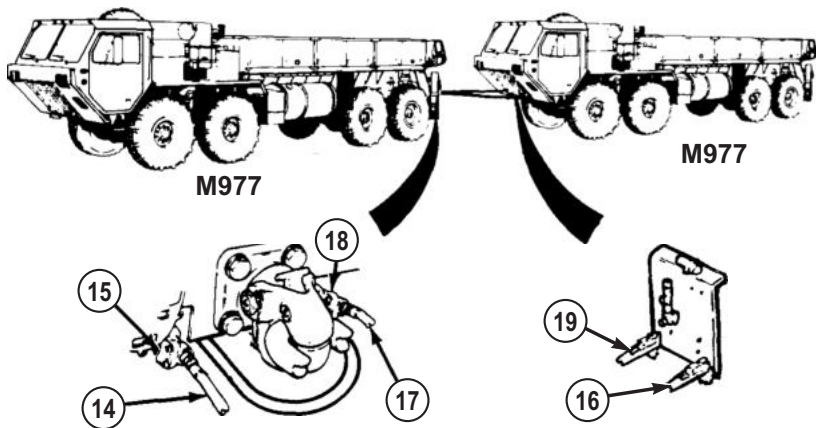
Do not put hands near pintle hook while aligning lunette eye with pintle hook. Failure to comply may result in injury or death to personnel.

14. While two assistants lift tow bar (1), slowly back up towing vehicle until tow bar lunette eye (13) connects to pintle hook (11).
15. Pull latch (12) and close top half of pintle hook (11).
16. Install cotter pin (10) in pintle hook (11).

**NOTE**

If air system of disabled vehicle is damaged, manually release spring brakes (WP 0117).

17. Remove two inter-vehicular air lines (14) from stowage.

**CONNECT TOW BAR - Continued***Figure 5.***NOTE**

Gladhands on all models of HEMTT series vehicles are same in appearance, operation, and location. HEMTT M977 shown.

18. Connect first intervehicular air line (14) to driver side rear gladhand (15) of towing vehicle and driver side front gladhand (16) of disabled vehicle.
19. Connect second intervehicular air line (17) to passenger side rear gladhand (18) of towing vehicle and passenger side front gladhand (19) of disabled vehicle.
20. Remove two 16 ft. (5 m) safety chains (20) from stowage.

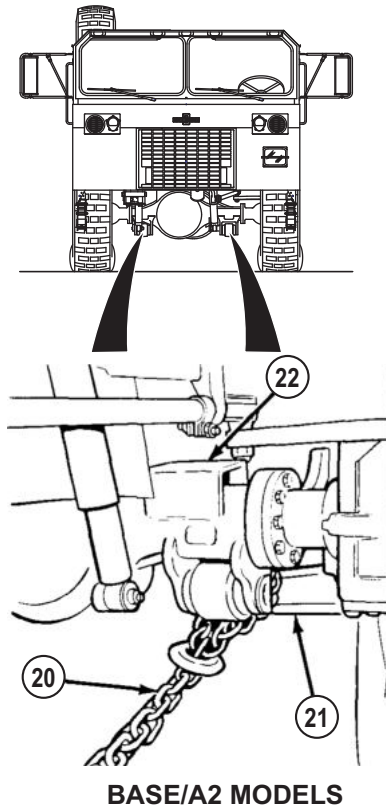
**NOTE**

- Both driver side and passenger side walking beams are same. Driver side shown.
- If disabled vehicle is either a BASE or A2 model HEMTT series vehicle (refer to data plate on inside of drivers door), complete Step

**CONNECT TOW BAR - Continued**

(21). If disabled vehicle is an A4 model HEMTT series vehicle (refer to data plate on inside of drivers door), skip to Step (22).

21. Route one 16 ft. (5 m) safety chain (20) over walking beam (21) behind No. 1 axle (22) on disabled vehicle, and hook 16 ft. (5 m) safety chain (20) back into itself under walking beam (21) as shown.



*Figure 6.*

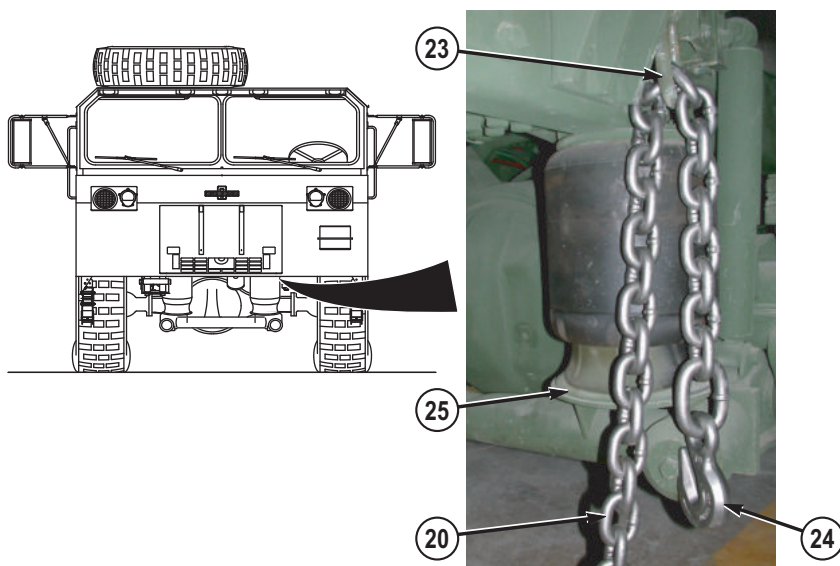
**CAUTION**

Special care should be taken when connecting 16 ft. (5 m) safety chain to tie down ring. The procedure listed below routes the 16 ft. (5 m) safety chain in such a way as to minimize excessive contact with vehicle air suspension air springs during towing. Failure to comply may result in damage to equipment.

**CONNECT TOW BAR - Continued****NOTE**

Both driver side and passenger side tie down rings are same. Driver side shown.

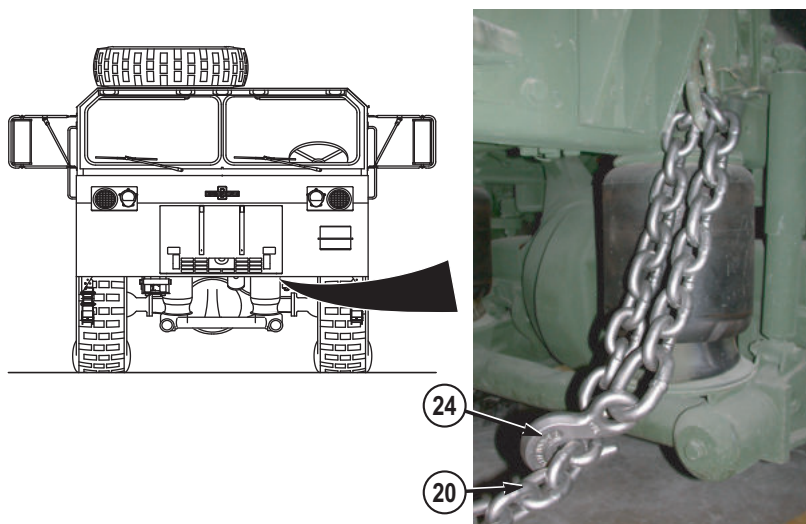
22. Connect 16 ft. (5 m) safety chain (20) to disabled vehicle tie down ring (23):
- Route end (without safety shackle) of 16 ft. (5 m) safety chain (20) through tie down ring (23) from inboard to outboard until grab hook (24) hangs just below bottom of air spring (25).



*Figure 7.*

- Hook 16 ft. (5 m) safety chain (20) back to itself. Grab hook (24) should open towards ground (shown) when tension is applied to 16 ft. (5 m) safety chain (20).



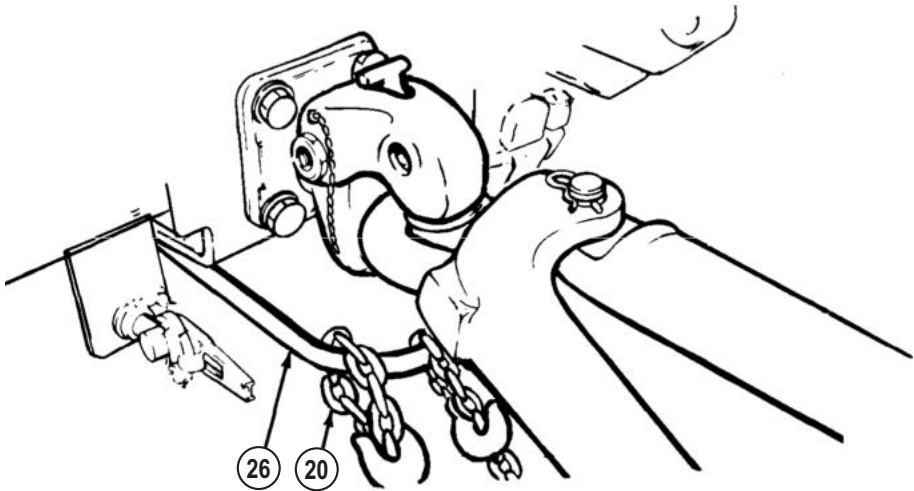
**CONNECT TOW BAR - Continued**

*Figure 8.*

23. Repeat Steps (21) or (22) for other side of disabled vehicle.

**NOTE**

- 16 ft. (5 m) safety chain may be attached to either safety chain loop or towing shackles.
  - 16 ft. (5 m) safety chain should be attached so they are just above, but not in contact with the ground.
24. Route free ends of two 16 ft. (5 m) safety chain (20) through safety chain loop (26) on towing vehicle and attach each 16 ft. (5 m) safety chain (20) back into itself as shown.

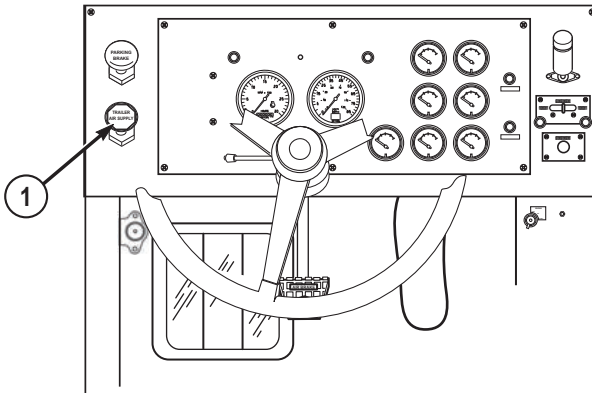
**CONNECT TOW BAR - Continued***Figure 9.*

25. Tow disabled vehicle. (WP 0101)

**DISCONNECT TOW BAR****NOTE**

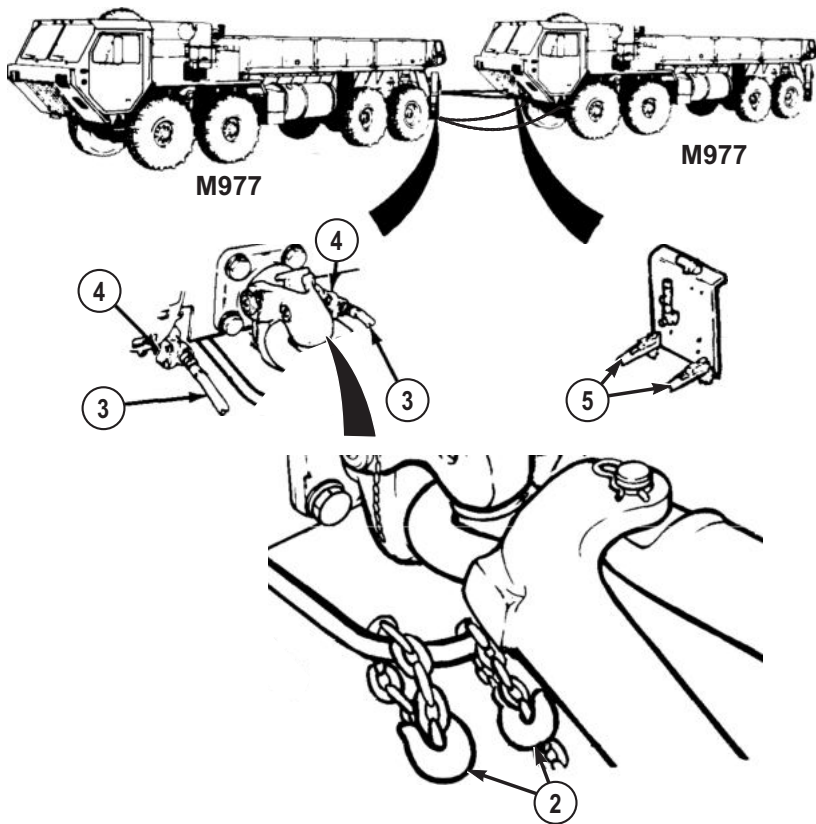
- This procedure is a three soldier task.
- Vehicle should be parked and disconnected on level ground.

1. Park towing vehicle. (WP 0065)
2. Pull out TRAILER AIR SUPPLY control (1) on towing vehicle.

**DISCONNECT TOW BAR - Continued***Figure 10.***NOTE**

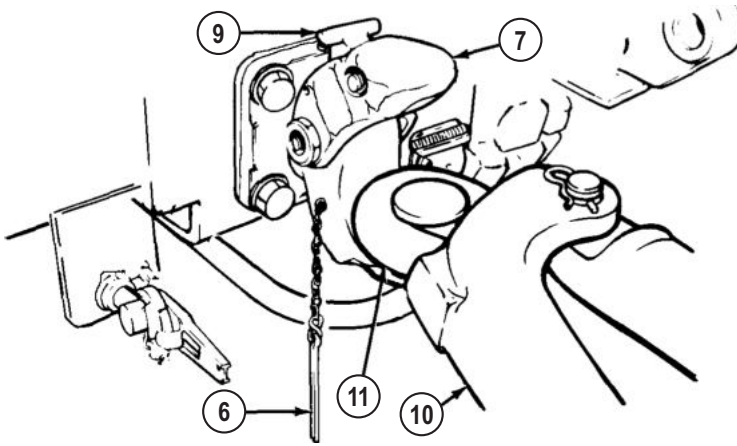
If disabled vehicle parking brake is inoperable and/or spring brakes on disabled vehicle were manually released, install wheel chocks (refer to operator's manual).

3. Engage parking brake on disabled vehicle (refer to operator's manual).
4. Disconnect two 16 ft. (5 m) safety chains (2) from towing vehicle and disabled vehicle. Return 16 ft. (5 m) safety chains (2) to stowage.

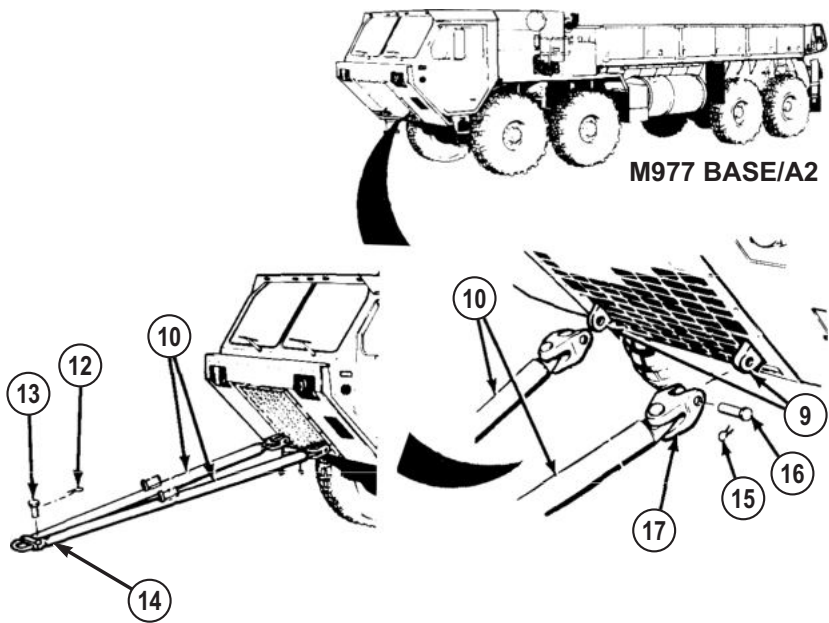
**DISCONNECT TOW BAR - Continued***Figure 11.***NOTE**

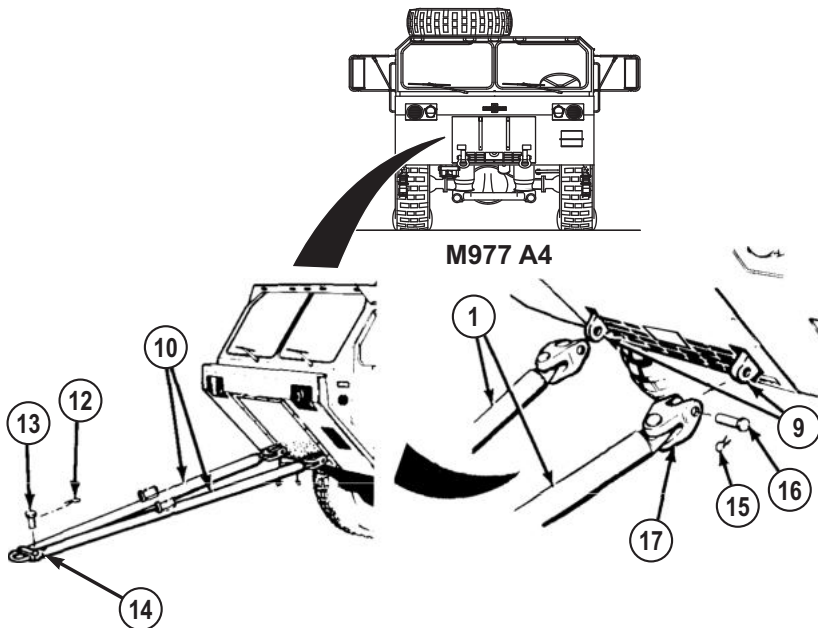
If spring brakes on disabled vehicle were manually released before towing, skip to Step (6).

5. Disconnect two intervehicular air lines (3) from towing vehicle rear gladhands (4) and from disabled vehicle front gladhands (5). Return intervehicular air lines (5) to stowage.
6. Remove cotter pin (6) from towing vehicle pintle hook (7).

**DISCONNECT TOW BAR - Continued***Figure 12.*

7. Pull latch (9) away from vehicle and hold.
8. Lift top of pintle hook (7) and let go of latch (9). Pintle hook (7) will be locked open.
9. As two assistants lift tow bar (10) until lunette eye (11) is clear of pintle hook (10), drive towing vehicle forward approximately 15 ft. (4.6 m).
10. As assistants lower tow bar (10) to the ground, park towing vehicle.
11. Pull latch (9) to close towing vehicle pintle hook (7) and install cotter pin (6) in pintle hook (7).
12. Remove cotter hairpin (12) and pin (13) and separate tow bar (10) at pivot point (14).

**DISCONNECT TOW BAR - Continued***Figure 13.*

**DISCONNECT TOW BAR - Continued***Figure 14.*

13. With aid of an assistant, hold one leg of tow bar (10) while another assistant removes cotter hairpin (15) and pin (16) from shackle (17).
14. Repeat Step (13) for other leg of tow bar (10).
15. With aid of two assistants, lower tow bar (10) to the ground.
16. Install two pins (16) and cotter hairpins (15) in shackles (17).
17. Align legs of tow bar (10) at pivot point (14) and install pin (13) and cotter hairpin (12).

**WARNING**

Tow bar is heavy. Do not attempt to lift or move tow bar without the aid of two assistants and a lifting device. Failure to comply may result in injury or death to personnel.

**DISCONNECT TOW BAR - Continued**

18. With aid of two assistants and lifting device, return tow bar (10) to stowage.

**END OF TASK****END OF WORK PACKAGE**





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## OPERATOR MAINTENANCE OPERATE VEHICLE IN EXTREME HEAT

---

### INITIAL SETUP:

Not Applicable

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### EXTREME HEAT OPERATION

#### CAUTION

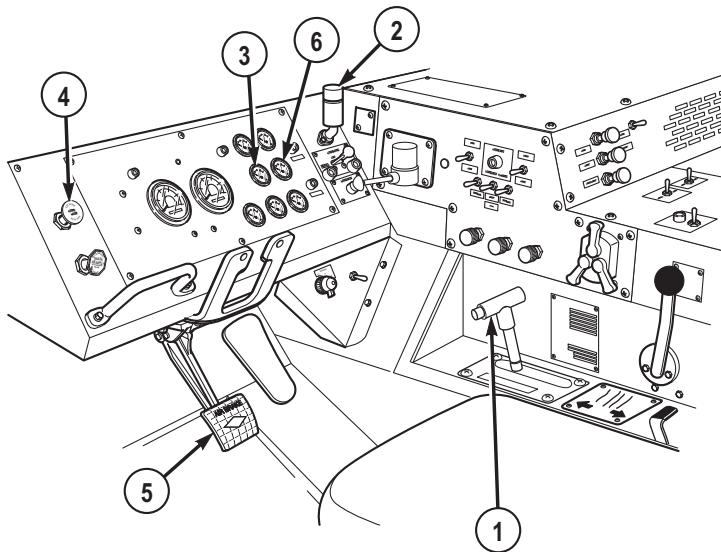
- When operating vehicle in very hot temperatures of above 100°F (38°C), extra care must be taken to prevent overheating engine (temperatures over 230°F (110°C) and transmission (temperatures over 250°F, 121°C). Watch water and transmission temperature gauges closely. Failure to comply may result in damage to equipment.
- Check oil levels often and keep operating strain as low as possible. Vehicle cooling and lubrication systems support each other. Failure of one system will rapidly cause failure of other systems.

#### NOTE

- Close heater valves to improve the efficiency of cabin air conditioning kit.
  - Closing the heater valves disables cabin heat.
1. Keep operating temperatures as low as possible:
    - a. Set transmission range selector (1) to N (neutral) while engine is running and not required to move.
    - b. Use low gear ranges only when necessary.
    - c. Stop vehicle for cooling off periods, and idle engine as often as possible. Let engine idle for approximately 3 minutes before shutting down. Idling will cool engine faster than quick shutdown and may prevent damage from remaining engine heat.
    - d. Check oil levels often. Oil seals are more likely to leak in extreme hot weather.
    - e. Check air filter restriction indicator (2) frequently. If indicator shows red:
      - (1) Park vehicle. (WP 0065)

**EXTREME HEAT OPERATION - Continued**

- (2) Shut off engine. (WP 0066)
- (3) Notify field level maintenance.



*Figure 1.*

- 2. If TRANS TEMP gauge (3) reads 250°F (121°C) or above, perform the following steps:
  - a. Slow vehicle.
  - b. Set transmission range selector (1) to next lower gear range.
  - c. Continue operation.
  - d. When TRANS TEMP gauge (3) reads normal range:
    - (1) Set transmission range selector (1) to normal gear range.
    - (2) Continue operation.
  - e. If TRANS TEMP gauge (3) does not return to normal range:
    - (1) Stop vehicle.
    - (2) Set transmission range selector (1) to N (neutral).
    - (3) Pull out PARKING BRAKE control (4).
    - (4) Allow transmission to cool.
  - f. When TRANS TEMP gauge (3) reads normal range:

**EXTREME HEAT OPERATION - Continued**

- (1) Apply service brake pedal (5).
  - (2) Push in PARKING BRAKE control (4).
  - (3) Set transmission range selector (1) to normal gear range.
  - (4) Continue operation.
3. If WATER TEMP gauge (6) indicates coolant temperature is near overheating, perform the following steps:
  - a. Slow vehicle.
  - b. Set transmission range selector (1) to next lower gear range.
  - c. Continue operation.
  - d. When WATER TEMP gauge (6) reads normal range:
    - (1) Set transmission range selector (1) to normal gear range.
    - (2) Continue operation.
  - e. If WATER TEMP gauge (6) does not return to normal range:
    - (1) Stop vehicle.
    - (2) Set transmission range selector (1) to N (neutral).
    - (3) Pull out PARKING BRAKE control (4).
    - (4) Allow engine to cool.
  - f. When WATER TEMP gauge (6) reads normal range:
    - (1) Apply service brake pedal (5).
    - (2) Push in PARKING BRAKE control (4).
    - (3) Set transmission range selector (1) to normal gear range.
    - (4) Continue operation.
4. Check cooling system often and notify field level maintenance if any of the following are found:
  - a. Low coolant level in radiator.
  - b. Leaking hose connections which have been tightened but still leak.
  - c. Cracked or leaking hoses.
  - d. Radiator or charge air cooler fins/grill plugged with mud, debris, etc.

**NOTE**

- Batteries do not hold charge well in extreme heat.

**EXTREME HEAT OPERATION - Continued**

- Battery will be tagged (white circle printed on top) for use in extreme heat conditions as specific gravity must be changed to adjust for heat (refer to TM 9-6140-200-14).
5. Keep batteries full, but do not overfill. Check battery electrolyte daily.
  6. In hot, damp climates check body and chassis often and notify field level maintenance if any of the following are found:
    - a. Signs of pitting or paint blistering on metal surfaces.
    - b. Signs of mildew, mold, or fungus on fabrics and rubber.
  7. Adjust lubrication intervals as specified in applicable lubrication instructions (refer to PMCS).
  8. Park vehicle (WP 0065) in sheltered area, out of wind if possible. If no shelter is available, park so vehicle does not face into wind.

**END OF TASK****END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE OPERATION IN EXTREME DUST

---

### INITIAL SETUP:

Not Applicable

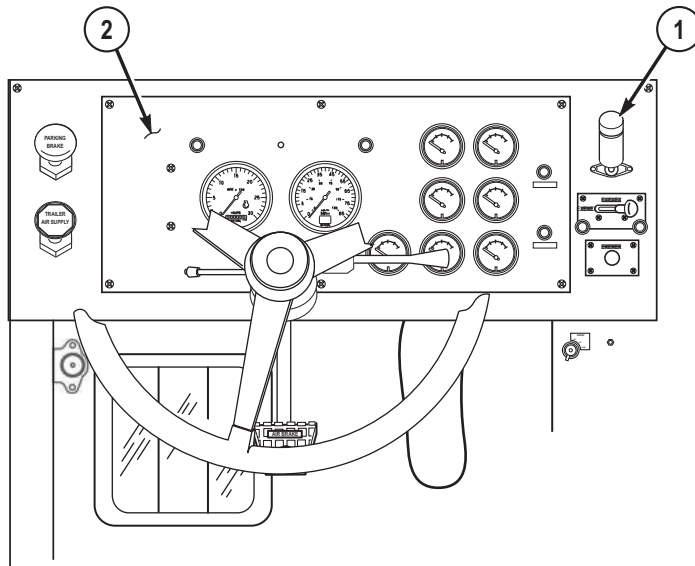
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### OPERATE VEHICLE IN EXTREME DUST

#### CAUTION

Clouds of dust can scratch glass surfaces. Keep glass surfaces covered as much as possible in these conditions to prevent scratching.

1. Leave glass surfaces covered if not needed for operations. Take extra care when cleaning glass to prevent scratching surfaces.
2. Keep close watch on air filter restriction indicator (1) located on top right side of driver's instrument panel.

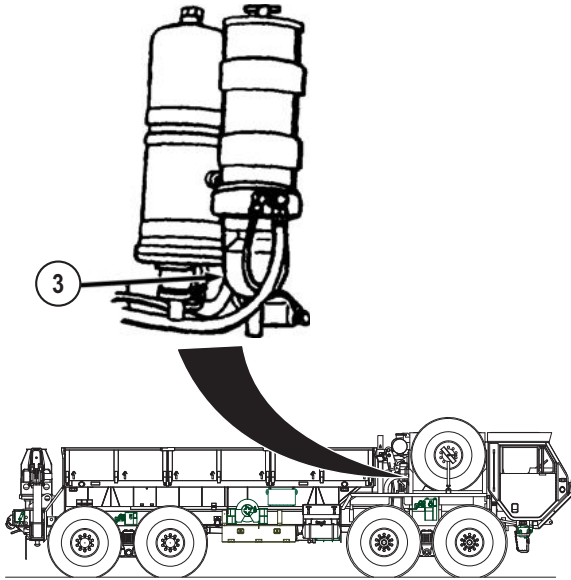


*Figure 1.*

3. Continuously scan gauges and indicators on driver's instrument panel (2) to be sure dust does not affect equipment.

**OPERATE VEHICLE IN EXTREME DUST - Continued**

4. Allow as much distance as possible between vehicles and operate at low speeds.
5. At stops, check and drain fuel/water separator (3).



*Figure 2.*

6. When possible, park vehicle so it does not face into wind.

**END OF TASK**

**END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE OPERATE VEHICLE IN SAND OR MUD

---

### INITIAL SETUP:

Not Applicable

---

### OPERATE VEHICLE IN SAND OR MUD

#### CAUTION

Blowing sand may scratch glass surfaces. Glass surfaces should remain covered as much as possible in these conditions to prevent scratching.

#### NOTE

Operating in mud can worsen vehicle braking and speed up brake wear. If braking worsens while operating in mud, dry brakes by driving vehicle approximately 500 ft. (153 m) with service brakes frequently applied. This must be done with brakedrums totally out of mud, so that drying action can take place. If adequate braking is not restored by drying brakes, notify field level maintenance.

1. Leave glass surfaces covered if not needed for operations. Extra care should be taken when cleaning glass surfaces to prevent scratching surfaces.

#### NOTE

Principles of driving in sand can also be applied to driving in mud. Best time to drive on sand is at night or early morning when sand is damp. Damp sand gives better traction.

- a. Check air filter restriction indicator (1) often.
2. Adjust tires to correct tire pressure for type tire and environment. (WP 0006)

#### NOTE

Positioning TRANSFER CASE shift lever to LO automatically activates 8X8 drive.

3. Set TRANSFER CASE shift lever (2) to LO. 8X8 DRIVE indicator (3) will illuminate.



OPERATE VEHICLE IN SAND OR MUD - Continued

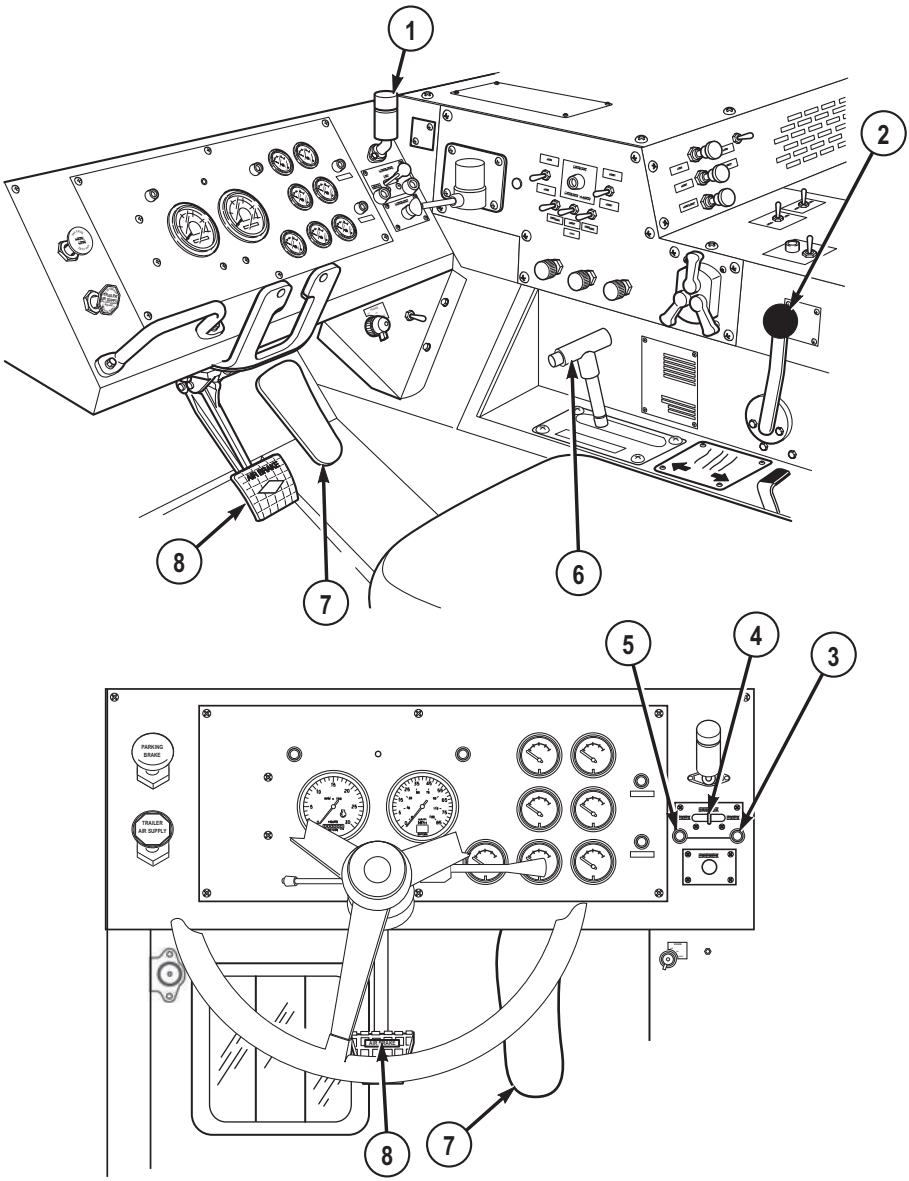


Figure 1.

**OPERATE VEHICLE IN SAND OR MUD - Continued****CAUTION**

Wheel hop condition should be avoided to prevent possible damage to drivetrain. If wheel hop begins to occur, ease up on throttle to allow tires to grip surface. If wheel hop continues, release throttle and apply brakes. Apply throttle slowly as traction permits.

4. Start slowly. Do not spin wheels when starting to move vehicle.
5. Set TRACTION CONTROL lever (4) to INTER-AXLE DIFF LOCK for added traction. Indicator light (5) will illuminate.
6. Set transmission range selector (6) to 2 (2nd) or 1 (1st), as needed for added traction.
7. Do not straddle sand mounds or drive on sides of two sand mounds. Loose sand will not support vehicle on steep slopes.
8. Keep throttle pedal (7) steady after vehicle reaches desired speed.
9. Turn vehicle slowly when on loose sand or mud.
10. Steer vehicle straight up and down hills if possible.
11. To move vehicle forward and turn after vehicle is stopped in loose sand or mud, do the following:
  - a. Set transmission range selector (6) to R (reverse).
  - b. Press throttle pedal (7) and move vehicle straight back about 20 ft. (6.1 m).
  - c. Release throttle pedal (7) and press service brake pedal (8).
  - d. Set transmission range selector (6) to 1 (1st).
  - e. Release service brake pedal (8) and press throttle pedal (7) to move vehicle forward.
  - f. Turn vehicle gradually.
  - g. Set transmission range selector (6) to D (drive) when vehicle picks up speed and is moving forward smoothly.
12. If vehicle starts to skid, do the following:
  - a. Release throttle pedal (7).
  - b. Steer in direction of skid until vehicle stops skidding.
  - c. Press throttle pedal (7) slowly and steer vehicle on straight course.

**PARK VEHICLE**

1. Park vehicle as follows:

**PARK VEHICLE - Continued**

- a. Vehicle should not face into wind.
- b. Clean mud off vehicle as soon as possible.

**CAUTION**

- Do not hit axle breathers when cleaning mud from axles.
  - Do not direct high pressure water stream at glass surfaces, seals, air intake, axle breathers, exhaust outlet, or any other component of vehicle that could be easily damaged by high pressure water stream.
2. Clean mud from wheels, brakes, axles, universal joints, steering mechanism, and radiator as soon as possible.
  3. Make sure axle breather vent caps move freely on breather body.

**END OF TASK****END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE OPERATE VEHICLE IN DESERT ENVIRONMENT

---

### INITIAL SETUP:

Not Applicable

---

### DESERT ENVIRONMENT OPERATION

#### NOTE

FM 90-3 contains detailed instructions for living and working in desert.

1. Principles for operating in extreme heat (WP 0103) and extreme dust (WP 0104), sand, or mud (WP 0105) apply to desert environment.

#### NOTE

- Close heater valves to improve the efficiency of cabin air conditioning kit.
  - Closing the heater valves disables cabin heat.
2. Temperatures may change as much as 70°F (21°C) degrees between day and night. These changes may damage equipment if vehicle is not properly prepared.
    - a. Due to expansion and contraction of all fluids and air, care should be taken when filling fuel tank and fluid reservoirs to prevent overflow when temperatures change.
    - b. Precision instruments may be affected by temperature changes and may need adjustment more often.

### END OF TASK

### END OF WORK PACKAGE



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**OPERATOR MAINTENANCE**  
**OPERATE VEHICLE IN COLD ENVIRONMENT (32°F [0°C] TO -25°F [-32°C])**

---

**INITIAL SETUP:**

Not Applicable

---

**OPERATE VEHICLE IN COLD ENVIRONMENT**

**WARNING**



Do not touch extremely cold metal (below -26°F, -32°C to -65°F, -54°C). Bare skin may freeze to cold metal. Failure to comply may result in injury or death to personnel.

**CAUTION**

- Before operating vehicle in extreme cold environment, ensure engine arctic kit is installed and vehicle has been prepared as described in FM 9-207 . Refer to FM 31-70 , FM 31-71 , and FM 21-305 for additional information on operations in extreme cold environment.
- Watch instrument panel closely. If any unusual readings occur, stop vehicle and shut off engine. Check engine immediately.
- Park in shelter when possible. If shelter is not available, park so vehicle does not face into wind. Place planks or brush under wheels so vehicle will not freeze in place.
- Fuel filter should be drained before topping off fuel tank. Keep fuel tank as full as possible during cold operations. Water forms in empty fuel tank as it cools. Water in fuel system could freeze and block system.
- All snow and ice should be removed from vehicle as soon as possible. Snow and ice may slow or stop movement of critical parts if allowed to pile up.
- Special care must be used during operations in extreme cold environment. In extreme cold, engine coolant and fluid in windshield

**OPERATE VEHICLE IN COLD ENVIRONMENT - Continued**

washer can freeze. Batteries can freeze and crack. Oil and grease may get thick and stiff. Rubber and metal parts may crack or become brittle and break easily.

- Proper component lubrication is a must for extreme cold operation.

1. Install tire chains, as needed. (WP 0095)

**NOTE**

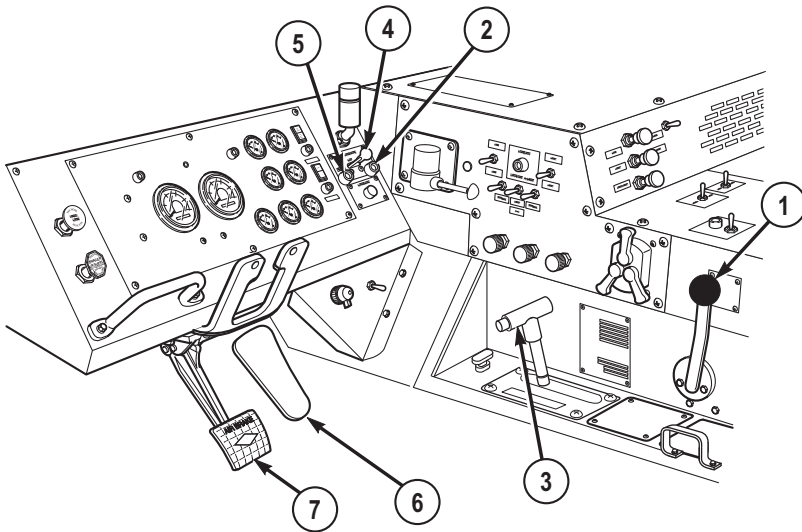
Use ether start system when starting a cold engine.

2. Start engine (WP 0053) and allow engine warm up thoroughly.
3. Let engine warm up thoroughly.

**NOTE**

Positioning TRANSFER CASE shift lever to LO automatically activates 8X8 drive.

4. Set TRANSFER CASE shift lever (1) to LO. 8X8 DRIVE indicator (2) will illuminate.



*Figure 1.*

5. Set transmission range selector (3) to 1 (1st gear range) and drive at lowest possible speed to warm driveline components and tires.
6. Drive on mud, snow, ice, and slippery surfaces as follows:

**OPERATE VEHICLE IN COLD ENVIRONMENT - Continued****NOTE**

- TRACTION CONTROL lever should be set to 8X8 DRIVE when transfer case shift lever is set to HI range while driving on slippery surfaces.
  - Positioning TRANSFER CASE shift lever to LO automatically activates 8X8 drive.
- a. Set TRANSFER CASE shift lever (1) to LO for added traction. 8X8 DRIVE indicator (2) will illuminate.

**NOTE**

TRACTION CONTROL lever should be set to INTER-AXLE DIFF. LOCK when transfer case shift lever is set to LO range while driving on slippery surfaces.

- b. Set TRACTION CONTROL lever (4) in INTER-AXLE DIFF. LOCK (when LO range is used - recommended) or 8X8 DRIVE (if HI range is required), as needed, when driving on slippery surfaces. INTER-AXLE LOCK indicator (5) and/or 8X8 DRIVE indicator (2) will illuminate as applicable.
- c. Press throttle pedal (6) slowly when changing speed.
- d. Keep throttle pedal (6) steady after vehicle reaches desired speed.
- e. Turn vehicle slowly when on slippery surfaces.
- f. Steer vehicle away from ruts and large snowbanks.
- g. Steer vehicle straight up and down hills if possible.
- h. Use gear range 2 (2nd) or 3 (3rd) to go down medium grades.
- i. Use gear range 1 (1st) to go down steep or very slippery grades.
- j. Drive at slower speeds and stay twice normal distance from vehicle ahead.
- k. Signal turns sooner than normal to give vehicles behind ample time to safely slow down.

**WARNING**

Do not use engine brake when vehicle is on slippery surface. If engine brake is used incorrectly, vehicle may skid out of control. Failure to comply may result in injury or death to personnel.



**OPERATE VEHICLE IN COLD ENVIRONMENT - Continued****NOTE**

Pressing service brake pedal lightly will help keep vehicle from skidding.

- l. Apply brakes sooner, and press service brake pedal (7) lightly to give early warning that vehicle will slow or stop.
- m. Downshift, if necessary, when slowing or stopping vehicle on slick surfaces.
- n. Keep windshield, windows, mirrors, headlights, stoplights, and body lights clean and free of snow and ice. Use defroster and windshield wipers to keep windshield free of snow and ice.
- o. Drive slowly and test brakes after driving through slush or water. If brakes slip, do the following:
  - (1) Continue to drive slowly.
  - (2) Apply moderate pressure on service brake pedal (7) to cause slight brake drag.
  - (3) When brakes are dry and no longer slip, release service brake pedal (7).
  - (4) Resume normal driving speed for conditions.
- p. If absolutely necessary for better traction, lower vehicle tire pressure to emergency air pressure limit:
  - (1) Ensure each tire has a valve cap.
  - (2) Drive at low speed when tire pressures are reduced.
- q. If rear of vehicle skids, do the following:
  - (1) Ease up on throttle pedal (6).
  - (2) Steer in same direction that vehicle is skidding.
  - (3) When vehicle is under control, lightly apply service brake pedal (7).
  - (4) Steer vehicle on a straight course and slowly apply throttle pedal (6).
- r. If vehicle starts to slide while climbing a grade, do the following:
  - (1) Ease up on throttle pedal (6).
  - (2) Steer in same direction that vehicle is skidding.
  - (3) Slowly apply throttle pedal (6) and steer vehicle on a straight course.
- s. If vehicle becomes stuck, do the following:
  - (1) Shovel a clear path ahead of each tire.
  - (2) Put boards, brush, or similar material in cleared paths to get better traction.

**OPERATE VEHICLE IN COLD ENVIRONMENT - Continued**

- (3) If vehicle remains stuck, use another vehicle to winch or tow stuck vehicle clear.
- (4) If another vehicle is not available, self-recover vehicle using self-recovery winch. (WP 0098)

7. Park vehicle (WP 0065) as follows:

**NOTE**

If no shelter is available, park vehicle so it does not face into the wind. Vehicle facing opposite of the direction of the wind is optimal.

- a. Park vehicle in sheltered area, out of wind if possible.

**NOTE**

If no high, dry ground is available, spread out planks, brush, etc., to create a raised area so that vehicle tires will not freeze in snow, water, ice, or mud.

- b. Park vehicle on high, dry ground if possible.
- c. Park vehicle on level ground so vehicle body does not twist.
- d. Leave transfer case shift lever (1) in LO.

**NOTE**

Do not hit axle breathers when cleaning mud, snow, and ice from axles.

- 8. Clean snow, ice, and mud off vehicle as soon as possible.
- 9. Clean mud, snow, and ice from wheels, brakes, axles, universal joints, mirrors, steering mechanism, and radiator as soon as possible.
- 10. Ensure axle breather vent caps move freely on breather body.

**END OF TASK****END OF WORK PACKAGE**



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## OPERATOR MAINTENANCE OPERATION IN EXTREME COLD ENVIRONMENT

---

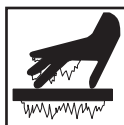
### INITIAL SETUP:

Not Applicable

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### OPERATE VEHICLE IN EXTREME COLD ENVIRONMENT (-26°F[-32°C] to -65°F[-54°C])

#### WARNING



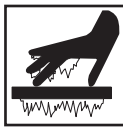
Do not touch extremely cold metal (below -26°F, -32°C to -65°F, -54°C). Bare skin may freeze to cold metal. Failure to comply may result in injury or death to personnel.

#### CAUTION

- Before operating vehicle in extreme cold environment, ensure engine arctic kit is installed and vehicle has been prepared as described in FM 9-207.
- Refer to FM 31-70 , FM 31-71 , and FM 21-305 for additional information on operations in extreme cold environment.
- Watch instrument panel closely. If any unusual readings occur, stop vehicle and shut off engine. Check immediately.
- Park in shelter when possible. If shelter is not available, park so vehicle does not face into wind. Place planks or brush under wheels so vehicle will not freeze in place.
- Fuel filter should be drained before topping off fuel tank. Keep fuel tank as full as possible during cold operations. Water forms in empty fuel tank as it cools. Water in fuel system could freeze and block system.
- All snow and ice should be removed from vehicle as soon as possible. Snow and ice may slow or stop movement of critical parts if allowed to pile up.

**OPERATE VEHICLE IN EXTREME COLD ENVIRONMENT (-26°F[-32°C] to -65°F[-54°C]) - Continued**

- Special care must be used during operations in extreme cold environment. In extreme cold, engine coolant and fluid in windshield washer can freeze. Batteries can freeze and crack. Oil and grease may get thick and stiff. Rubber and metal parts may crack or become brittle and break easily.
  - Proper component lubrication is a must for extreme cold operation.
1. Principles and procedures for operating in cold environment (WP 0107) also apply to extreme cold environment.
  2. Ensure arctic engine heater kit has been installed.
  3. Operate arctic engine heater (WP 0069) as needed.

**WARNING**

Do not touch extremely cold metal (below -26°F, -32°C to -65°F, -54°C). Bare skin may freeze to cold metal. Failure to comply may result in injury or death to personnel.

**NOTE**

If additional air is put in tires for standby periods, lower tire pressure to normal amounts before driving vehicle.

4. In areas where temperatures reach -50°F (-46°C) or colder, fill tires with air approximately 10 psi above normal for long standby periods and overnight.

**END OF TASK****END OF WORK PACKAGE**

---

## OPERATOR MAINTENANCE OPERATE VEHICLE IN FOREST OR ROCKY TERRAIN

---

### INITIAL SETUP:

Not Applicable

---

### OPERATE VEHICLE IN FOREST OR ROCKY TERRAIN

#### WARNING



Ensure tire pressure is correct for vehicle operation. Failure to comply may result in injury or death to personnel.

#### NOTE

When driving over very rocky terrain is part of the mission route, be sure spare wheel and tire are on vehicle, in good repair, and at correct pressure for normal operations. There is greater chance of tire punctures when operating in rocky terrain.

1. Fold vehicle side mirrors in far enough so area to rear of vehicle can still be seen, but mirrors will not be damaged by rocks, trees, and other obstructions.

#### CAUTION

Before driving over ground obstructions such as stumps and large rocks, ensure vehicle has adequate clearance. Stumps and rocks may damage components underneath vehicle.

2. Avoid driving over obstructions if possible.

#### CAUTION

Ensure vehicle can clear overhanging tree limbs and other obstructions. Low overhead obstructions may damage cargo, cargo cover, and other parts on top of vehicle.

3. Avoid low overhanging obstructions if possible.

**OPERATE VEHICLE IN FOREST OR ROCKY TERRAIN - Continued**

4. Check traction and braking. Rocks and fallen leaves can be very slick, especially when wet.

**END OF TASK****END OF WORK PACKAGE**

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**OPERATOR MAINTENANCE  
OPERATE VEHICLE IN SALTWATER AREAS**

---

**INITIAL SETUP:**

Not Applicable

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**OPERATION**

1. Inspect vehicle and major components (crane, tanker module, LHS, etc.) frequently for the buildup of salt deposits, rust, and corrosion.

**NOTE**

Do not direct high-pressure water hose nozzles, or steam cleaner nozzles into hydraulic system seals and/or electrical junction boxes.

2. If salt deposits are located, clean the affected areas using authorized local procedures.
3. Frequently wash the vehicle and major components to prevent the buildup of salt deposits.
4. If corrosion is present, notify your supervisor as these conditions need to be corrected immediately.

**END OF TASK**

**END OF WORK PACKAGE**





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## OPERATOR MAINTENANCE MANUALLY BYPASSING SOLENOID DURING ELECTRIC POWER LOSS

---

### INITIAL SETUP:

Not Applicable

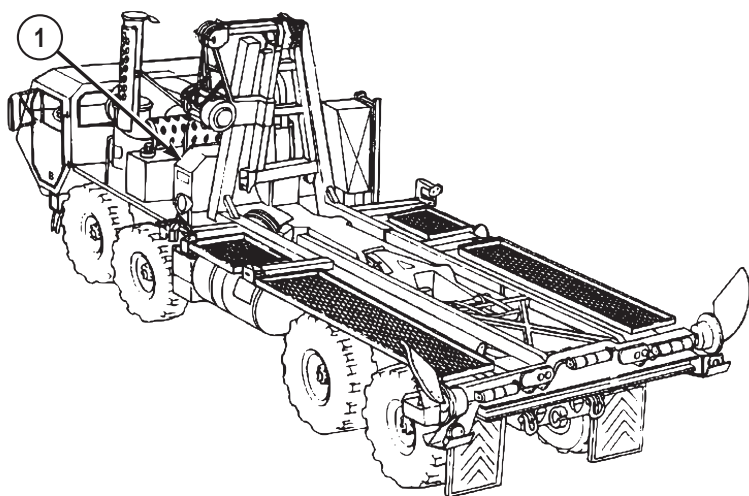
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### PERFORM PROCEDURE

#### NOTE

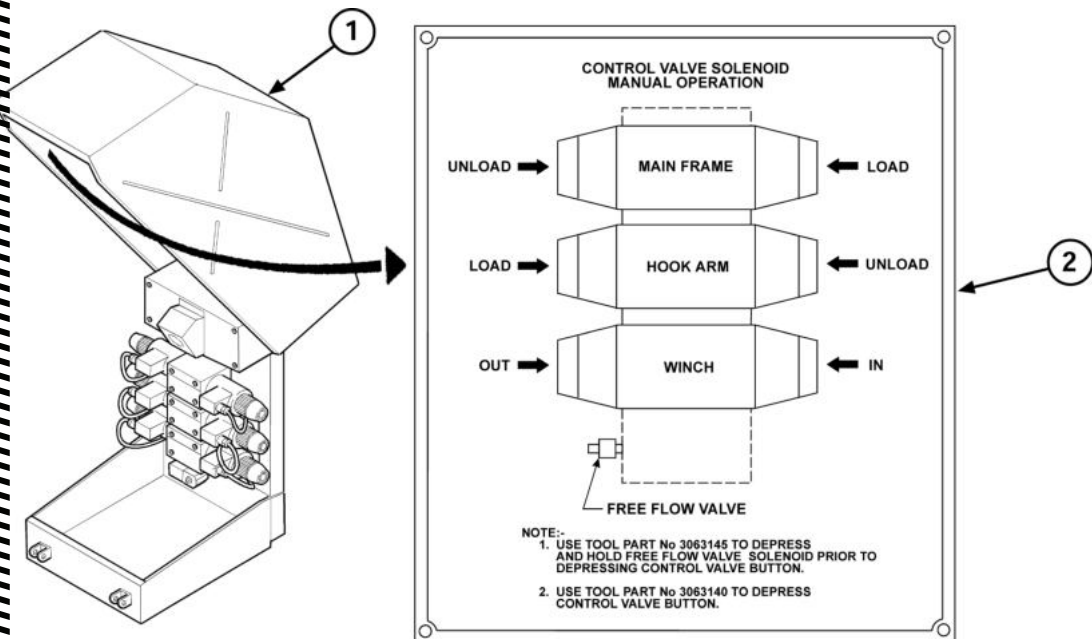
- Manual mode operations using the cab control box are to be performed only when the normal AUTO mode electric circuit is malfunctioning.
- When determined necessary, the solenoid bypass procedure may be used to perform CBT operations.

1. Locate hydraulic manifold assembly cover (1) on driver side of vehicle.

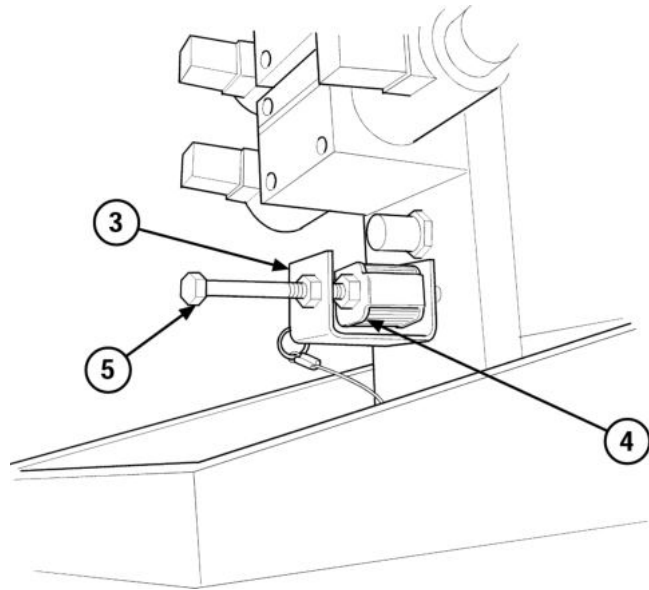


*Figure 1.*

2. Open hydraulic manifold assembly cover (1). Instructional placard (2) is on inside of cover (1).

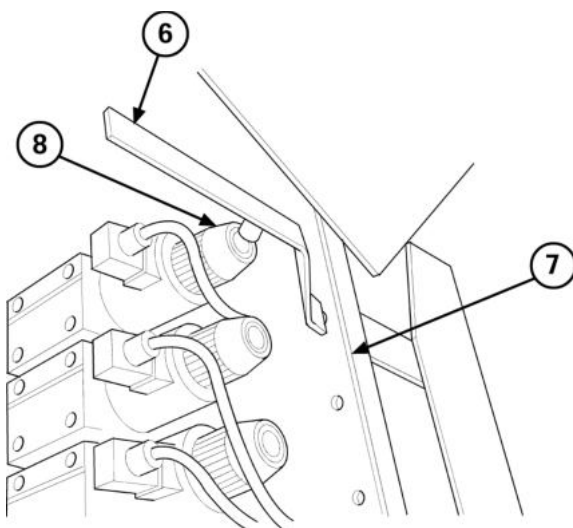
**PERFORM PROCEDURE - Continued***Figure 2.*

3. Install free-flow valve tool (3) on free-flow valve (4) and tighten thumbscrew (5).

**PERFORM PROCEDURE - Continued**

*Figure 3.*

4. Refer to and perform the appropriate operational procedures with the following exceptions: when the procedure directs the operation of the remote control unit or the cab controls, use the manual valve plunger tool (6), follow procedures on the instructional placard (2), and perform the operation within the control valve layout of the hydraulic manifold assembly. Fit plunger tool (6) in appropriate hole in hydraulic manifold assembly (7) and press plunger tool (6) into solenoid button (8).

**PERFORM PROCEDURE - Continued***Figure 4.***END OF TASK****END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE  
MANUALLY LOADING BRIDGE ADAPTER PALLET (BAP) FROM THE GROUND**

---

**INITIAL SETUP:**

**Personnel Required**

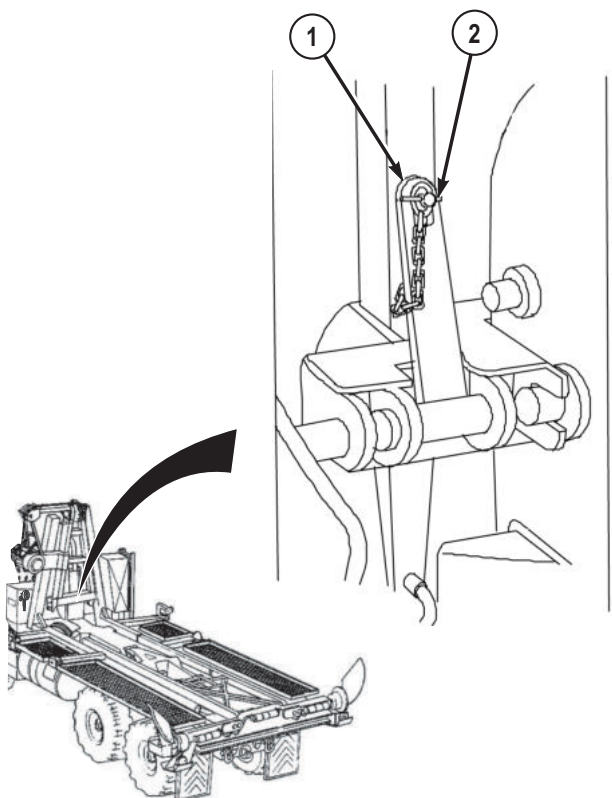
Operator and Assistant - - (2)

---

**PERFORM PROCEDURE**

**NOTE**

- This procedure is a two soldier task.
  - The following manual mode operations using the cab control box are to be performed only when the normal AUTO mode electric circuit is malfunctioning.
1. Secure winch frame to the BAP. Ensure two winch frame locking levers (1) are in the up position.

**PERFORM PROCEDURE - Continued***Figure 1.*

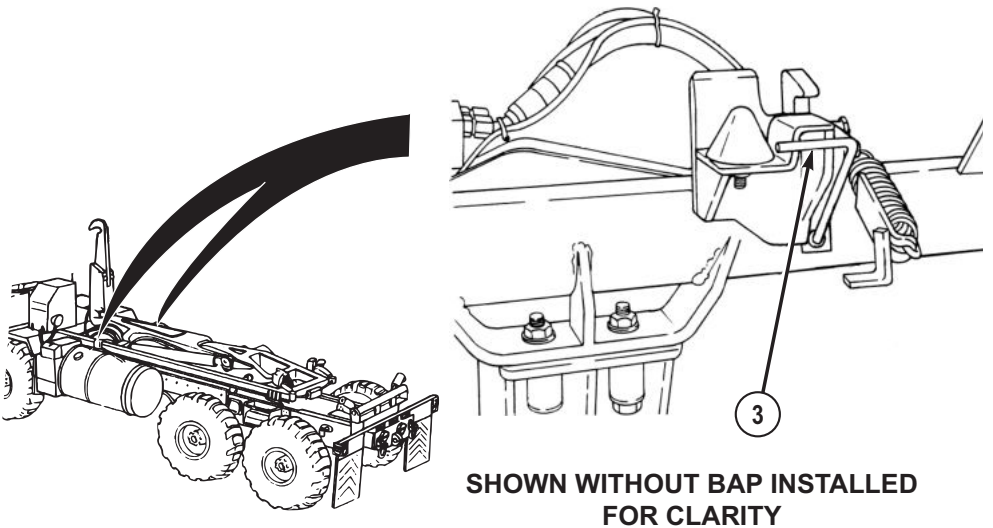
2. If locking levers (1) are not up:
  - a. Remove lockpin (2) from each locking lever (1).
  - b. Swing locking lever (1) to the up position.
  - c. Insert lockpin (2) into locking lever (1).
3. If the BAP is loaded, inspect load and ensure it is secure.

**CAUTION**

The BAP holddown locks must be unlocked before loading the BAP. Loading the BAP with the holddown locks engaged could result in damage to equipment.

**PERFORM PROCEDURE - Continued**

4. Ensure BAP holddown locks (3) are in auto engage position (handle pushed in).



*Figure 2.*

5. Back up vehicle so that at least 5 ft. (1.5 m) of clearance is available behind vehicle for loading the BAP.
6. Pull out PARKING BRAKE control (4) or apply service brake pedal (5).



PERFORM PROCEDURE - Continued

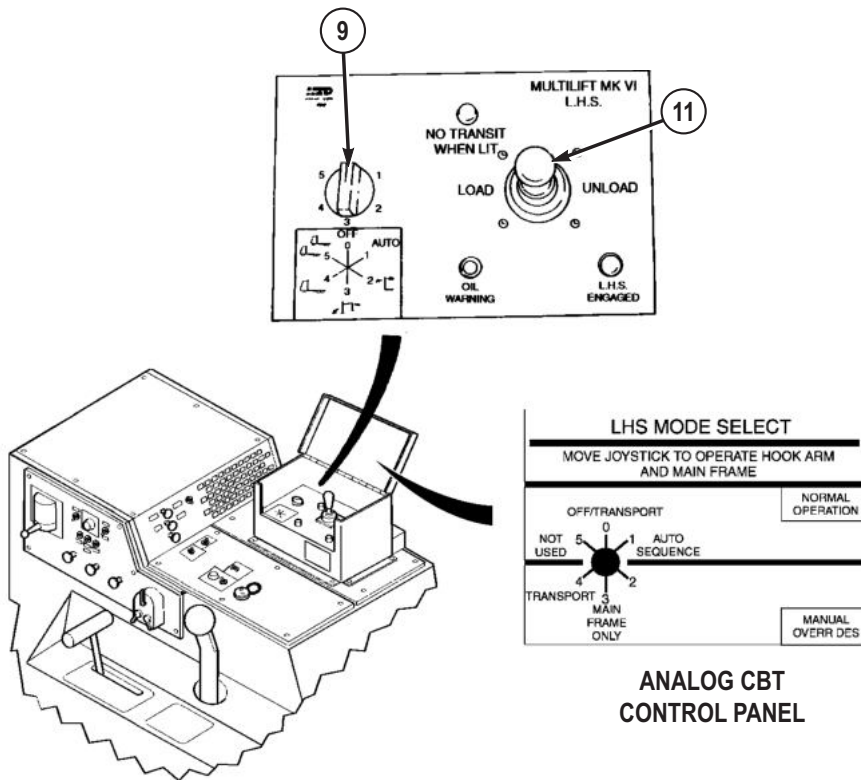
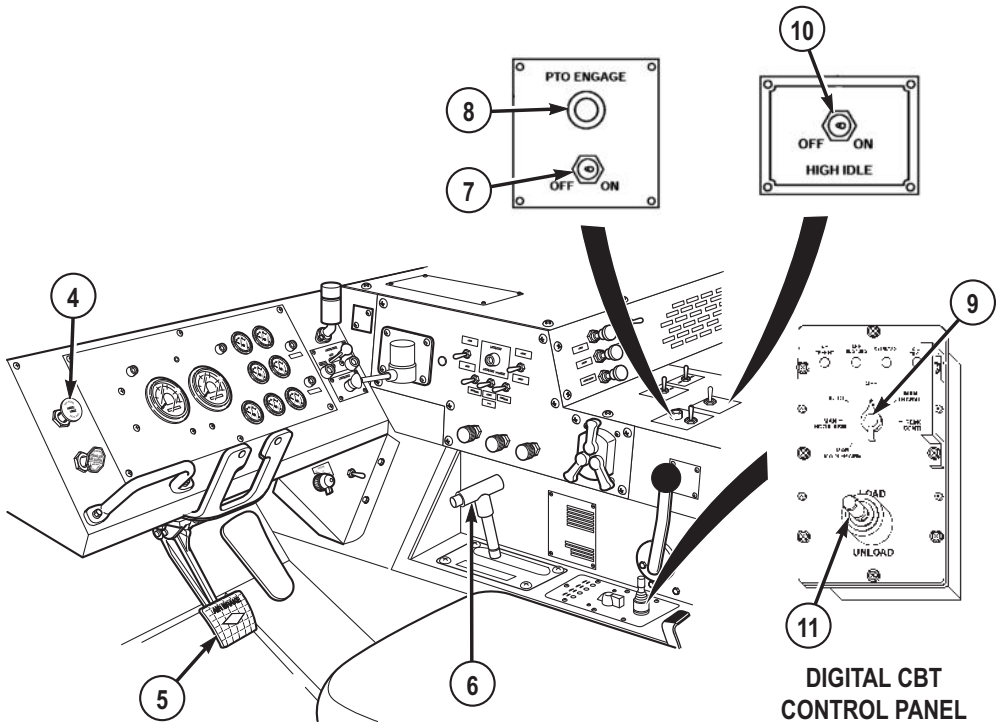


Figure 3.

**PERFORM PROCEDURE - Continued***Figure 4.*

7. Set transmission range selector (6) to N (neutral).

**CAUTION**

- Do not position PTO ENGAGE switch to ON with HIGH IDLE switch ON. Engaging the PTO with HIGH IDLE switch ON may result in sudden application of hydraulic pressure to the LHS, resulting in damage to equipment.
- PTO ENGAGE switch must be positioned OFF before road transport or severe equipment damage could result.

8. Set PTO ENGAGE switch (7) to ON position. Indicator light (8) will illuminate.
9. Turn LHS MODE SELECT switch (9) to MAN H.A.
10. Set HIGH IDLE switch (10) to ON position.
11. To raise and move hook arm toward the BAP, move joystick (11) to UNLOAD and hold.

**PERFORM PROCEDURE - Continued**

12. Release joystick (11) when hook arm completes its full movement rearward.
13. Set HIGH IDLE switch (10) to OFF position.
14. Turn LHS MODE SELECT switch (9) to MAN M.F.
15. Set HIGH IDLE switch (10) to ON position.

**NOTE**

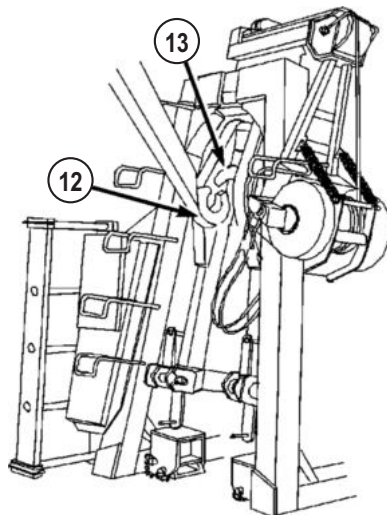
When LHS hook moves below level of BAP hook bar, release joystick.

16. To raise and move main frame toward the BAP, move joystick (11) to UNLOAD and hold.
17. Set HIGH IDLE switch (10) to OFF position.
18. Push in PARKING BRAKE control (4) or release service brake pedal (5).

**NOTE**

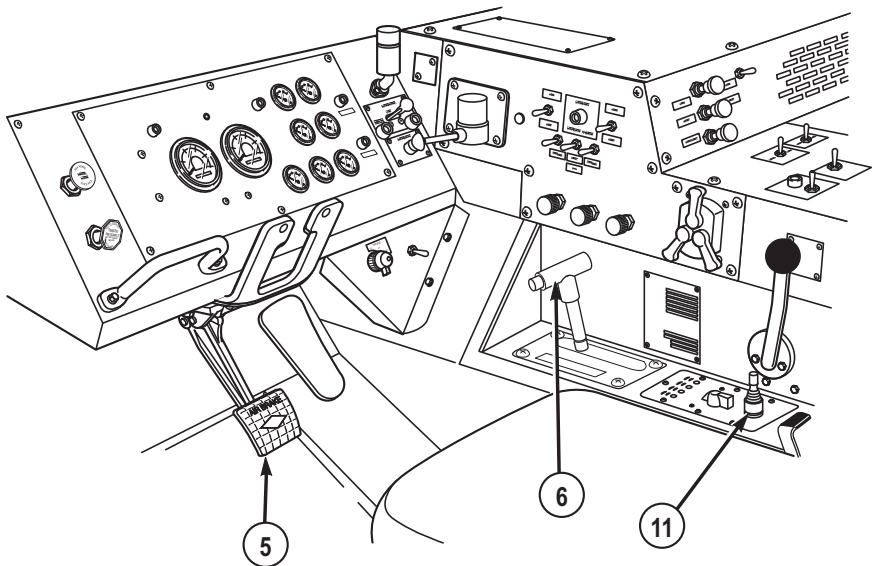
Have an assistant function as a ground guide.

19. Back up vehicle until aligned with the BAP.
20. Ensure LHS lifting hook tip (12) is slightly below and in line with the middle of the BAP hook bar (13).

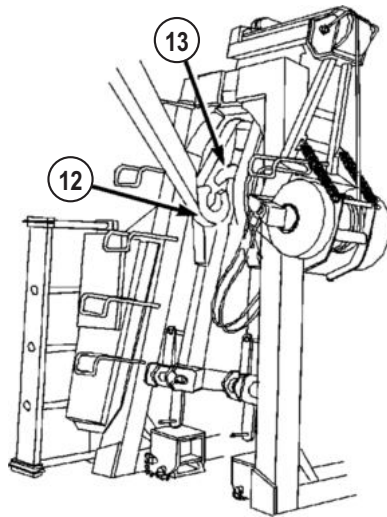


*Figure 5.*

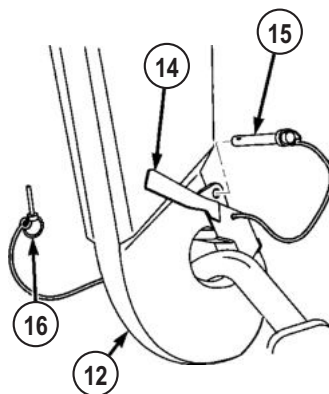
21. Apply service brake pedal (5), and set transmission range selector (6) to N (neutral).

**PERFORM PROCEDURE - Continued***Figure 6.*

22. Move joystick (11) to UNLOAD until LHS lifting hook (12) engages BAP hook bar (13).

**PERFORM PROCEDURE - Continued***Figure 7.*

23. If LHS hook (12) and BAP hook bar (13) are not properly aligned, perform the following steps:
- Move vehicle away from the BAP.
  - Repeat Steps (5) through (22).
24. Install bail bar lock (14) on LHS lifting hook (12) with pin (15) and lockpin (16).

*Figure 8.*

25. Set HIGH IDLE switch (10) to ON position.

**PERFORM PROCEDURE - Continued**

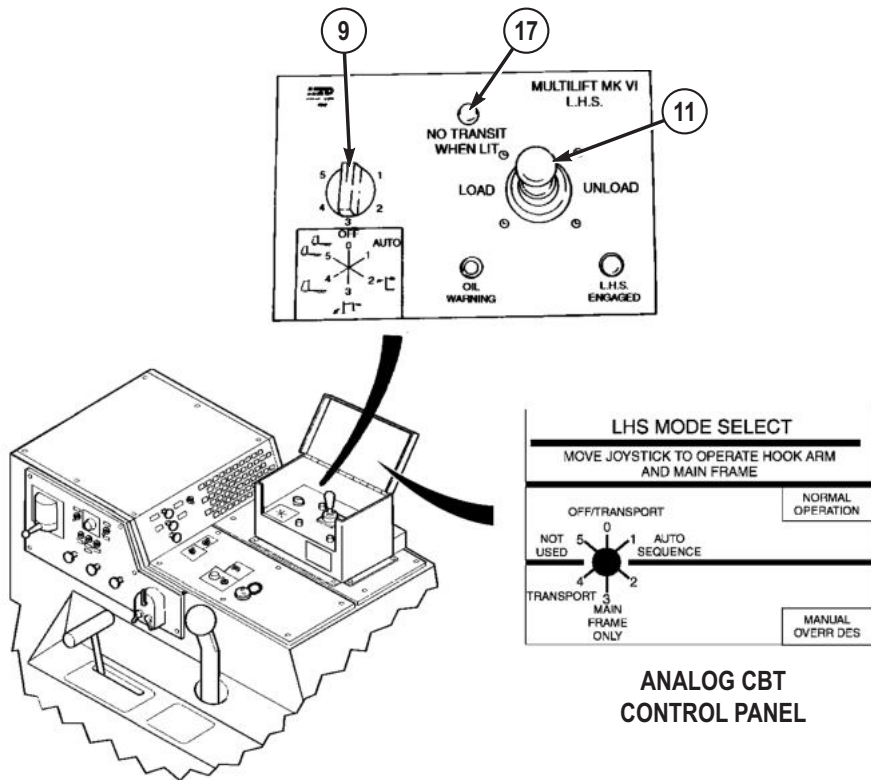
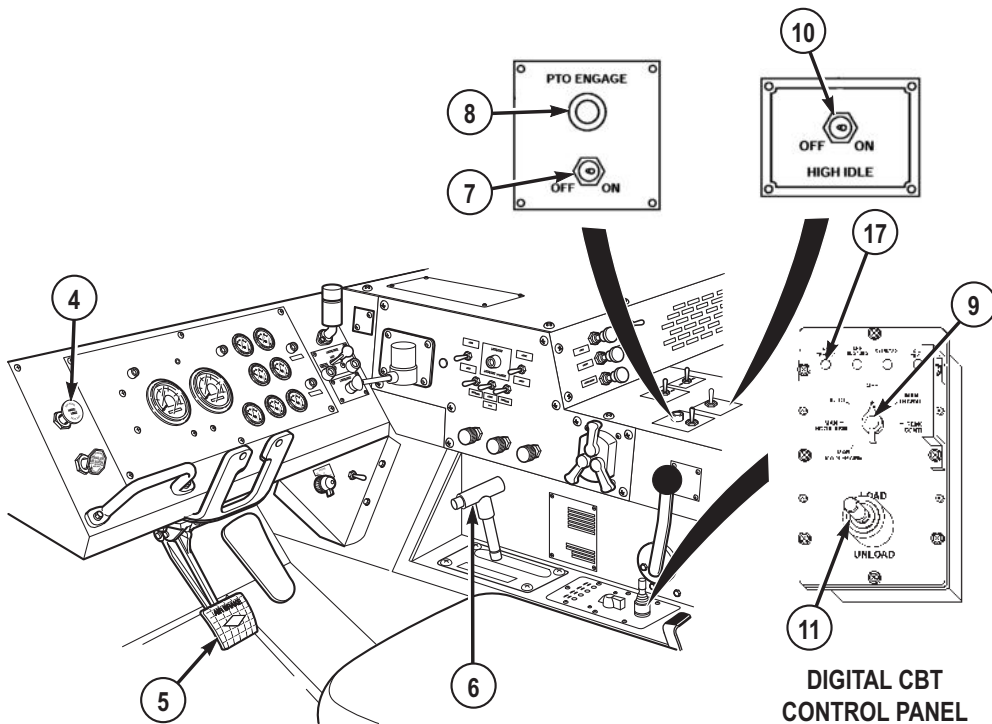


Figure 9.

**PERFORM PROCEDURE - Continued***Figure 10.*

26. Move joystick (11) to LOAD.
27. Ensure BAP runners engage LHS rear rollers by steering vehicle under BAP as BAP rises.
28. Apply service brake pedal (5) when BAP runners contact LHS rear rollers.
29. Move joystick (11) to LOAD and release when main frame is fully open.
30. Set HIGH IDLE switch (10) to OFF position.
31. Turn LHS MODE SELECT switch (9) to MAN H.A.
32. Set HIGH IDLE switch (10) to ON position.

**NOTE**

Hold joystick in LOAD position until the BAP is loaded.

33. To move and lower hook arm to stowed position, move joystick (11) to LOAD and hold.

**PERFORM PROCEDURE - Continued****WARNING**

When NO TRANSIT indicator is illuminated, vehicle may be maneuvered in the immediate vicinity of the loading/unloading site. However, vehicle is unsafe for road travel. Do not perform open-road driving when NO TRANSIT indicator is illuminated. Failure to comply may result in injury or death to personnel and damage to equipment.

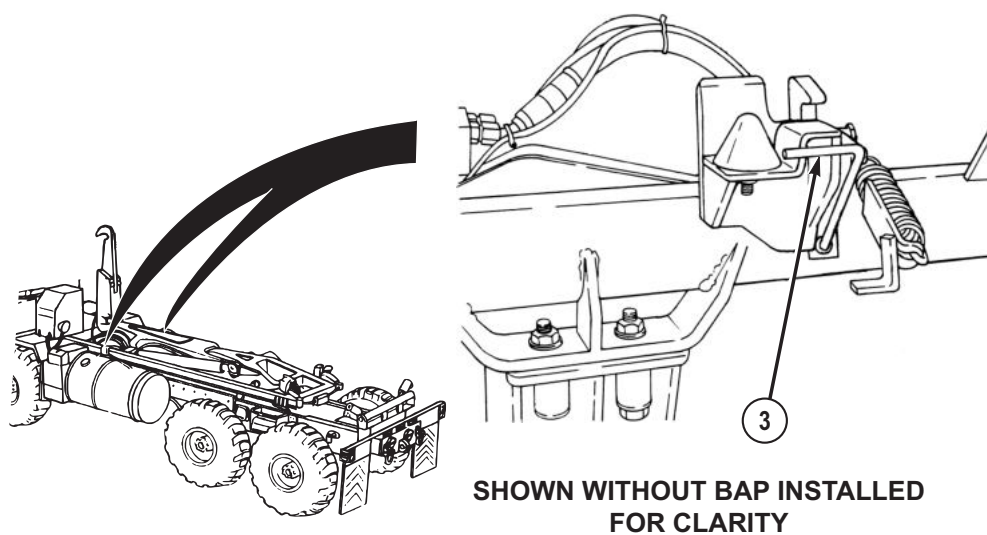
34. Release joystick (11) when hook arm is fully stowed and NO TRANSIT indicator (17) light goes out.
35. Set HIGH IDLE switch (10) to OFF position.
36. Pull out PARKING BRAKE control (4).

**CAUTION**

While maneuvering vehicle in the immediate vicinity of the loading or unloading site, LHS MODE SELECT switch may be in any setting. However, LHS MODE SELECT switch must be set to OFF prior to road travel, to prevent damage to main frame and hook arm cylinders.

37. Turn LHS MODE SELECT switch (9) to OFF.
38. Set PTO ENGAGE switch (7) to OFF position. Indicator light (8) will go out.
39. Ensure both BAP holddown locks (3) are in auto engage position (handles are pushed in).



**PERFORM PROCEDURE - Continued***Figure 11.***END OF TASK****END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE**  
**MANUALLY UNLOADING BRIDGE ADAPTER PALLET (BAP) TO THE GROUND**

---

**INITIAL SETUP:**

**Personnel Required**

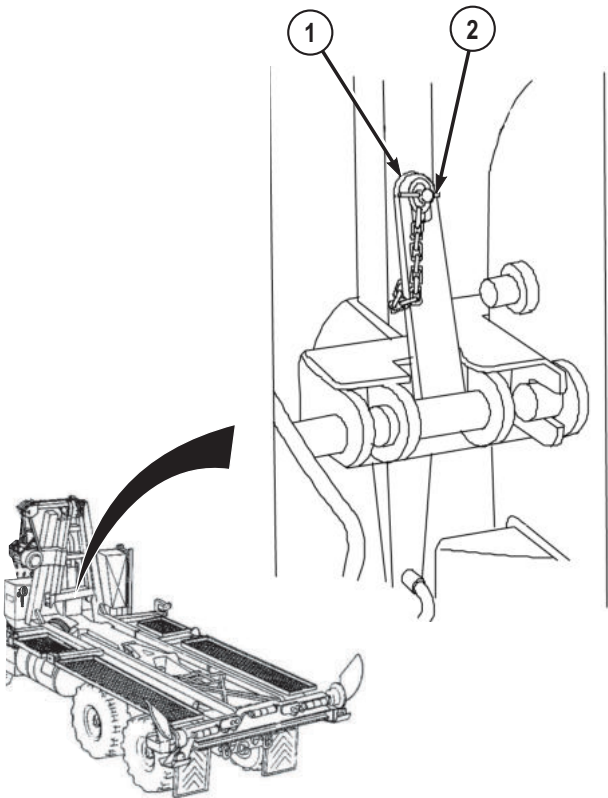
Operator and Assistant - - (2)

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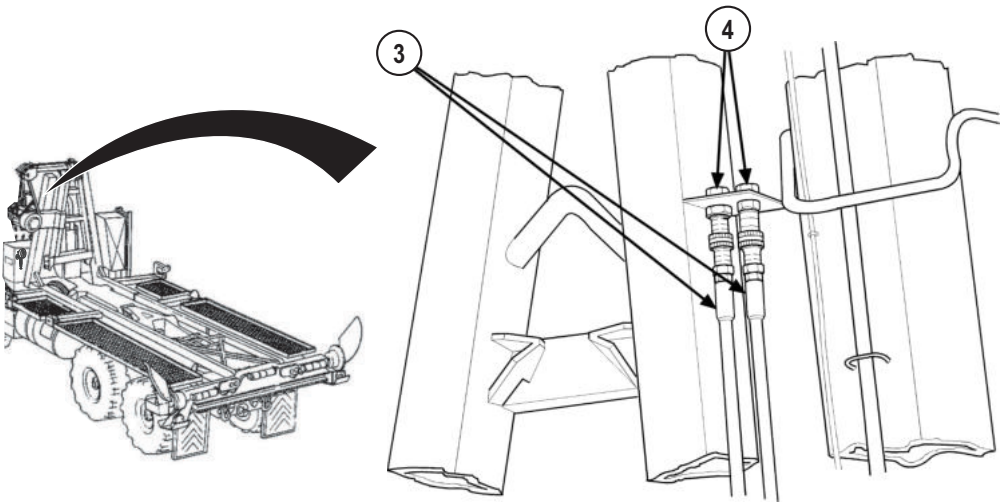
**PERFORM PROCEDURE**

**NOTE**

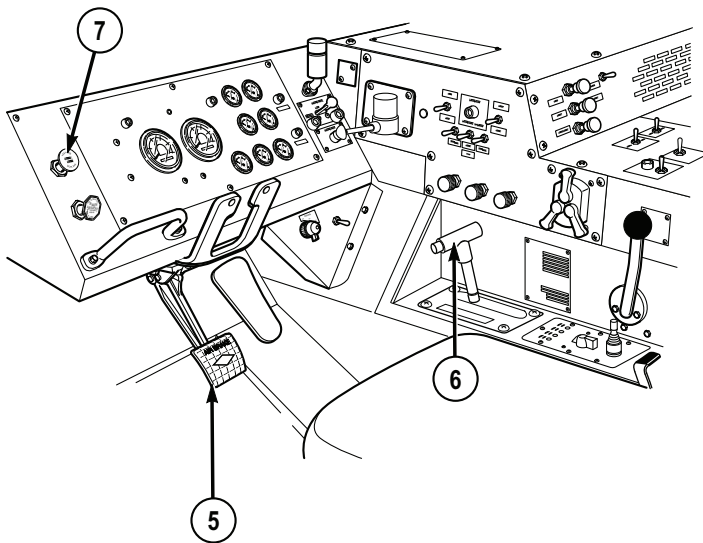
- This procedure is a two soldier task.
  - The following manual mode operations using the cab control box are to be performed only when the normal AUTO mode electric circuit is malfunctioning.
1. Secure winch frame to the BAP. and ensure two winch frame locking levers (1) are in the up position.

**PERFORM PROCEDURE - Continued***Figure 1.*

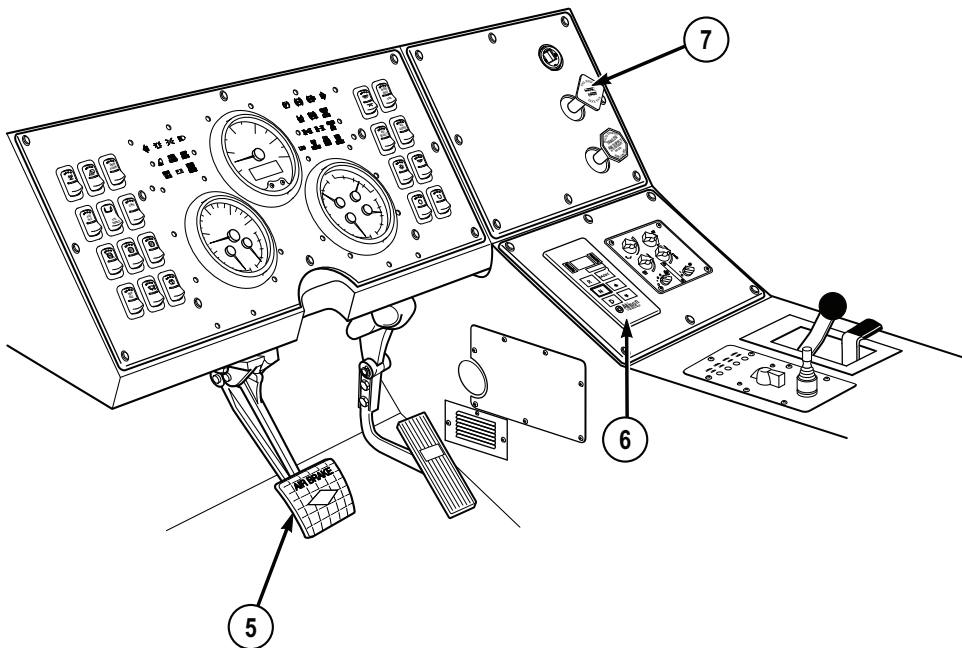
2. If locking levers (1) are not up:
  - a. Remove lockpin (2) from each locking lever (1).
  - b. Swing locking lever (1) to the up position.
  - c. Insert lockpin (2) into locking lever (1).
3. If the BAP is loaded, inspect load and ensure it is secure.
4. Connect two hydraulic hoses (3) to the stowed location connections (4).

**PERFORM PROCEDURE - Continued***Figure 2.*

5. Drive vehicle to unloading area, apply service brake pedal (5).

*Figure 3.*

6. Drive vehicle to unloading area, apply service brake pedal (5).

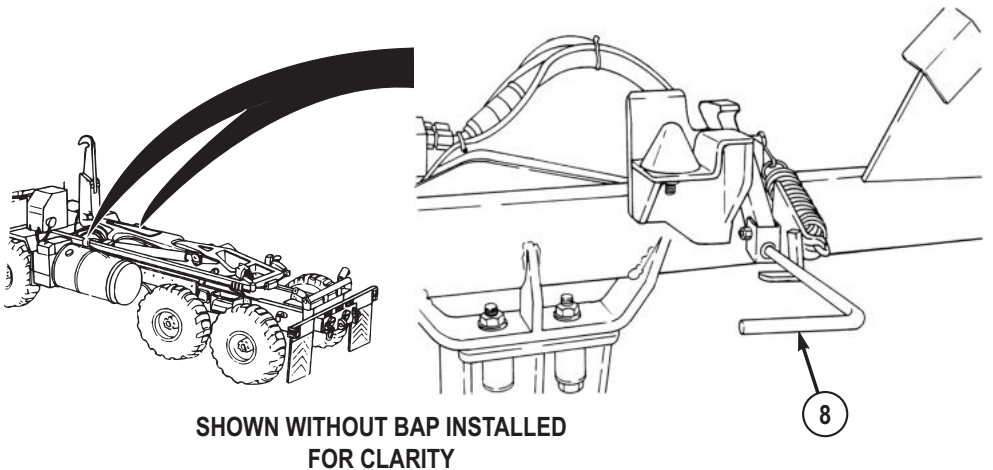
**PERFORM PROCEDURE - Continued***Figure 4.*

7. Set transmission range selector (6) to N (neutral).
8. Pull out PARKING BRAKE control (7).

**CAUTION**

The BAP hold-down locks must be unlocked from the LHS prior to starting BAP unloading operations. Failure to release the hold-down locks could result in damage to equipment.

9. Ensure BAP hold-down locks (8) are disengaged (handle pulled out).

**PERFORM PROCEDURE - Continued***Figure 5.***CAUTION**

- Do not position PTO ENGAGE switch to ON with HIGH IDLE switch ON. Engaging the PTO with HIGH IDLE switch ON may result in sudden application of hydraulic pressure to the LHS, resulting in damage to equipment.
- PTO ENGAGE switch must be positioned OFF before road transport or severe equipment damage could result.

10. Set PTO ENGAGE switch (9) to ON position. Indicator light (10) will illuminate.

PERFORM PROCEDURE - Continued

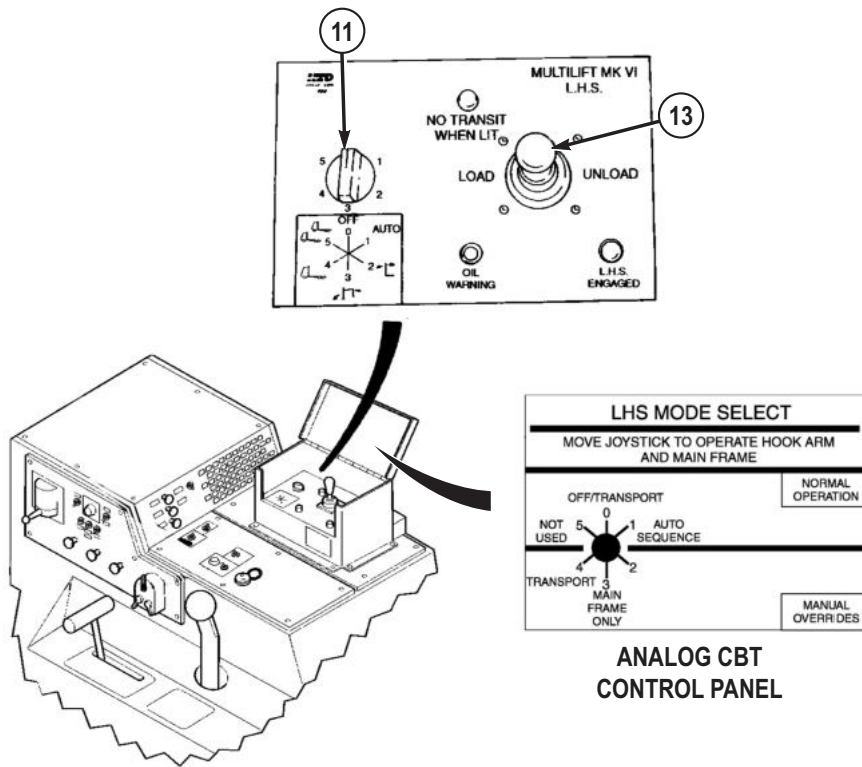
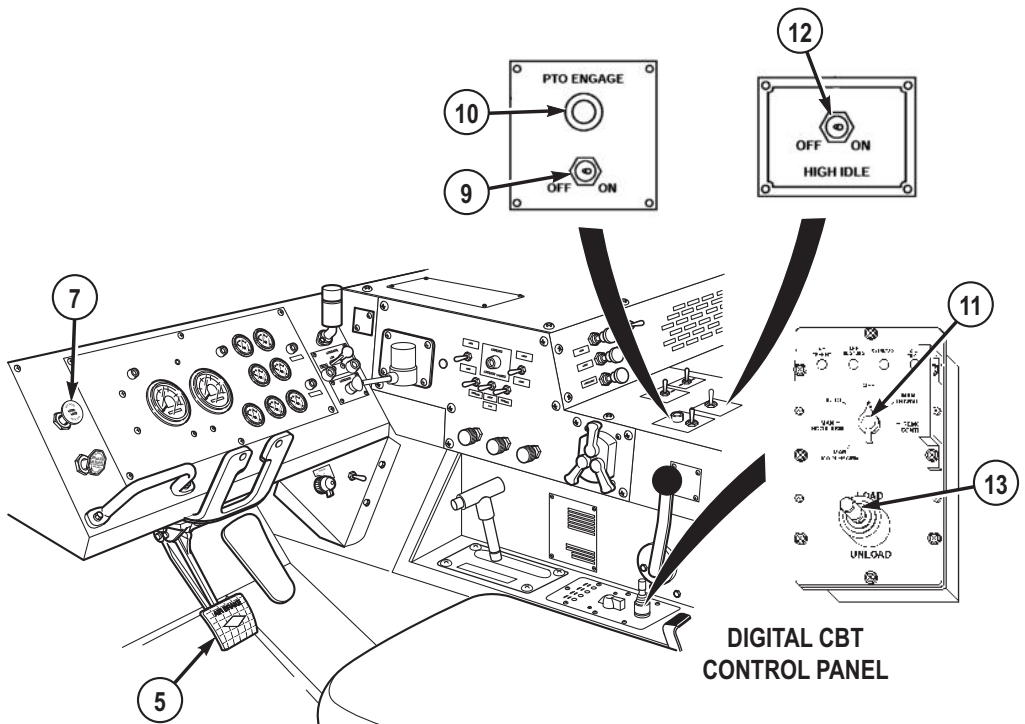


Figure 6.

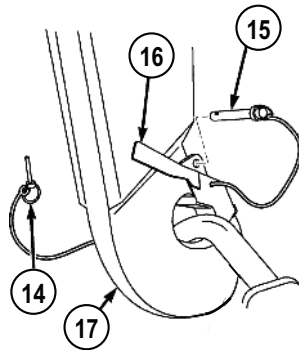
**PERFORM PROCEDURE - Continued***Figure 7.*

11. Turn LHS MODE SELECT switch (11) to MAN H.A.
12. Set HIGH IDLE switch (12) to ON position.
13. Move joystick (13) to UNLOAD and hold while hook arm rises and moves the BAP to the rear.
14. Release joystick (13) when hook arm completes its full movement rearward.
15. Set HIGH IDLE switch (12) to OFF position.
16. Turn LHS MODE SELECT switch (11) to MAN M.F.
17. Set HIGH IDLE switch (12) to ON position.
18. Move joystick (13) to UNLOAD and hold until back edge of the BAP touches the ground.
19. Immediately release service brake pedal (5).
20. Move joystick (13) to UNLOAD and continue unloading while allowing vehicle to roll forward.



**PERFORM PROCEDURE - Continued**

21. Release joystick (13) when front end of the BAP is about 1 ft. (30 cm) off the ground.
22. Set HIGH IDLE switch (12) to OFF position.
23. Move joystick (13) to UNLOAD and continue unloading until the BAP rests on the ground and weight of load is off LHS lifting hook.
24. Apply service brake pedal (5), or pull out PARKING BRAKE control (7).
25. Remove lockpin (14), pin (15), and bail bar lock (16) from LHS lifting hook (17).

*Figure 8.***NOTE**

Vehicle may be equipped with either a analog or digital CBT control panel, the differences are displayed below.

26. Move joystick (13) to UNLOAD.

**PERFORM PROCEDURE - Continued**

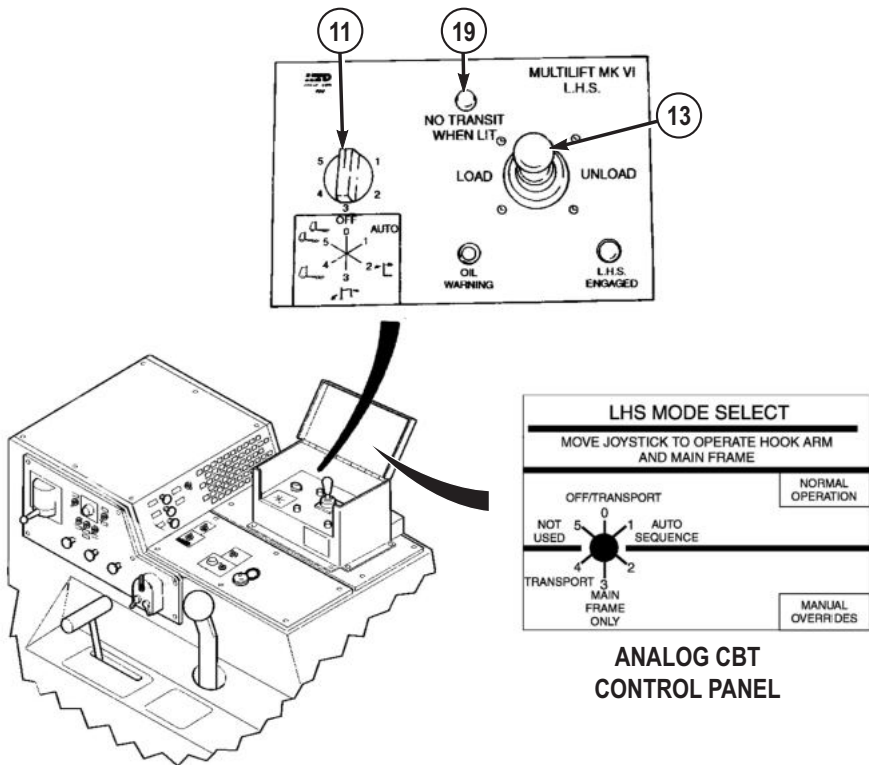
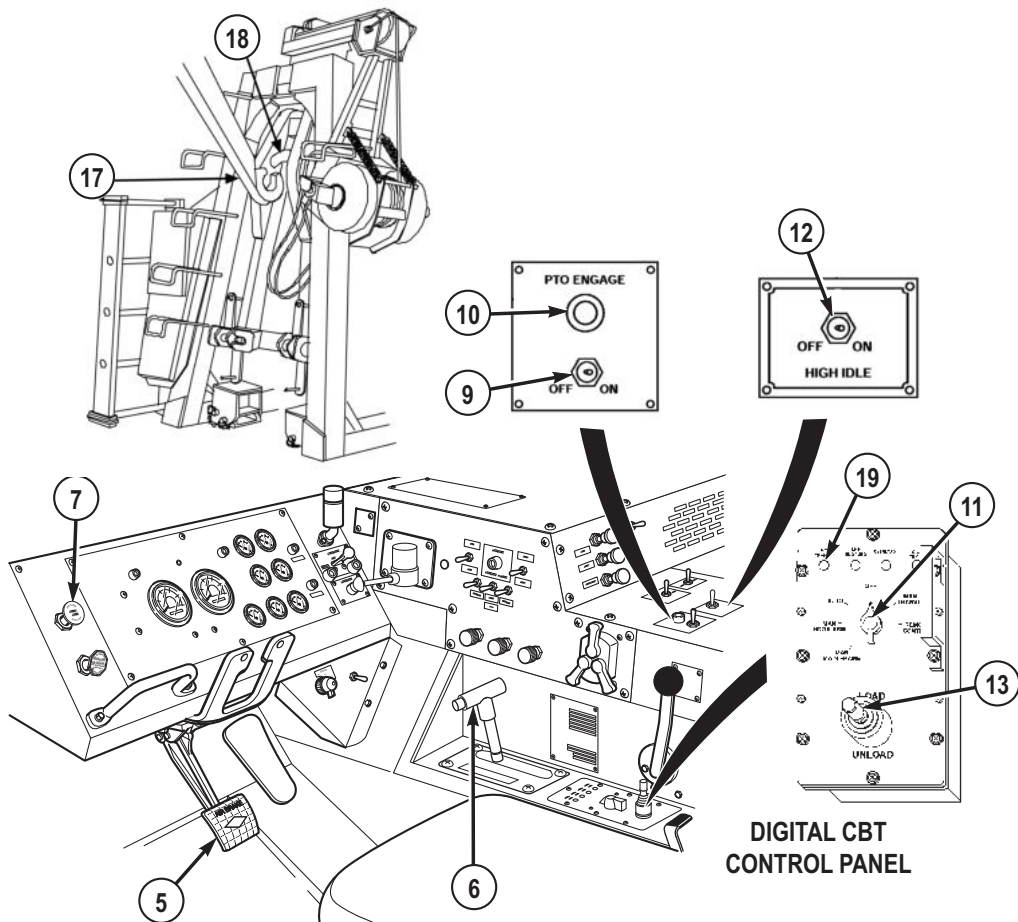


Figure 9.

**PERFORM PROCEDURE - Continued***Figure 10.*

27. Release joystick (13) when LHS lifting hook (17) is slightly below BAP hook bar (18).
28. Release service brake pedal (5) or push in PARKING BRAKE control (7).
29. Drive vehicle forward (WP 0059) slowly about 6 in. (15 cm), and stop vehicle.
30. Pull out PARKING BRAKE control (7).
31. Set transmission range selector (6) to N (neutral).
32. Set HIGH IDLE switch (12) to ON position.
33. Move joystick (13) to LOAD, release when main frame has stopped moving.
34. Set HIGH IDLE switch (12) to OFF position.

**PERFORM PROCEDURE - Continued**

35. Turn LHS MODE SELECT switch (11) to MAN H.A.
36. Set HIGH IDLE switch (12) to ON position.
37. Move joystick (13) to LOAD.

**WARNING**

When NO TRANSIT indicator is illuminated, vehicle may be maneuvered in the immediate vicinity of the loading/unloading site. However, vehicle is unsafe for road travel. Do not perform open-road driving when NO TRANSIT indicator is illuminated. Failure to comply may result in injury or death to personnel and damage to equipment.

38. Release joystick (13) when hook arm is fully stowed and NO TRANSIT indicator (19) light is off.
39. Set HIGH IDLE switch (12) to OFF position.

**CAUTION**

While maneuvering vehicle in the immediate vicinity of the loading or unloading site, LHS MODE SELECT switch may be in any setting. However, LHS MODE SELECT switch must be set to OFF prior to road travel, to prevent damage to main frame and hook arm cylinders.

40. Turn LHS MODE SELECT switch (11) to OFF.
41. Set PTO ENGAGE switch (9) to OFF position. Indicator light (10) will go out.

**END OF TASK****END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE

### MANUALLY REMOVING LOAD DURING HYDRAULIC POWER LOSS

---

#### INITIAL SETUP:

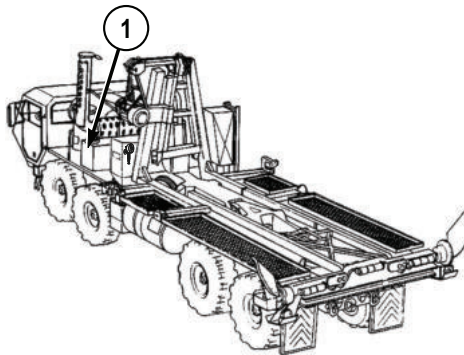
Not Applicable

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#### PERFORM PROCEDURE

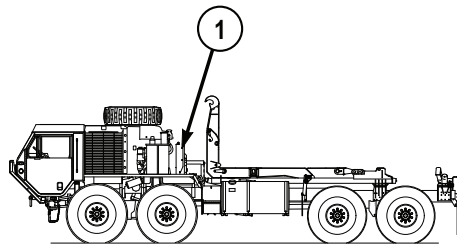
#### NOTE

- Manual mode operations using the cab CBT control box are to be performed only when the normal AUTO mode electric circuit is not operating.
  - This procedure is used to remove the load from a vehicle with a failed hydraulic system or other failure that prevents operation of the hydraulic system.
  - Each vehicle is equipped with one slave hydraulic hose. Two hoses (one from each vehicle) are required.
1. Move vehicles into position so LHS control boxes (1) of both vehicles are side by side.

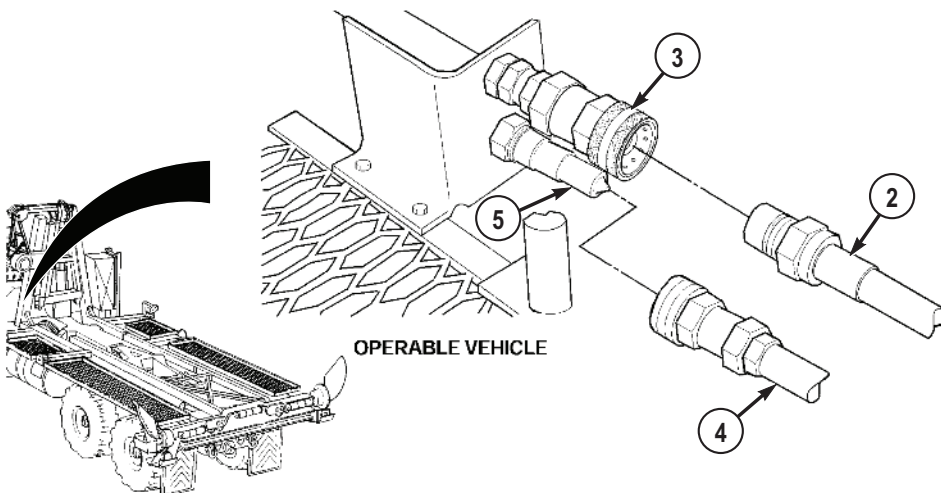


BASE/A2 MODEL CBT

*Figure 1.*

**PERFORM PROCEDURE - Continued****A4 MODEL CBT***Figure 2.*

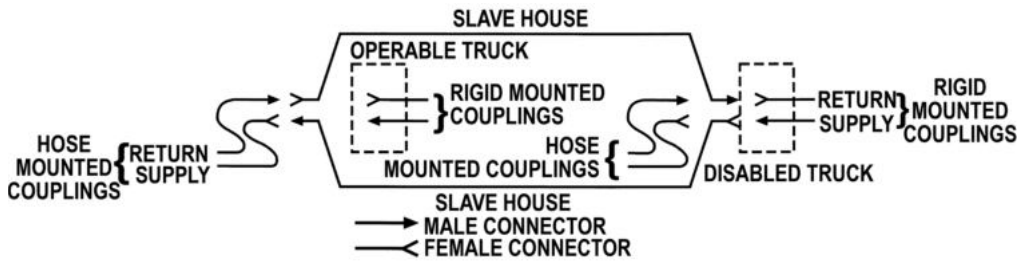
2. Shut off engine of both vehicles. (WP 0066)
3. Disconnect both return and supply hydraulic lines on operable vehicle and connect slave hydraulic hose (2) to rigid mounted supply coupling (3). Connect other slave hose (4) to operable vehicle rigid mounted return coupling (5).

*Figure 3.***NOTE**

Ensure to connect slave hoses to disabled vehicle's hose mounted couplings (free hanging hoses which normally connect to rigid mounted couplings), NOT rigid mounted couplings (mounted to vehicle).

**PERFORM PROCEDURE - Continued**

4. Disconnect both return and supply hydraulic lines on disabled vehicle and connect slave hydraulic hose (2) to hose mounted supply coupling. Connect other slave hose (4) to disabled vehicle hose mounted return coupling.

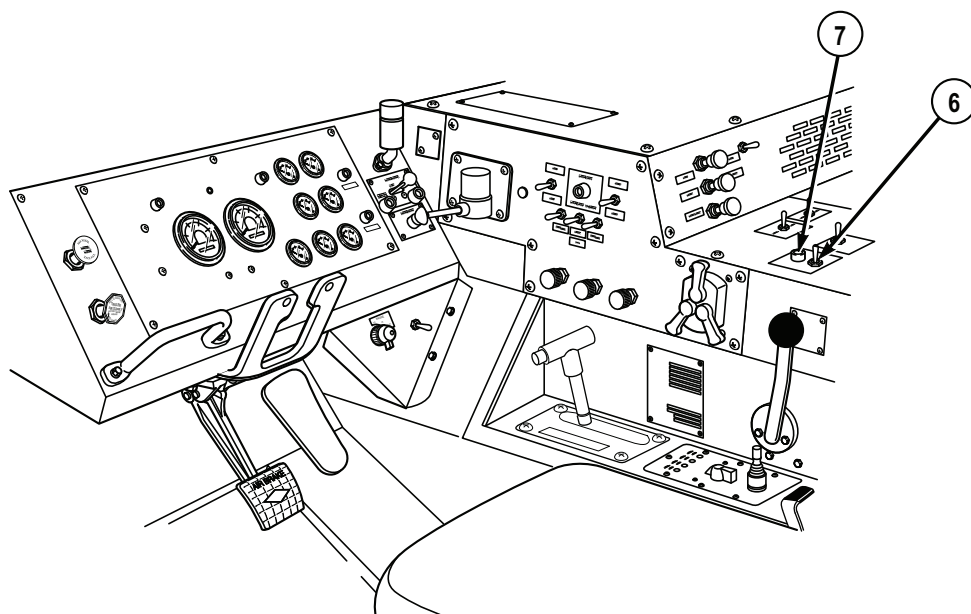
*Figure 4.*

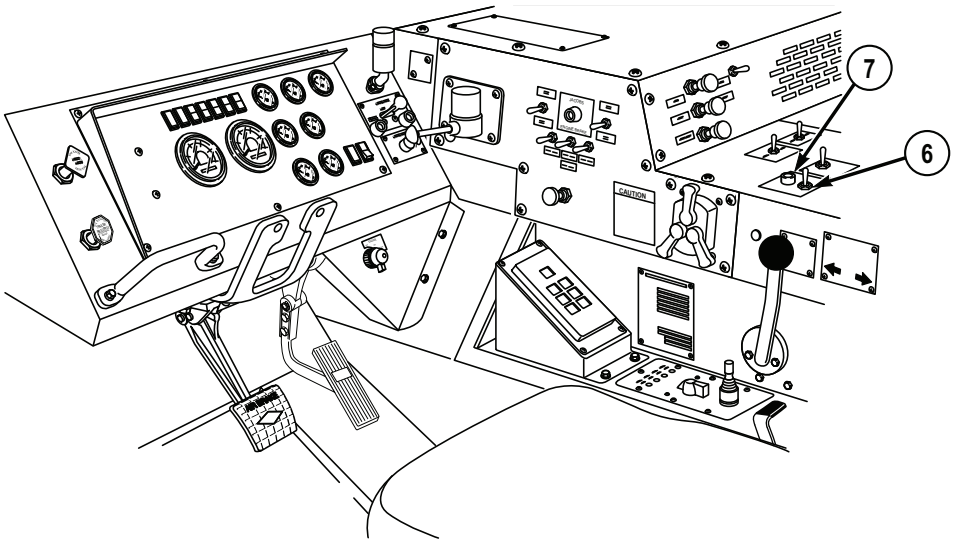
5. Start engines of both vehicles. (WP 0053)
6. Turn on both vehicles stoplights. (WP 0081)

**NOTE**

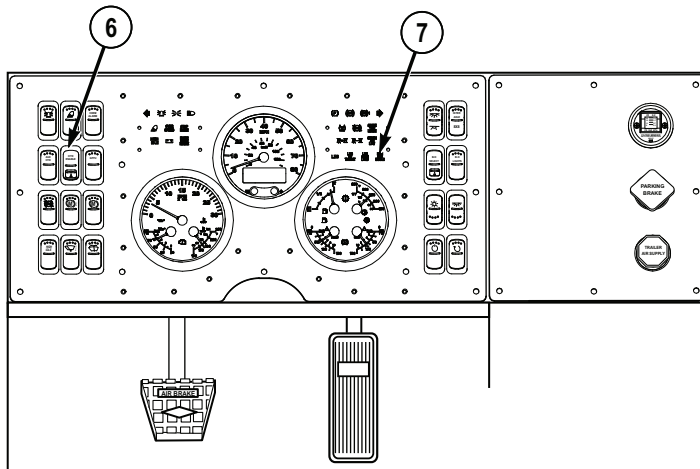
- For BASE or A2 model CBT, perform Step (7).
  - For A4 model CBT, skip to Step (8).
7. Set PTO ENGAGE switch (6) to ON position. Indicator light (7) will illuminate.



**PERFORM PROCEDURE - Continued****BASE MODEL CBT***Figure 5.*

**PERFORM PROCEDURE - Continued****A2 MODEL CBT***Figure 6.*

8. Set HYD ENABLE switch (6) to on position. MAIN HYD ENABLE indicator (7) will illuminate.

**PERFORM PROCEDURE - Continued****A4 MODEL CBT***Figure 7.***NOTE**

Ensure slave hoses are not stretched or run over during operations.

9. Continue the unload operations using operable vehicles' controls.
10. After completion of operations:

**NOTE**

For BASE and A2 model CBT perform Step (a), for A4 model CBT skip to Step (b).

- a. Set PTO ENGAGE switch (6) to OFF position. Indicator light (7) will go out.
- b. Set HYD ENABLE switch (6) to off position. MAIN HYD ENABLE indicator (7) will go out.
- c. Shut off engine of both vehicles. (WP 0066)

**NOTE**

Ensure each vehicle has one of the two slave hydraulic hoses accompanying it.

- d. Disconnect slave hydraulic hoses and return to stowage (one to each vehicle).

**PERFORM PROCEDURE - Continued**

- e. Reconnect both vehicles' return and supply hydraulic hoses.

**END OF TASK****END OF WORK PACKAGE**

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**OPERATOR MAINTENANCE  
PREPARATION FOR EMERGENCY MANUAL REMOVAL OF BRIDGE ADAPTER  
PALLET (BAP)**

---

**INITIAL SETUP:**

**Personnel Required**

Operator and Assistant - - (2)

---

**PERFORM PROCEDURE**

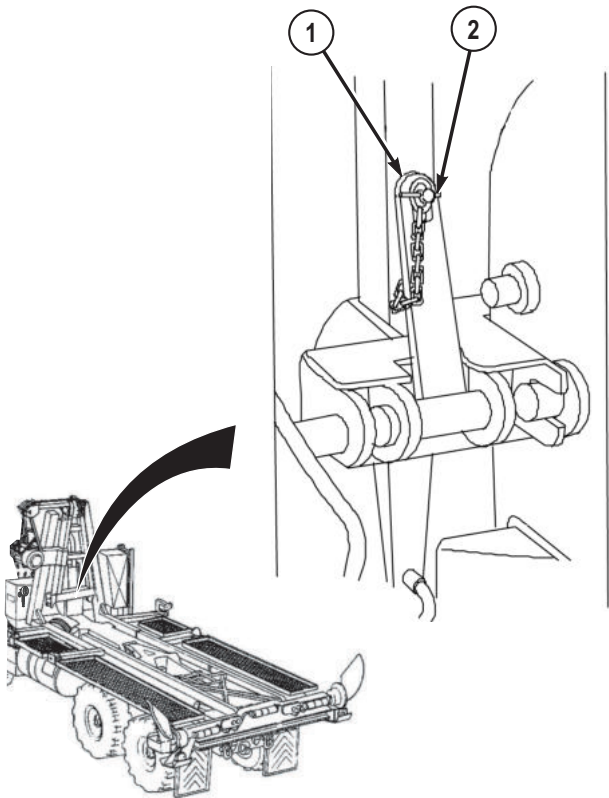
**WARNING**



Do not attempt to lift a load greater than the rated load capacity of crane or materiel-handling equipment. Failure to comply may result in injury or death to personnel and damage to equipment.

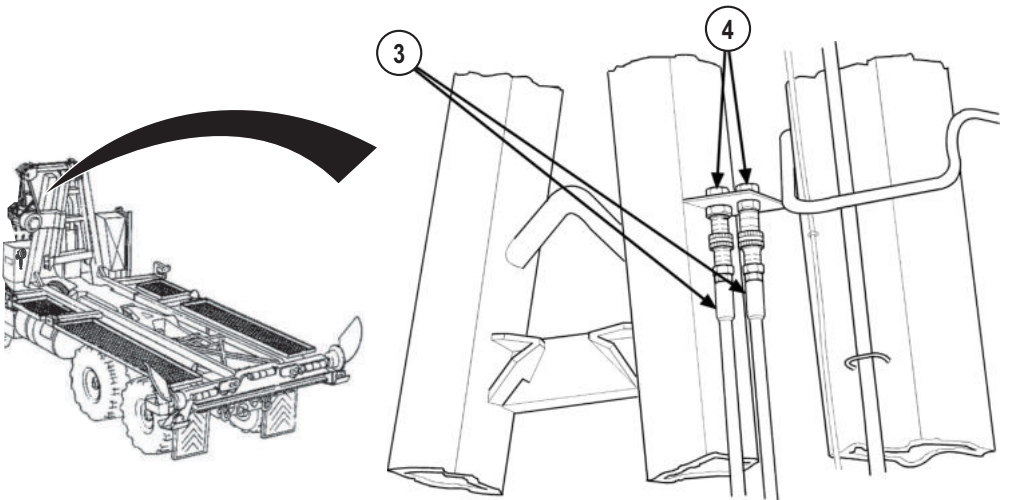
**NOTE**

- This procedure is a two soldier task.
  - Manual mode operations using the cab control box are to be performed only when the normal AUTO mode electric circuit is malfunctioning.
  - This procedure is performed when a loaded BAP must be removed using a crane or other handling system and must be done with help of a higher maintenance level.
  - The BAP weighs 5,810 lbs (2 637 kg). The BAP with bridge bay weighs 24,148 lbs (10 963 kg).
1. Ensure main frame is fully stowed.
  2. Ensure that, if necessary, main frame is lowered using loading button of the solenoid bypass procedure as necessary. (WP 0111)
  3. Secure winch frame to the BAP. and ensure two winch frame locking levers (1) are in the up position.

**PERFORM PROCEDURE - Continued**

*Figure 1.*

4. If locking levers (1) are not up:
  - a. Remove lockpin (2) from each locking lever (1).
  - b. Swing locking lever (1) to the up position.
  - c. Insert lockpin (2) into locking lever (1).
5. Connect two hydraulic hoses (3) to the stowed location connections (4).

**PERFORM PROCEDURE - Continued***Figure 2.*

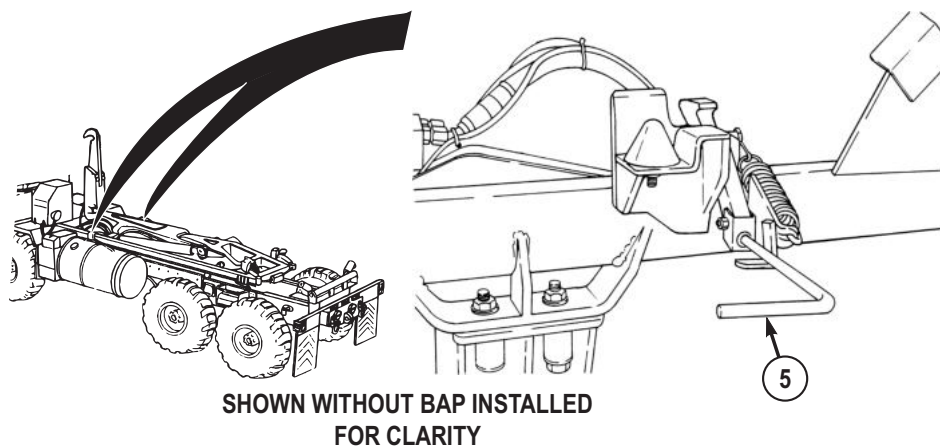
6. If the BAP is loaded, inspect load and ensure it is secure.

**CAUTION**

The BAP holddown locks must be unlocked from the LHS prior to starting BAP unloading operations. Failure to release holddown locks could result in damage to equipment.

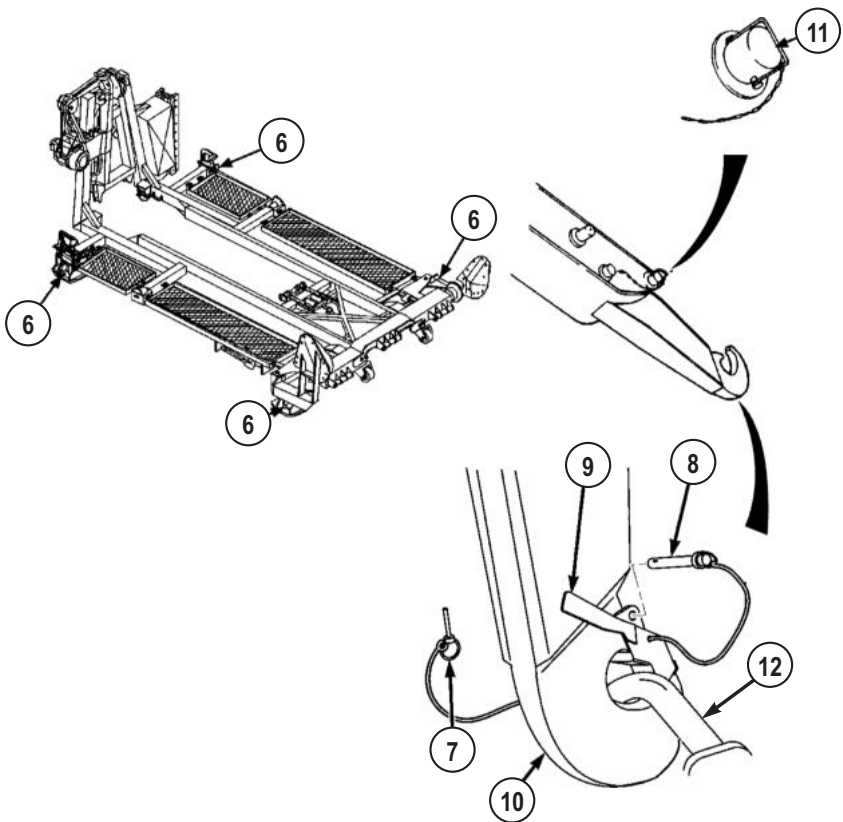
7. Release BAP holddown locks by pulling down handle (5).



**PERFORM PROCEDURE - Continued***Figure 3.***CAUTION**

The BAP is front-heavy. Arrange cable length accordingly, or damage to equipment may occur.

8. With the aid of an assistant, the crane operator secures four-legged sling to BAP lifting eyes (6) and to crane or other material handling-system hook.

**PERFORM PROCEDURE - Continued***Figure 4.*

9. Remove locking pin (7), pin (8), and bail bar lock (9) from LHS lifting hook (10).
10. Remove hook arm locking pin (11).

**WARNING**

A loaded BAP will not rise due to LHS hook being engaged to the BAP. Stand clear of loaded BAP. Failure to comply may result in injury or death to personnel.

11. Crane operator performs the following steps:

**PERFORM PROCEDURE - Continued**

- a. Using a crane, raise sling until tension is on sling and weight of the BAP is removed from vehicle.

**WARNING**

LHS hook arm weighs 1,025 lbs (466 kg) and will fall free when the BAP is moved rearward. Stay clear of hook arm when moving the BAP. Do not attempt to lift or move hook arm without the aid of an assistant and a lifting device. Failure to comply may result in injury or death to personnel.

- b. Move the BAP rearward until LHS lifting hook (10) drops free of BAP hook bar (12).
- c. Raise loaded BAP until it clears the LHS.
- d. Move loaded BAP away from vehicle.
- e. Set loaded BAP on the ground.
- f. Remove sling lifting eye from hook on crane. Remove four legs of sling from BAP lifting eye (6).
- g. Stow sling.

**END OF TASK****END OF WORK PACKAGE**

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**OPERATOR MAINTENANCE  
SET UP/SECURE HIGHWAY EMERGENCY MARKER KIT**

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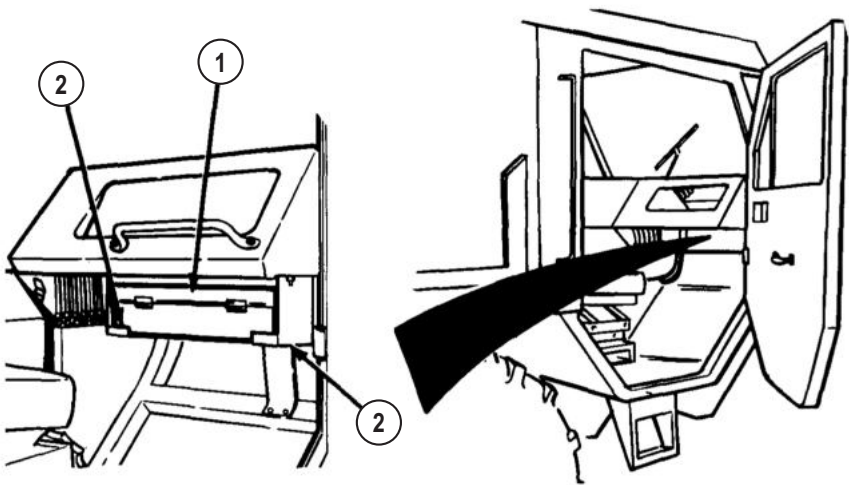
**INITIAL SETUP:**

Not Applicable

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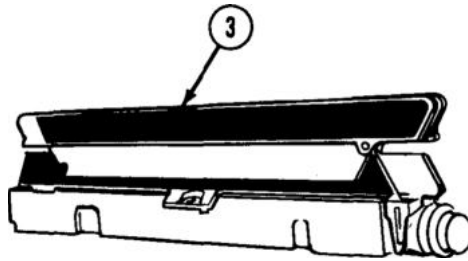
**PREPARE VEHICLE/MARKERS FOR USE**

1. Turn vehicle emergency flashers on. (WP 0088)
2. Remove emergency marker kit (1) from stowage brackets (2).



*Figure 1.*

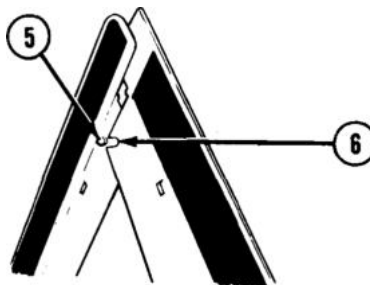
3. Remove markers (3) from case.

**PREPARE VEHICLE/MARKERS FOR USE - Continued***Figure 2.*

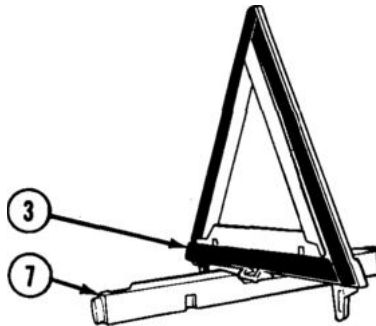
4. Raise arms (4).

*Figure 3.*

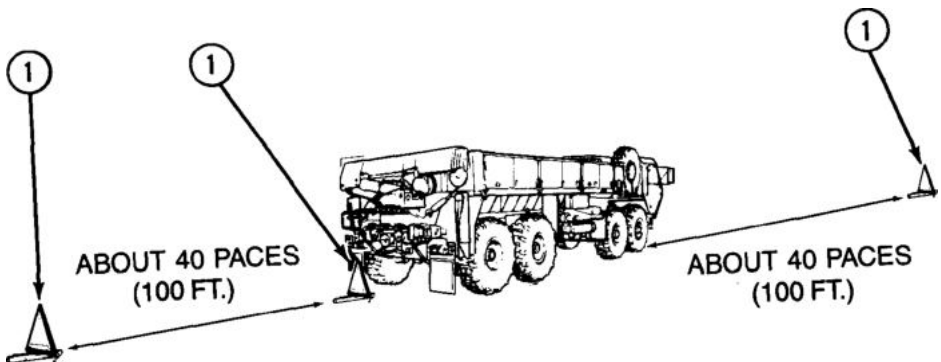
5. Snap pin (5) into slot (6).

*Figure 4.*

6. Rotate marker (3) about  $\frac{1}{4}$  turn on base (7) until it stops.

**PREPARE VEHICLE/MARKERS FOR USE - Continued***Figure 5.***PLACE MARKERS ON UNDIVIDED HIGHWAY**

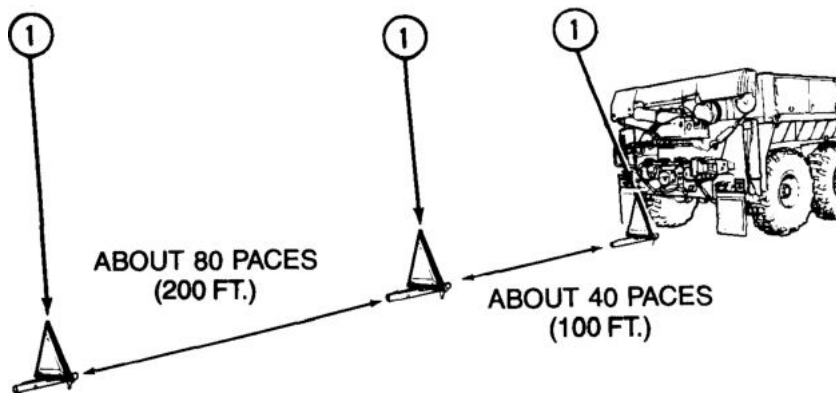
1. Place one marker (1) about 40 paces (100 ft. [30 m]) in front of vehicle, so marker faces traffic approaching from front.

*Figure 6.*

2. Place another marker (1) directly behind vehicle, so marker faces traffic approaching from rear.
3. Place third marker (1) approximately about 40 paces (100 ft. [30 m]) behind vehicle, so marker faces traffic approaching from rear.

**PLACE MARKERS ON DIVIDED HIGHWAY**

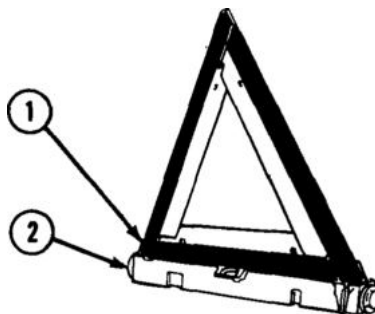
1. Place one marker (1) directly behind vehicle, so marker faces traffic approaching from rear.

**PLACE MARKERS ON DIVIDED HIGHWAY - Continued***Figure 7.*

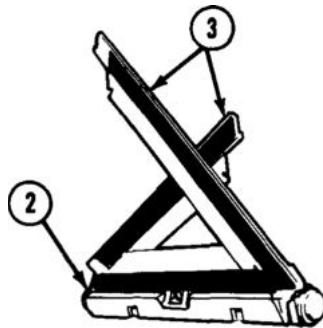
2. Place second marker (1) about 40 paces (100 ft. [30 m]) behind vehicle, so marker faces traffic approaching from rear.
3. Place third marker (1) about 80 paces (200 ft. [60 m]) behind second marker, so marker faces traffic approaching from rear.

**SECURE MARKERS**

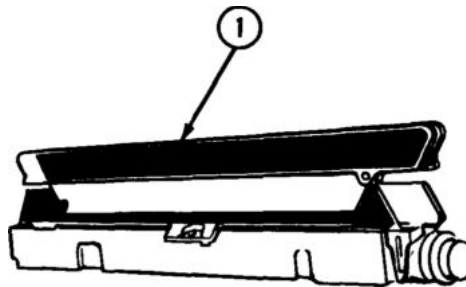
1. Rotate marker (1) over base (2).

*Figure 8.*

2. Separate arms (3).

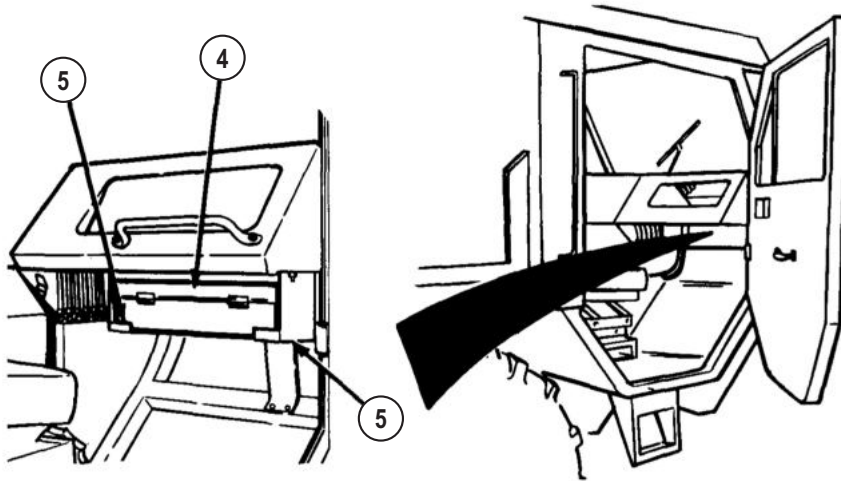
**SECURE MARKERS - Continued***Figure 9.*

3. Fold arms (3) down onto base (2).

*Figure 10.*

4. Put markers (1) in case.
5. Put emergency marker kit (4) in stowage brackets (5).



**SECURE MARKERS - Continued**

*Figure 11.*

6. Turn vehicle emergency flashers off. (WP 0088)

**END OF TASK**

**END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE MANUALLY RELEASE SPRING BRAKES

---

### INITIAL SETUP:

Not Applicable

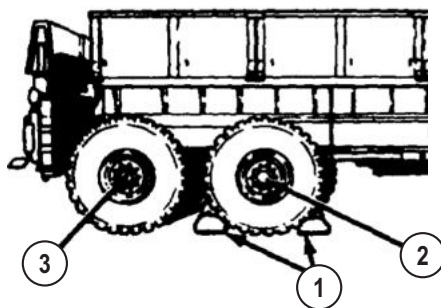
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### CHOCK REAR WHEELS

#### NOTE

This procedure should only be used when vehicle air system is totally inoperative and vehicle cannot be towed with rear end raised by wrecker.

1. Remove wheel chocks (1) from stowage.



*Figure 1.*

2. Place wheel chocks (1) in front and back of one wheel on No. 3 (2) or No. 4 (3) axle.

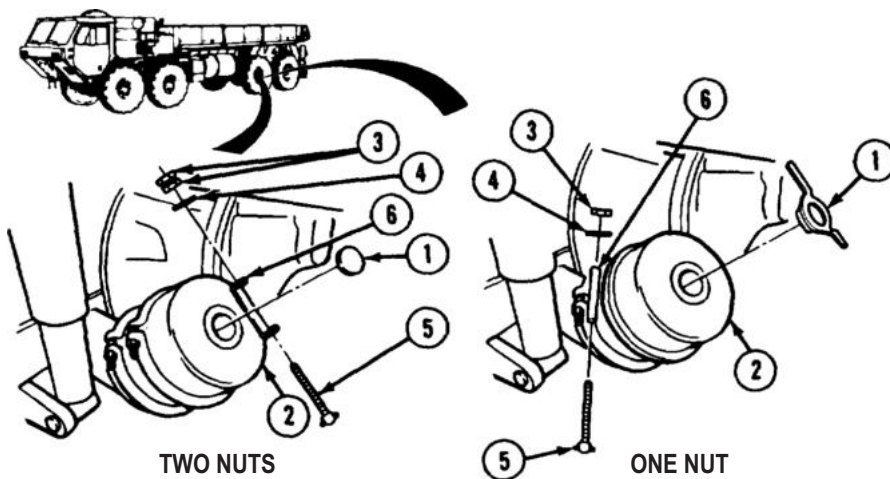
**RELEASE BRAKES****WARNING**

Ensure brake chamber is caged while releasing brakes. Spring is under 2,500 lbs (1 135 kg) tension. Failure to comply may result in injury or death to personnel.

**NOTE**

Driver side brake chamber on No. 4 axle is shown. Steps are same for No. 4 axle passenger side and No. 3 axle.

1. Remove dust cap (1) from brake chamber (2).

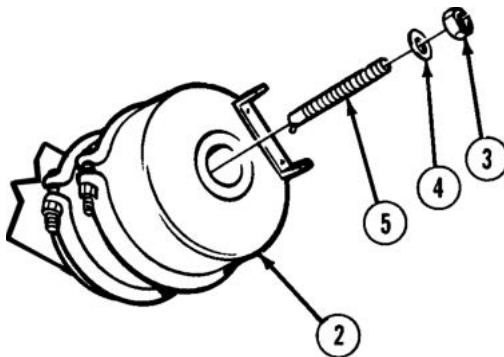


*Figure 2.*

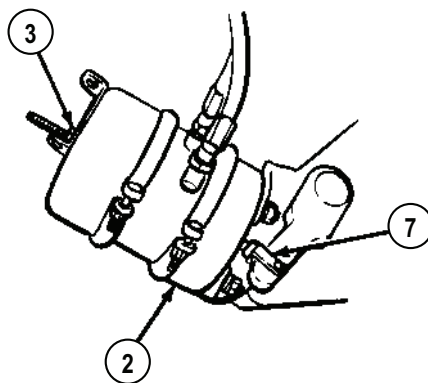
**NOTE**

There are two types of brake chambers: older vehicles have two nuts, newer vehicles have one nut.

2. Remove either one or two nuts (3) (as applicable), washer (4), and release-bolt (5) from bracket (6).
3. Insert release-bolt (5) into brake chamber (2).

**RELEASE BRAKES - Continued***Figure 3.*

4. Turn release-bolt (5) 1/4 turn to engage inside brake chamber (2).
5. Install washer (4) and nut (3) on release-bolt (5).
6. Tighten nut (3) until clevis (7) is pulled to rear of brake chamber (2).

*Figure 4.*

7. Repeat Steps (1) through (6) to release three remaining spring brakes on No. 3 and No. 4 axles.

**END OF TASK****END OF WORK PACKAGE**

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**OPERATOR MAINTENANCE  
LIMP HOME/FLAT TIRE WITH NO SPARE**

---

**INITIAL SETUP:**

Not Applicable

---

**INSTALL LIMP HOME SETUP ON PASSENGER SIDE FRONT OR ANY REAR WHEEL**

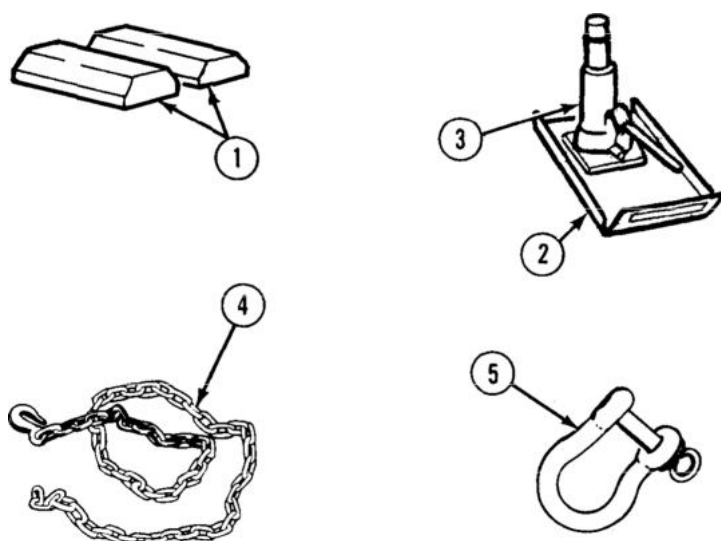
**CAUTION**

- Do not use this procedure on fully loaded M983 vehicle with trailer in tow. Limp home setup will not support extra weight and equipment could be damaged.
- Vehicle must not be driven faster than 10 mph (16 km/h) or farther than 30 miles (48 km) in limp home condition.

**NOTE**

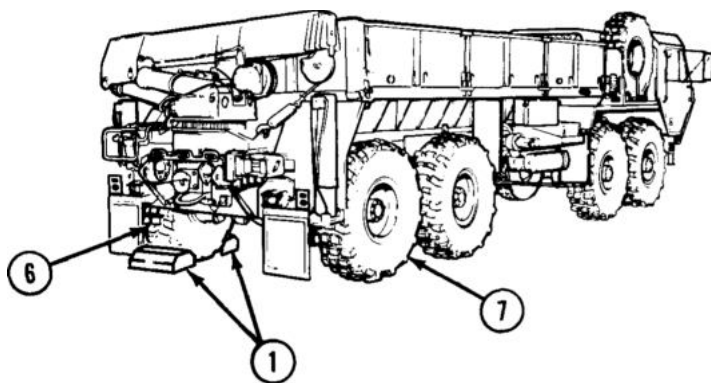
- Use limp home procedure for emergency only in case of wheel bearing failure, wheel damage, or when unable to change wheel and tire.
  - For limp home setup on driver side front No. 1 and 2 axles, refer to Limp Home Setup/Driver Side Front section.
  - Limp home setup for No. 4 axle is shown. Other limp home setups are done in same manner.
1. Remove two wheel chocks (1), jack base plate (2), jack (3), 7 ft. (2.1 m) chain (4), and shackle (5) from stowage.

# **INSTALL LIMP HOME SETUP ON PASSENGER SIDE FRONT OR ANY REAR WHEEL - Continued**



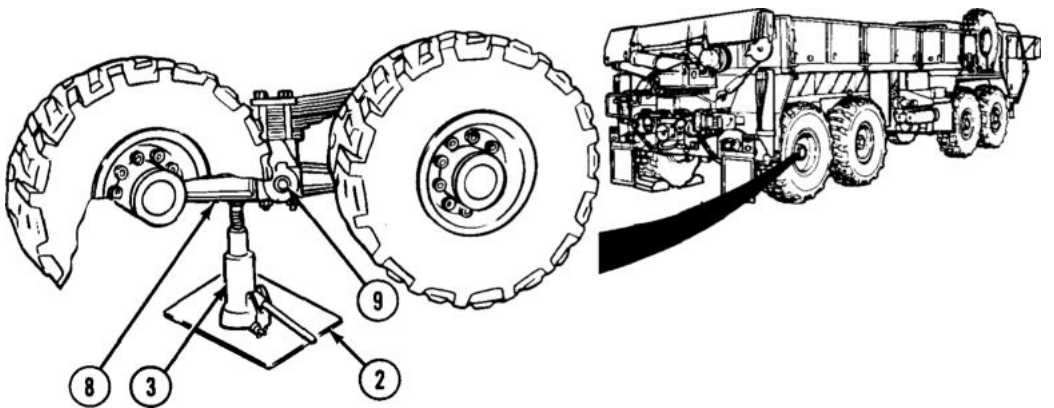
*Figure 1.*

2. Install two wheel chocks (WP 0089) (1) in front of and behind tire (6) across from tire (7) being raised.

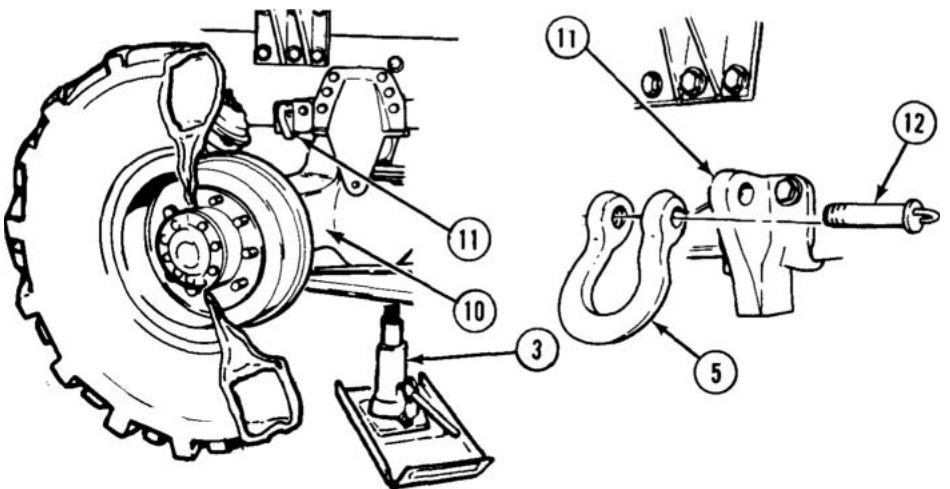


*Figure 2.*

3. Position jack base plate (2) and jack (3) under equalizer beam (8) 4 to 5 in. (102 to 127 mm) from center pivot point (9) towards axle to be raised (No. 4 axle shown).

**INSTALL LIMP HOME SETUP ON PASSENGER SIDE FRONT OR ANY REAR WHEEL - Continued***Figure 3.*

4. Raise jack (3) until it touches equalizer beam (8).
5. Raise jack (3) until axle (10) is as close as it will go to axle stop (11).

*Figure 4.*

6. Install shackle (5) on axle stop (11) with pin (12).



**INSTALL LIMP HOME SETUP ON PASSENGER SIDE FRONT OR ANY REAR WHEEL - Continued****CAUTION**

Do not wrap 7 ft. (2.1 m) chain around any air line or brake chamber bracket. Air line could be crushed and damaged to bracket could result.

7. Route 7 ft. (2.1 m) chain (4) through shackle (5).



*Figure 5.*

8. Loop end of 7 ft. (2.1 m) chain (4) around axle (10).
9. Bring 7 ft. (2.1 m) chain (4) up to chain hook (13) and fasten as tight as possible.

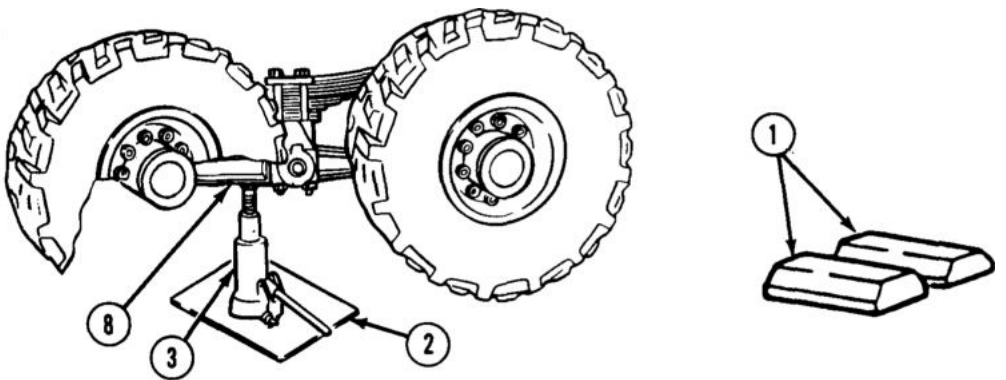
**WARNING**

Keep hands away from chain when lowering jack. Hands and fingers could be crushed. Failure to comply may result in injury or death to personnel.

**NOTE**

Axle will drop slightly when jack is lowered.

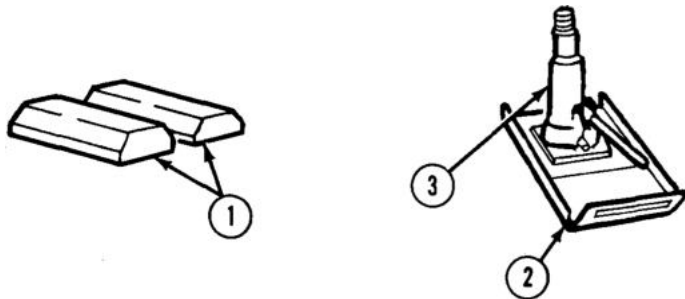
10. Lower jack (3) and remove jack from under equalizer beam (8).

**INSTALL LIMP HOME SETUP ON PASSENGER SIDE FRONT OR ANY REAR WHEEL - Continued***Figure 6.*

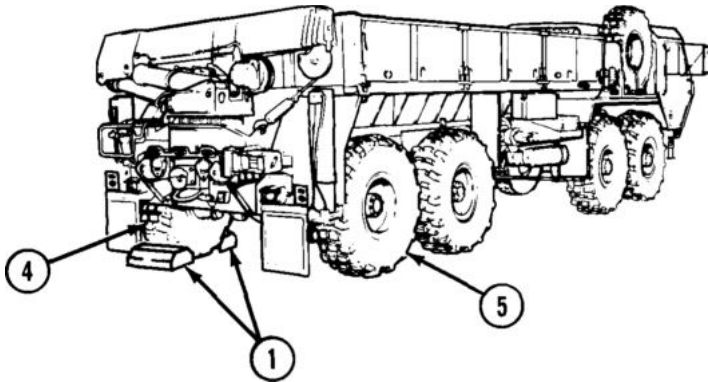
11. Return jack (3), and jack base plate (2) to stowage.
12. Remove and stow two wheel chocks (1).

**REMOVE LIMP HOME SETUP FROM PASSENGER SIDE FRONT OR ANY REAR WHEEL**

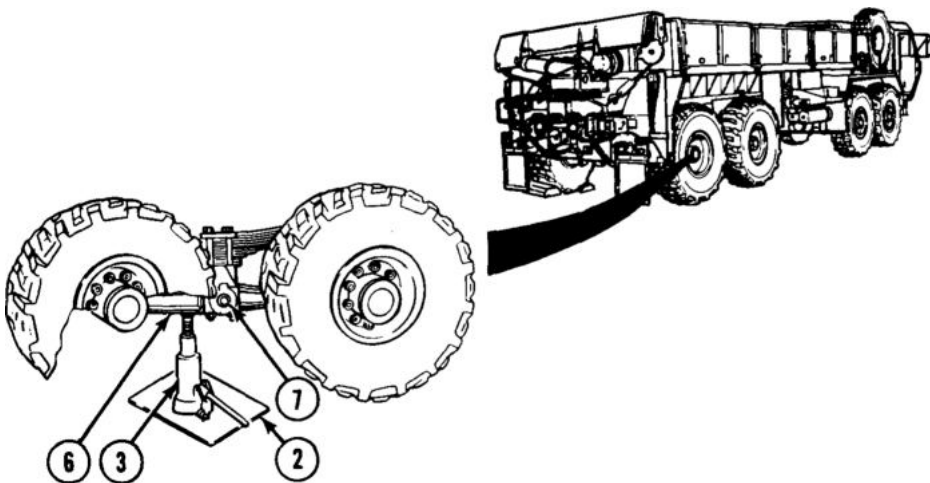
1. Remove two wheel chocks (1), jack base plate (2), and jack (3) from stowage.

*Figure 7.*

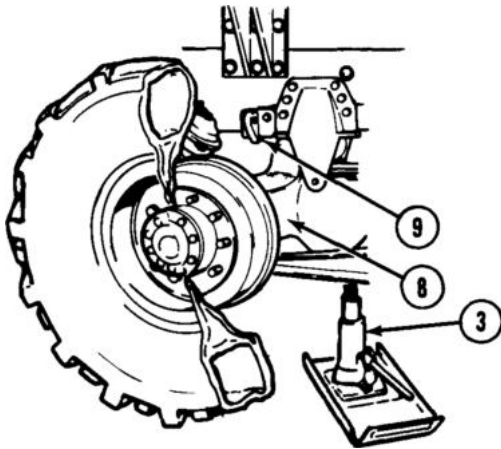
2. Install two wheel chocks (WP 0089) (1) in front of and behind tire (4) across from tire (5) being raised.

**REMOVE LIMP HOME SETUP FROM PASSENGER SIDE FRONT OR ANY REAR WHEEL - Continued***Figure 8.*

3. Position jack base plate (2) and jack (3) under equalizer beam (6) 4 to 5 in. (102 to 127 mm) from center pivot point (7).

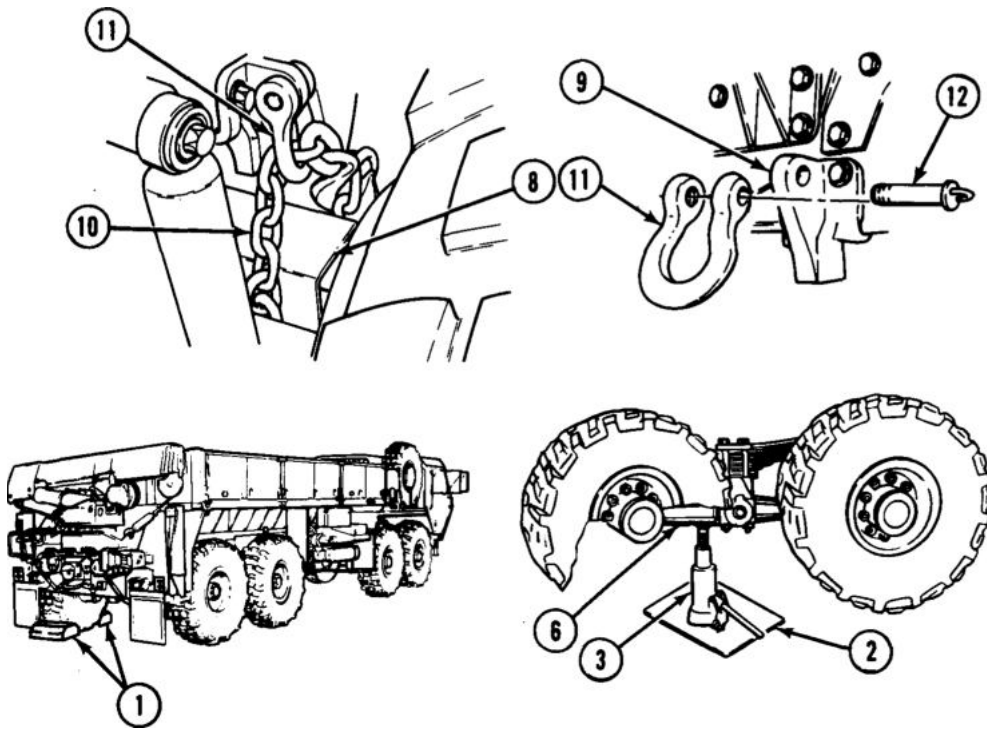
*Figure 9.*

4. Raise jack (3) until it touches equalizer beam (6).

**REMOVE LIMP HOME SETUP FROM PASSENGER SIDE FRONT OR ANY REAR WHEEL - Continued***Figure 10.*

5. Raise jack (3) until axle (8) is as close as it will go to axle stop (9).
6. Unhook 7 ft. (2.1 m) chain (10) and remove from shackle (11) and axle (8).

# **REMOVE LIMP HOME SETUP FROM PASSENGER SIDE FRONT OR ANY REAR WHEEL - Continued**



*Figure 11.*

7. Remove pin (12) from shackle (11) and axle stop (9).
8. Remove shackle (11) from axle stop (9) and reinstall pin (12) in shackle (11).
9. Lower jack (3) and remove jack (3) from equalizer beam (6).
10. Return jack base plate (2), jack (3), 7 ft. (2.1 m) chain (10), and shackle (11) to stowage.
11. Remove and stow two wheel chocks (1).

## **INSTALL LIMP HOME SETUP/DRIVER SIDE FRONT**

### **CAUTION**

- Do not use this procedure on fully loaded M983 vehicle with trailer in tow. Limp home setup will not support extra weight and equipment could be damaged.

**INSTALL LIMP HOME SETUP/DRIVER SIDE FRONT - Continued**

- Vehicle must not be driven faster than 10 mph (16 km/h) or farther than 30 miles (48 km) in limp home condition.

**NOTE**

- Use limp home procedure for emergency only in case of wheel bearing failure, wheel damage, or when unable to change wheel and tire.
- Limp home setup No. 1 axle is shown. Setup for No. 2 axle is done in same manner.
- For limp home setup on other axles, refer to passenger side front or any rear wheel section above.

1. Remove two wheel chocks (1), jack base plate (2), jack (3), and 7 ft. (2.1 m) chain (4) from stowage.

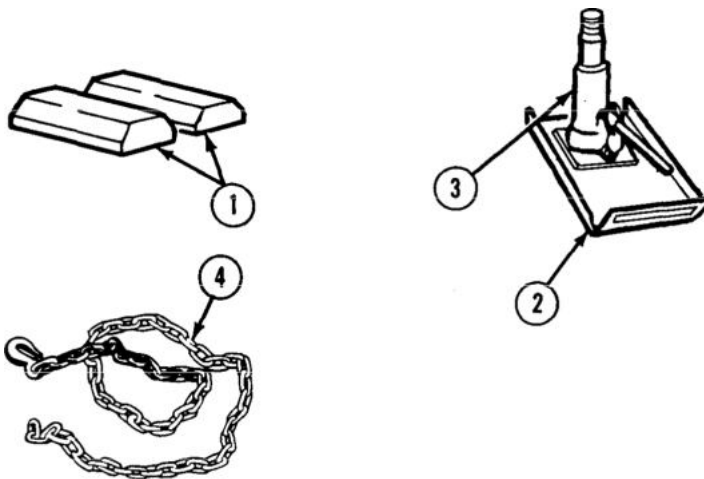
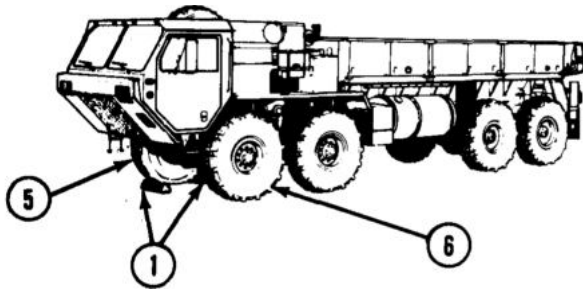
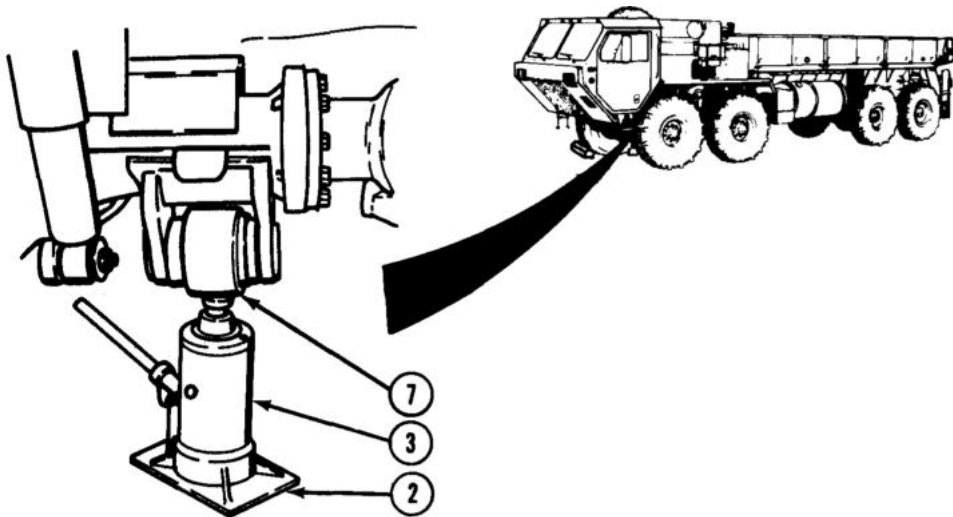


Figure 12.

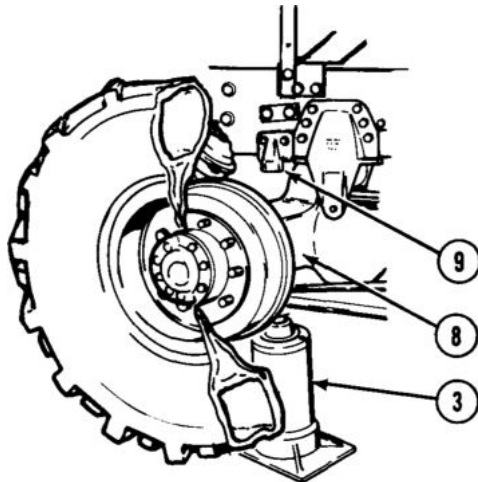
2. Install two wheel chocks (WP 0089) (1) in front of and behind tire (5) across from tire (6) being raised.

**INSTALL LIMP HOME SETUP/DRIVER SIDE FRONT - Continued***Figure 13.*

3. Place jack base plate (2) and jack (3) under end of equalizer beam (7).

*Figure 14.*

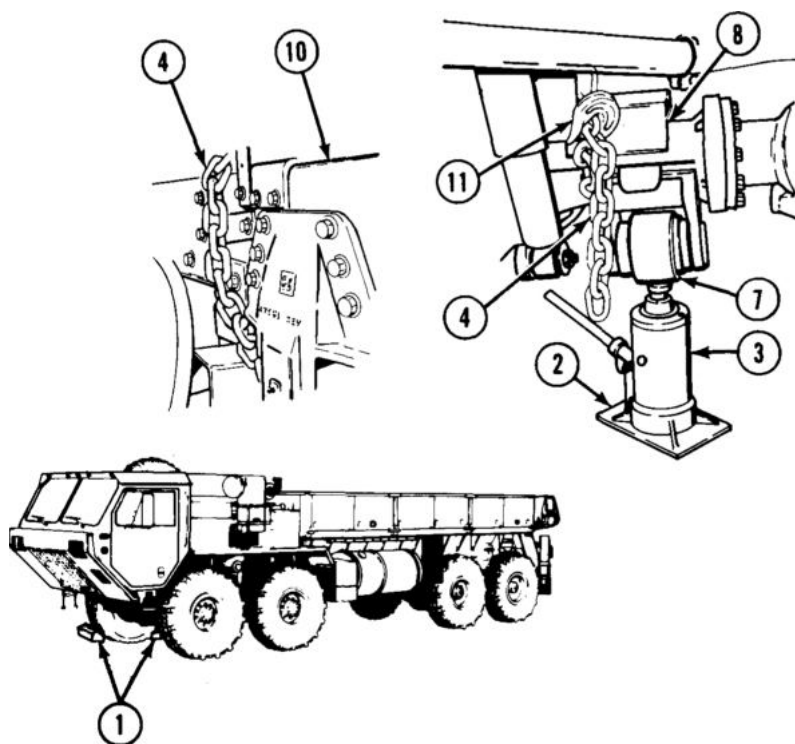
4. Raise jack (3) until it touches end of equalizer beam (7).  
5. Raise jack (3) until axle (8) is as close as it will go to axle stop (9).

**INSTALL LIMP HOME SETUP/DRIVER SIDE FRONT - Continued***Figure 15.***CAUTION**

Do not wrap 7 ft. (2.1 m) chain around lateral torque rod or shift cables as they could be crushed. Failure to comply may result in damage to equipment.

6. Loop end of 7 ft. (2.1 m) chain (4) around frame (10) and axle (8).



**INSTALL LIMP HOME SETUP/DRIVER SIDE FRONT - Continued***Figure 16.***WARNING**

Keep hands away from chain when lowering jack. Hands and fingers could be crushed. Failure to comply may result in injury or death to personnel.

7. Bring end of 7 ft. (2.1 m) chain (4) up to chain hook (11) and fasten back into itself as tight as possible.

**NOTE**

Axle will drop slightly when jack is lowered.

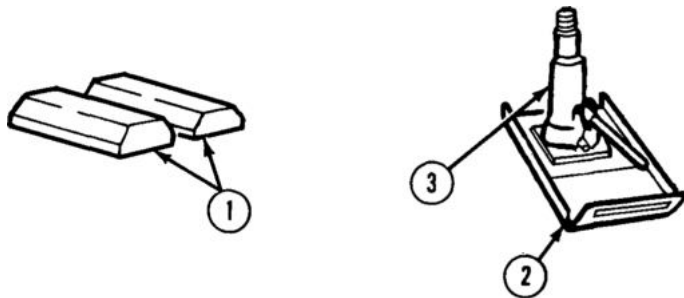
8. Lower jack (3) and remove jack (3) from end of equalizer beam (7).

**INSTALL LIMP HOME SETUP/DRIVER SIDE FRONT - Continued**

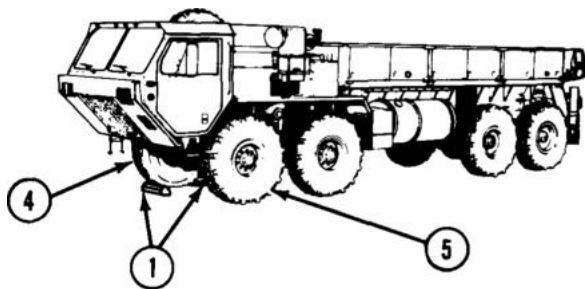
9. Return jack base plate (2), and jack (3) to stowage.
10. Remove and stow two wheel chocks (1).

**REMOVE LIMP HOME SETUP/DRIVER SIDE FRONT**

1. Remove two wheel chocks (1), jack base plate (2), and jack (3) from stowage.

*Figure 17.*

2. Install two wheel chocks (1) in front of and behind tire (4) across from tire (5) being raised.

*Figure 18.*

3. Place jack base plate (2) and jack (3) under end of equalizer beam (6).

## REMOVE LIMP HOME SETUP/DRIVER SIDE FRONT - Continued

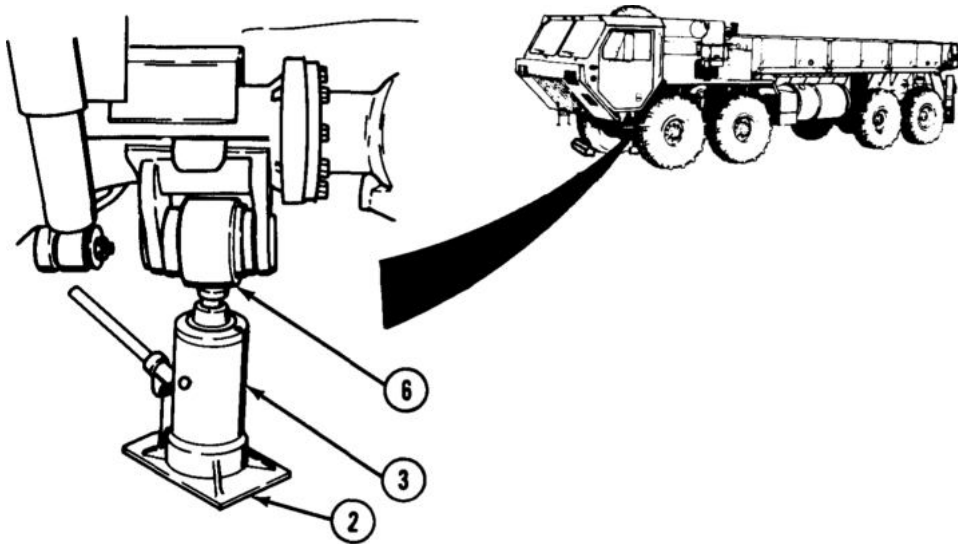


Figure 19.

4. Raise jack (3) until it touches end of equalizer beam (6).
5. Raise jack (3) until axle (7) is as close as it will go to axle stop (8).

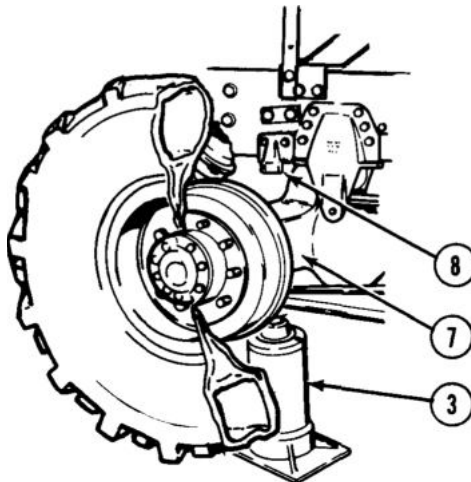
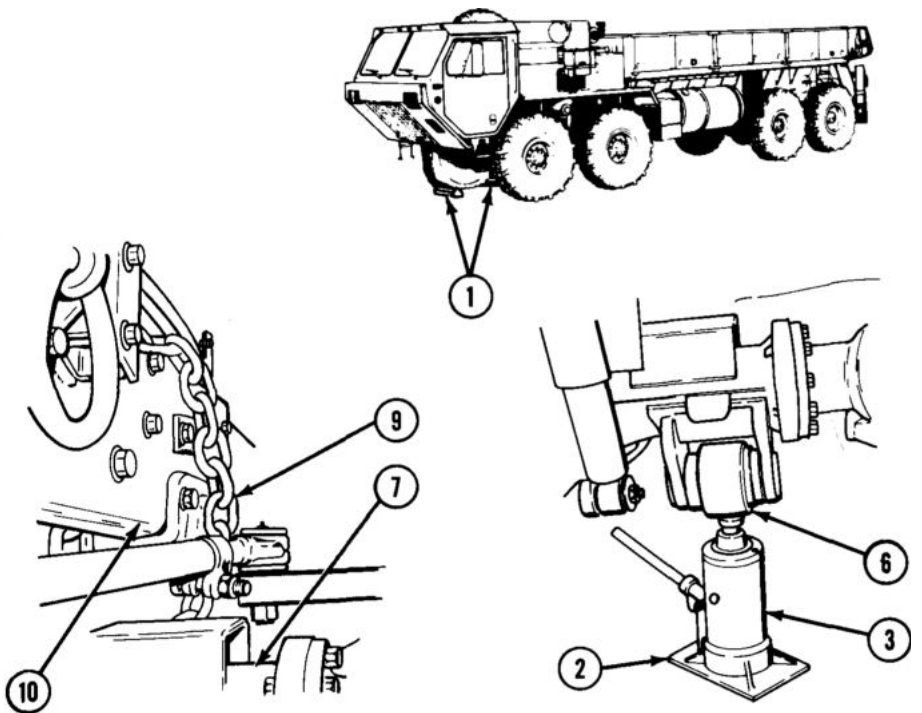


Figure 20.

6. Unhook 7 ft. (2.1 m) chain (9) and remove from around frame (10) and axle (7).

**REMOVE LIMP HOME SETUP/DRIVER SIDE FRONT - Continued***Figure 21.*

7. Lower jack (3) and remove jack from equalizer beam (6).
8. Return jack base plate (2), jack (3), and 7 ft. (2.1 m) chain (9) to stowage.
9. Remove and stow two wheel chocks (1).

**END OF TASK****END OF WORK PACKAGE**

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**OPERATOR MAINTENANCE  
SLAVE START VEHICLE**

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**INITIAL SETUP:****Personnel Required**

Operator and Assistant - - - (2)

---

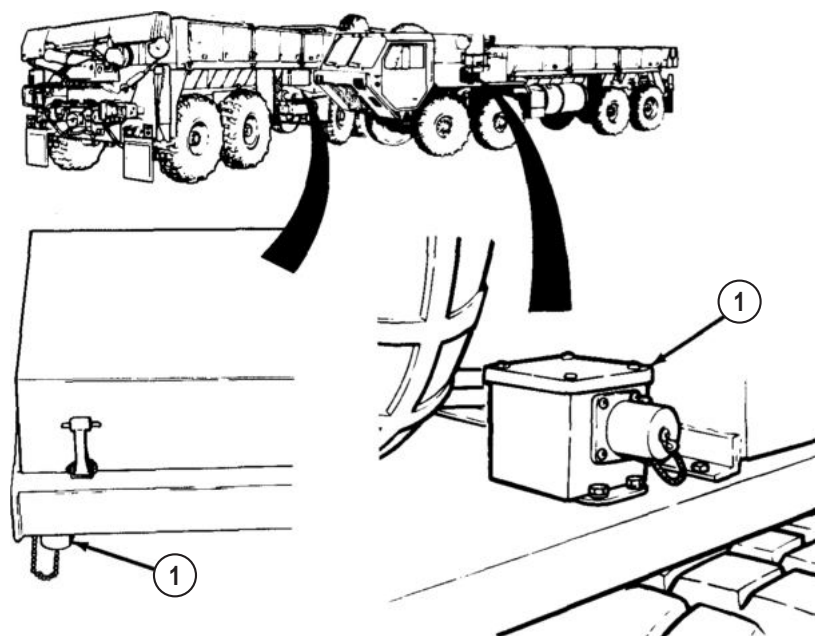
**PREPARE ASSIST VEHICLE****NOTE**

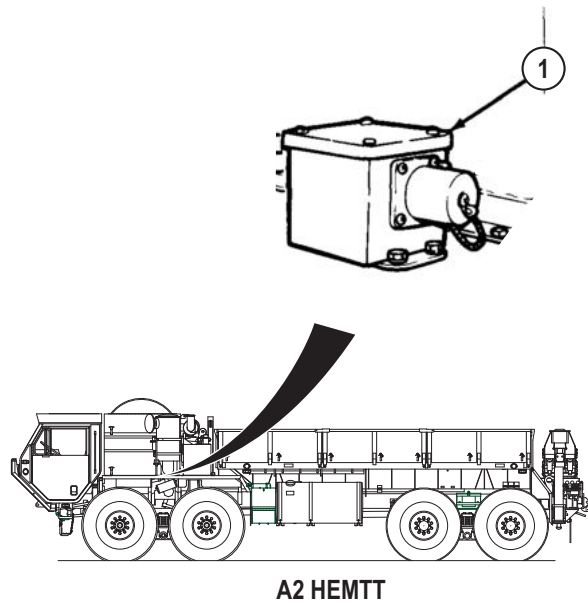
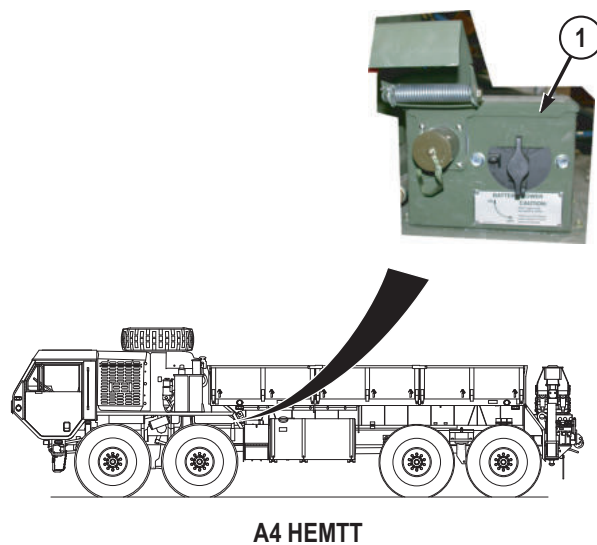
This procedure is a two soldier task.

1. Start engine of assist vehicle. (WP 0053)

**NOTE**

- Model of truck can be determined by information plate on inside of driver side cabin door.
  - Base Model HEMTT - Slave receptacle may be located either on battery box or driver side front fender.
  - A2 Model HEMTT - Slave receptacle is located on driver side front fender.
  - A4 Model HEMTT - Slave receptacle is located on driver side front fender.
2. Move assist vehicle into position beside disabled vehicle so slave receptacles (1) on both vehicles are side by side.

**PREPARE ASSIST VEHICLE - Continued****BASE HEMTT***Figure 1.*

**PREPARE ASSIST VEHICLE - Continued***Figure 2.**Figure 3.*

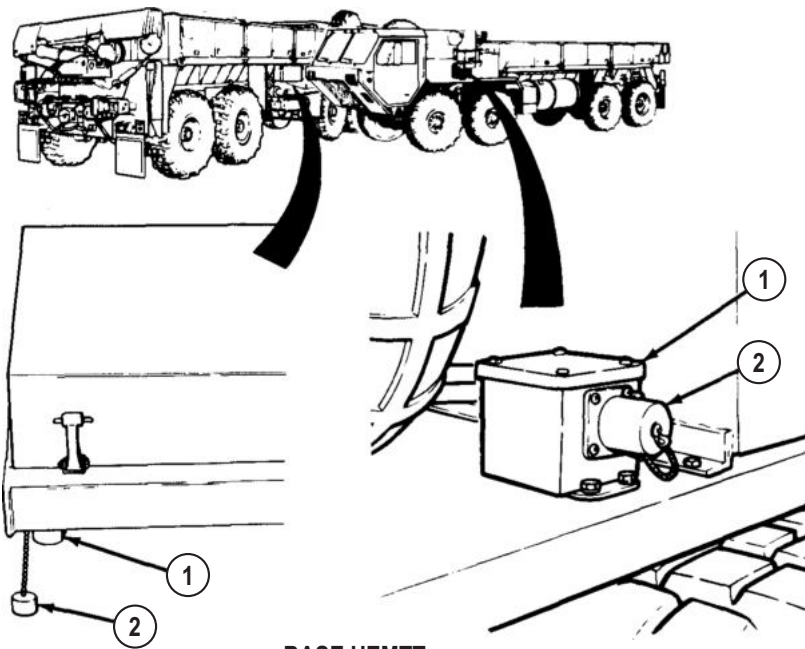
3. Shut off engine of assist vehicle. (WP 0066)

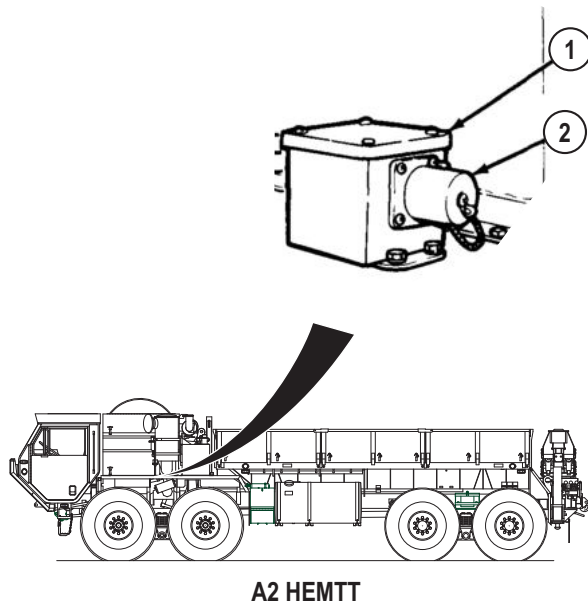
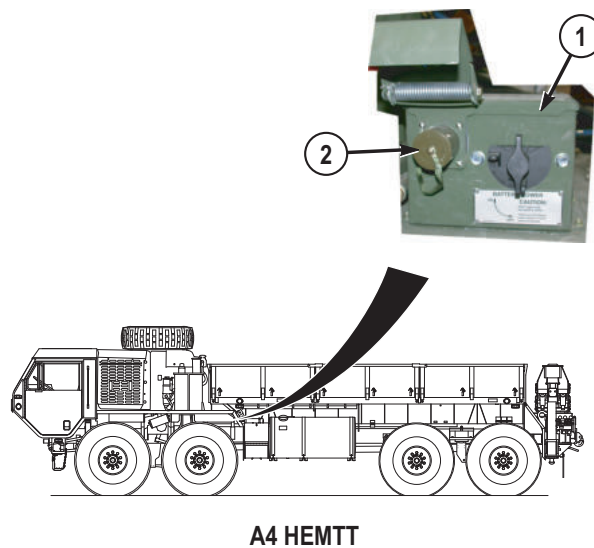


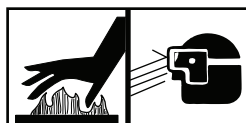
**SLAVE START DISABLED VEHICLE****NOTE**

- Model of truck can be determined by information plate on inside of driver side cabin door.
- Base Model HEMTT - Slave receptacle may be located either on battery box or driver side front fender.
- A2 Model HEMTT - Slave receptacle is located on driver side front fender.
- A4 Model HEMTT - Slave receptacle is located on driver side front fender.

1. Remove caps (2) from slave receptacles (1) on both vehicles.

**BASE HEMTT***Figure 4.*

**SLAVE START DISABLED VEHICLE - Continued***Figure 5.**Figure 6.*

**SLAVE START DISABLED VEHICLE - Continued****WARNING**

Hot transmission/oil can cause severe burns. Wear gloves and proper eye protection while performing troubleshooting or maintenance. Failure to comply may result in injury or death to personnel.

**NOTE**

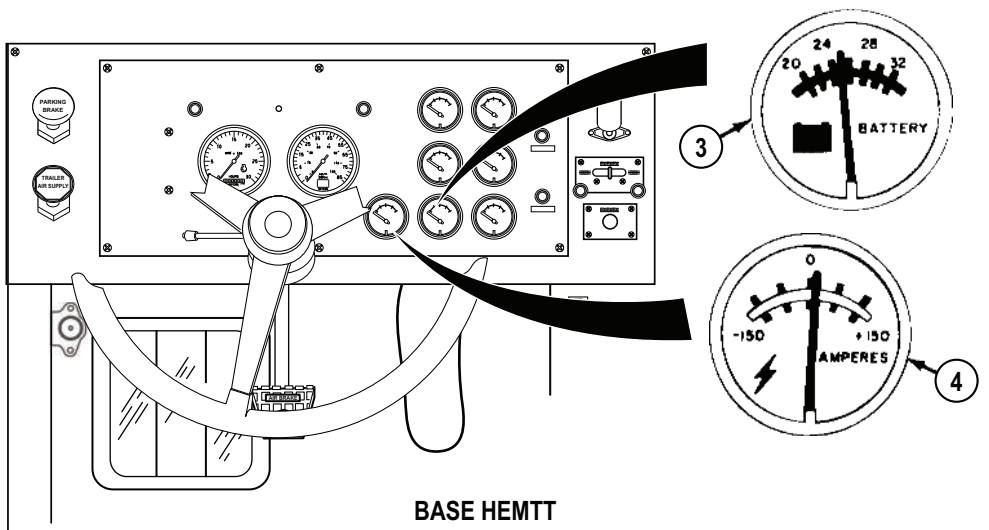
Make sure connectors and receptacles are free from dirt, sand, and debris before use.

2. Remove NATO slave cable from stowage and plug into slave receptacles of both vehicles.
3. Start engine of assist vehicle. (WP 0053)
4. Using the throttle pedal, increase assist vehicle engine speed to more than 1000 rpm, while assistant starts engine of disabled vehicle. (WP 0053)
5. As soon as disabled vehicle engine is running smoothly, remove NATO slave cable from slave receptacles (1) on both vehicles and return to stowage.
6. Install caps (2) on slave receptacles (1) of both vehicles.
7. Move assist vehicle. (WP 0059)
8. Shut off engine of assist vehicle. (WP 0066)

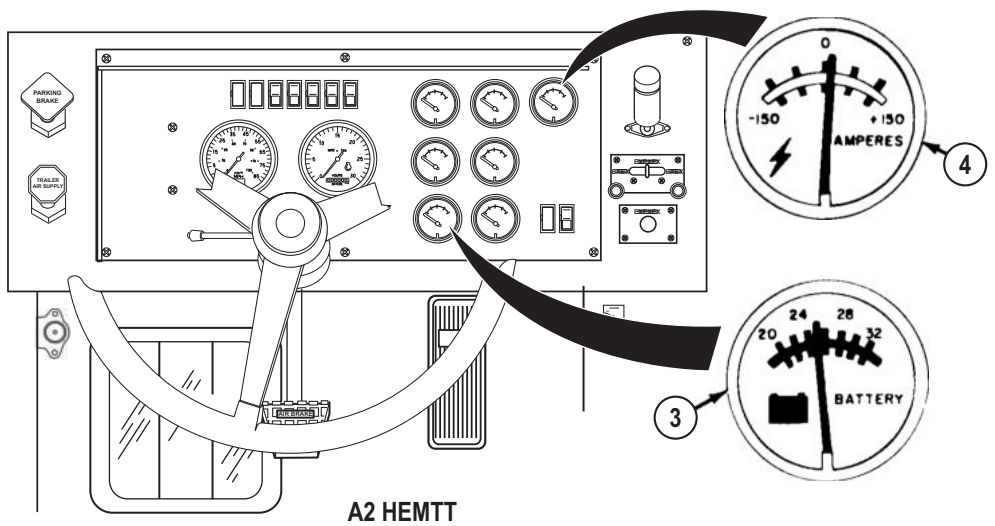
**NOTE**

- Model of truck can be determined by information plate on inside of driver side cabin door.
  - A4 Model HEMTT does not have an AMPERES gauge. Battery voltage readout is located in top right corner of Liquid Crystal Display (LCD) on instrument panel.
  - Gauges are located in different places dependent on model HEMTT. Select correct view below for model HEMTT being serviced.
9. Check BATTERY gauge (3) of disabled vehicle. If BATTERY gauge (3) shows less than 24 volts, notify field level maintenance. If BATTERY gauge (3) shows 24 volts or more, continue with Step (11).

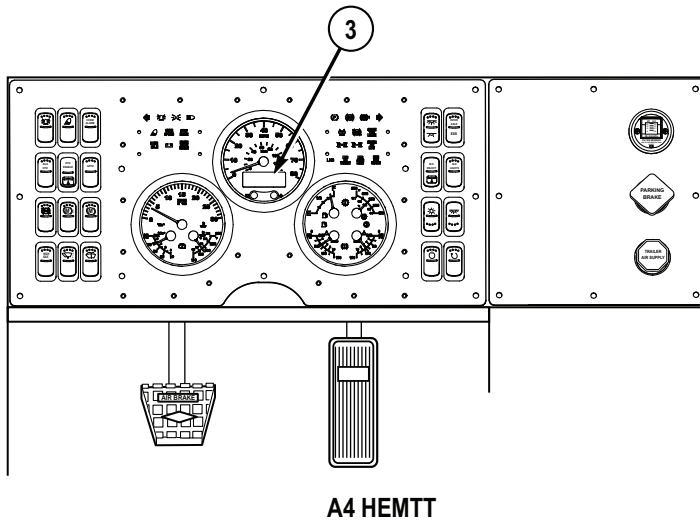
**SLAVE START DISABLED VEHICLE - Continued**



*Figure 7.*



*Figure 8.*

**SLAVE START DISABLED VEHICLE - Continued***Figure 9.*

10. Check AMPERES gauge (4) of disabled vehicle (as applicable). If AMPERES gauge shows discharge condition, notify field level maintenance. If AMPERES gauge (4) shows charging, continue operation of vehicle.

**END OF TASK****END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE**  
**PERFORM IMMEDIATE ACTION FOR LOSS OF AIR SUPPLY SYSTEM PRESSURE**

---

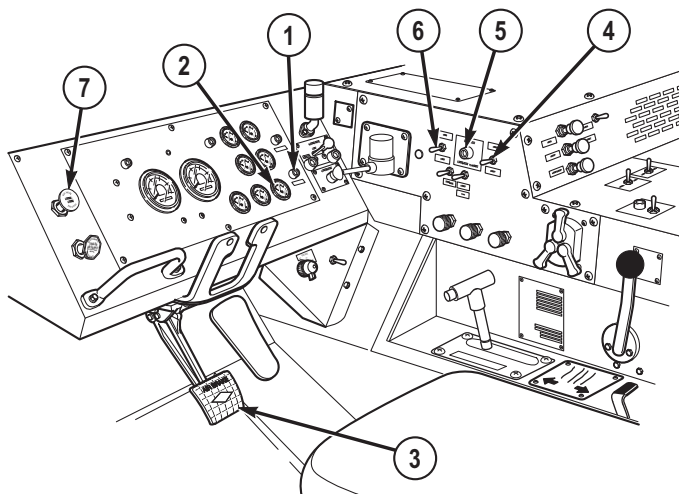
**INITIAL SETUP:**

Not Applicable

---

**PERFORM PROCEDURE**

1. If AIR indicator (1) illuminates and warning buzzer sounds while driving vehicle, check AIR PRESS gauge (2).



*Figure 1.*

**NOTE**

If both red needle and green needle on AIR PRESS gauge read zero, skip to Step (4).

2. If red pointer on AIR PRESS gauge (2) is at zero and green needle shows normal air pressure of 100 to 120 psi (690 to 827 kPa), complete the following:
  - a. Continue operation of vehicle. Brakes on all eight wheels and trailer will work even if air pressure from No. 2 air tank has been lost.
  - b. Notify field level maintenance as soon as possible.

**PERFORM PROCEDURE - Continued****WARNING**

When green pointer of AIR PRESS gauge is at zero, braking capability is greatly reduced. Extra care must be used to avoid collision. Failure to comply may result in injury or death to personnel.

**NOTE**

If both red needle and green needle on AIR PRESS gauge read zero, skip to Step (4).

3. If green needle on AIR PRESS gauge (2) is at zero and red needle shows normal air pressure of 100 to 120 psi (690 to 827 kPa), complete the following:
  - a. Continue operation of vehicle. Brakes on third and fourth axles and trailer will work even if air pressure from No. 3 air tank has been lost.
  - b. Leave additional distance between vehicles.
  - c. Apply service brake pedal (3) earlier than usual when slowing vehicle.
  - d. Downshift as necessary, when slowing vehicle.

**WARNING**

Do not use engine brake when vehicle is on slippery surface. If engine brake is used incorrectly, vehicle may skid out of control. Failure to comply may result in injury or death to personnel.

- e. If necessary to slow vehicle, set Jacobs engine brake HIGH/LOW switch (6) to LOW and set ON/OFF switch (7) to ON.
  - f. Notify field level maintenance as soon as possible.
4. If both red needle and green needle on AIR PRESS gauge (2) read zero, complete the following:
  - a. Downshift as needed to control vehicle speed until place is found to stop.

**PERFORM PROCEDURE - Continued****WARNING**

Use of service brake pedal will not slow or stop vehicle when both pointers of AIR PRESS gauge read zero. Use the following procedure to safely stop vehicle after loss of air pressure. Failure to comply may result in injury or death to personnel.

**NOTE**

When spring brakes are applied, vehicle will stop quickly. Vehicle cannot be driven again until malfunction is repaired and there is enough air supply for operation of service brakes.

- b. Look for place to stop vehicle without blocking other traffic.
- c. When suitable area is found to stop vehicle, pull out PARKING BRAKE control (8) to apply spring brakes on four rear wheels.
- d. Notify field level maintenance.

**END OF TASK****END OF WORK PACKAGE**



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**OPERATOR MAINTENANCE**  
**PERFORM IMMEDIATE ACTION FOR LOSS OF HYDRAULIC SYSTEM**

---

**INITIAL SETUP:**

Not Applicable

---

**NOTE**

Steering wheel will be harder to turn after failure of hydraulic system.

1. If failure occurs while driving, continue steering as before.

**NOTE**

Failure of hydraulic system will stop operation of any crane, winch, or hydraulic motor on vehicle. All cranes and winches are equipped with automatic locking mechanisms to hold cranes and winches in position they were in before hydraulics failed.

2. Do not try to continue operation of any crane or winch.
3. Do not try to repair hydraulic system. Notify your supervisor.
4. Notify field level maintenance.

**END OF TASK**

**END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE STOWAGE AND SIGN GUIDE

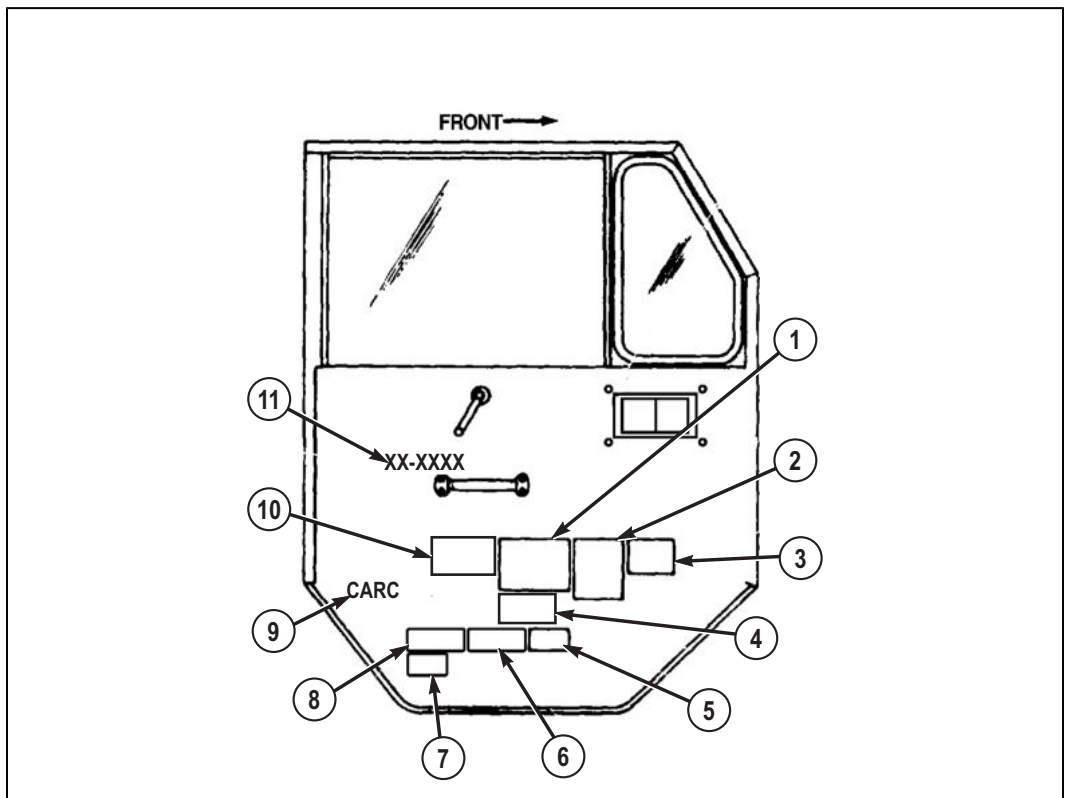
### Scope

This work package shows locations for data plates, decals, and stencils that are required to be in place on the HEMTT series vehicles.

### General

The following figures show the location of metal signs, decals, and stencils used on the vehicle. Most of these signs and stencils contain cautions or information needed to operate the vehicle safely. For stowage locations of Components Of End Item (COEI) and Basic Issue Items (BII), refer to Components of End Item and Basic Issue Items tables. (WP 0165)

**Table 1. Inside Driver Side Door.**



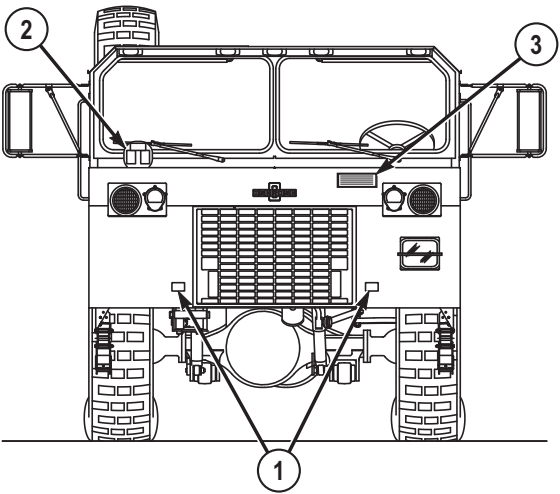
General - Continued

*Table 1. Inside Driver Side Door. - Continued*

INDEX	DECAL/PLATE/STENCIL
1	Manufacturer's Certification Information
2	Parts Data
3	Name Plate
4	Overhaul Data (not included on all vehicles)
5	Tire Inflation Data
6	Warranty Information
7	Rustproofing Data/Rustproofing CAUTION
8	Noise Exemption Decal (not included on all vehicles)
9	"CARC" Stencil (not included on all vehicles)
10	Shipping Data
11	Registration Number (inside both driver and passenger side doors) (not included on all vehicles)

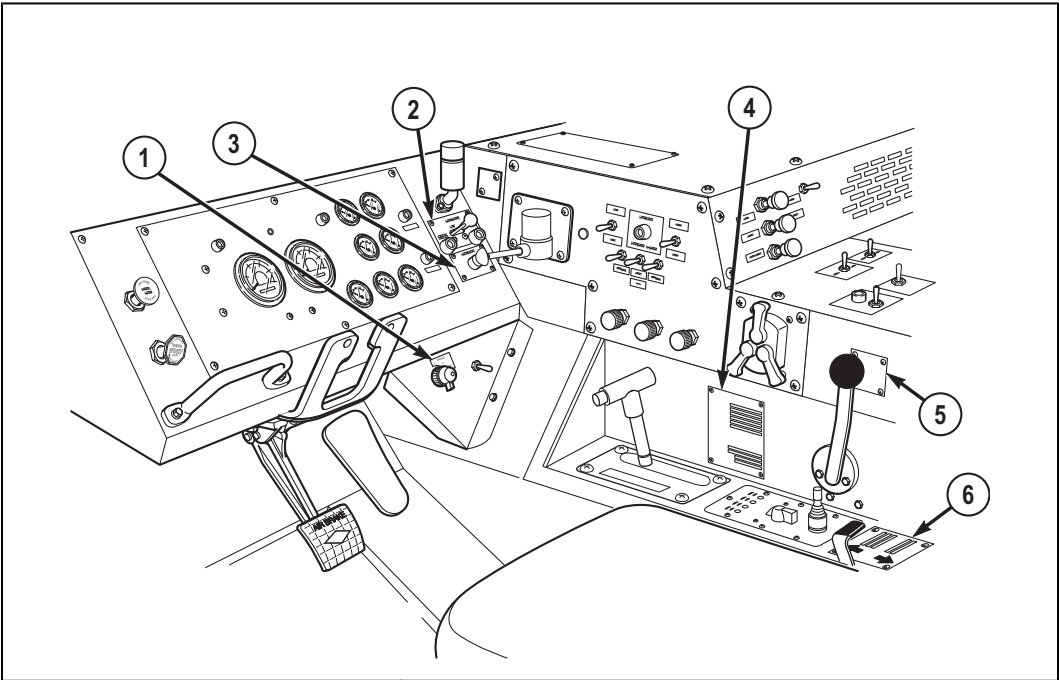
General - Continued

Table 2. Front Exterior.

	
INDEX	PLACARD/STENCIL
1	"TIE DOWN" Stencil
2	Sign Kit/Weight Indicator
3	"U.S. ARMY" Stencil

General - Continued

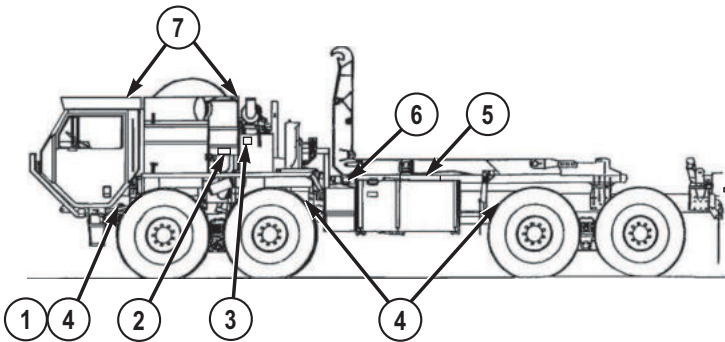
Table 3. M1977 CBT Cabin.



INDEX	DECAL/PLATE
1	Engine ON/OFF Decal
2	Traction Control Data Plate
3	Ether Start Data Plate
4	Vehicle Data Plate
5	Transfer Case Data Plate
6	Self-Recovery Winch Data Plate (vehicles equipped with self-recovery winch only)

## General - Continued

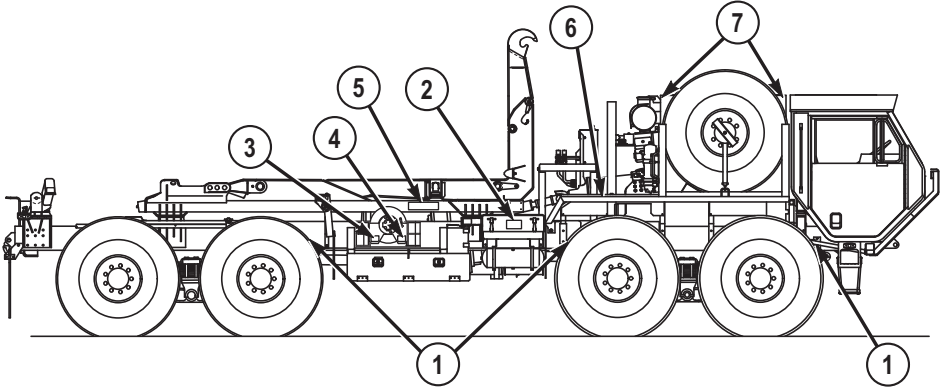
*Table 4. M1977 CBT Driver Side Exterior.*

	
INDEX	DECAL/PLACARD/PLATE/STENCIL
1	Vehicle Identification Number (VIN) Placard
2	CAUTION Decal (hearing protection required)
3	"FULL COLD" Stencil
4	"TIE DOWN" Stencil
5	"MULTILIFT" Stencil
6	Multilift Data Plate
7	"NO STEP" Stencil (multiple on exhaust and engine access panels)



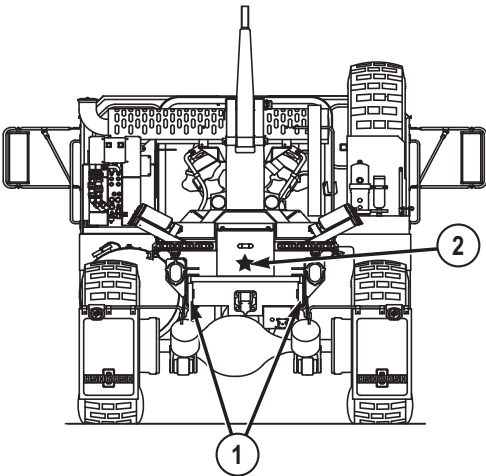
General - Continued

Table 5. M1977 CBT Passenger Side Exterior.

	
INDEX	DECAL/PLACARD/PLATE/STENCIL
1	"TIE DOWN" Stencil
2	CAUTION Decal (hearing protection required)
3	Self-Recovery Winch Data Plate (vehicles equipped with self-recovery winch only)
4	WARNING (self-recovery winch) Plate (vehicles equipped with self-recovery winch only)
5	"MULTILIFT" Stencil
6	CAUTION (hydraulic selector valve) Decal (vehicles equipped with self-recovery winch only)
7	"NO STEP" Stencil (multiple on exhaust and engine access panels)

## General - Continued

**Table 6. M1977 CBT Rear Exterior.**

	
INDEX	STENCIL
1	"SLING POINT" and "TIE DOWN" Stencils (one each per side)
2	US Army Star Stencil

**Table 7. Miscellaneous Decals/Placards/Plates/Stencils.**

LOCATION	M977/ M985	M978	M983	M984A 1	M985 E1	M1120 LHS	M1977 CBT
Axle Housing	4	4	4	4	4	4	4
Carrier	4	4	4	4	4	4	4
Transfer Case	1	1	1	1	1	1	1
Engine	1	1	1	1	1	1	1
Transmission	1	1	1	1	1	1	1

General - Continued

*Table 7. Miscellaneous Decals/Placards/Plates/Stencils. - Continued*

Heavy-Duty Winch	0	0	0	1	0	0	0
Total	11	11	11	12	11	11	11

END OF WORK PACKAGE

CHAPTER 3  
TROUBLESHOOTING  
PROCEDURES



---

## OPERATOR MAINTENANCE BUZZER SOUNDS AND AIR INDICATOR IS LIT

---

### INITIAL SETUP:

#### Equipment Condition

Engine OFF. (WP 0066)

#### Equipment Condition - Continued

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

### TROUBLESHOOTING PROCEDURE

#### BUZZER SOUNDS AND AIR INDICATOR IS LIT

##### TEST 1 - Is air pressure greater than 75 psi (517 kPa)?

1. Start engine, (WP 0053) and allow air pressure to build.
2. Check air pressure.

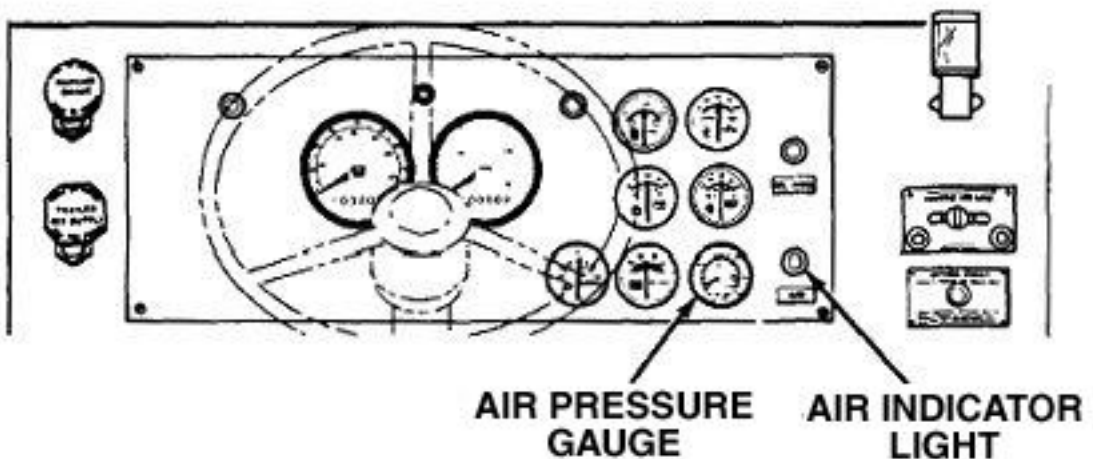


Figure 1.

3. Turn engine OFF. (WP 0066)

#### CONDITION/INDICATION

Is air pressure greater than 75 psi (517 kPa)?

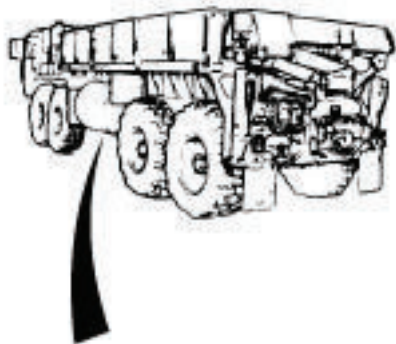
**DECISION**

No - Test 2 - Are any petcock valves open?

Yes - Notify Supervisor.

**TEST 2 - Are any petcock valves open?**

1. Check if any air reservoir petcock valves are open. If valve(s) open, close petcock(s).



*Figure 2.*

**CONDITION/INDICATION**

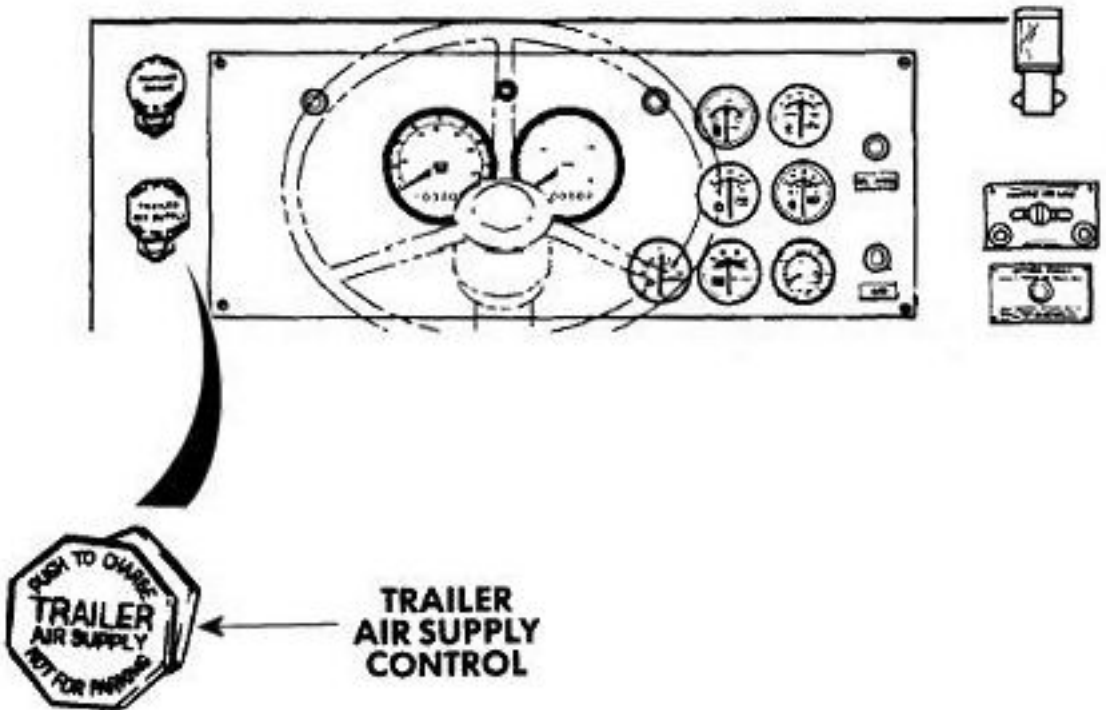
Are any petcock valves open?

**DECISION**

Petcock(s) open - Test 6 - Does buzzer stop, and air indicator light extinguish?  
 Petcock's closed - Test 3 - Is trailer air supply control in correct position?

**TEST 3 - Is trailer air supply control in correct position?**

1. Check that trailer air supply control is pulled out (OFF position) if no trailer is coupled, and pushed in (ON position) if trailer is coupled.
2. If trailer air control is found in an incorrect position, set to correct position.



*Figure 3.*

**CONDITION/INDICATION**

Is trailer air supply control in correct position?

**DECISION**

No - Test 6 - Does buzzer stop, and air indicator light extinguish?  
 Yes - Test 4 - Does air reservoir, hoses, lines, fittings, and/or connectors leak?



**TEST 4 - Does air reservoir, hoses, lines, fittings, and/or connectors leak?**

1. Check air reservoir, hoses, lines, fittings, and/or connectors for leaks. Tighten any leaks found.

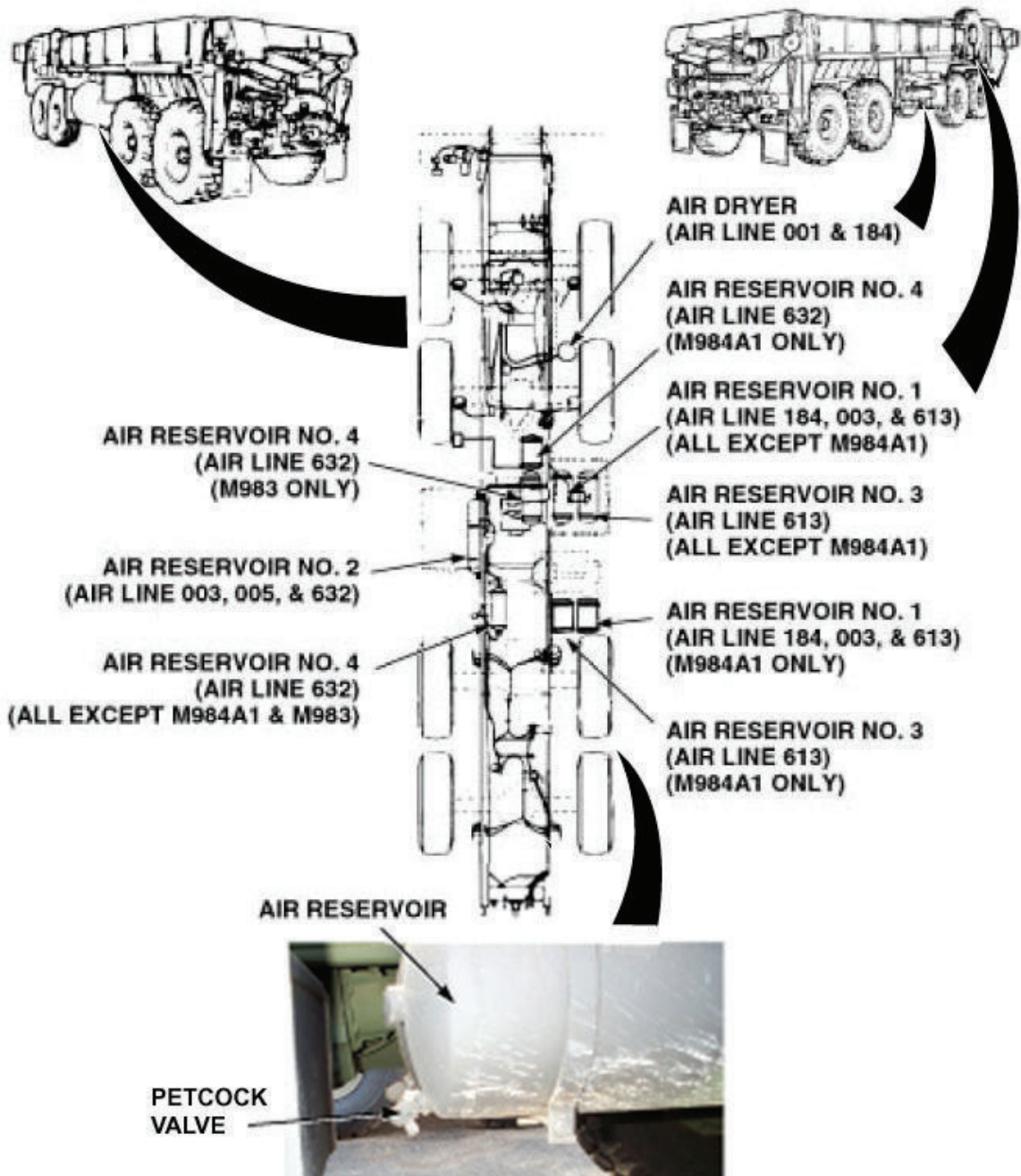


Figure 4.

**CONDITION/INDICATION**

Does air reservoir, hoses, lines, fittings, and/or connectors leak?

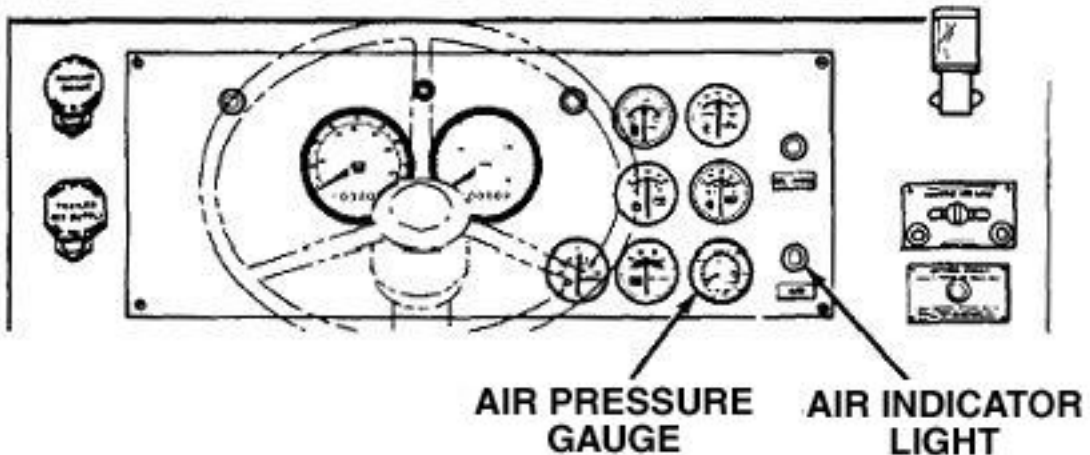
**DECISION**

Air reservoir, hoses, lines and/or connectors leak. - Notify Supervisor. Test 6 - Does buzzer stop, and air indicator light extinguish? Notify Supervisor.

Air reservoir, hoses, lines, fittings, and/or connectors OK - Test 5 - Does buzzer sound, and air indicator light illuminate when trailer is disconnected?

**TEST 5 - Does buzzer sound, and air indicator light illuminate when trailer is disconnected?**

1. If trailer is coupled, disconnect trailer from vehicle.



*Figure 5.*

2. Start engine, (WP 0053) and allow air pressure to build.
3. Check if buzzer continues to sound, and if air indicator light is illuminated.
4. Turn engine off. (WP 0066)

**CONDITION/INDICATION**

Does buzzer sound, and air indicator light illuminate when trailer is disconnected?

**DECISION**

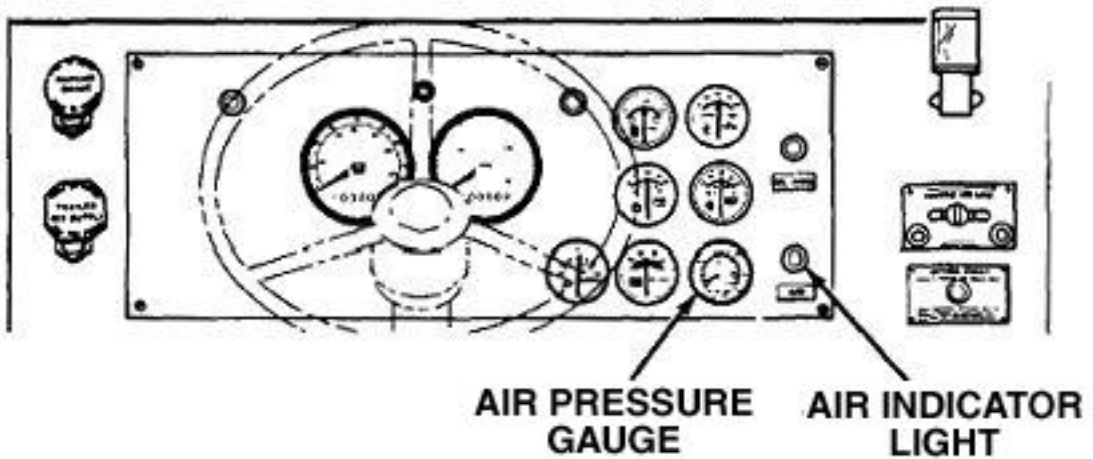
No - Notify Supervisor.

Yes - Problem corrected.

**TEST 6 - Does buzzer stop, and air indicator light extinguish?**

1. Start engine, (WP 0053) and allow air pressure to build.

2. Check that buzzer does not sound, and air indicator light is off.



*Figure 6.*

3. Turn engine off. (WP 0066)

**CONDITION/INDICATION**

Does buzzer stop, and air indicator light extinguish?

**DECISION**

No - Notify Supervisor.  
Yes - Problem corrected.

**END OF WORK PACKAGE**



---

**OPERATOR MAINTENANCE  
WINDSHIELD WASHER WILL NOT OPERATE**

---

**INITIAL SETUP:**

**Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

**TROUBLESHOOTING PROCEDURE  
WINDSHIELD WASHER WILL NOT OPERATE**

**TEST 1 - Is washer fluid reservoir free from damage or cracks?**

1. Check washer fluid reservoir for cracks and/or damage.



*Figure 1.*

**CONDITION/INDICATION**

Is washer fluid reservoir free from damage or cracks?

**DECISION**

No - Notify Supervisor.

Yes - Test 2 - Is washer fluid present in washer fluid reservoir?

**TEST 2 - Is washer fluid present in washer fluid reservoir?****CAUTION**

Do not fill windshield washer reservoir with water when temperatures are likely to be 32°F (0°C) or less. If water freezes, reservoir can crack or break.

1. Check washer fluid level in reservoir. if low, fill windshield washer reservoir.





*Figure 2.*

**CONDITION/INDICATION**

Is washer fluid present in washer fluid reservoir?

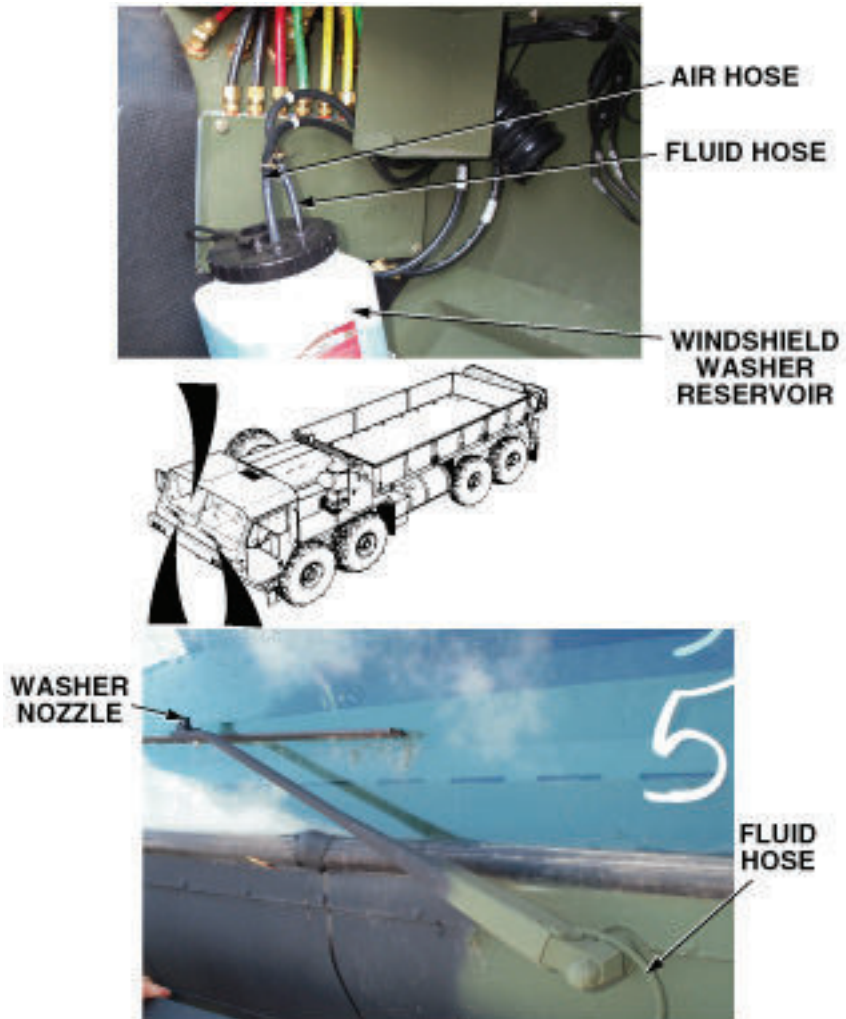
**DECISION**

No - Test 6 - Does the windshield washer operate?

Yes - Test 3 - Are all hoses securely attached to reservoir?

**TEST 3 - Are all hoses securely attached to reservoir?**

1. Check that all hoses are securely attached to reservoir. If loose hoses are found, attach to reservoir.



*Figure 3.*

**CONDITION/INDICATION**

Are all hoses securely attached to reservoir?

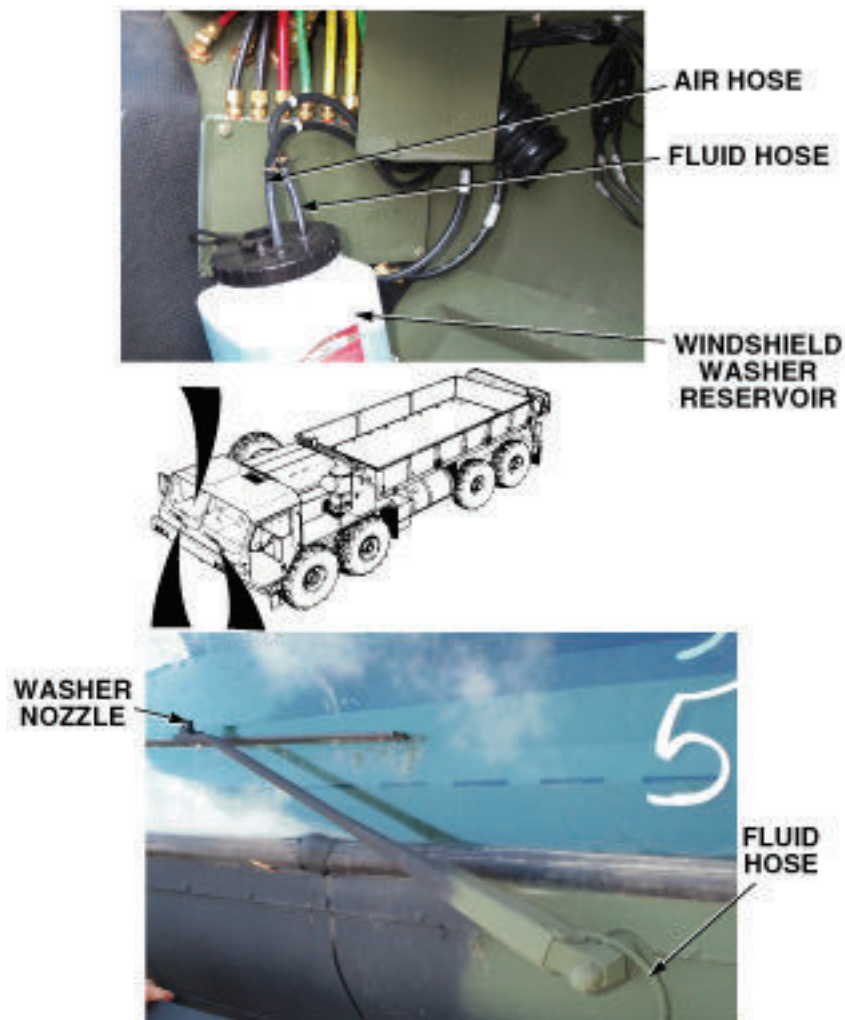
**DECISION**

No - Test 6 - Does the windshield washer operate?

Yes - Test 4 - Are hoses free of cracks or damage?

**TEST 4 - Are hoses free of cracks or damage?**

1. Check if hoses are cracked or damaged.



*Figure 4.*

**CONDITION/INDICATION**

Are hoses free of cracks or damage?

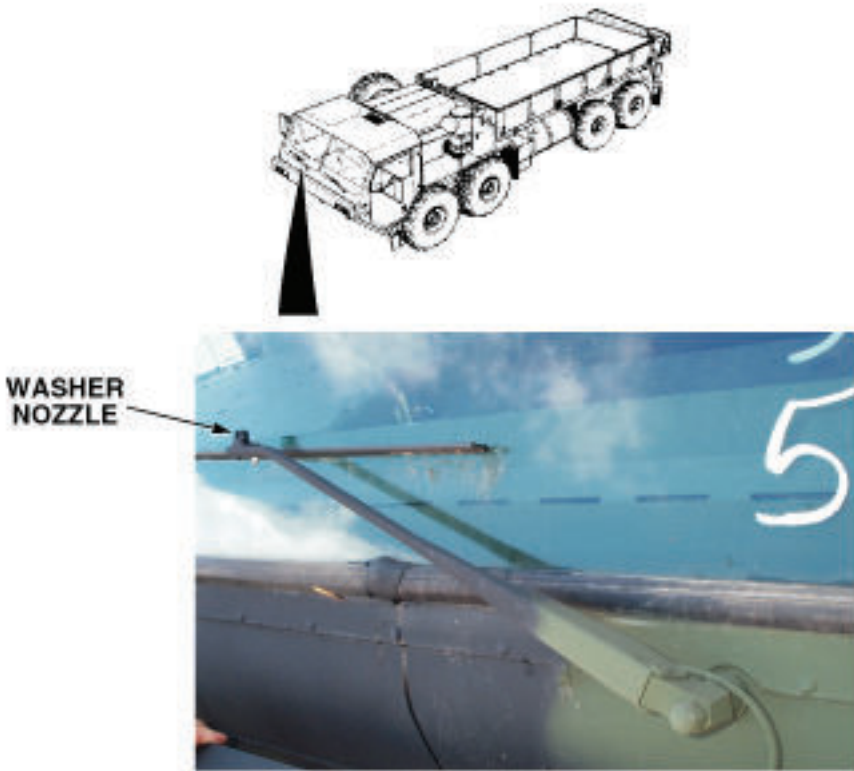
**DECISION**

No - Notify Supervisor.

Yes - Test 5 - Are washer spray openings free of debris?

**TEST 5 - Are washer spray openings free of debris?**

1. Check washer spray openings on wipers for clogs.



*Figure 5.*

2. If openings are clogged, clear washer spray opening using pin, wire, or similar item.

**CONDITION/INDICATION**

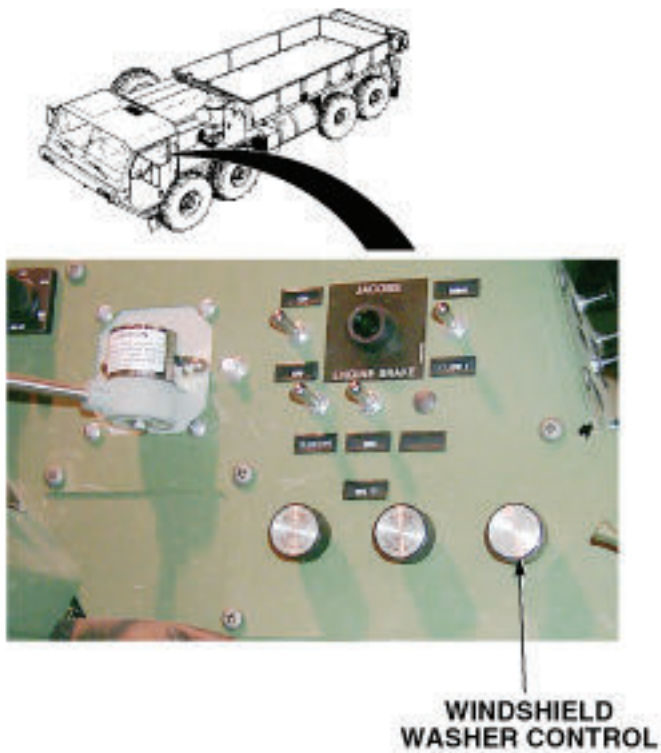
Are washer spray openings free of debris?

**DECISION**

No - Test 6 - Does the windshield washer operate?  
Yes - Notify Supervisor.

**TEST 6 - Does the windshield washer operate?**

1. Start engine, (WP 0053) and allow air pressure to build.
2. Check windshield washer for proper operation.



*Figure 6.*

**CONDITION/INDICATION**

Does the windshield washer operate?

**DECISION**

No - Notify Supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**

---

## OPERATOR MAINTENANCE

### AIR SYSTEM LOSES PRESSURE DURING OPERATION

---

#### INITIAL SETUP:

##### Equipment Condition

Engine OFF. (WP 0066)

##### Equipment Condition - Continued

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

#### TROUBLESHOOTING PROCEDURE

### AIR SYSTEM LOSES PRESSURE DURING OPERATION

#### TEST 1 - Are any petcock valves open?

#### WARNING



Vehicles air system is pressurized, be sure to wear proper eye protection and keep face away from drain valves while draining air reservoirs. Open air drain valves slowly to prevent sudden blast of air. Failure to comply may result in injury to personnel.

1. Check to make sure all four air reservoir petcock valves are closed.

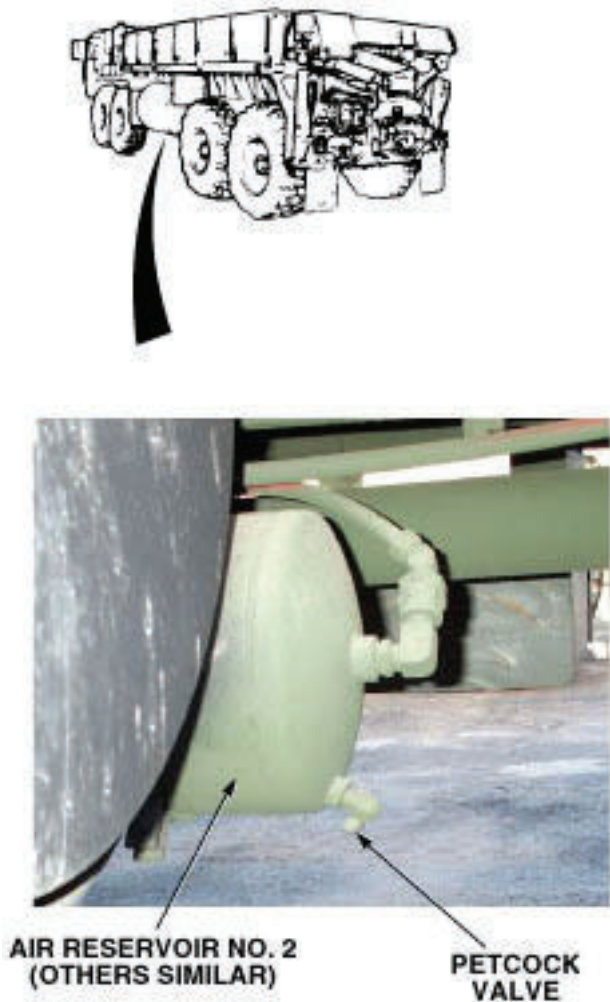


Figure 1.

#### CONDITION/INDICATION

Are any petcock valves open?

#### DECISION

Petcock(s) open - Test 5 - Does air system lose pressure during operation?

Petcocks closed - Test 2 - Is trailer air supply control in correct position?

#### TEST 2 - Is trailer air supply control in correct position?

1. Check if trailer air supply control is pulled out (OFF position) if no trailer is coupled, and pushed in (ON position) if trailer is coupled.



2. If trailer air control is found in an incorrect position, set to correct position.

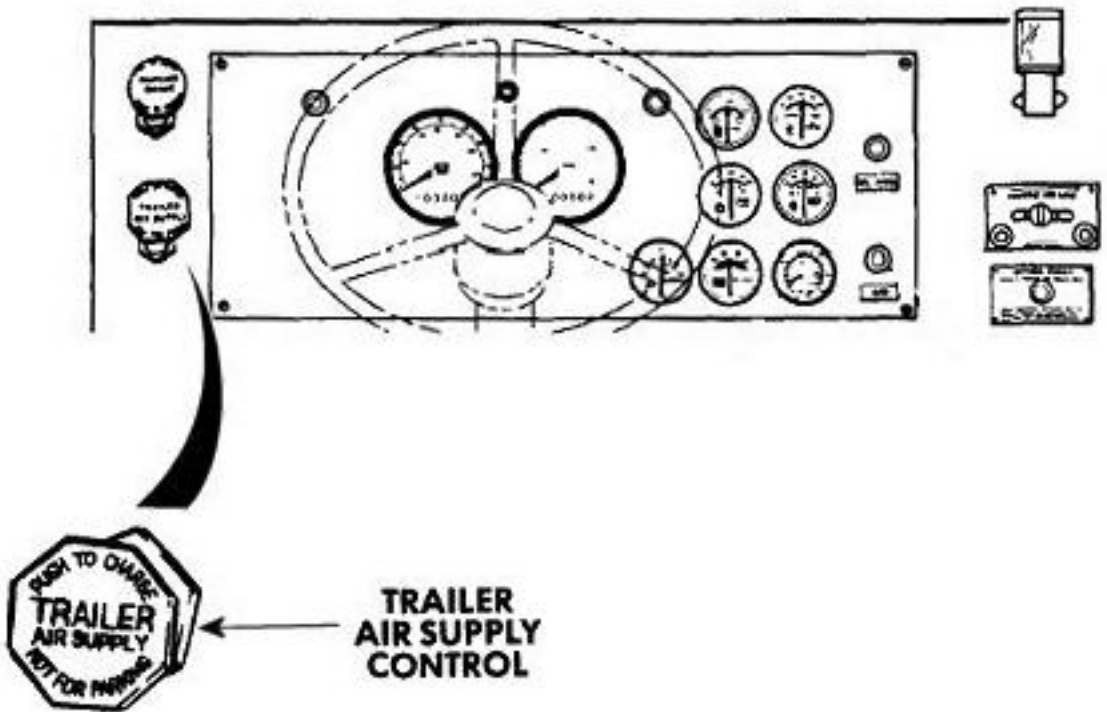


Figure 2.

#### CONDITION/INDICATION

Is trailer air supply control in correct position?

#### DECISION

No - Test 5 - Does air system lose pressure during operation?

Yes - Test 3 - Does air pressure reach 120 psi (827 kPa) with engine accelerated?

#### TEST 3 - Does air pressure reach 120 psi (827 kPa) with engine accelerated?

1. Start engine. (WP 0053)
2. Accelerate engine and check if air pressure reaches 120 psi (827 kPa).



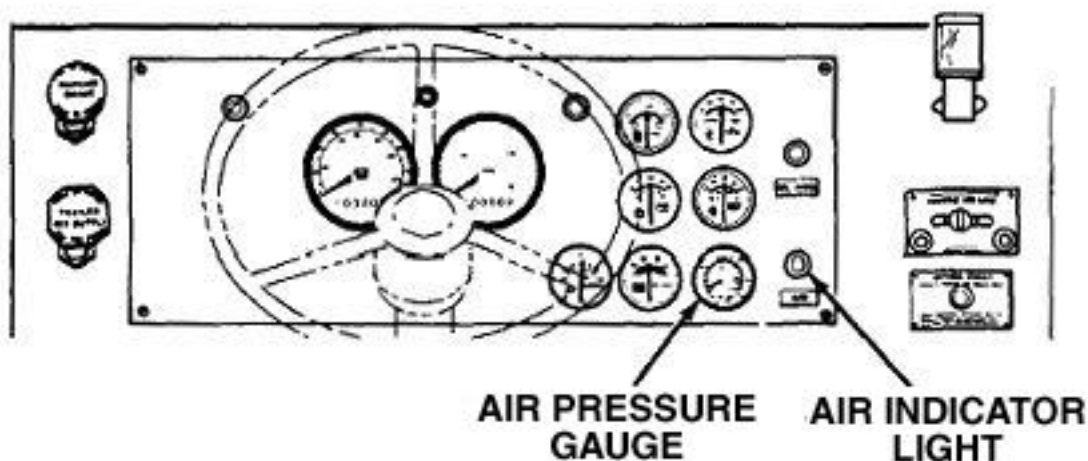


Figure 3.

#### CONDITION/INDICATION

Does air pressure reach 120 psi (827 kPa) with engine accelerated?

#### DECISION

No - Notify Supervisor.

Yes - Test 4 - Are air leaks present?

#### TEST 4 - Are air leaks present?

1. Turn engine off. (WP 0066)
2. Press service brake treadle completely down, and have crew member check for air leaks.

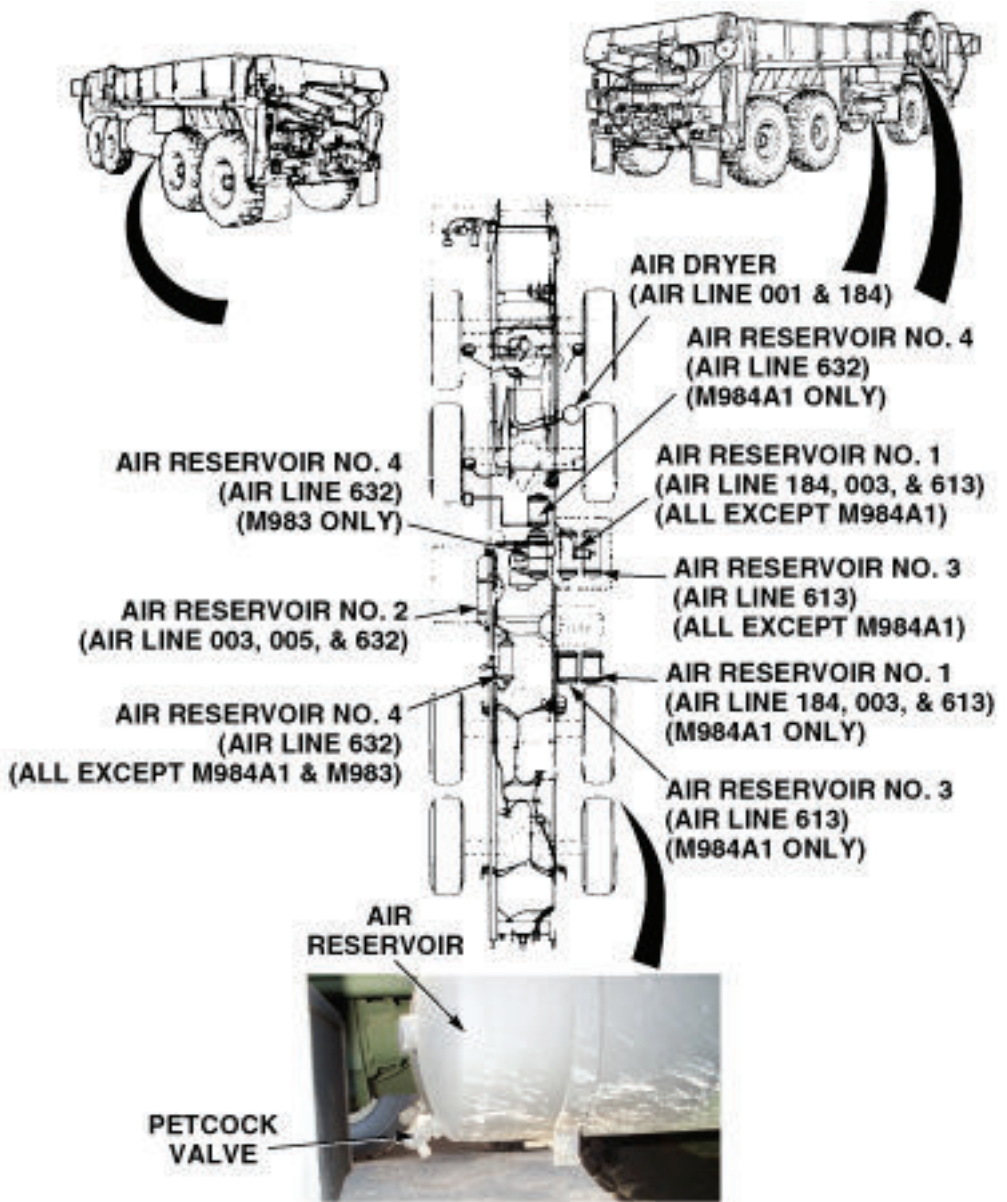


Figure 4.

3. If leaky fitting(s) found, tighten fittings.

**CONDITION/INDICATION**

Are air leaks present?

**DECISION**

Air leaks found - Notify Supervisor.

No air leaks found - Test 5 - Does air system lose pressure during operation?

**TEST 5 - Does air system lose pressure during operation?**

1. Start engine. (WP 0053)
2. Test drive vehicle.
3. Observe and note air pressure.

**CONDITION/INDICATION**

Does air system lose pressure during operation?

**DECISION**

No - Notify Supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE  
TRAILER BRAKE DOES NOT APPLY WHEN SERVICE BRAKE TREADLE OR  
PARKING BRAKE IS USED**

---

**INITIAL SETUP:**

**Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

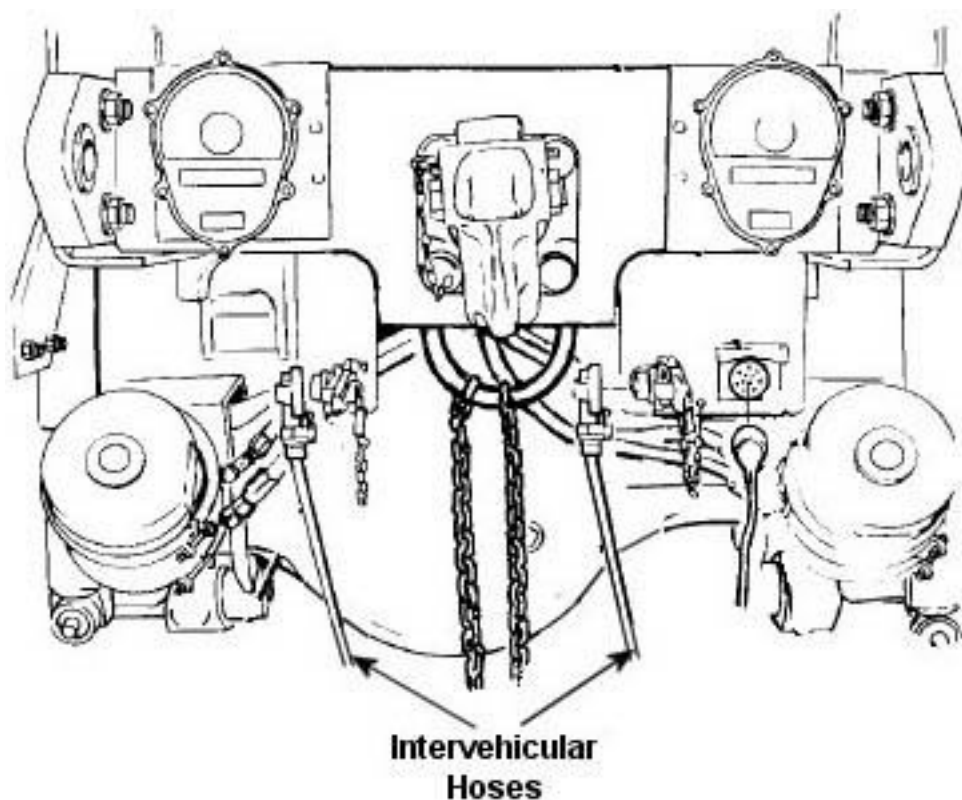
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**TROUBLESHOOTING PROCEDURE**

**TRAILER BRAKE DOES NOT APPLY WHEN SERVICE BRAKE TREADLE OR  
PARKING BRAKE IS USED**

**TEST 1 - Are intervehicular air hoses securely and correctly connected?**

1. Check that intervehicular air hoses are secure and correctly connected. If not, reconnect correctly.



*Figure 1.*

#### **CONDITION/INDICATION**

Are intervehicular air hoses securely and correctly connected?

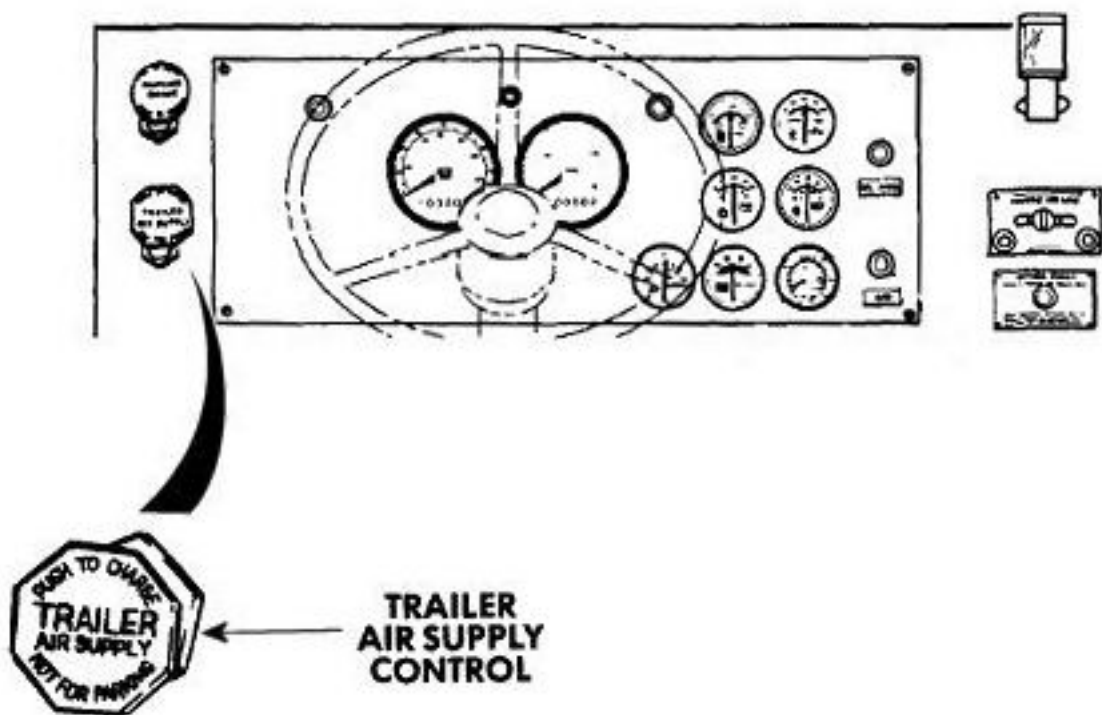
#### **DECISION**

No - Test 3 - Do trailer brakes apply when service brake treadle or parking brake is used?

Yes - Test 2 - Is trailer air supply control pushed in (ON position)?

#### **TEST 2 - Is trailer air supply control pushed in (ON position)?**

1. Check if trailer air supply control is pushed in (ON position).



*Figure 2.*

2. If trailer air supply control is found pulled out (OFF position), push in.

#### **CONDITION/INDICATION**

Is trailer air supply control pushed in (ON position)?

#### **DECISION**

No - Test 3 - Do trailer brakes apply when service brake treadle or parking brake is used?

Yes - Notify Supervisor.

#### **TEST 3 - Do trailer brakes apply when service brake treadle or parking brake is used?**

1. Start engine. (WP 0053)
2. Test drive vehicle.
3. Note trailer brake operations.

#### **CONDITION/INDICATION**

Do trailer brakes apply when service brake treadle or parking brake is used?

**DECISION**

No - Notify Supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**

---

## OPERATOR MAINTENANCE AIR HORN WILL NOT OPERATE

---

### INITIAL SETUP:

#### Equipment Condition

Engine OFF. (WP 0066)

#### Equipment Condition - Continued

Parking brakes applied. (WP 0065)

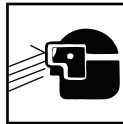
Wheels chocked. (WP 0089)

---

### TROUBLESHOOTING PROCEDURE AIR HORN WILL NOT OPERATE

#### TEST 1 - Are air hoses tight?

#### WARNING



Caution the hose connections could be under pressure be sure to wear eye protection to avoid personal injury.

1. Check air hose connections for tightness. Tighten any loose hose connections found.



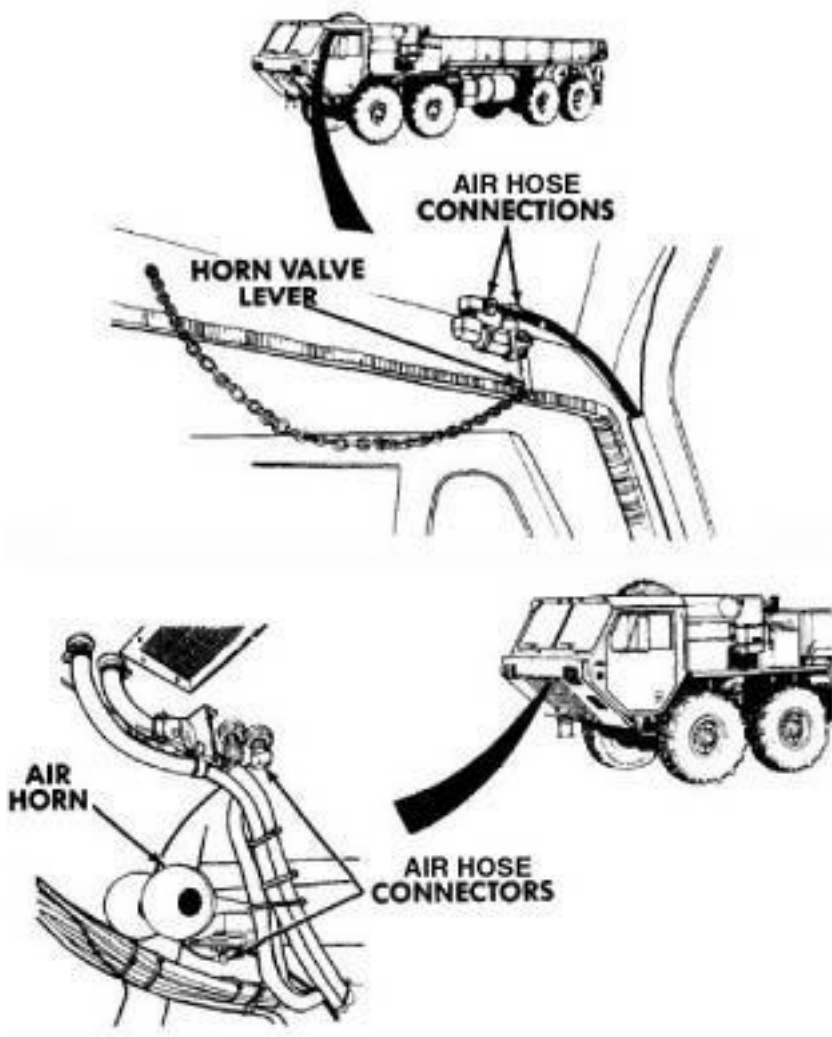


Figure 1.

**CONDITION/INDICATION**

Are air hoses tight?

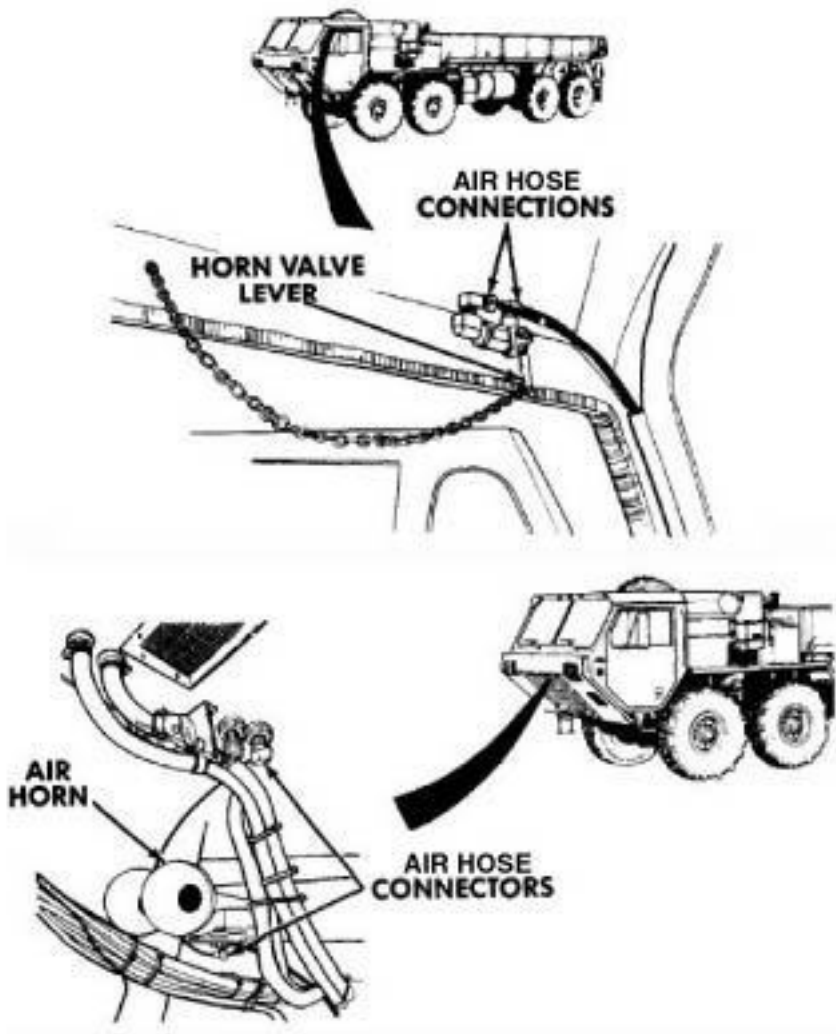
**DECISION**

Connections loose - Test 3 - Does air horn operate?

Connections OK - Test 2 - Does horn valve lever move freely?

**TEST 2 - Does horn valve lever move freely?**

1. Check horn valve lever for freedom of movement.



*Figure 2.*

**CONDITION/INDICATION**

Does horn valve lever move freely?

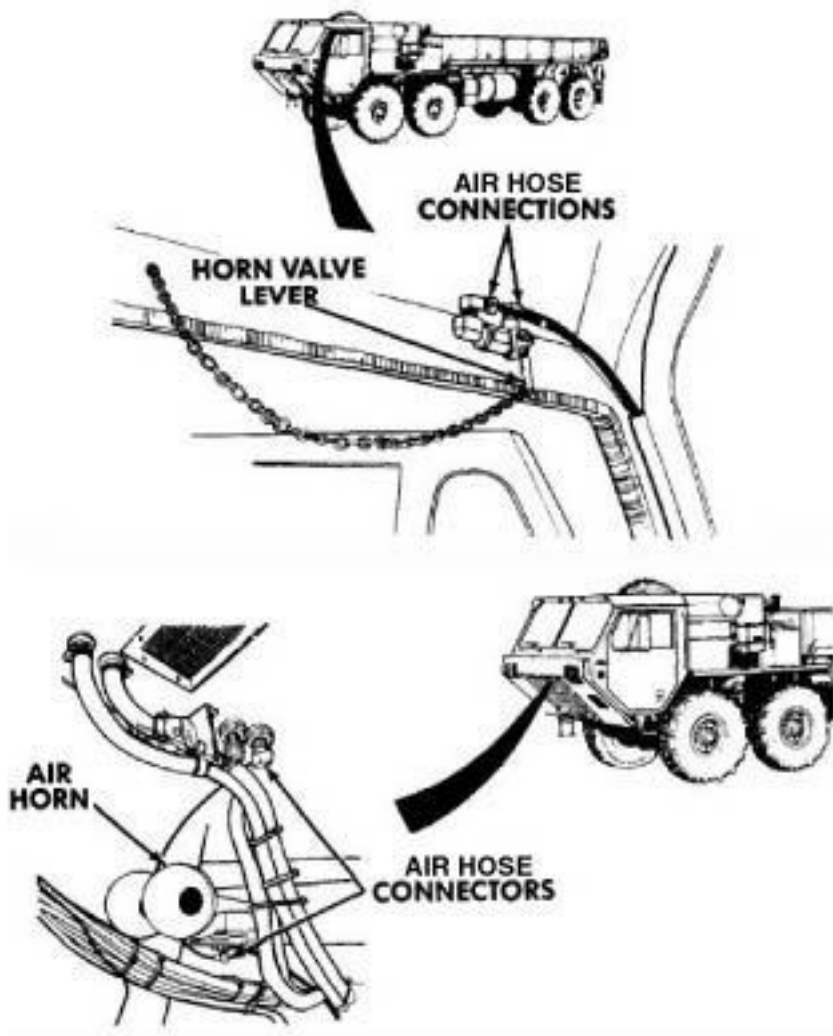
**DECISION**

No - Notify Supervisor.

Yes - Test 3 - Does air horn operate?

**TEST 3 - Does air horn operate?**

1. Start engine, (WP 0053) and allow air pressure to build.
2. Check air horn for proper operation.



*Figure 3.*

3. Turn engine off. (WP 0066)

**CONDITION/INDICATION**

Does air horn operate?

**DECISION**

No - Notify Supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**



**OPERATOR MAINTENANCE  
ARCTIC ENGINE HEATER FAILS TO OPERATE**

---

**INITIAL SETUP:****Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

**TROUBLESHOOTING PROCEDURE  
ARCTIC ENGINE HEATER FAILS TO OPERATE**

**TEST 1 - Is fuel present in fuel tank?**

1. Turn engine start switch ON. (WP 0021)
2. Check fuel gauge for presence of fuel.



*Figure 1.*

3. Turn engine start switch OFF.
4. Add fuel to fuel tank if no fuel present.

#### **CONDITION/INDICATION**

Is fuel present in fuel tank?

#### **DECISION**

No - Test 3 - Does arctic heater operate?

Yes - Test 2 - Are arctic heater intake port and exhaust tube free from blockage?

#### **TEST 2 - Are arctic heater intake port and exhaust tube free from blockage?**

1. Inspect arctic heater inlet port and exhaust tube for foreign objects and obstructions. Remove any items found.

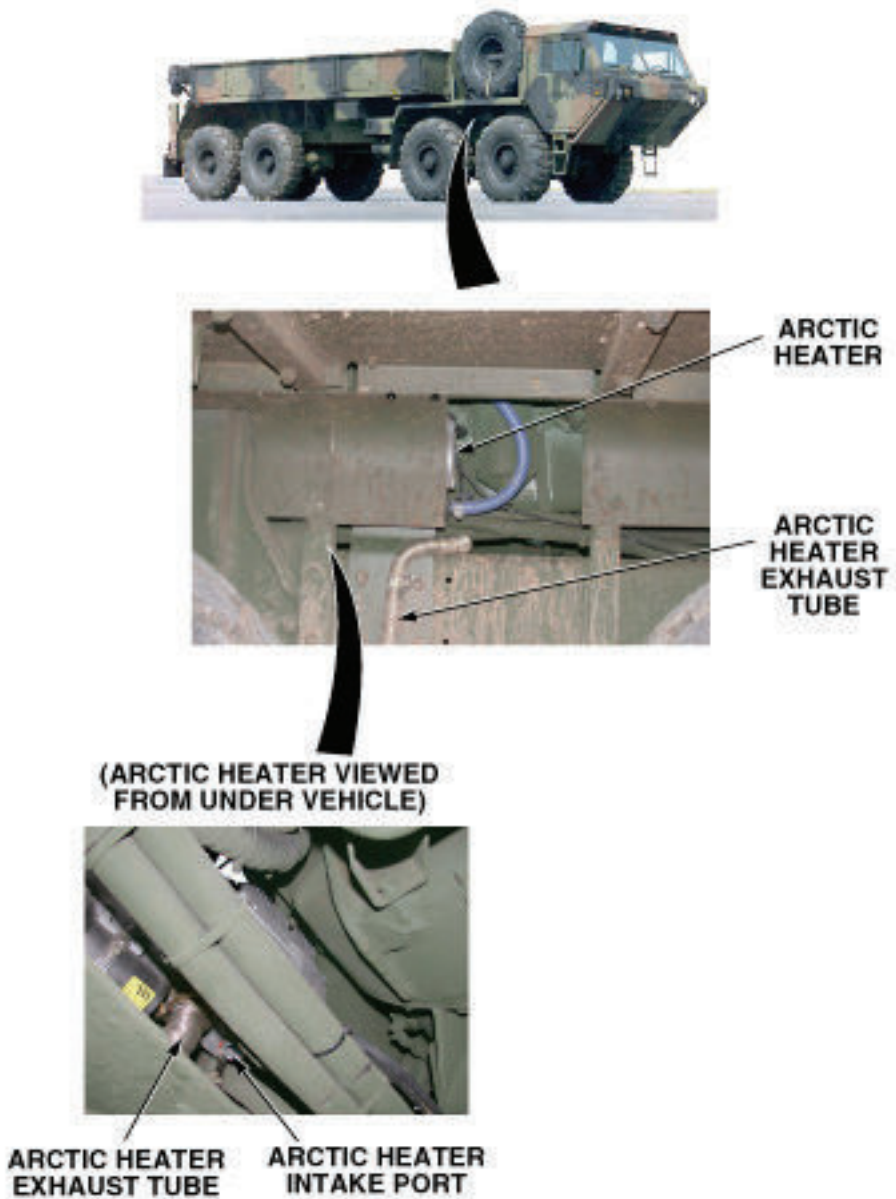


Figure 2.

**CONDITION/INDICATION**

Are arctic heater intake port and exhaust tube free from blockage?



**DECISION**

-  
Continue - Test 3 - Does arctic heater operate?

**TEST 3 - Does arctic heater operate?****CAUTION**

Do not attempt to operate arctic heater if arctic heater fails to start, or shutdown occurs during normal operation. System shutdown may indicate an arctic heater system fault. Failure to comply may cause system lockout.

**CAUTION**

Do not operate arctic heater if arctic heater indicator light flashes during normal operation. Arctic heater indicator light flashing indicates an arctic heater system fault. Failure to comply may cause system lockout.

**NOTE**

If arctic heater does not operate, arctic heater may be in lockout mode due to, either too many overheat occurrences (code 15), or too many start attempts (code 50). Arctic heater lockout mode (code 50) is activated if arctic heater fails to start after 20 successive start attempts (10 start cycles in succession).

**NOTE**

The arctic heater will attempt to start two times per start cycle. After the second failed start attempt, the arctic heater will not operate until the arctic heater on/off switch is turned off, then back on.

**NOTE**

Audible clicking from the arctic heater fuel metering pump may indicate that the arctic heater fuel system isn't primed. If audible clicking is heard from the arctic heater fuel metering pump, repeat steps (1) through (4) four times, or until arctic heater starts. Do not attempt to start arctic heater more than five times. The arctic heater should prime itself within nine start attempts.

1. Turn arctic heater ON. (WP 0069)
2. Observe arctic heater indicator light for steady illumination.
3. Observe arctic heater for proper operation.



*Figure 3.*

4. Turn arctic heater on/off switch OFF.

**CONDITION/INDICATION**

Does arctic heater operate?

**DECISION**

No - Notify Supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**



---

**OPERATOR MAINTENANCE  
ONE OR MORE LIGHTING CIRCUITS NOT OPERATING**

---

**INITIAL SETUP:**

**Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

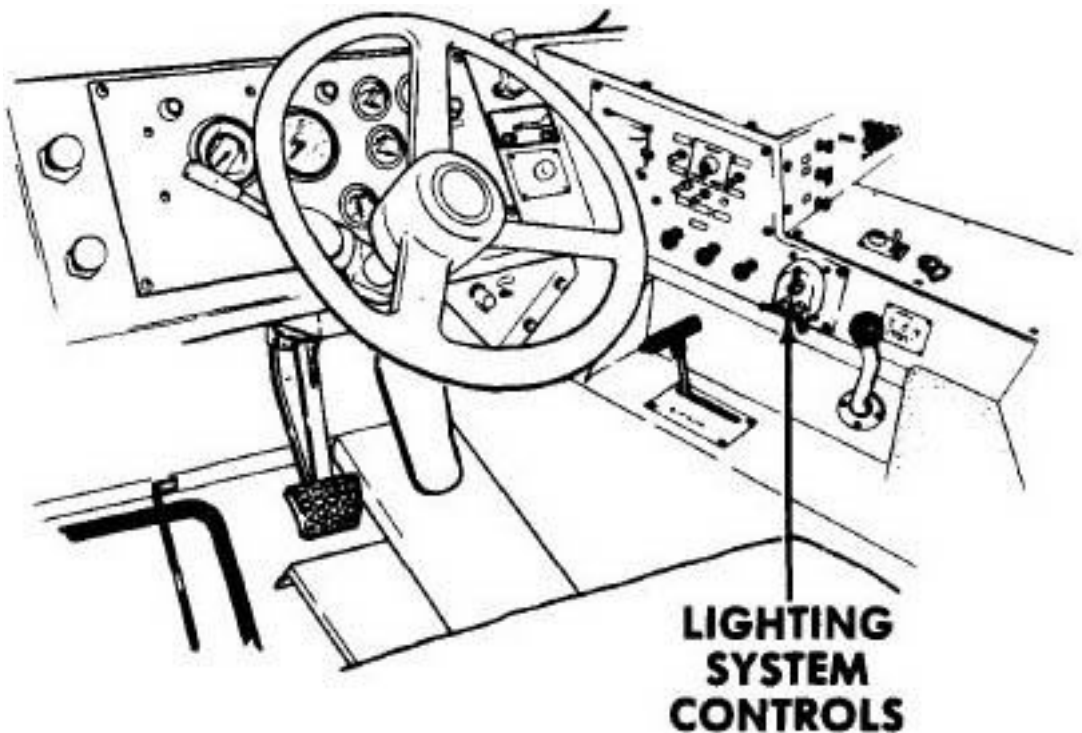
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**TROUBLESHOOTING PROCEDURE**

**ONE OR MORE LIGHTING CIRCUITS NOT OPERATING**

**TEST 1 - Is the lighting system control in the ON or OPERATING position?**

1. Check if lighting system control is ON or in OPERATING position.



*Figure 1.*

**CONDITION/INDICATION**

Is the lighting system control in the ON or OPERATING position?

**DECISION**

No - Test 3 - Do all lighting circuits operate properly?

Yes - Test 2 - Is intervehicular connection secure and/or connected correctly?

**TEST 2 - Is intervehicular connection secure and/or connected correctly?**

1. If trailer is attached, and trailer lighting system is not working, check intervehicular connection.
2. If trailer lights are the problem, make sure cable is securely connected.

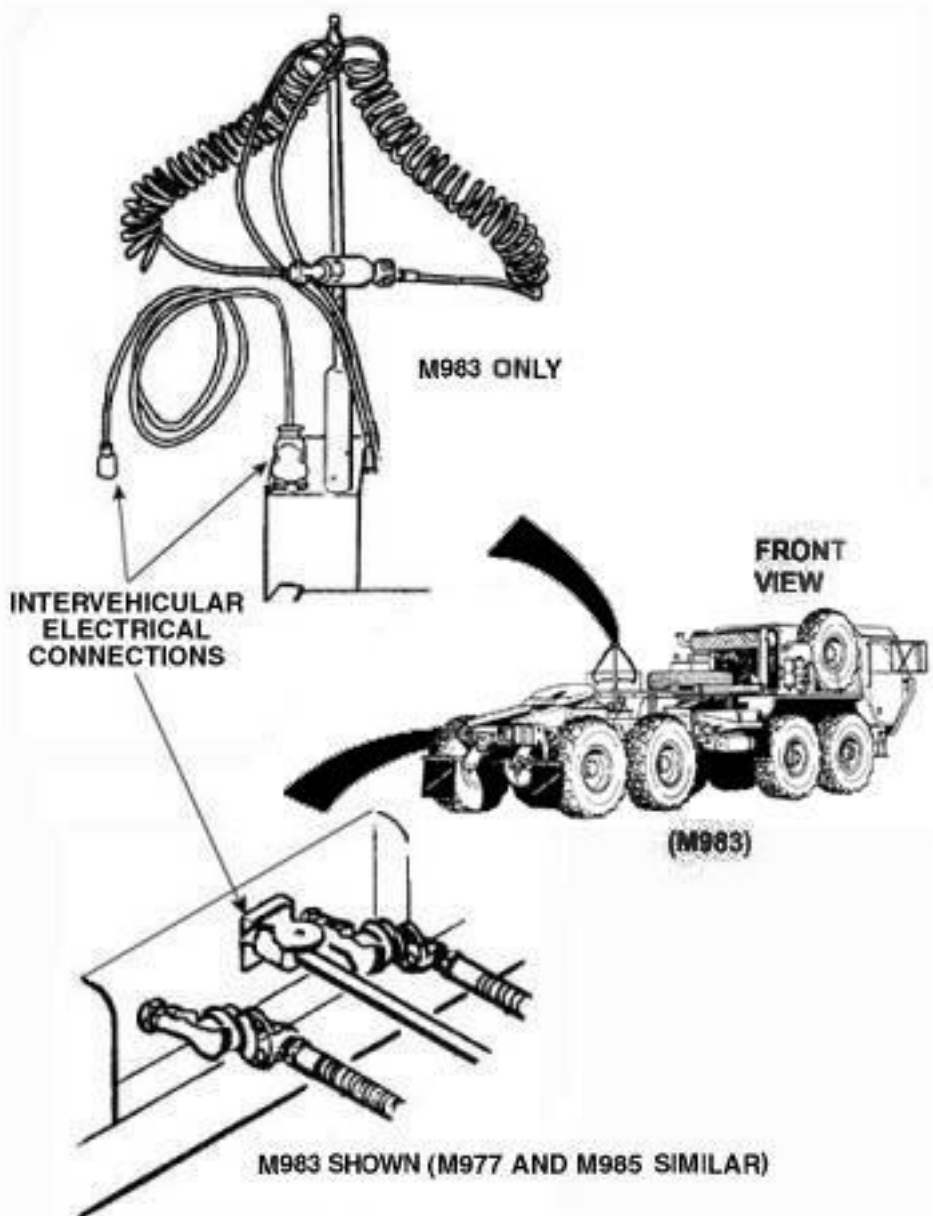


Figure 2.

**CONDITION/INDICATION**

Is intervehicular connection secure and/or connected correctly?

**DECISION**

Intervehicular cable loose. - Test 3 - Do all lighting circuits operate properly? Notify Supervisor.

Intervehicular connection OK. - Notify Supervisor.

**TEST 3 - Do all lighting circuits operate properly?**

1. Check for proper operation of dome lights. (WP 0077)
2. Check for proper operation of panel lights. (WP 0078)
3. Check for proper operation of service drive lights. (WP 0080)
4. Check for proper operation of parking lights. (WP 0079)
5. Check for proper operation of clearance lights. (WP 0082)
6. Check for proper operation of stoplight. (WP 0081)
7. Check for proper operation of worklights. (WP 0085)
8. Check for proper operation of blackout drive lights. (WP 0083)
9. Check for proper operation of blackout marker lights. (WP 0084)
10. Check for proper operation of turn signal lights. (WP 0087)

**CONDITION/INDICATION**

Do all lighting circuits operate properly?

**DECISION**

No - Notify Supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE**  
**FAILS TO CRANK WHEN ENGINE START SWITCH IS TURNED TO START POSITION**

---

**INITIAL SETUP:**

**Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

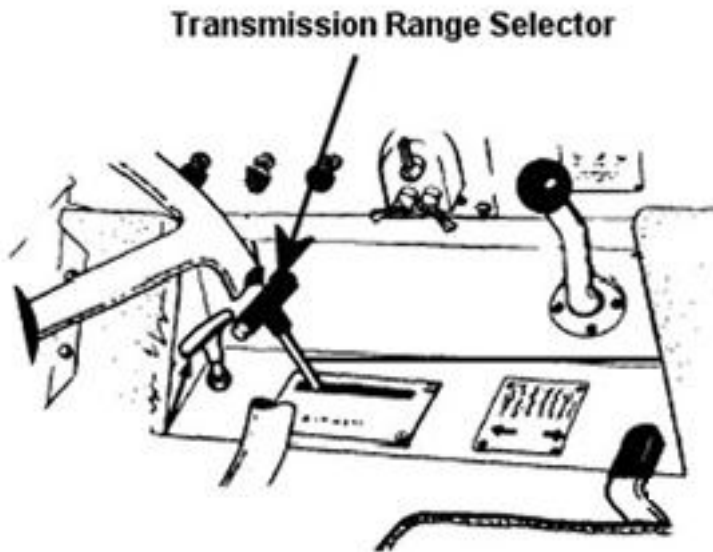
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**TROUBLESHOOTING PROCEDURE**

**FAILS TO CRANK WHEN ENGINE START SWITCH IS TURNED TO START POSITION**

**TEST 1 - Is transmission range selector in neutral (N)?**

1. Verify range selector is in neutral (N) position. If not in neutral (N), shift it to neutral (N).



*Figure 1.*

**CONDITION/INDICATION**

Is transmission range selector in neutral (N)?



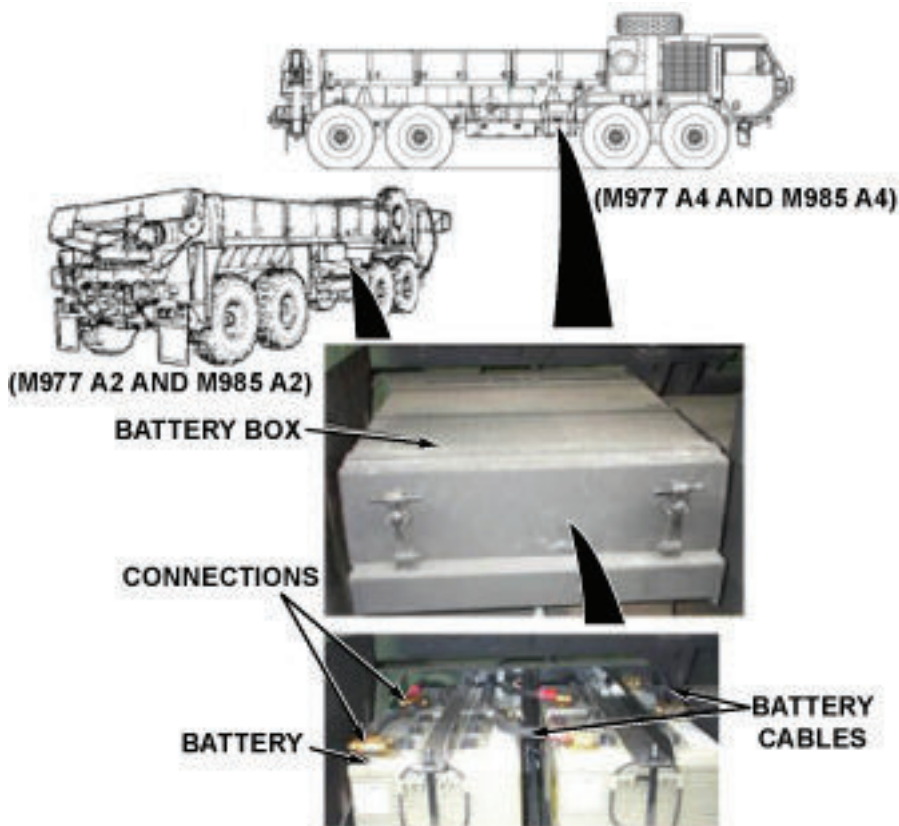
**DECISION**

No - Test 3 - Does engine crank when engine start switch is turned to start position?

Yes - Test 2 - Are battery cable connections clean, tight, and free from damage?

**TEST 2 - Are battery cable connections clean, tight, and free from damage?**

1. Remove battery box cover. (WP 0162)
2. Check battery cable connections for dirt, corrosion and/or looseness.



*Figure 2.*

3. Check battery cables for damage.

**CONDITION/INDICATION**

Are battery cable connections clean, tight, and free from damage?

**DECISION**

No - Notify Supervisor.

Yes - Test 3 - Does engine crank when engine start switch is turned to start position?

**TEST 3 - Does engine crank when engine start switch is turned to start position?**

1. Install battery box cover. (WP 0162)
2. Attempt to start engine. (WP 0053)

**CONDITION/INDICATION**

Does engine crank when engine start switch is turned to start position?

**DECISION**

No - Notify Supervisor.  
Yes - Problem corrected.

**END OF WORK PACKAGE**



**OPERATOR MAINTENANCE  
CRANKS BUT FAILS TO START**

---

**INITIAL SETUP:****Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

**TROUBLESHOOTING PROCEDURE  
CRANKS BUT FAILS TO START**

**TEST 1 - Does fuel gauge indicate the presence of fuel?**

1. Turn engine start switch ON. (WP 0021)
2. Check fuel gauge for indication of fuel presence.



*Figure 1.*

3. Turn engine start switch OFF. (WP 0021)
4. If fuel gauge indicated no fuel present, add fuel to fuel tank.

#### **CONDITION/INDICATION**

Does fuel gauge indicate the presence of fuel?

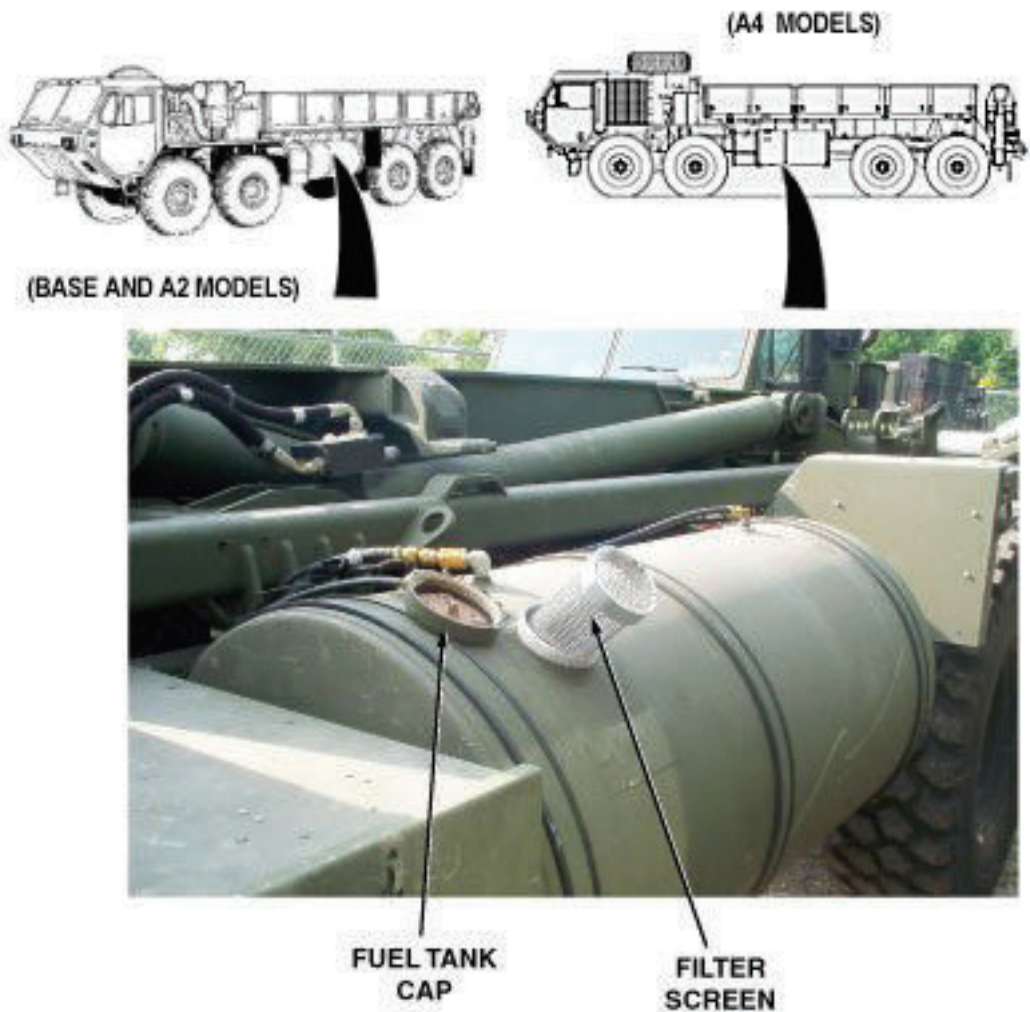
#### **DECISION**

No - Test 5 - Does engine start?

Yes - Test 2 - Is there fuel present in fuel tank?

#### **TEST 2 - Is there fuel present in fuel tank?**

1. Remove fuel tank cap and filter screen from fuel tank.



*Figure 2.*

2. Check fuel tank for presence of fuel.
3. Add fuel to fuel tank if no fuel was present.
4. Replace filter screen and fuel tank cap on fuel tank.

#### **CONDITION/INDICATION**

Is there fuel present in fuel tank?

#### **DECISION**

No - Test 5 - Does engine start?  
Yes - Test 3 - Is air filter restricted?

**TEST 3 - Is air filter restricted?**

1. Attempt to start engine and note indication on air filter restriction indicator.



*Figure 3.*

**CONDITION/INDICATION**

Is air filter restricted?

**DECISION**

Restricted - Test 4 - Does air filter restriction indicator showed yellow and/or VACUUM INCHES H<sub>2</sub>O window shows less than 18 after servicing air filter?

Not Restricted - Test 5 - Does engine start?

**TEST 4 - Does air filter restriction indicator showed yellow and/or VACUUM INCHES H2O window shows less than 18 after servicing air filter?**

1. Service air filter. (WP 0160)
2. Attempt to start engine and note indication on air filter restriction indicator.



*Figure 4.*

**CONDITION/INDICATION**

Does air filter restriction indicator showed yellow and/or VACUUM INCHES H2O window shows less than 18 after servicing air filter?

**DECISION**

Restricted - Notify Supervisor.

Not Restricted - Test 5 - Does engine start?



**TEST 5 - Does engine start?**

1. Attempt to start engine. (WP 0053)

**CONDITION/INDICATION**

Does engine start?

**DECISION**

No. - Notify Supervisor.  
Yes. - Problem corrected.

**END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE**  
**STARTS OR RUNS ROUGHLY AFTER PROPER WARM-UP, DOES NOT MAKE FULL**  
**POWER, OR MAKES EXCESSIVE EXHAUST SMOKE**

---

**INITIAL SETUP:**

**Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

**TROUBLESHOOTING PROCEDURE**

**STARTS OR RUNS ROUGHLY AFTER PROPER WARM-UP, DOES NOT MAKE FULL**  
**POWER, OR MAKES EXCESSIVE EXHAUST SMOKE**

**TEST 1 - Is PTO engaged?**

1. Start engine and allow engine to reach normal operating temperature. (WP 0053)
2. Check PTO ENGAGE switch and PTO ENGAGE indicator to make sure that PTO is disengaged. Light should be off.

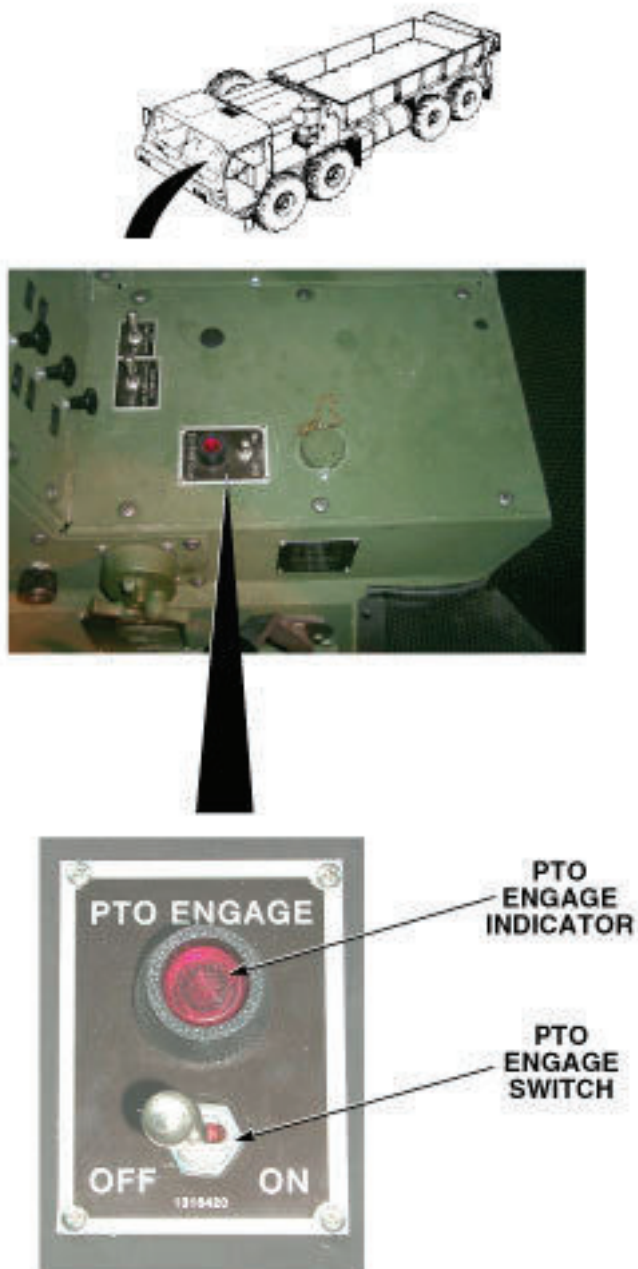


Figure 1.

**CONDITION/INDICATION**

Is PTO engaged?

**DECISION**

PTO engaged. - Test 4 - Does engine start or run roughly after proper warm-up, and/or does not make full power or makes excessive exhaust smoke?

PTO disengaged. - Test 2 - Does air filter restriction indicator show red and/or VACUUM INCHES H2O window show 18 or more after being reset?

**TEST 2 - Does air filter restriction indicator show red and/or VACUUM INCHES H2O window show 18 or more after being reset?**

1. Reset air filter restriction indicator.
2. Start engine. (WP 0053)
3. Check if air filter restriction indicator is red and/or VACUUM INCHES H2O window shows 18 or more.



*Figure 2.*

### **CONDITION/INDICATION**

Does air filter restriction indicator show red and/or VACUUM INCHES H<sub>2</sub>O window show 18 or more after being reset?

### **DECISION**

Restricted. - Test 3 - Does air filter restriction indicator show red and/or VACUUM INCHES H<sub>2</sub>O window show 18 or more after being cleaned?

Not restricted. - Test 4 - Does engine start or run roughly after proper warm-up, and/or does not make full power or makes excessive exhaust smoke?

**TEST 3 - Does air filter restriction indicator show red and/or VACUUM INCHES H2O window show 18 or more after being cleaned?**

1. Turn engine OFF. (WP 0066)
2. Clean air filter. (WP 0160)
3. Start engine. (WP 0053)
4. Check if air filter restriction indicator is red and/or VACUUM INCHES H2O window shows 18 or more.



*Figure 3.*

**CONDITION/INDICATION**

Does air filter restriction indicator show red and/or VACUUM INCHES H2O window show 18 or more after being cleaned?

**DECISION**

Restricted. - Notify Supervisor.

Not restricted. - Test 4 - Does engine start or run roughly after proper warm-up, and/or does not make full power or makes excessive exhaust smoke?

**TEST 4 - Does engine start or run roughly after proper warm-up, and/or does not make full power or makes excessive exhaust smoke?**

1. Test drive vehicle.

**CONDITION/INDICATION**

Does engine start or run roughly after proper warm-up, and/or does not make full power or makes excessive exhaust smoke?

**DECISION**

Runs rough. - Notify Supervisor.

Runs normal. - Problem corrected.

**END OF WORK PACKAGE**

---

## OPERATOR MAINTENANCE ENGINE OVERHEATS

---

### INITIAL SETUP:

#### Equipment Condition

Engine OFF. (WP 0066)

#### Equipment Condition - Continued

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

### TROUBLESHOOTING PROCEDURE ENGINE OVERHEATS

#### TEST 1 - Are right-side radiator hoses and housing free from leaks?

#### WARNING



Radiator coolant hoses are very hot and pressurized during vehicle operation. Allow radiator to cool prior to checking hoses. Failure to comply may result in injury or death to personnel.

1. Open driver and passenger side engine covers. (WP 0163)
2. Check upper and lower radiator hoses and housing for leaks.
3. Check that all clamps are tight and secure.



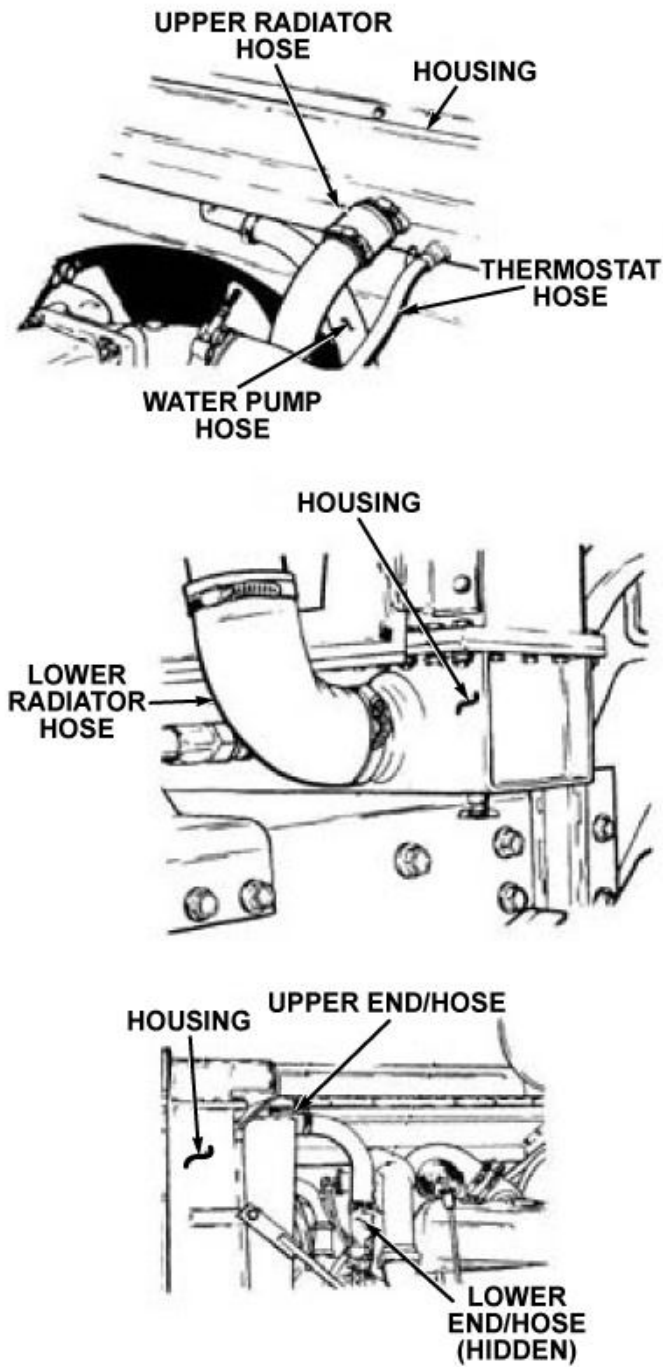


Figure 1.

**CONDITION/INDICATION**

Are right-side radiator hoses and housing free from leaks?

**DECISION**

Radiator hoses and/or housing damaged. - Notify Supervisor. Test 2 - Does engine overheat? Notify Supervisor.

Radiator hoses and/or housing free from damage and/or leaks. - Notify Supervisor.

**TEST 2 - Does engine overheat?**

1. Close driver and passenger side engine covers. (WP 0163)
2. Test drive vehicle.

**CONDITION/INDICATION**

Does engine overheat?

**DECISION**

Engine overheats - Notify Supervisor.

Engine OK - Problem corrected.

**END OF WORK PACKAGE**



---

**OPERATOR MAINTENANCE  
LOW OIL PRESSURE GAUGE INDICATION**

---

**INITIAL SETUP:**

**Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

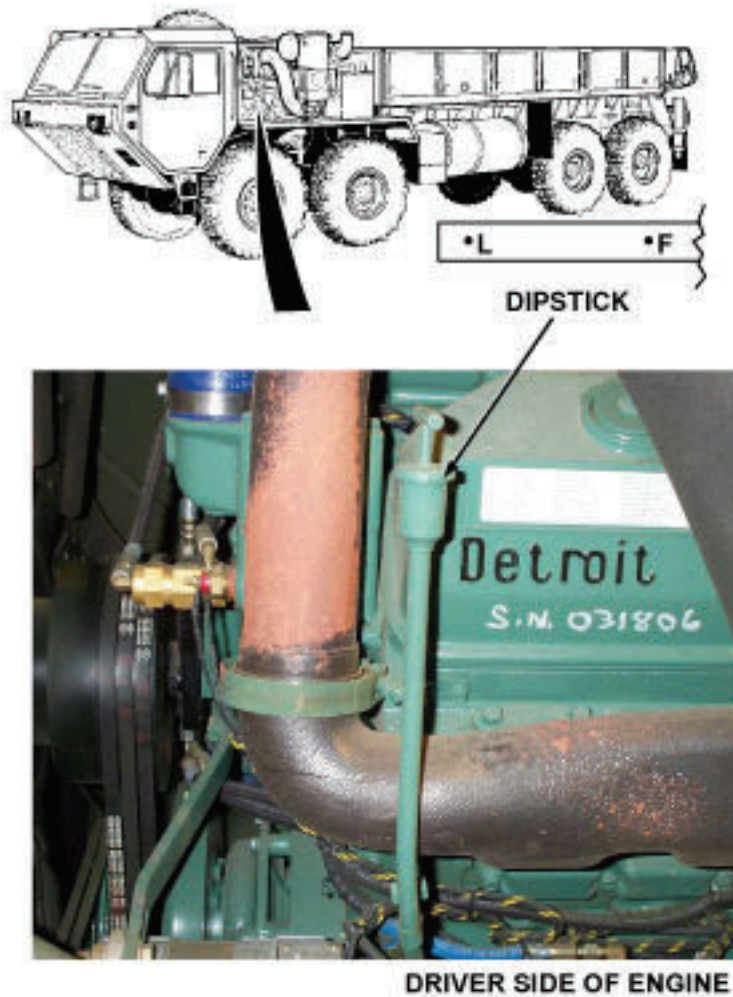
Wheels chocked. (WP 0089)

---

**TROUBLESHOOTING PROCEDURE  
LOW OIL PRESSURE GAUGE INDICATION**

**TEST 1 - Is engine oil level low?**

1. Check engine oil level. (WP 0150)



*Figure 1.*

2. If oil level is low, fill oil to proper level. (WP 0150)

**CONDITION/INDICATION**

Is engine oil level low?

**DECISION**

-

Continue - Test 2 - Is engine oil pressure still low?

**TEST 2 - Is engine oil pressure still low?**

1. Start engine and allow engine to reach operating temperature. (WP 0053)
2. Check OIL PRESS gauge. Gauge should read as follows:
  - At idle, oil pressure can go as low as 5 psi (34 kPa).
  - Normal operation range is 40 psi to 60 psi (276 to 414 kPa) between engine speeds 1800 to 2100 rpm. Minimum for safe operation is 30 psi (207 kPa).

**CONDITION/INDICATION**

Is engine oil pressure still low?

**DECISION**

Oil pressure low. - Notify Supervisor.

Oil pressure OK. - Problem corrected.

**END OF WORK PACKAGE**



---

## OPERATOR MAINTENANCE EXCESSIVE OIL CONSUMPTION

---

### INITIAL SETUP:

#### Equipment Condition

Engine OFF. (WP 0066)

#### Equipment Condition - Continued

Parking brakes applied. (WP 0065)

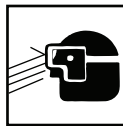
Wheels chocked. (WP 0089)

---

### TROUBLESHOOTING PROCEDURE EXCESSIVE OIL CONSUMPTION

#### TEST 1 - Are engine oil lines loose?

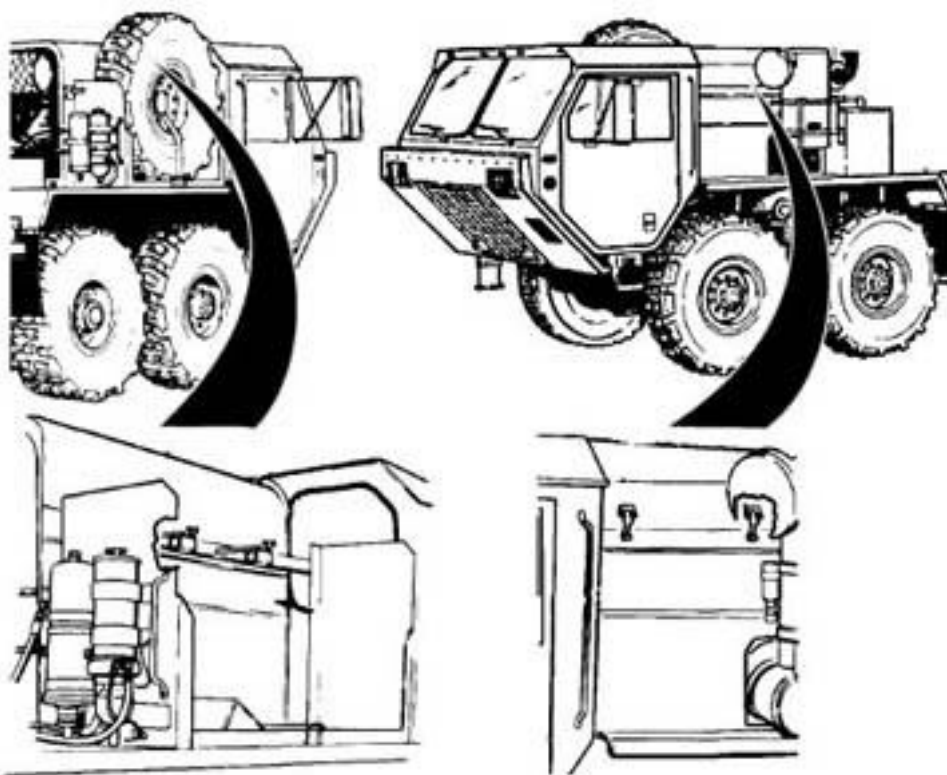
#### WARNING



Caution the oil lines could be under pressure be sure to wear the proper eye protection to avoid personal injury.

1. Open driver and passenger side engine covers. (WP 0163)





*Figure 1.*

2. Check for loose engine oil lines or damaged components.

#### **CONDITION/INDICATION**

Are engine oil lines loose?

#### **DECISION**

Lines Loose - Notify Supervisor.

Lines OK - Test 2 - Are any engine oil leaks present?

#### **TEST 2 - Are any engine oil leaks present?**

1. Tighten any loose fittings/components if found.
2. Visually check for engine oil leaks.

#### **CONDITION/INDICATION**

Are any engine oil leaks present?

**DECISION**

Leaks found. - Notify Supervisor.

No leaks found. - Notify Supervisor.

**END OF WORK PACKAGE**



---

**OPERATOR MAINTENANCE**  
**HYDRAULIC SYSTEM OPERATES TOO SLOW, TOO FAST, WITH JERKY**  
**MOVEMENTS; OR ONE OR MORE HYDRAULICS CIRCUITS WILL NOT OPERATE**

---

**INITIAL SETUP:**

**Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

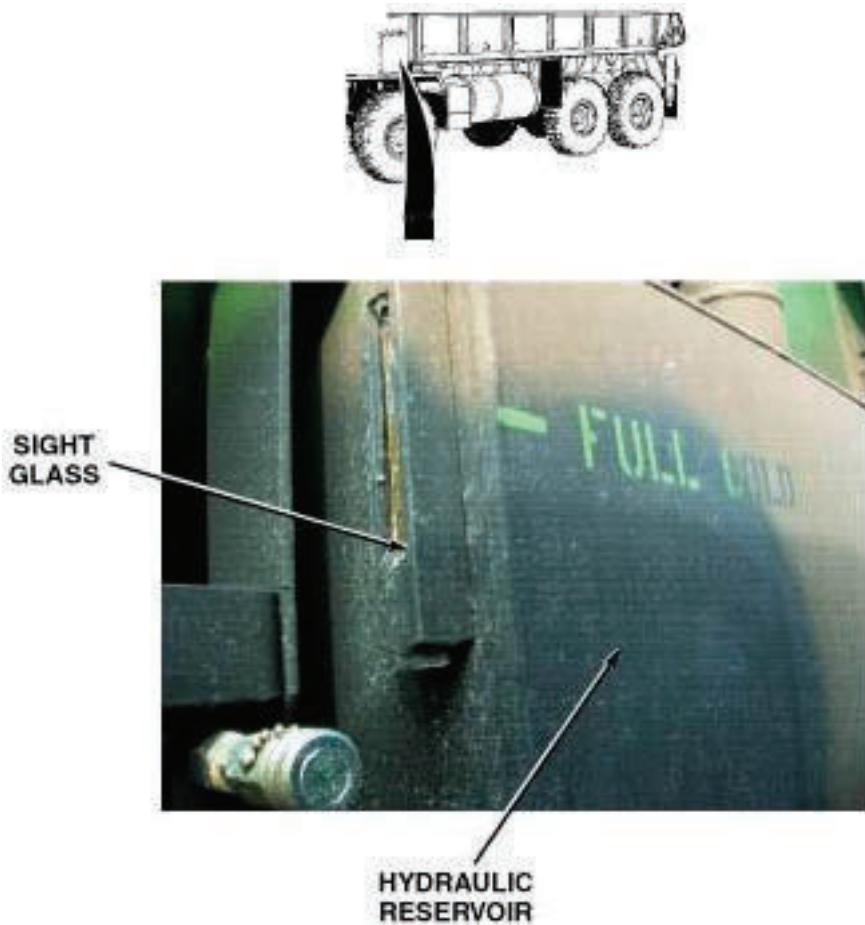
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**TROUBLESHOOTING PROCEDURE**

**HYDRAULIC SYSTEM OPERATES TOO SLOW, TOO FAST, WITH JERKY**  
**MOVEMENTS; OR ONE OR MORE HYDRAULICS CIRCUITS WILL NOT OPERATE**

**TEST 1 - Is hydraulic fluid level within normal operating range?**

1. Check hydraulic fluid level. If low, add hydraulic fluid. (WP 0150)



*Figure 1.*

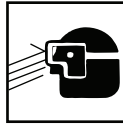
#### **CONDITION/INDICATION**

Is hydraulic fluid level within normal operating range?

#### **DECISION**

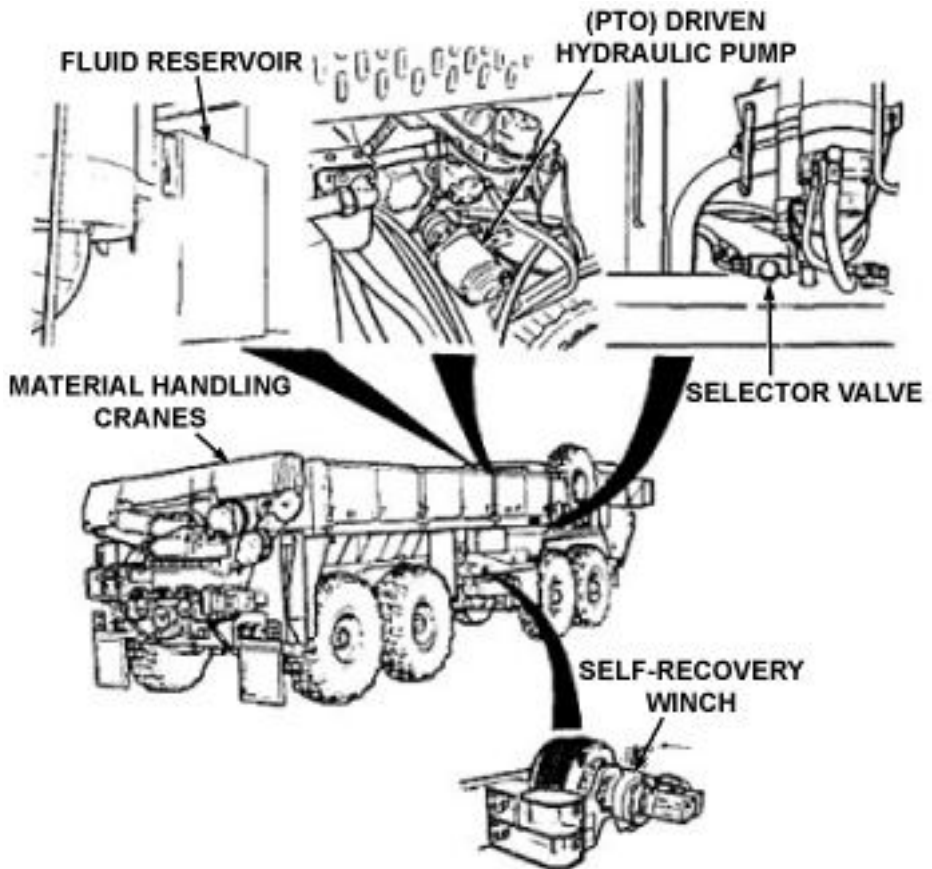
No - Test 3 - Do all hydraulic systems operate properly?

Yes - Test 2 - Are hydraulic hoses and connections free from leaks and/or damage?

**TEST 2 - Are hydraulic hoses and connections free from leaks and/or damage?****WARNING**

Caution the hydraulic system maybe under pressure be sure to wear the proper eye protection to avoid personal injury.

1. Check hydraulic hoses and connections for leaks and/or damage.



*Figure 2.*

2. Attempt to tighten loose hose(s) and/or connection(s).

**CONDITION/INDICATION**

Are hydraulic hoses and connections free from leaks and/or damage?

**DECISION**

Hydraulic hose or connection damaged. - Notify Supervisor. Test 3 - Do all hydraulic systems operate properly? Notify Supervisor.

Hydraulic hoses and connections OK. - Notify Supervisor.

**TEST 3 - Do all hydraulic systems operate properly?**

1. Start engine. (WP 0053)
2. Operate hydraulic systems to check for proper operation.

**CONDITION/INDICATION**

Do all hydraulic systems operate properly?

**DECISION**

No - Notify Supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**

**OPERATOR MAINTENANCE  
SELF-RECOVERY WINCH DOES NOT WORK**

---

**INITIAL SETUP:****Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

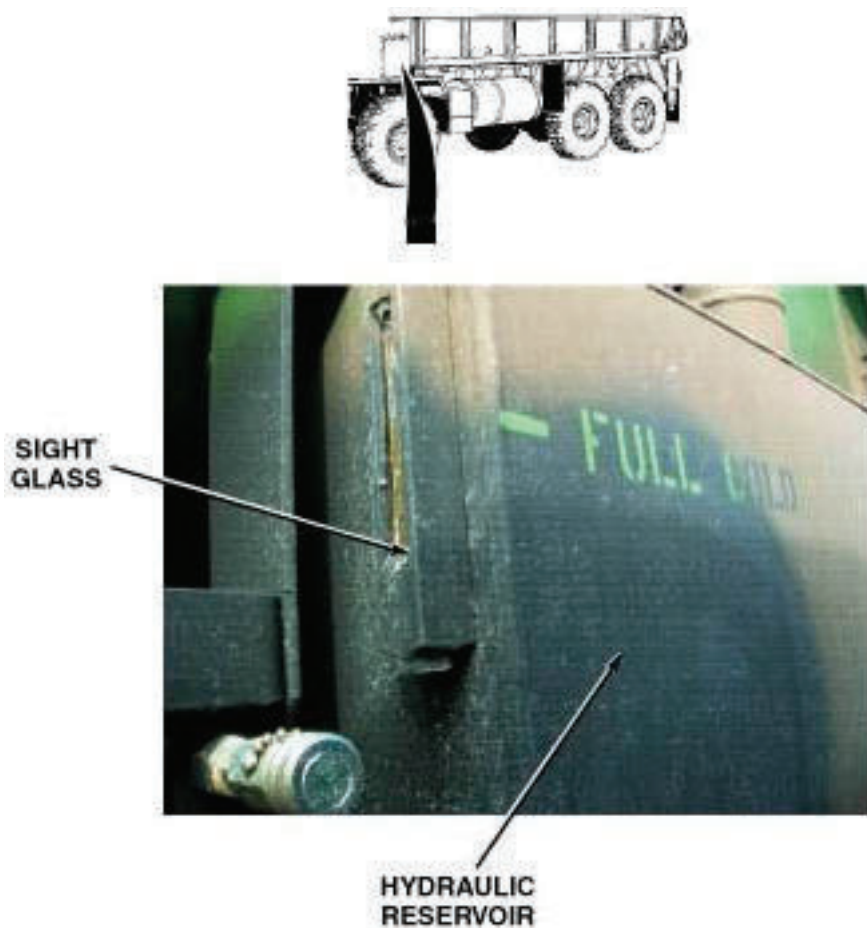
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**TROUBLESHOOTING PROCEDURE  
SELF-RECOVERY WINCH DOES NOT WORK**

**TEST 1 - Is hydraulic fluid level within normal operating range?**

1. Check hydraulic fluid level. If low, add hydraulic fluid. (WP 0150)





*Figure 1.*

#### **CONDITION/INDICATION**

Is hydraulic fluid level within normal operating range?

#### **DECISION**

No - Test 3 - Does self-recovery winch operate properly?

Yes - Test 2 - Is self-recovery winch shift linkage free from debris and damage?

#### **TEST 2 - Is self-recovery winch shift linkage free from debris and damage?**

1. Check self-recovery winch shift linkage for debris and damage. If debris found, clean shift linkage. (WP 0157)



*Figure 2.*

**CONDITION/INDICATION**

Is self-recovery winch shift linkage free from debris and damage?

**DECISION**

Linkage damaged. - Notify Supervisor. Test 3 - Does self-recovery winch operate properly? Notify Supervisor.

Linkage OK. - Notify Supervisor.

**TEST 3 - Does self-recovery winch operate properly?**

1. Start engine. (WP 0053)
2. Check operation of self-recovery winch. (WP 0098)

**CONDITION/INDICATION**

Does self-recovery winch operate properly?

**DECISION**

No - Notify supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**



---

## OPERATOR MAINTENANCE UNUSUALLY NOISY WHEN OPERATING

---

### INITIAL SETUP:

#### Equipment Condition

Engine OFF. (WP 0066)

#### Equipment Condition - Continued

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

### TROUBLESHOOTING PROCEDURE UNUSUALLY NOISY WHEN OPERATING

#### TEST 1 - Is self-recovery winch cable free of twists, tangles, or binding?

1. Check if self-recovery winch cable is twisted, tangled, or causing drum to bind. If cable is tangled, pay out or take up cable as necessary to straighten.

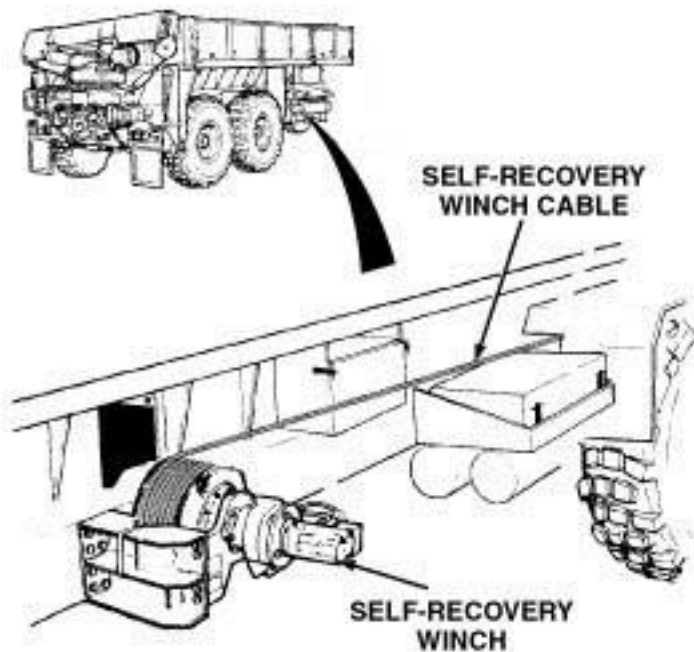


Figure 1.

**CONDITION/INDICATION**

Is self-recovery winch cable free of twists, tangles, or binding?

**DECISION**

No - Notify supervisor.

Yes - Test 2 - Is self-recovery winch free of unusual noise when operating?

**TEST 2 - Is self-recovery winch free of unusual noise when operating?**

1. Start engine. (WP 0053)



*Figure 2.*

2. Operate self-recovery winch, and listen for unusual noise. (WP 0098)

**CONDITION/INDICATION**

Is self-recovery winch free of unusual noise when operating?

**DECISION**

No - Notify supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE**  
**VEHICLE IS HARD TO STEER, SHIMMIES, WANDERS, OR PULLS TO ONE SIDE**

---

**INITIAL SETUP:**

**Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

**TROUBLESHOOTING PROCEDURE**

**VEHICLE IS HARD TO STEER, SHIMMIES, WANDERS, OR PULLS TO ONE SIDE**

**TEST 1 - Are tires inflated to proper pressure for road condition?**

**WARNING**

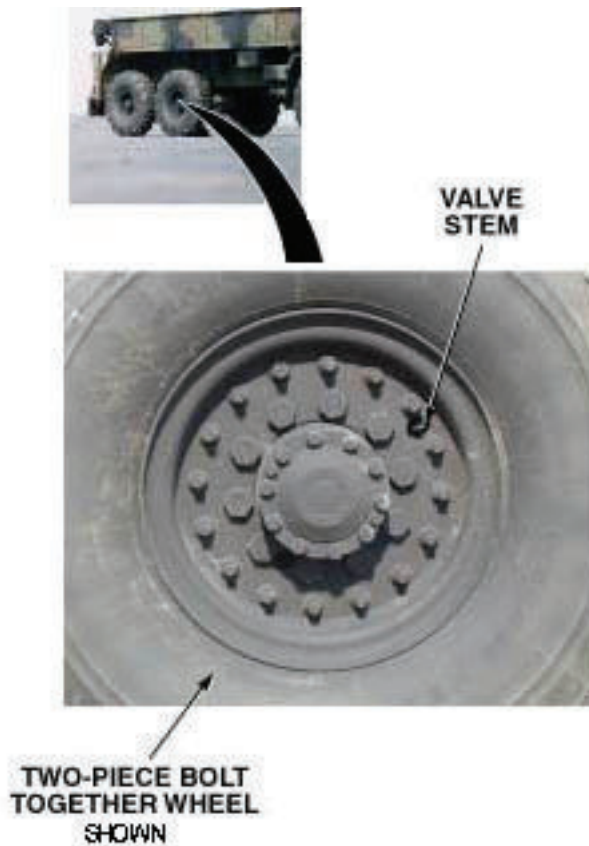


Tire air pressure must be checked properly. Failure to comply may result in injury or death to personnel.

**NOTE**

- Inflate tires only when they are cool. Inflate to proper pressure for road condition.
- Tire tread is non-directional. Vehicle operation is not affected by direction of traction bars.

1. Check tires for proper inflation. (WP 0148)



*Figure 1.*

2. If tires are improperly inflated, inflate or deflate tires to proper pressure.

#### **CONDITION/INDICATION**

Are tires inflated to proper pressure for road condition?

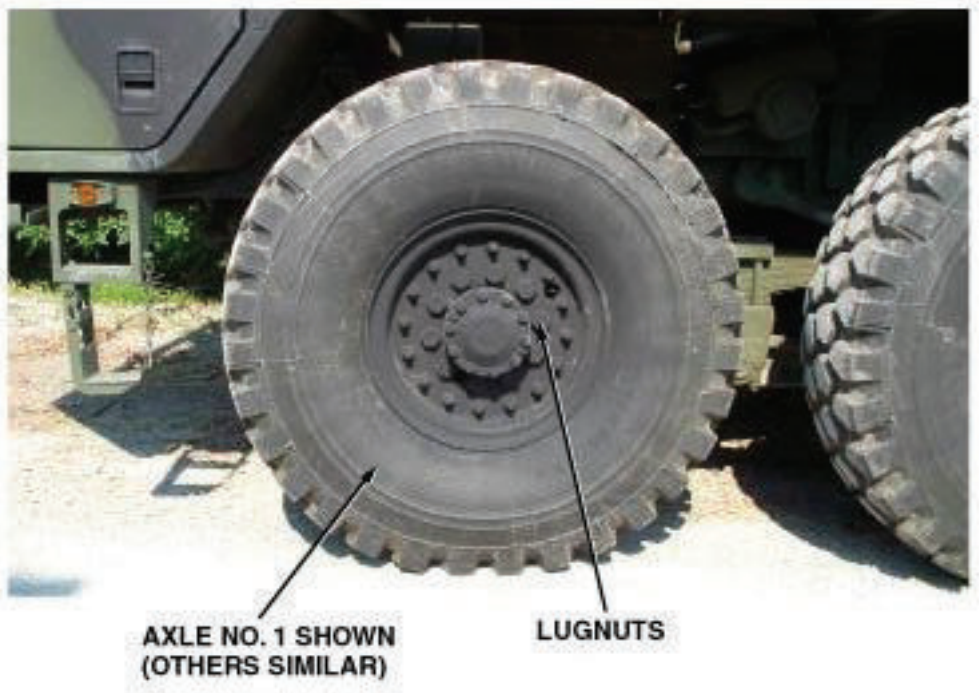
#### **DECISION**

Improperly inflated - Test 3 - Is vehicle hard to steer; or does it shimmy, wander, or pull to one side?

Inflation OK - Test 2 - Are wheels free of loose, missing, or broken lugnuts?

#### **TEST 2 - Are wheels free of loose, missing, or broken lugnuts?**

1. Check for loose, missing, or broken lugnuts.



*Figure 2.*

**CONDITION/INDICATION**

Are wheels free of loose, missing, or broken lugnuts?

**DECISION**

No - Tighten and/or replace loose, missing, or damaged lugnut(s). (WP 0158)

Yes - Notify Supervisor.

**TEST 3 - Is vehicle hard to steer; or does it shimmy, wander, or pull to one side?**

1. Start engine. (WP 0053)
2. Test drive vehicle.

**CONDITION/INDICATION**

Is vehicle hard to steer; or does it shimmy, wander, or pull to one side?



**DECISION**

No - Notify Supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**

**OPERATOR MAINTENANCE  
VEHICLE STEERING SLOW TO RESPOND OR INTERMITTENT**

---

**INITIAL SETUP:****Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

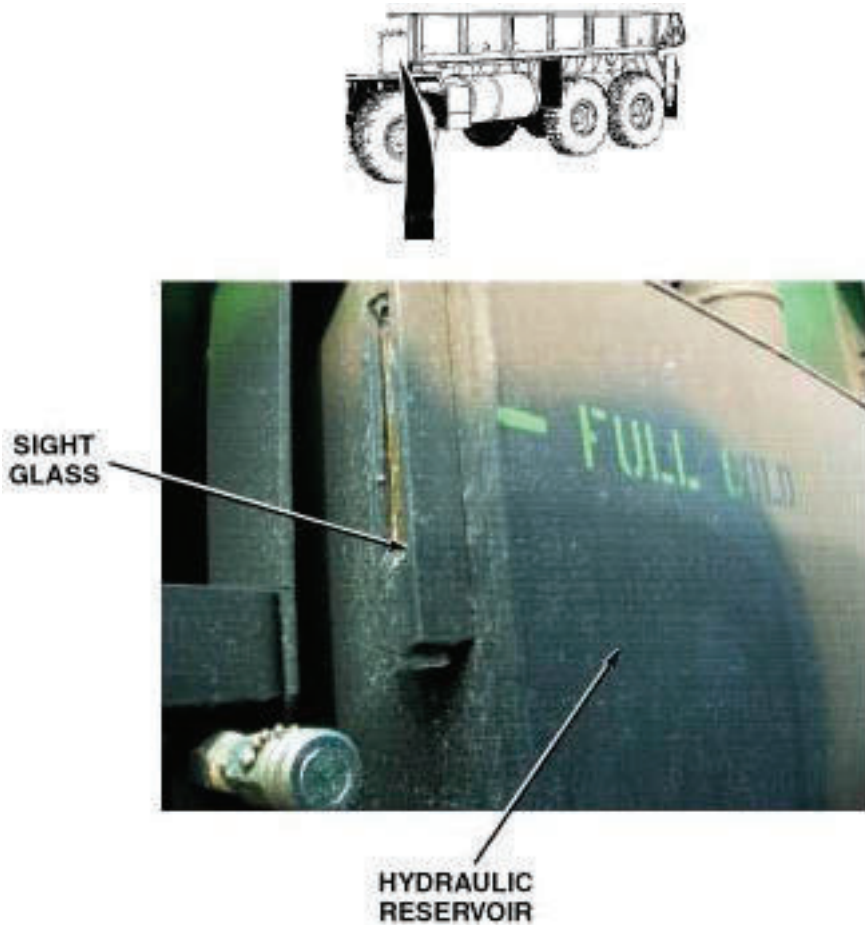
Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

**TROUBLESHOOTING PROCEDURE****VEHICLE STEERING SLOW TO RESPOND OR INTERMITTENT****TEST 1 - Is hydraulic fluid low?**

1. Check for low hydraulic fluid. (WP 0150)
2. If fluid level is low, add hydraulic fluid. (WP 0150)



*Figure 1.*

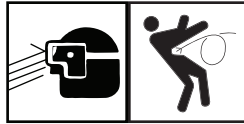
#### **CONDITION/INDICATION**

Is hydraulic fluid low?

#### **DECISION**

Fluid level low - Test 3 - Is steering slow to respond or intermittent?

Fluid level OK - Test 2 - Are there any leaking or damaged hydraulic fittings or lines?

**TEST 2 - Are there any leaking or damaged hydraulic fittings or lines?****WARNING**

Vehicles air system is pressurized, be sure to wear proper eye protection and keep face away from drain valves while draining air reservoirs. Open air drain valves slowly to prevent sudden blast of air. Failure to comply may result in injury to personnel.

1. Check for leaking or damaged hydraulic lines and/or fittings.

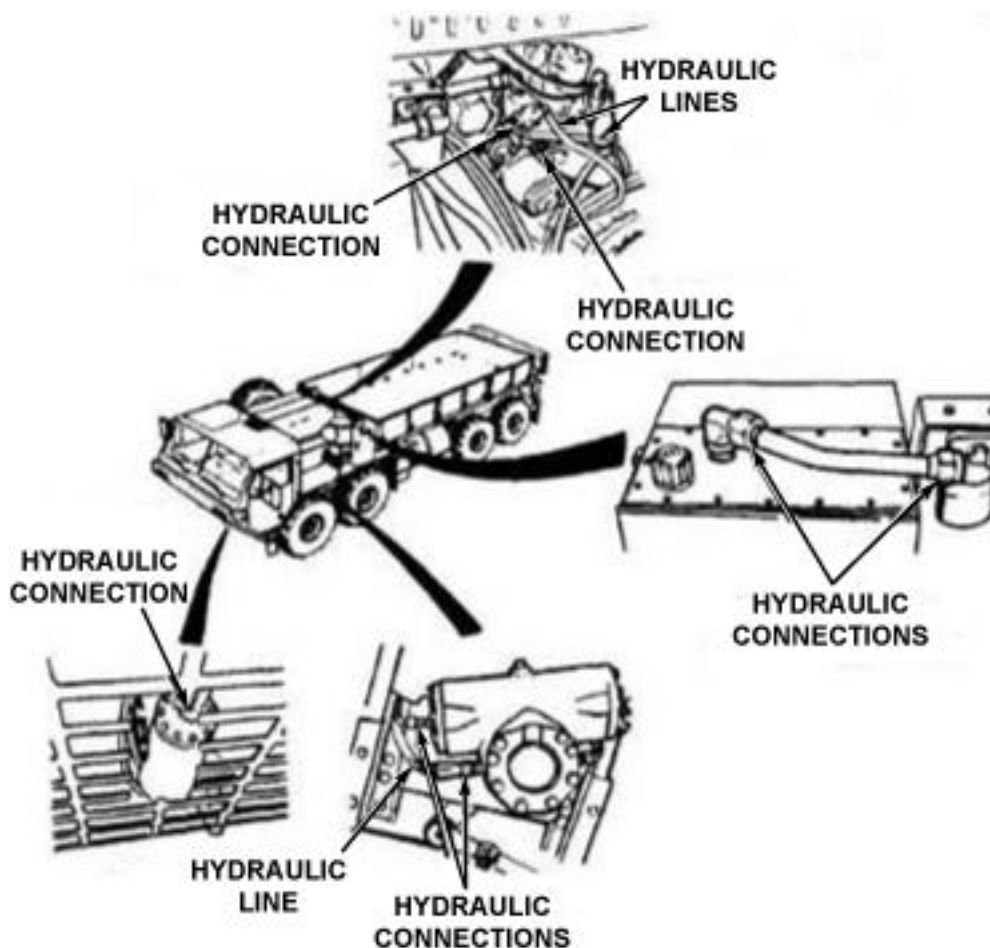


Figure 2.

2. If loose hydraulic fluid fittings are found, tighten fittings.

#### CONDITION/INDICATION

Are there any leaking or damaged hydraulic fittings or lines?

#### DECISION

Hydraulic lines damaged or leaking. - Ensure fittings are tightened and notify supervisor of faulty hydraulic lines. Tighten loose fittings. (Test 3 - Is steering slow to respond or intermittent?) Notify Supervisor.

No leaks, damaged lines or loose fittings found. - Notify Supervisor.

#### TEST 3 - Is steering slow to respond or intermittent?

1. Start engine. (WP 0053)

2. Test drive vehicle.

**CONDITION/INDICATION**

Is steering slow to respond or intermittent?

**DECISION**

Steering faulty - Notify Supervisor.

Steering OK - Problem corrected.

**END OF WORK PACKAGE**



---

## OPERATOR MAINTENANCE UNUSUALLY NOISY WHEN OPERATING

---

### INITIAL SETUP:

#### Equipment Condition

Engine OFF. (WP 0066)

#### Equipment Condition - Continued

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

### TROUBLESHOOTING PROCEDURE UNUSUALLY NOISY WHEN OPERATING

#### TEST 1 - Is transmission/transfer case free from unusual noise while operating?

1. Start engine. (WP 0053)
2. Test drive vehicle.



*Figure 1.*

#### CONDITION/INDICATION

Is transmission/transfer case free from unusual noise while operating?



**DECISION**

No - Notify supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**

---

## OPERATOR MAINTENANCE SLOW OR DIFFICULT ENGAGEMENT

---

### INITIAL SETUP:

#### Equipment Condition

Engine OFF. (WP 0066)

#### Equipment Condition - Continued

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

### TROUBLESHOOTING PROCEDURE SLOW OR DIFFICULT ENGAGEMENT

#### TEST 1 - Does transmission and/or transfer case engage normally?

1. Start engine. (WP 0053)
2. Test drive vehicle.



*Figure 1.*

#### CONDITION/INDICATION

Does transmission and/or transfer case engage normally?

**DECISION**

No - Notify Supervisor.

Yes - Problem corrected.

**END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE  
TRANSFER CASE SHIFT LEVER WILL NOT SHIFT**

---

**INITIAL SETUP:**

**Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

**TROUBLESHOOTING PROCEDURE**

**TRANSFER CASE SHIFT LEVER WILL NOT SHIFT**

**TEST 1 - Does transfer case shift lever shift when transmission is shifted from Neutral (N) to Drive (D)?**

1. Start engine (WP 0053)
2. Move transmission range selector from Neutral (N) to Drive (D). Apply throttle to roll vehicle slightly, and shift transmission from (D) to (N). As vehicle stops, shift TRANSFER CASE shift lever.

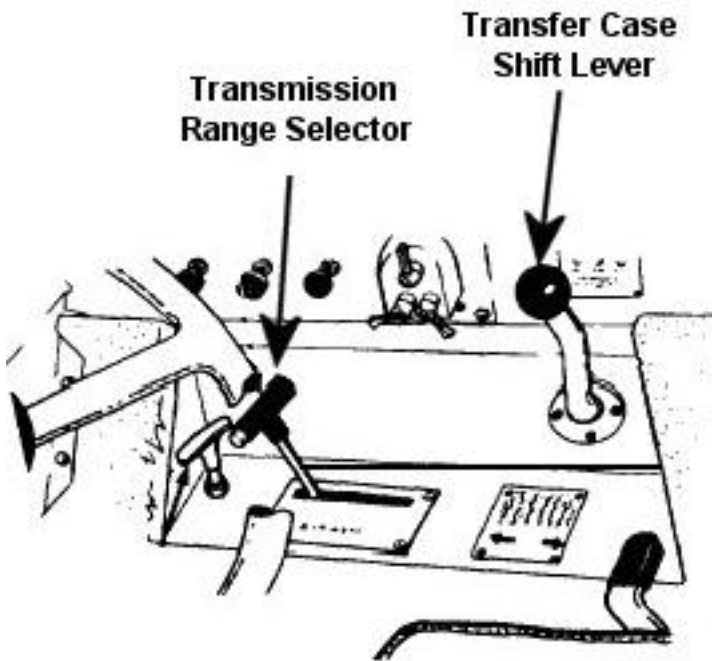


Figure 1.

#### CONDITION/INDICATION

Does transfer case shift lever shift when transmission is shifted from Neutral (N) to Drive (D)?

#### DECISION

No - Test 2 - Does transfer case shift lever shift when transmission is shifted from Neutral (N) to Reverse (R)?

Yes - Problem corrected.

#### TEST 2 - Does transfer case shift lever shift when transmission is shifted from Neutral (N) to Reverse (R)?

1. Move transmission range selector from Neutral (N) to Reverse (R). Apply throttle to roll vehicle slightly and shift transmission from R to N. As vehicle stops, shift TRANSFER CASE shift lever.

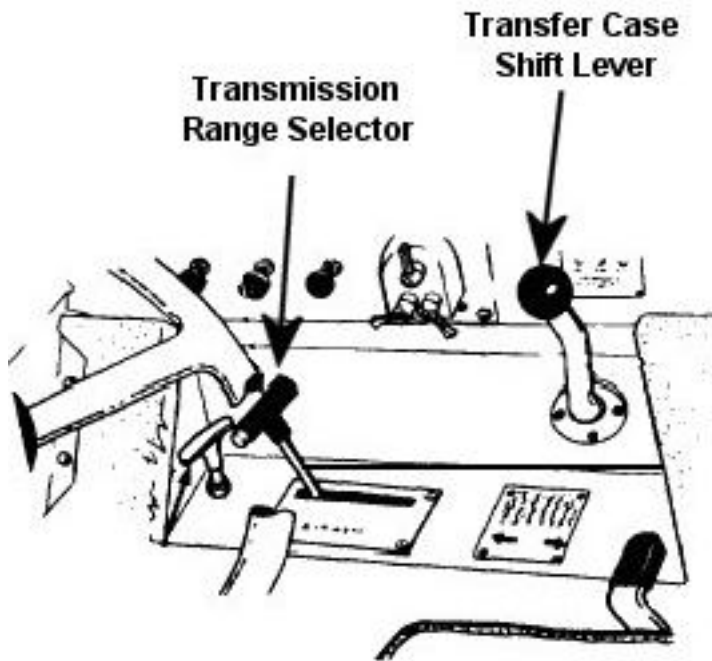


Figure 2.

### CONDITION/INDICATION

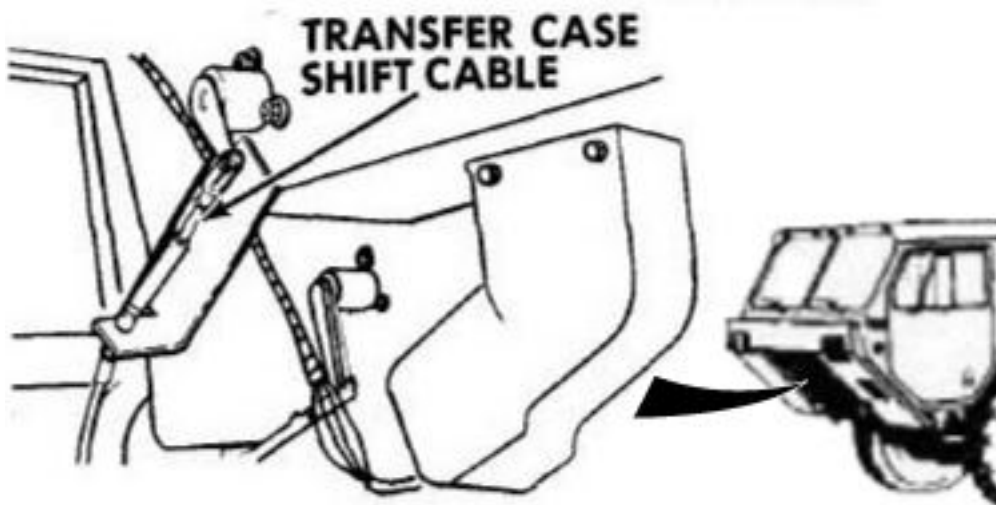
Does transfer case shift lever shift when transmission is shifted from Neutral (N) to Reverse (R)?

### DECISION

No - Test 3 - Is shift cable free of mud and debris?  
Yes - Problem corrected.

### TEST 3 - Is shift cable free of mud and debris?

1. Turn engine OFF. (WP 0066)
2. Check shift cable for mud and/or debris.

*Figure 3.*

3. If needed, clean shift cable. (WP 0157)

**CONDITION/INDICATION**

Is shift cable free of mud and debris?

**DECISION**

Dirty - Test 4 - Does transfer case shift lever shift normally?  
Clean - Notify Supervisor.

**TEST 4 - Does transfer case shift lever shift normally?**

1. Start engine. (WP 0053)
  - a. Test drive vehicle.
2. Attempt to shift transfer case. (WP 0057)

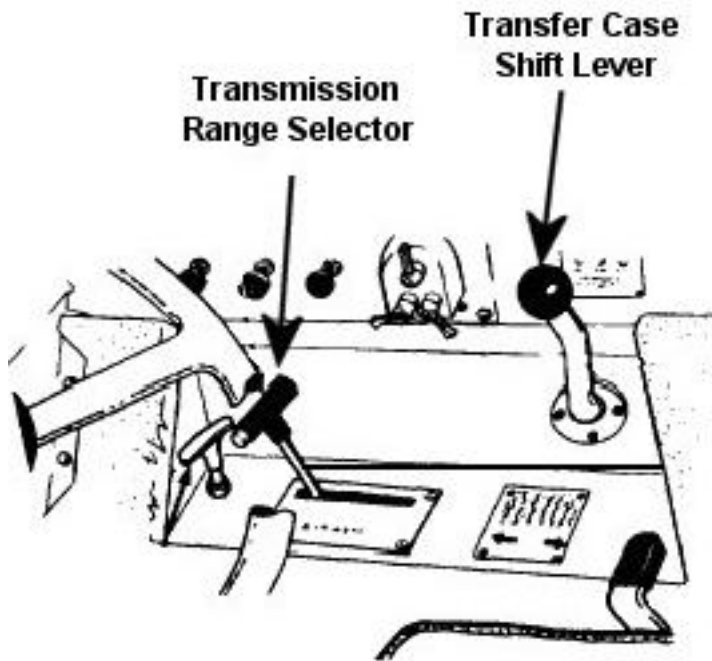


Figure 4.

3. Turn engine OFF. (WP 0066)

**CONDITION/INDICATION**

Does transfer case shift lever shift normally?

**DECISION**

No - Notify Supervisor.  
Yes - Problem corrected.

**END OF WORK PACKAGE**





---

**OPERATOR MAINTENANCE**  
**TRANS TEMP GAUGE INDICATES OVERHEATING DURING NORMAL OPERATION**

---

**INITIAL SETUP:**

**Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

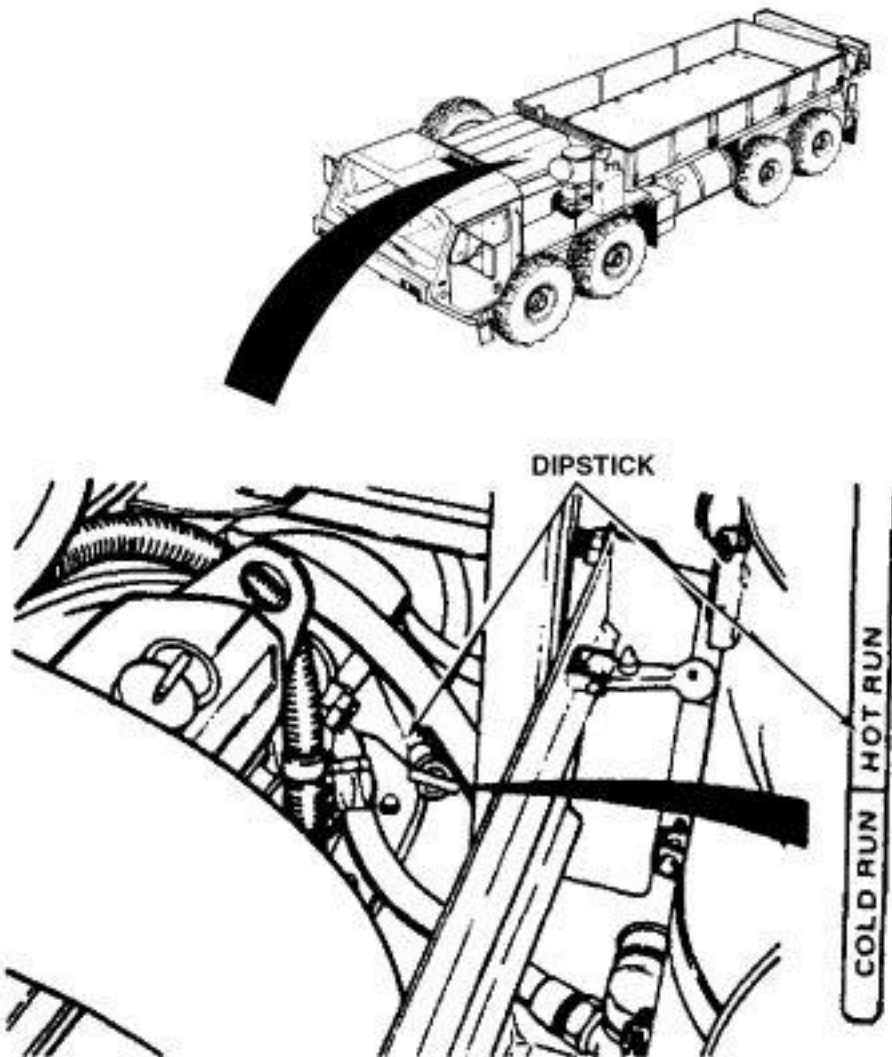
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**TROUBLESHOOTING PROCEDURE**

**TRANS TEMP GAUGE INDICATES OVERHEATING DURING NORMAL OPERATION**

**TEST 1 - Is transmission fluid at proper operating level?**

1. Check transmission fluid level. (WP 0150)



*Figure 1.*

2. If transmission fluid is low, add transmission fluid. (WP 0150)

**CONDITION/INDICATION**

Is transmission fluid at proper operating level?

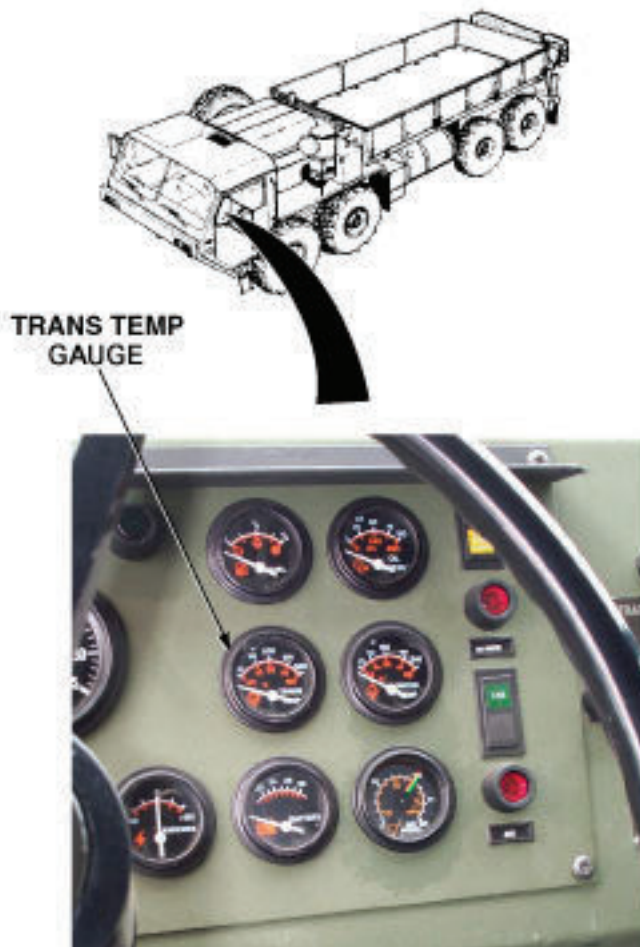
**DECISION**

Transmission fluid was high. - Notify Supervisor. Test 2 - Does TRANS TEMP gauge indicate overheating during normal operation?

Transmission fluid was at proper level. - Notify Supervisor.

**TEST 2 - Does TRANS TEMP gauge indicate overheating during normal operation?**

1. Start engine. (WP 0053)
2. Test drive vehicle.



*Figure 2.*

**CONDITION/INDICATION**

Does TRANS TEMP gauge indicate overheating during normal operation?

**DECISION**

Overheating - Notify Supervisor.

Correct temperature - Problem corrected.

**END OF WORK PACKAGE**

**OPERATOR MAINTENANCE  
WHEEL WOBBLES**

---

**INITIAL SETUP:****Equipment Condition**

Engine OFF. (WP 0066)

**Equipment Condition - Continued**

Parking brakes applied. (WP 0065)

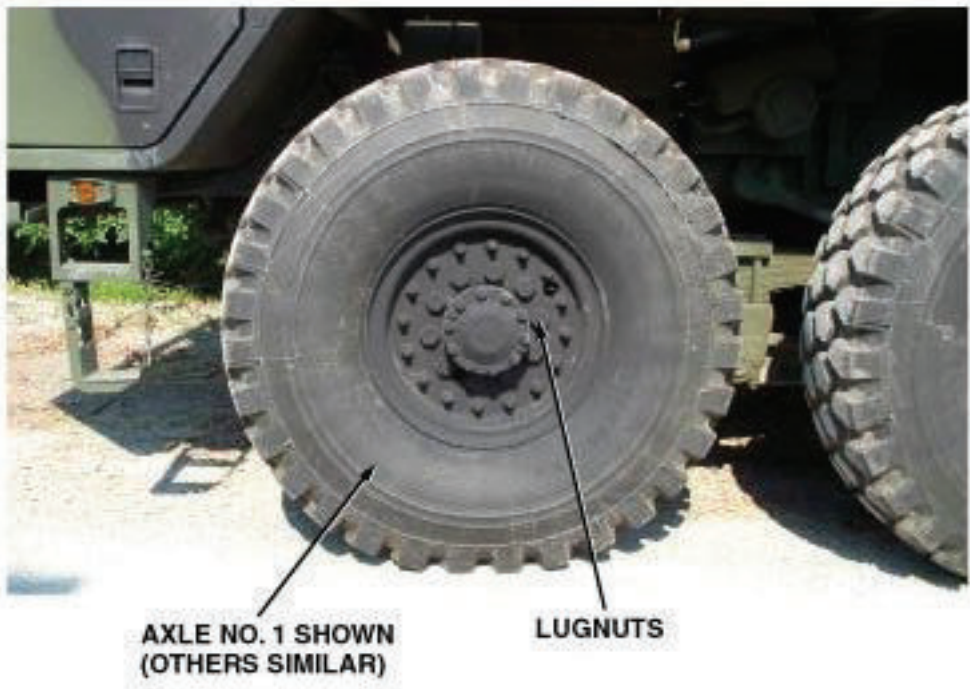
Wheels chocked. (WP 0089)

---

**TROUBLESHOOTING PROCEDURE  
WHEEL WOBBLES**

**TEST 1 - Are any lugnuts loose, missing or broken?**

1. Check wheels for loose, missing or broken lugnuts.



*Figure 1.*

**CONDITION/INDICATION**

Are any lugnuts loose, missing or broken?

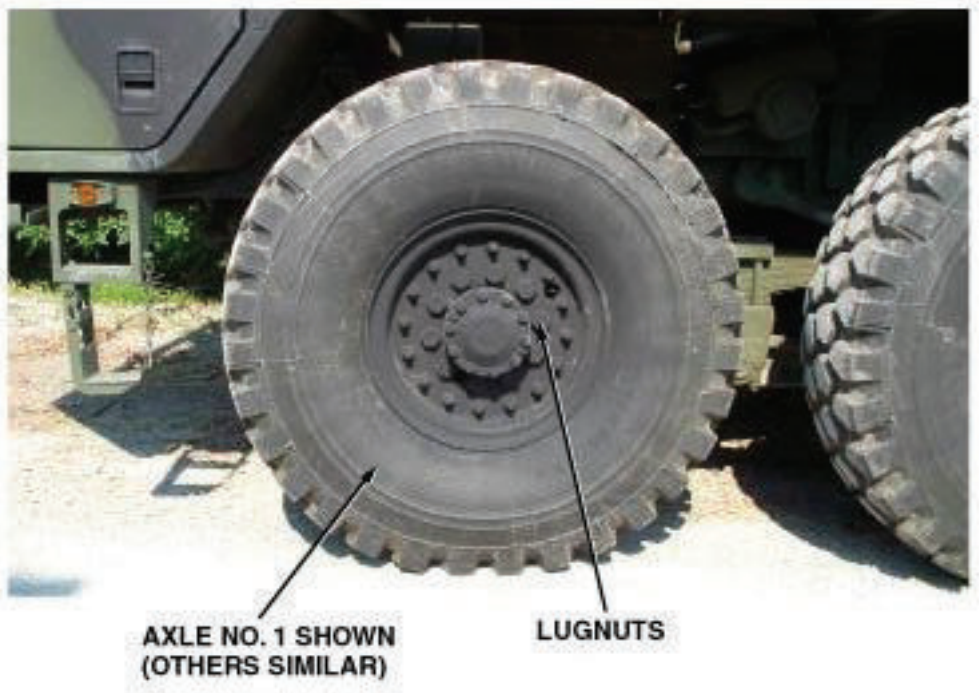
**DECISION**

No - Tighten or replace lugnut(s). (WP 0158)

Yes - Test 2 - Are any of the wheels bent?

**TEST 2 - Are any of the wheels bent?**

1. Check to see if any of the wheels are bent.



*Figure 2.*

**CONDITION/INDICATION**

Are any of the wheels bent?

**DECISION**

Wheel bent - Replace damaged wheel(s). (WP 0158)

Wheels OK - Notify Supervisor.

**TEST 3 - Do any of the wheels wobble?**

1. Start engine. (WP 0053)
2. Test drive vehicle.

**CONDITION/INDICATION**

Do any of the wheels wobble?



**DECISION**

Wheel wobbles - Notify Supervisor.

Wheel OK - Notify Supervisor.

**END OF WORK PACKAGE**

---

## OPERATOR MAINTENANCE TIRES WORN UNEVENLY OR EXCESSIVELY

---

### INITIAL SETUP:

#### Equipment Condition

Engine OFF. (WP 0066)

#### Equipment Condition - Continued

Parking brakes applied. (WP 0065)

Wheels chocked. (WP 0089)

---

### TROUBLESHOOTING PROCEDURE TIRES WORN UNEVENLY OR EXCESSIVELY

#### TEST 1 - Are tires inflated to proper pressure for road condition?

#### WARNING

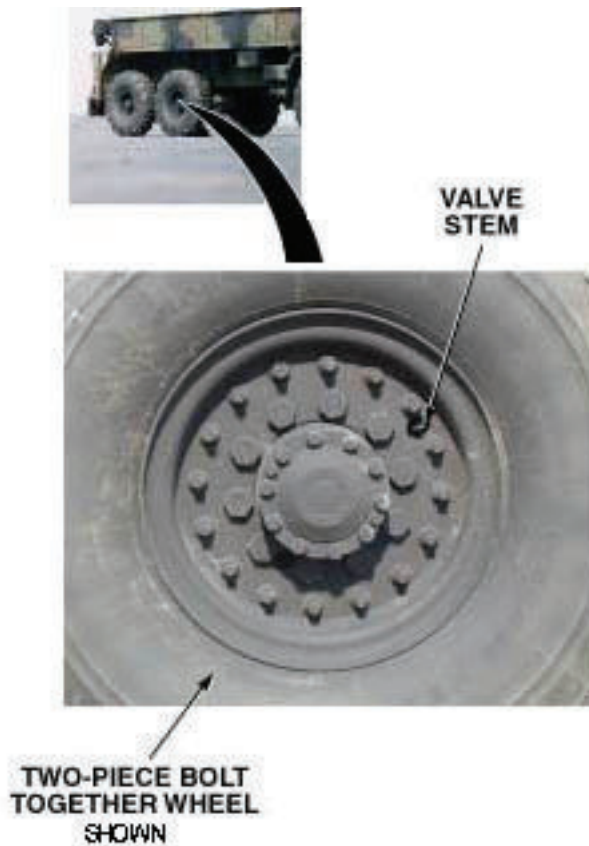


Tire air pressure must be checked properly. Failure to comply may result in injury or death to personnel.

#### NOTE

- Inflate tires only when they are cool. Inflate to proper pressure for road condition.
- Tire tread is non-directional. Vehicle operation is not affected by direction of traction bars.

1. Check tires for proper inflation. (WP 0151)



*Figure 1.*

2. If tires are improperly inflated, inflate or deflate to proper pressure.

**CONDITION/INDICATION**

Are tires inflated to proper pressure for road condition?

**DECISION**

Improperly inflated - Notify Supervisor.

Inflation OK - Notify Supervisor.

**END OF WORK PACKAGE**

## CHAPTER 4

### PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)



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## **OPERATOR MAINTENANCE INTRODUCTION - PREVENTIVE MAINTENANCE**

---

### **PMCS INTRODUCTION**

This section contains PMCS requirements for HEMTT series vehicles. The PMCS tables contain checks and services necessary to ensure that the vehicle is ready for operation. Using PMCS tables, perform maintenance at specified intervals.

### **MAINTENANCE FORMS AND RECORDS**

Every mission begins and ends with paperwork. There is not much of it, but it must be kept up. The filled out forms and records have several uses. They are a permanent record of services, repairs, and modifications made on the vehicle; they are reports to unit maintenance and to your Commander; and they serve as a checklist to find out what is wrong with the vehicle after its last use, and whether those faults have been fixed. For the information needed on forms and records, refer to DA PAM 750-8. (WP 0164)

### **PREVENTIVE MAINTENANCE CHECKS AND SERVICES**

- Do the before (B) PREVENTIVE MAINTENANCE just before operating vehicle. Pay attention to the CAUTIONS and WARNINGS.
- Do the during (D) PREVENTIVE MAINTENANCE while vehicle and/or its component systems are in operation. Pay attention to the CAUTIONS and WARNINGS.
- Do the after (A) PREVENTIVE MAINTENANCE right after operating vehicle. Pay attention to the CAUTIONS and WARNINGS.
- Do the (W) PREVENTIVE MAINTENANCE weekly. Pay attention to the CAUTIONS and WARNINGS.
- Do the (M) PREVENTIVE MAINTENANCE once a month. Pay attention to the CAUTIONS and WARNINGS.
- Do the (S) PREVENTIVE MAINTENANCE once every six months. Pay attention to the CAUTIONS and WARNINGS.
- If something does not work, troubleshoot and notify the supervisor.
- Always do PREVENTIVE MAINTENANCE in the same order until it gets to be habit. Once practiced, problems can be spotted in a hurry.
- If something looks wrong and cannot be fixed right then, write it on DA Form 2404 (WP 0164) or DA Form 5988-E. (WP 0164) If something seems seriously wrong, report it to field level maintenance RIGHT NOW.
- When doing PREVENTIVE MAINTENANCE, take along the tools needed and a rag or two to make all the checks.

## GENERAL MAINTENANCE PROCEDURE

- **Cleanliness:** Dirt, grease, oil, and debris only get in the way and may cover up a serious problem. Use solvent cleaning compound (WP 0167, Table 1, Item 6, 7, 8, 9, 10, 11) on all metal surfaces and soapy water on rubber.
- **Bolts, Nuts, and Screws:** Check bolts, nuts, and screws for obvious looseness, missing, bent, or broken condition and tighten or replace as necessary. They cannot all be checked with a tool, of course, but look for chipped paint, bare metal, or rust around bolt heads.
- **Welds:** Look for loose or chipped paint, rust, or gaps where parts are welded together. If a bad weld is found, have it repaired.
- **Electric Wires and Connectors:** Look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors and make sure wires are in good shape.
- **Hydraulic Lines and Fittings:** Look for wear, damage, and leaks, and make sure clamps and fittings are tight. Wet spots show leaks, of course, but a stain around a fitting or connector can indicate a leak. If a connector or fitting is loose, tighten it. If something is broken or worn out, repair or replace per applicable procedure.
- **Damage is defined as:** Any conditions that affect safety or would render the vehicle unserviceable for mission requirements.

## FLUID LEAKAGE

It is necessary to know how fluid leakage affects the status of fuel, oil, coolant, and the hydraulic systems. The following are definitions of types/classes of leakage necessary to know in order to determine the status of the vehicle.

### NOTE

Equipment operation is allowable with minor leakage (Class I or II). Consideration must be given to the fluid capacity in the item/system being checked/inspected. When in doubt, notify the supervisor. When operating with Class I or II leaks, continue to check fluid levels as required in the PMCS. Class III leaks should be repaired per applicable procedure.

**Class I :** Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

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

**Class III:** Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

## PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Prior to performing your PMCS, check with your PLL clerk to verify that the latest publications are being used.

**PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) - Continued**

Listed below are the sections of the PMCS.

PMCS - BEFORE (WP 0148)

PMCS - DURING (WP 0149)

PMCS - AFTER (WP 0150)

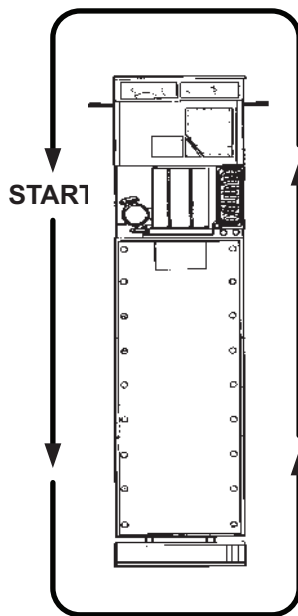
PMCS - WEEKLY (WP 0151)

PMCS - MONTHLY (WP 0153)

PMCS - SEMIANNUAL (WP 0152)

Vehicles designated or dispatched to transport Class A or B ammunition, explosives, poisons, or radioactive yellow III materials over public highways require more stringent inspections.

Daily Walk Around PMCS Diagram. This routing diagram will be of help to complete the B, D, or A PMCS. It shows the vehicle PMCS routing track, which matches the sequence of PMCS to be performed.



*Figure 1.*

**END OF WORK PACKAGE**





OPERATOR MAINTENANCE  
BEFORE - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools  
Gloves, Leather (WP 0166, Table 2)

Table 1. PMCS - BEFORE



Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<div><p><b>WARNING</b></p><p>Do not start engine or move vehicle when personnel are under vehicle or working on brake lines. Failure to comply may result in injury or death to personnel.</p><p><b>WARNING</b></p><p>Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.</p></div>	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p><b>NOTE</b></p> <p>Perform Operator's Before, After, and Weekly PMCS checks if:</p> <ul style="list-style-type: none"><li>• You are the assigned driver but have not operated the vehicle since the last weekly inspection.</li><li>• You are operating the vehicle for the first time.</li></ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing.</li><li>• When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated.</li><li>• Always refer to lubrication instructions (WP 0154) to ensure equipment has correct lubricants appropriate to operating environment (expected continuous temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as</li></ul>	

**Table 1. PMCS - BEFORE - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
1	Before	Driver Side Exterior	<p>prescribed in lubrication instructions. (WP 0154)</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Diesel engine slobber is an inherent condition of diesel engines. When diesel engines are allowed to idle for prolonged periods of time, this characteristic may be interpreted as a Class III leak. Check engine oil level. If there is any doubt, contact your supervisor or field level maintenance.</li> <li>• If leakage is detected, further investigation is needed to determine the location and cause of the leak. If there is any doubt, contact your supervisor or field level maintenance.</li> </ul> <p>1. Check underneath entire length of driver side of vehicle for fluid and air leaks.</p>	Any fuel leak, Class III leak (other than fuel), or air lines/fittings leaking or damaged.

Table 1. PMCS - BEFORE - Continued


Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p>2. Visually check driver side of vehicle for obvious damage that would impair operation.</p> <p><b>WARNING</b></p>  <ul style="list-style-type: none"><li>• During normal vehicle operation, cooling system can become very hot. Allow cooling system to cool prior to servicing. Failure to comply may result in injury to personnel.</li><li>• Use extreme care when removing radiator cap. Sudden release of pressure can cause a steam flash. Slowly loosen radiator cap to the first stop to relieve pressure before removing radiator cap completely. Failure to comply may result in injury to personnel.</li><li>• Use a clean, thick waste cloth or like material to remove radiator cap.</li></ul>	Any damage that would impair operation.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
2	Before	Radiator	<p>Avoid using gloves. If hot water soaks through gloves, personnel could be burned. Failure to comply may result in injury to personnel.</p> <p>Remove radiator cap and check radiator coolant level. Coolant level should be up to bottom of filler neck. If fluid level is low, fill to appropriate level.</p>	Coolant is low.

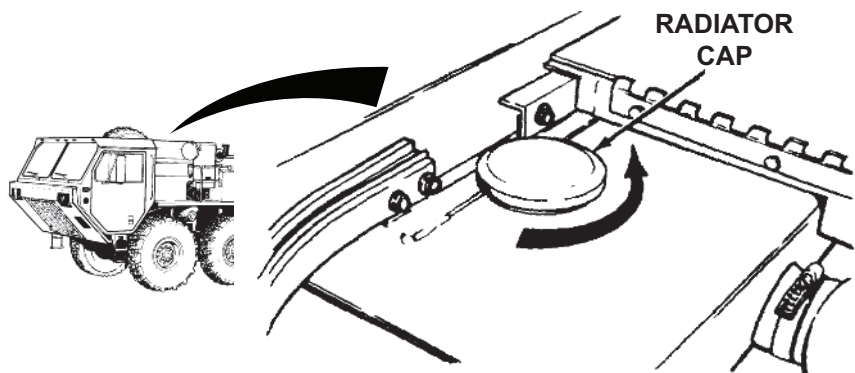


Figure 1.

**WARNING**



Do not operate a vehicle with a tire in an over-inflated or un-

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p>der-inflated condition, or with a questionable defect. Failure to comply may result in injury or death to personnel and damage to equipment.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• A tire is bad or in need of repair if the bead, sidewall, and tread areas show signs of damage.</li><li>• Remember that this process requires you to make judgment calls and the goal is to safely maintain equipment in top quality conditions.</li></ul>	
3	Before	Driver Side Tires	Check for correct air pressure on each driver side tire and service tire (WP 0161) as required.	Tire missing, deflated, or un-serviceable.
4	Before	Engine	1. Check engine oil level on dipstick.	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

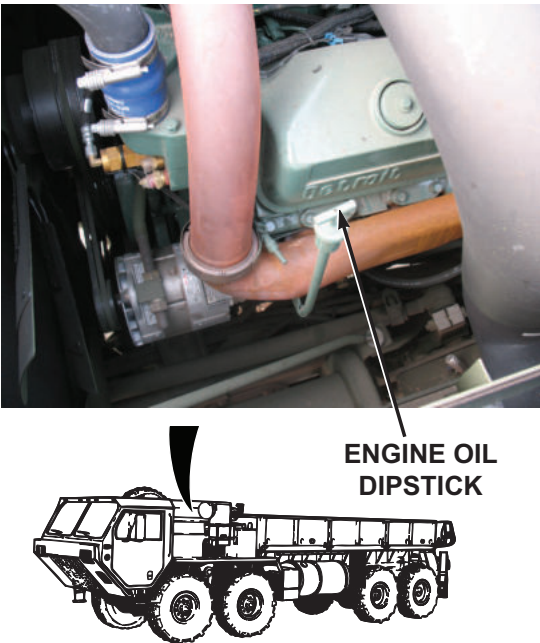


Figure 2.

**NOTE**

Engine oil level should be between L (low) and F (full) mark on dipstick.

- a. Add engine oil as required. (WP 0154)



Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
5	Before	Rear of Vehicle	<div>b. Drain excess engine oil as required, or notify field level maintenance.</div> <div>Visually check rear of vehicle for obvious damage that would impair operation.</div>	Any damage that would impair operation.
6	Before	Work Lights	<div>1. Inspect portable work light for damage.</div>	

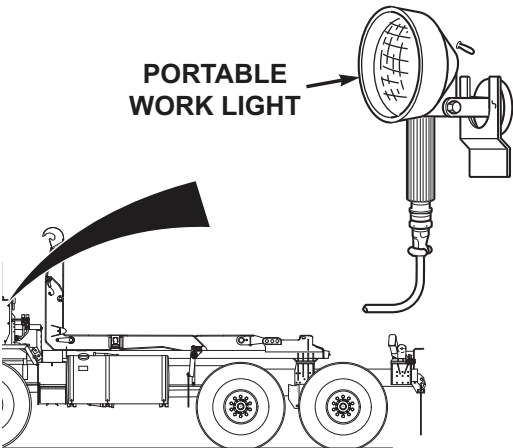


Figure 3.

		<div>2. Check operation of portable work light. (WP 0085)</div> <div>3. Inspect stationary work light for damage.</div>
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Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

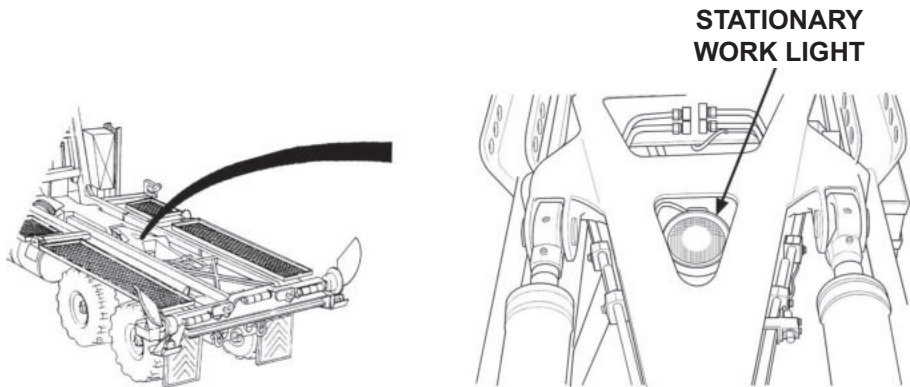
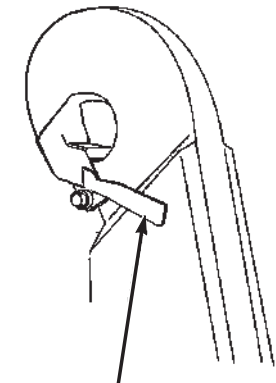
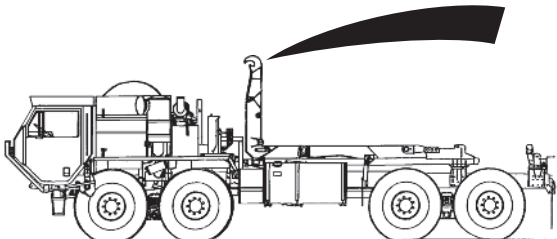


Figure 4.

7	Before	LHS Hook Bail Bar Lock	<div>4. Check operation of stationary work light. (WP 0085)</div> <div>1. Check LHS hook bail bar lock for damage and missing hardware.</div>	LHS hook bail bar lock missing hardware or unserviceable.
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Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:



LHS HOOK  
BAIL BAR LOCK

Figure 5.

8	Before	Self-Recovery Winch (SRW)	1. Inspect self-recovery winch for obvious damage.	Self-recovery winch unserviceable.
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Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

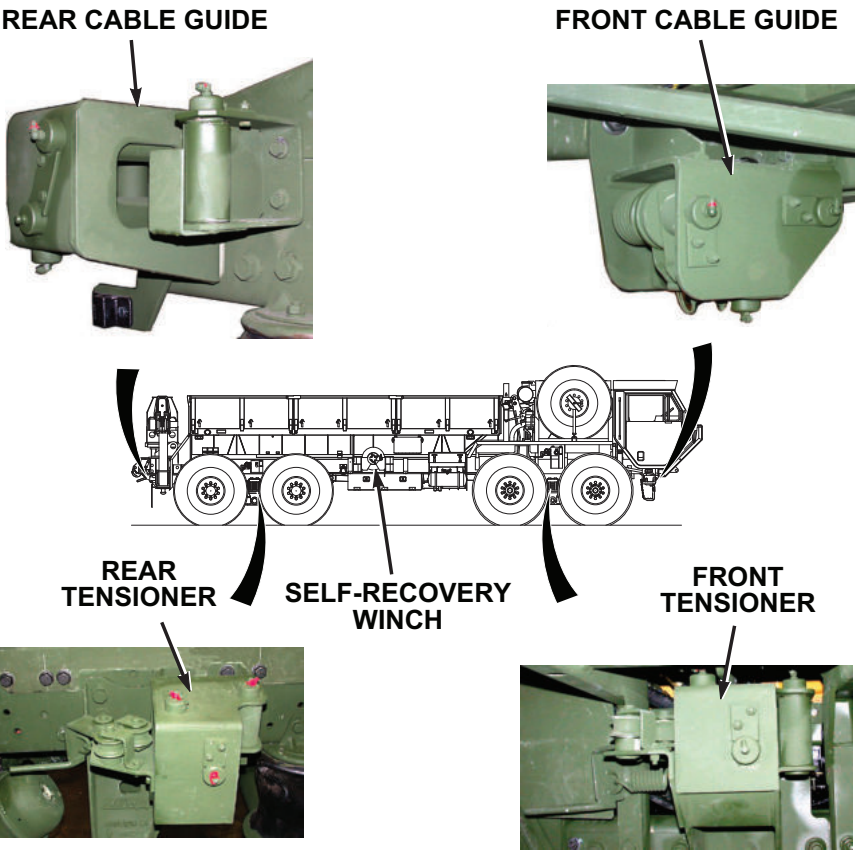


Figure 6.

			2. Inspect front cable guide for any loose or missing parts and any obvious damage.	Front cable guide has loose or missing parts, or is
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Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
9	Before	Wheel Chocks	3. Inspect front tensioner for loose or missing parts and any obvious damage.	unserviceable.  Front tensioner has loose or missing parts, or is unserviceable.
			4. Inspect rear tensioner for loose or missing parts and any obvious damage.	Rear tensioner has loose or missing parts, or is unserviceable.
			5. Inspect rear cable guide for loose or missing parts and any obvious damage	Rear cable guide has loose or missing parts, or is unserviceable.
			Ensure vehicle is equipped with four wheel chocks.	Vehicle is equipped with less than four wheel chocks.
			<p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• Diesel engine slobber is an inherent condition of</li></ul>	

**Table 1. PMCS - BEFORE - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
10	Before	Passenger Side Exterior	<p>diesel engines. When diesel engines are allowed to idle for prolonged periods of time, this characteristic may be interpreted as a Class III leak. Check engine oil level. If there is any doubt, contact your supervisor or field level maintenance.</p> <ul style="list-style-type: none"> <li>If leakage is detected, further investigation is needed to determine the location and cause of the leak. If there is any doubt, contact your supervisor or field level maintenance.</li> </ul> <ol style="list-style-type: none"> <li>1. Check underneath entire length of driver side of vehicle for fluid and air leaks.</li> <li>2. Visually check driver side of vehicle for obvious damage that would impair operation.</li> </ol>	<p>Any fuel leak, Class III leak (other than fuel), or air lines/fittings leaking or damaged.</p> <p>Any damage that would impair operation.</p>

Table 1. PMCS - BEFORE - Continued

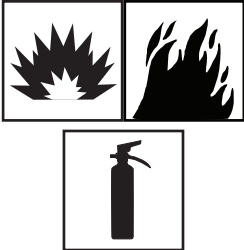
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<div><p><b>WARNING</b></p><div></div><p>Fuel is very flammable and can explode easily. Keep fuel away from open fire and keep fire extinguisher within easy reach when working with fuel. Do not work on fuel system when engine is hot. Fuel can be ignited when engine is hot. When working with fuel, post signs that read NO SMOKING WITHIN 50 FEET OF VEHICLE. Failure to comply may result in injury or death to personnel.</p><p><b>NOTE</b></p><ul style="list-style-type: none"><li>• Drain fuel into suitable container.</li><li>• Operation of vehicle with malfunctioning fuel/water separator may violate AR 385-55. (WP 0164)</li></ul></div>	
11	Before	Fuel/ Water	1. Check for level of water in bowl of fuel/water separator. If there is	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
		Separator	water, turn thumb nut on bottom of bowl to open contaminant drain valve. Keep drain open until only pure fuel is flowing out of drain tube. Close drain valve by turning thumb nut.	

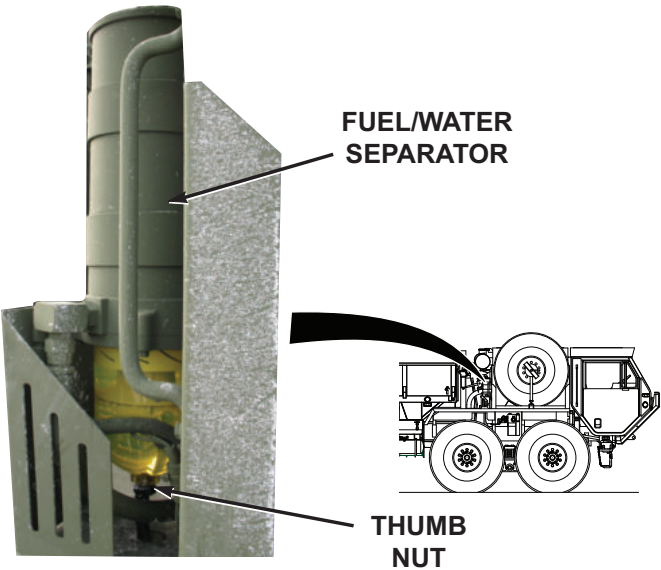



Figure 7.

		2. Check fuel/water separator for leaks and damage.	Any fuel leaking.
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Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p><b>WARNING</b></p>  <p>Do not operate a vehicle with a tire in an over-inflated or under-inflated condition, or with a questionable defect. Failure to comply may result in injury or death to personnel and damage to equipment.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• Remember that a tire in storage (spare) can be flat but not look like it. The HEMTT tire sidewalls can support the wheel. Don't be fooled.</li><li>• A tire is bad or in need of repair if the bead, sidewall, and tread areas show signs of damage.</li><li>• Remember that this process requires you to make judgment calls and the goal is to safely maintain equipment in top quality conditions.</li></ul>	
12	Before	Passenger Side Tires	1. Check for correct air pressure on each passenger side tire	Tire missing, defla-

**Table 1. PMCS - BEFORE - Continued**


Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
13	Before	Seat Belts	<p>(including spare tire) and service tire (WP 0161) as required.</p> <p><b>WARNING</b></p>  <p>Ensure proper inspection and maintenance procedures of seat belt systems are adhered to. Failure to comply may result in injury or death to personnel.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>Vehicle may have either a three-point or four-point seat belt system. Refer to specific checks (below) for seat belt system installed.</li> <li>Vehicle operation with inoperative seat belts may violate AR 385-55. (WP 0164)</li> </ul> <ol style="list-style-type: none"> <li>Check three-point seat belt system as follows: <ol style="list-style-type: none"> <li>Check for worn webbing at the latch and D-loop areas.</li> </ol> </li> </ol>	<p>ted, or un-serviceable.</p> <p>Webbing is cut, frayed,</p>

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				or excessively worn.

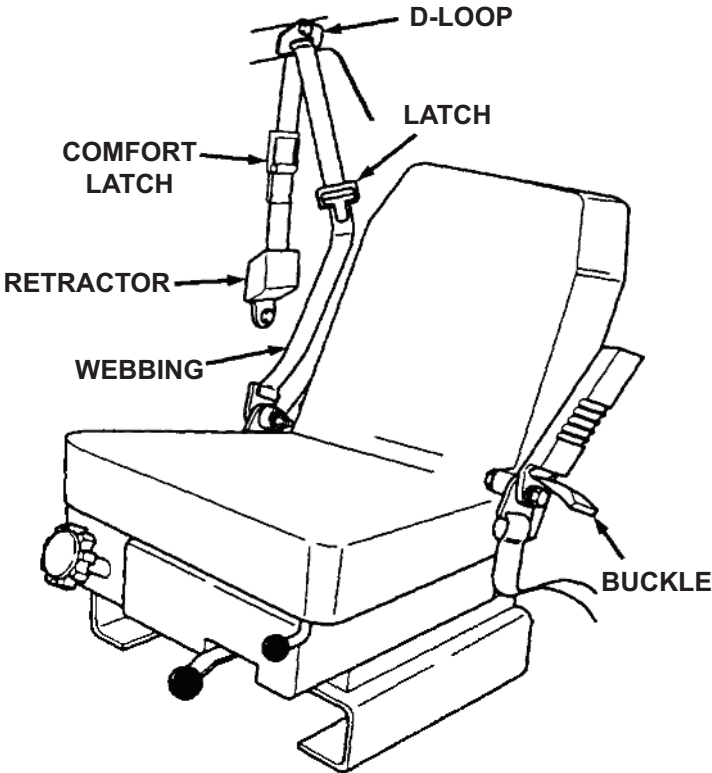


Figure 8.

		b. Check D-loop for free rotation, deformation, cracks, or damage.	D-loop does not rotate freely or is deformed,
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**Table 1. PMCS - BEFORE - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p>c. Check comfort latch for proper operation, cracks, or damage.</p> <p>d. Check latch and buckle for wear, deformation, damage, or broken casing.</p> <p>e. Check latch and buckle for proper operation.</p>	<p>cracked, or broken.</p> <p>Comfort latch is broken, or does not lock in place easily, and does not release by tugging down on webbing.</p> <p>Molded plastic around buckle/latch is deformed, cracked, or broken.</p> <p>Buckle/latch do not engage with a solid sounding "click" and/or do not release freely when button on buckle is pushed.</p>

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<div>f. Check that retractor is not locked up, and pays out/reels in webbing properly.</div> <div>g. Check all seat belt mounting hardware for looseness and other damage.</div> <div>2. Check four-point seat belt system as follows:<div>a. Check seat belt strap webbing wear, tears, fraying, etc.</div></div>	<div>Retractor does not operate properly or retractor cover is cracked/ broken.</div> <div>Seat belt hardware is loose, missing, rusted, corroded, or damaged.</div> <div>Webbing is cut, frayed or excessively worn.</div>

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

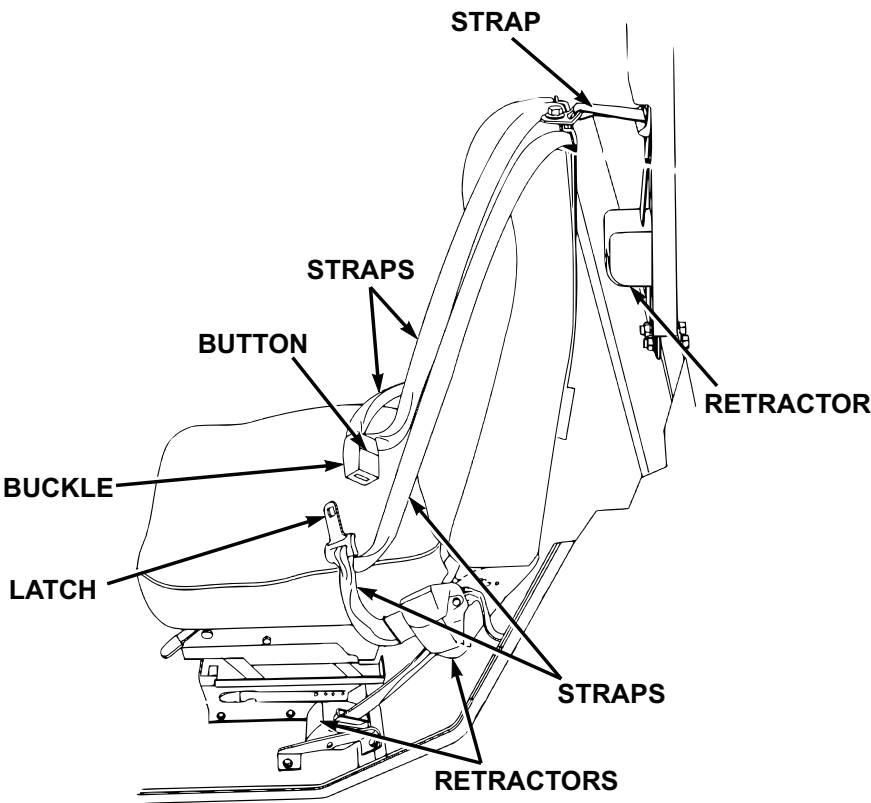


Figure 9.

			b. Check latch and buckle for proper operation, wear, deformation, damage, and broken casing.	Buckle/latch does not engage with a solid-sounding "click" and/or does not
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*Table 1. PMCS - BEFORE - Continued*

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
14	Before	Seats	<p>c. Check all seat belt retractors are not locked up and pay out/reel in webbing straps properly.</p> <p>d. Check all seat belt mounting hardware for looseness and other damage.</p> <p>Check operation of seat adjusting mechanisms. (WP 0023)</p>	<p>release freely when button is pushed. Molded plastic around buckle/latch is de-formed, cracked, or broken.</p> <p>Retractor(s) do not operate properly, or retractor cover(s) are cracked/ broken.</p> <p>Hardware is loose, missing, rusted, corroded, or damaged.</p> <p>Seat adjustment mechanism broken or missing.</p>

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

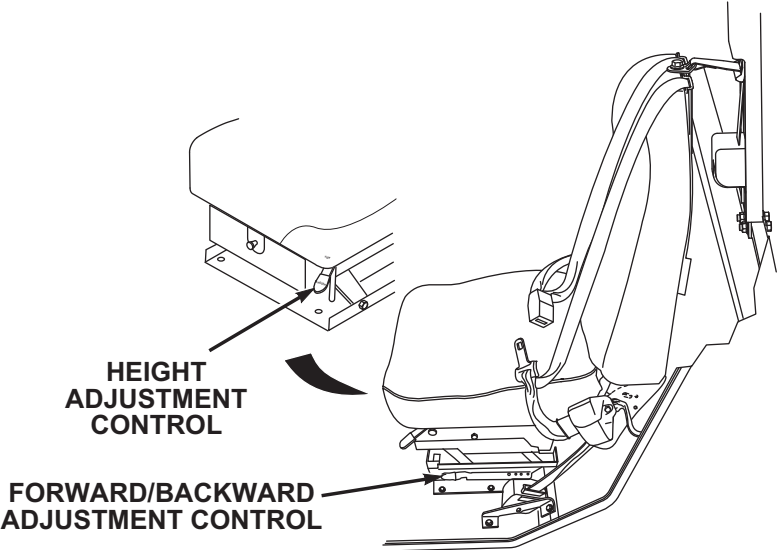


Figure 10.

15	Before	Fire Extinguisher (cab)	1. Check for missing or damaged fire extinguisher.	Fire extinguisher missing or damaged.
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Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

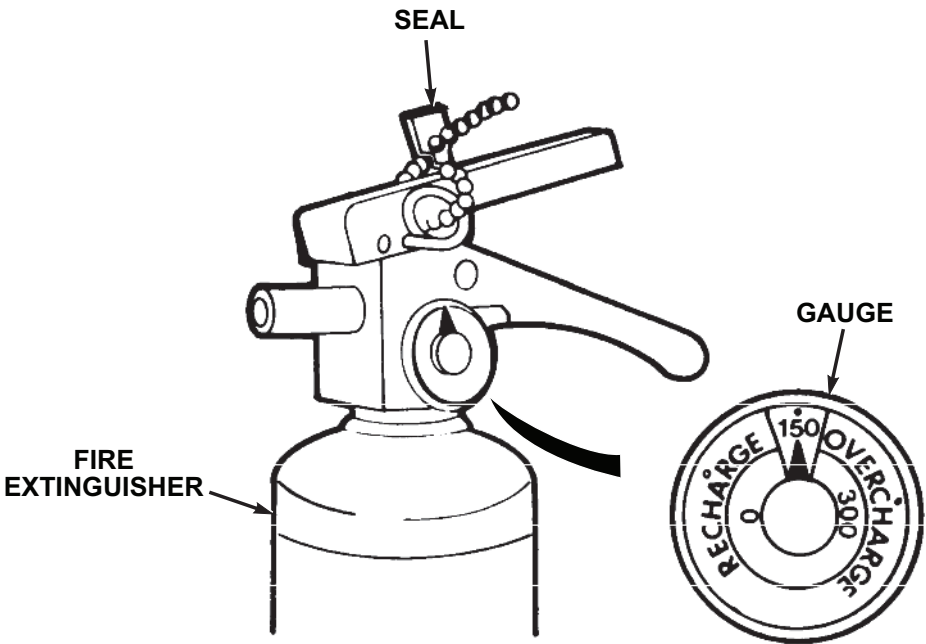


Figure 11.

		<div>2. Check gauge for proper pressure of about 150 psi (1034 kPa).</div> <div>3. Ensure fire extinguisher mounting is secure.</div>	<div>Pressure gauge needle in RE-CHARGE area.</div>
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*Table 1. PMCS - BEFORE - Continued*

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
16	Before	Engine	<p>4. Check for damaged or missing seal.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Complete all start engine (WP 0053) procedures, and comply with all notes, cautions, and warnings within that procedure before completing the PMCS checks below.</li> <li>• Once all start engine (WP 0053) procedures are completed, engine should be kept running for the remaining PMCS checks.</li> </ul>	Seal broken or missing.
			<p>Start engine. (WP 0053)</p> <p><b>NOTE</b></p> <p>Check the instruments listed below for damage, operation, and condition.</p>	Engine fails to start.
17	Before	Instruments	<p>1. Engine OIL PRESS gauge.</p>	Engine OIL PRESS gauge is in-operative.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

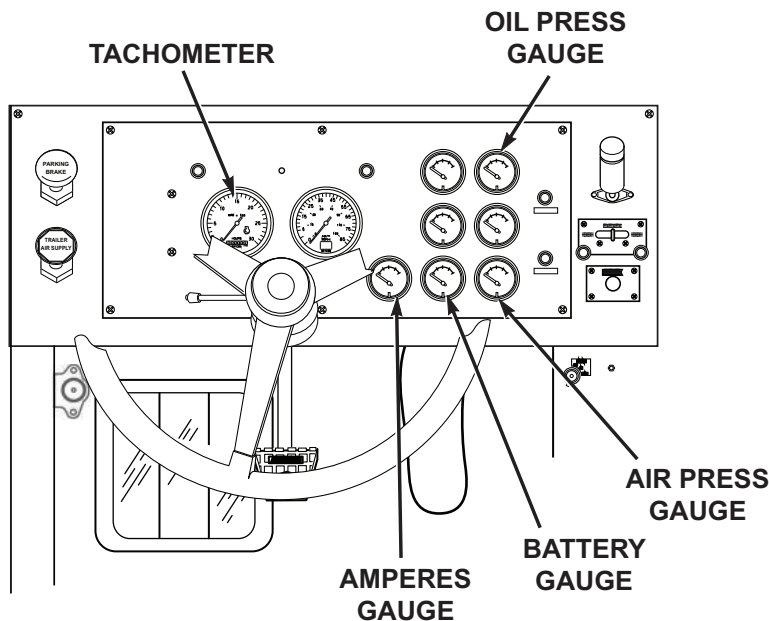


Figure 12.

		2. Tachometer.	Tachometer is inoperative or indicates less than 700 rpm or more than 725 rpm at idle after engine has been properly warmed up (start en-
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Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p>3. BATTERY gauge.</p> <p>4. AMPERES gauge.</p> <p><b>NOTE</b></p> <p>Air pressure buzzer will sound anytime low air indicator is illuminated. Ensure low air indicator and buzzer activate when air pressure falls below 60 to 75 psi (414 to 517 kPa) in either front or rear air system.</p> <p>5. AIR PRESS gauge.</p>	<p>gine (WP 0053) procedure completed).</p> <p>BATTERY gauge is in-operative, or indicates less than 24 VDC or more than 30 VDC with engine running.</p> <p>AMPERES gauge is in-operative, or shows a negative reading with engine running.</p> <p>AIR PRESS gauge is in-</p>

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			6. Air filter restriction indicator.	<p>operative or indicates either system is below 60 psi (414 kPa) after engine has been properly warmed up (start engine (WP 0053) procedure completed). Low air pressure indicator and/ or buzzer remain on, or do not operate.</p> <p>Air filter restriction indicator inoperative, cracked, or unserviceable.</p>

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

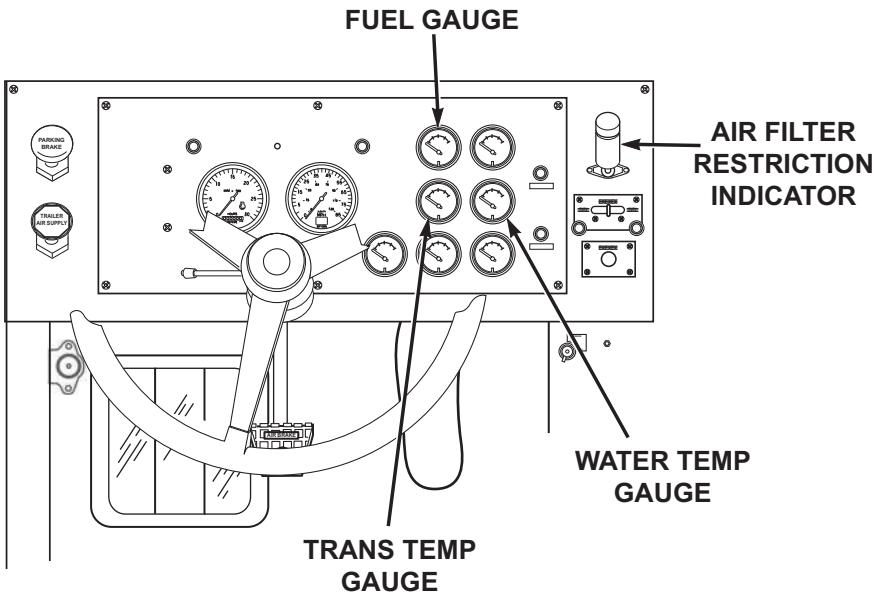


Figure 13.

**NOTE**

Several minutes are required for engine to warm up so an accurate reading can be taken.

7. WATER TEMP gauge.

WATER TEMP gauge is inoperative, or indicates less than

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p><b>NOTE</b></p> <p>Transmission may not reach 160°F (71°C) oil temperature at idle for several minutes.</p> <p>8. TRANS TEMP gauge.</p> <p>9. FUEL gauge.</p>	<p>140°F (60°C) or more than 230°F (110°C) after engine has been properly warmed up (start engine (WP 0053) procedure completed).</p> <p>TRANS TEMP gauge indicates more than 250°F (121°C).</p> <p>FUEL gauge is inoperative, or indicates less than the required amount of fuel needed</p>

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
18	Before	TRANSF ER CASE Shift Lever and TRACTI ON CONTRO L lever	<p><b>CAUTION</b></p> <p>Vehicle must be parked when making this check. Failure to comply may result in damage to equipment. Transfer case will be damaged if shifted while vehicle is moving.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• Engine must be running to perform this check.</li><li>• Transmission must be in N (neutral) to perform this check.</li></ul> <p>1. TRANSFER CASE Shift Lever - Check operation: (WP 0057)</p>	to complete the mission.



Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

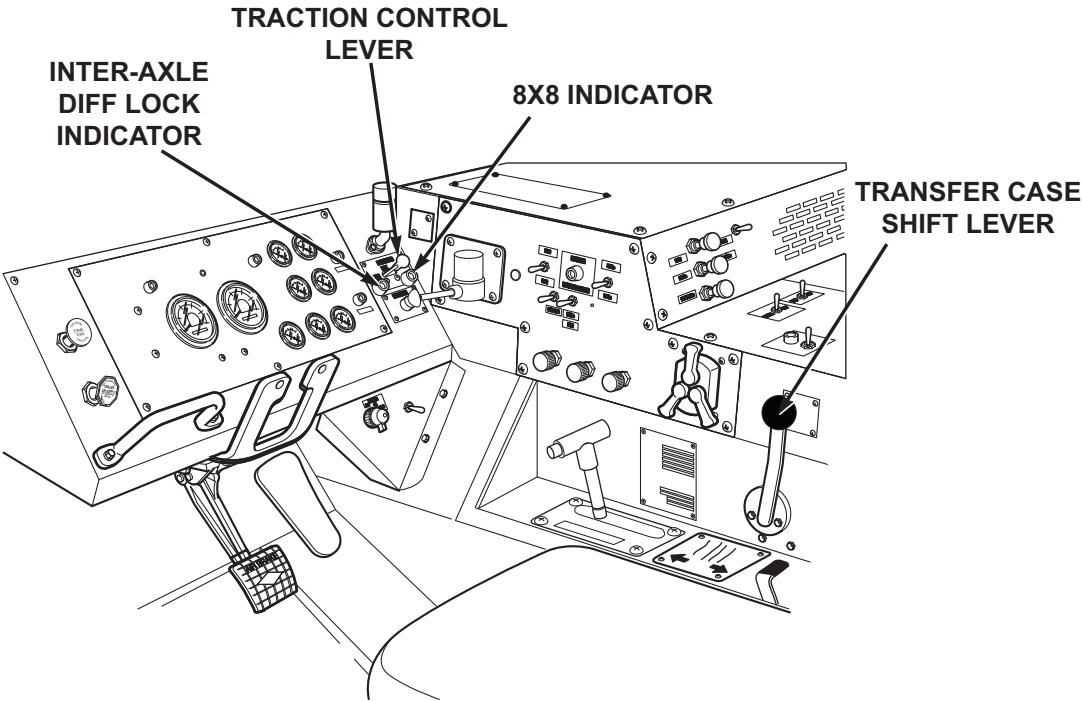


Figure 14.

		<div><div>a. Set transfer case shift lever to each range position.</div><div>b. Transfer case shift lever should move freely through all range positions.</div></div>	<div>TRANSFER CASE shift lever inop-erable or binds be-tween</div>
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*Table 1. PMCS - BEFORE - Continued*

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
19	Before	Engine Retarder/ Brake	<p>2. TRACTION CONTROL Lever - Check operation: (WP 0021)</p> <p>a. TRACTION CONTROL lever should slide smoothly, and interact with transfer case shift lever to show correct indications on dash panel.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Engine must be running to perform this check.</p> <p>1. Check engine retarder/brake for proper operation (WP 0058) (vehicle stationary) using the following procedures:</p> <p>a. Pull out PARKING BRAKE control.</p>	<p>range de- tents.</p> <p>TRACTION CONTROL lever or indicators inoperable.</p>

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

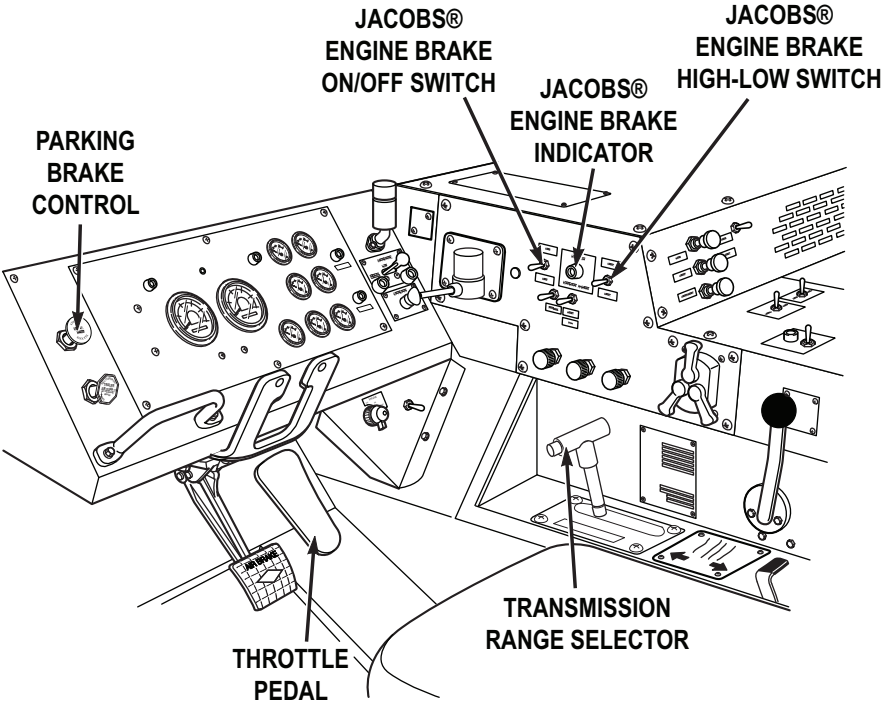


Figure 15.

			<div>b. Set transmission range selector to N (neutral) position.</div> <div>c. Apply throttle pedal and increase engine speed to 1900-2100 rpm for several seconds to allow</div>	
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**Table 1. PMCS - BEFORE - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
20	Before	Steering	<p>transmission to upshift to at least 2 (2nd gear range).</p> <p>d. Set JACOBS ® ENGINE BRAKE ON/OFF switch to ON position, JACOBS ® ENGINE BRAKE indicator light will come on.</p> <p>e. Release throttle pedal and listen for engine "popping" or "chattering" sounds that indicate engine retarder/ brake is engaged and operating.</p> <p><b>NOTE</b></p> <p>Engine must be running to perform this check.</p>	Steering inoperable or binds.
			<p>1. Check vehicle steering for proper operation:</p> <p>a. Turn steering wheel from full left to full right, back to full left.</p> <p><b>NOTE</b></p> <p>Engine must be running to perform this check.</p>	
21	Before	PTO Switch	Set PTO ENGAGE switch to ON position. Indicator light will illuminate.	PTO ENGAGE switch and/or indicator

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				does not operate.

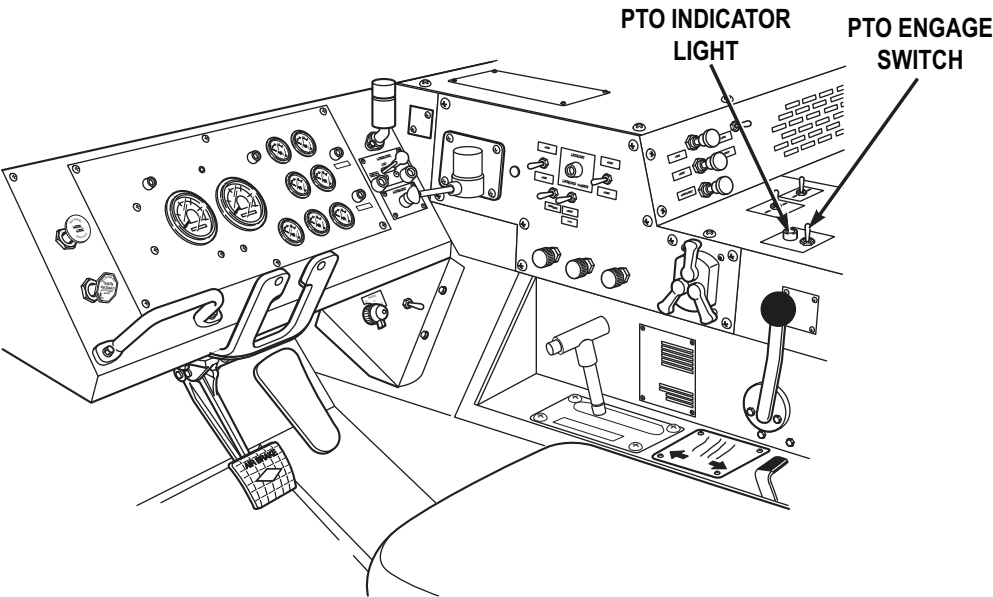


Figure 16.


		<div><p><b>WARNING</b></p><p>Check for overhead power lines or other obstructions prior to attempting LHS operation. LHS reaches a height of</p></div>	
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Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
22	Before	LHS Controls	<p>22 ft. 2 in. (6.7 m). Failure to comply may result in injury or death to personnel.</p> <p>1. Check for proper operation of LHS:</p> <p>a. Set PTO ENGAGE switch to ON position. Indicator light will illuminate.</p>	LHS will not operate.

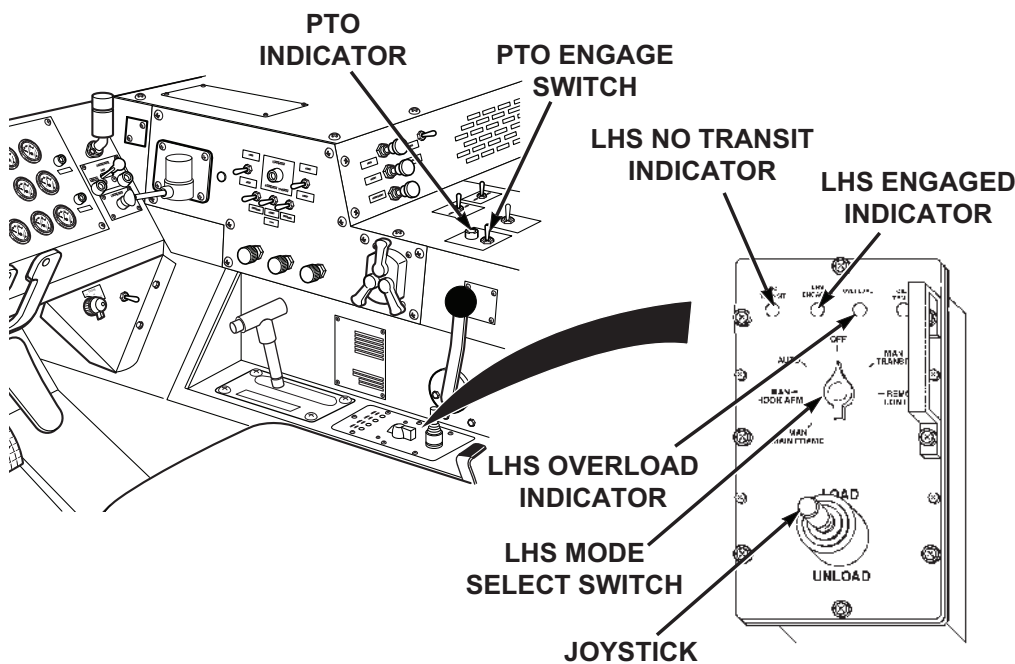


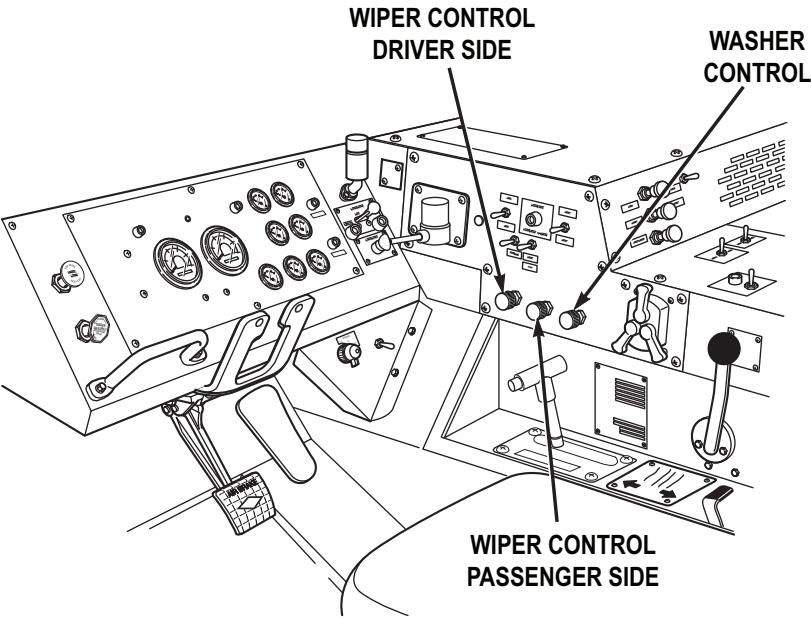
Figure 17.

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p style="text-align: center;"><b>NOTE</b></p> <ul style="list-style-type: none"><li>• LHS NO TRANSIT indicator will illuminate (red) when LHS is raised out of transport position.</li><li>• LHS OVERLOAD indicator may illuminate (yellow) if system is overloaded and raised out of transport position.</li></ul> <p>2. Move joystick to UNLOAD position and raise LHS approximately 1-2 ft. (30-61 cm). LHS ENGAGED indicator will illuminate (green).</p> <p style="text-align: center;"><b>NOTE</b></p> <p>LHS NO TRANSIT indicator will go out when LHS is fully loaded and in transport position.</p> <p>3. Move joystick to LOAD position and lower LHS to transport position.</p> <p>4. Turn LHS MODE SELECT switch to Off. LHS ENGAGED indicator will go out.</p> <p>5. Set PTO ENGAGE switch to OFF position. Indicator light will go out.</p>	

**Table 1. PMCS - BEFORE - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
23	Before	WIPER/ Washer Controls	<p><b>NOTE</b></p> <p>Operation of vehicle with malfunctioning windshield wiper may violate AR 385-55. (WP 0164)</p> <p>1. Check WIPER controls (driver and passenger side) for proper operation. (WP 0035)</p>	



*Figure 18.*



Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
24	Before	Parking Brake Control	<div>2. Check windshield washer control for proper operation. (WP 0035)</div> <div><b>NOTE</b><ul style="list-style-type: none"><li>• Engine must be running to perform this check.</li><li>• Operation of vehicle with malfunctioning windshield wiper may violate AR 385-55. (WP 0164)</li></ul></div> <div>1. Check PARKING BRAKE control for proper operation: (WP 0054)</div>	

Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

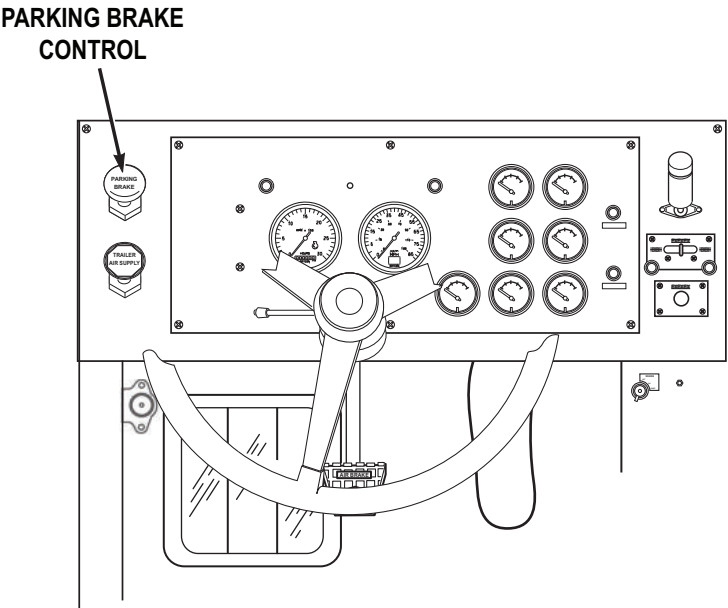


Figure 19.

			<div>a. With vehicle at idle and service brake pedal engaged, (WP 0055) set transmission range selector to D (drive). (WP 0057)</div> <div>b. Apply (pull out) PARKING BRAKE control. (WP 0054)</div> <div>c. Release service brake pedal. (WP 0055)</div>	Vehicle moves with PARKING BRAKE
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Table 1. PMCS - BEFORE - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
25	Before	Engine	<p>d. Set transmission range selector to N (neutral). (WP 0057)</p> <p><b>NOTE</b></p> <p>Operator may continue on with mission if vehicle requires no servicing.</p> <p>Shut OFF engine (WP 0066) (as required).</p>	control applied (pulled out).

END OF WORK PACKAGE

OPERATOR MAINTENANCE  
DURING - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools

Gloves, Leather (WP 0166, Table 2)

Table 1. PMCS - DURING

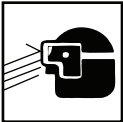
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
1	During	Engine	<div><p><b>WARNING</b></p><p>Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.</p><p><b>NOTE</b></p><p>Check trailer handbrake control lever only if a trailer is hooked up to vehicle.</p></div>	Engine has excessive smoke, unusual noise, runs rough, or misfires.

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
2	During	Trailer Handbrake Control Lever	Check trailer handbrake control lever for proper operation. (WP 0056)	Control lever does not apply trailer brakes.

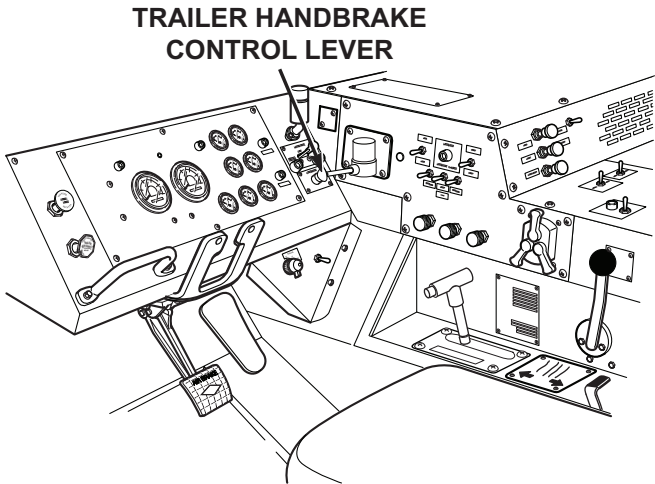


Figure 1.

Listen for actuation. If none, refer to applicable trailer operator's manual.

**NOTE**

During operation, all gauges should maintain the proper readings listed in the PMCS BEFORE checks. (WP 0148)

**Table 1. PMCS - DURING - Continued**

<b>Item No.</b>	<b>Interval</b>	<b>Item to be Checked or Serviced</b>	<b>Procedure</b>	<b>Equipment Not Ready/ Available If:</b>
3	During	Instruments	Monitor all gauges, indicators, and warning lights for proper reading and operation while operating vehicle.	Gauges, indicators, and warning lights do not read/operate properly.
4	During	Transmission	Check transmission for proper operation. (WP 0057)	Transmission slips or will not shift.
5	During	Steering	Be alert for any unusual noise, binding, or difficulty in steering during operation.	Steering binds or is unresponsive.
6	During	Service Brakes	Be alert for chatter, noise, and side pull.	Service brakes do not operate properly.
7	During	Hydraulic Cabinet Assembly	1. Check hydraulic cabinet assembly for dents, damage, and missing hardware.	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

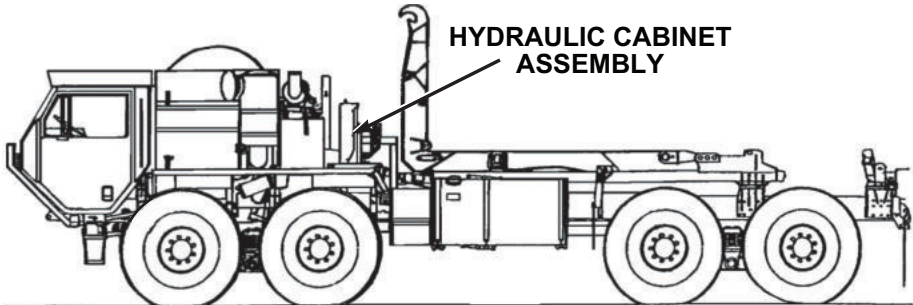



Figure 2.

			<div>2. Check hydraulic cabinet assembly for rust, corrosion, and chipped paint.</div> <div>3. Check hydraulic cabinet weldment for breaks, cracks, and damage.</div> <div><div><b>WARNING</b></div><div></div><div>Check for overhead power lines or other obstructions prior to attempting LHS operation. LHS reaches a height of 22 ft. 2 in. (6.7 m). Failure to comply may result in injury or death to personnel.</div></div>
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*Table 1. PMCS - DURING - Continued*

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
8	During	LHS Remote-Control Unit	<p style="text-align: center;"><b>CAUTION</b></p> <p>BAP must be unloaded and winch frame unlocked from the BAP (WP 0041) before completing the following PMCS steps to the LHS remote-control unit. Failure to comply may result in damage to equipment.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Engine must be running to perform this check.</p> <ol style="list-style-type: none"> <li>1. Remove remote-control unit and remote control cable from stowage box and check for damage.</li> </ol>	



Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

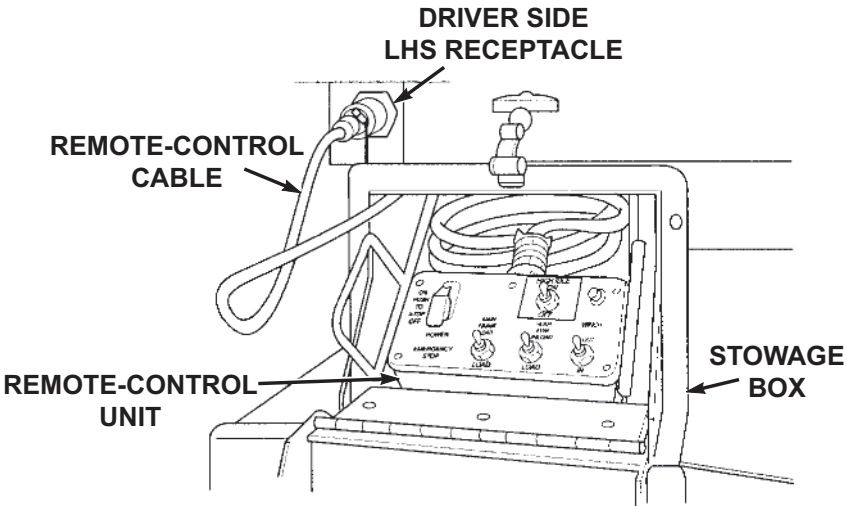


Figure 3.

		<div>2. Connect remote-control cable to remote-control unit and either driver side (shown) or passenger side LHS receptacle.</div> <div>3. Set EMERGENCY STOP switch to OFF position. Ensure remote-controls DO NOT function.</div>	<div>Remote-controls function with EMERGENCY STOP switch in OFF position.</div>
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Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

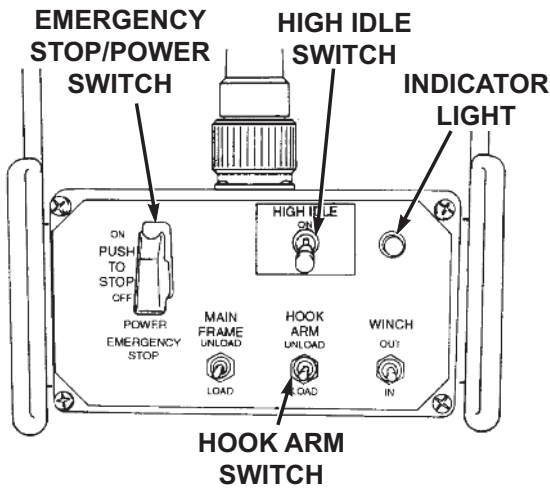


Figure 4.

		<p>4. Set EMERGENCY STOP switch to ON position, ensure indicator light illuminates.</p> <p>5. Set HIGH IDLE switch to ON position. Engine RPM should increase audibly.</p> <p>6. Set HIGH IDLE switch to OFF position. Engine RPM should decrease to normal idle.</p>	<p>Remote-controls DO NOT function with EMERGENCY STOP switch in ON position.</p>
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Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			7. Set HOOK ARM switch to UNLOAD position, release when hook arm cylinders extend approximately 6 in. (15 cm).	

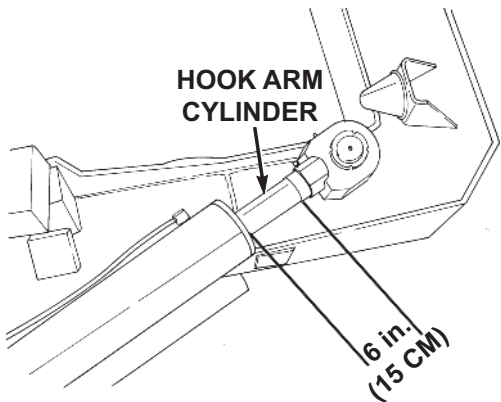


Figure 5.

			<p><b>NOTE</b></p> <p>Ensure main frame extends fully.</p>	
			8. Set MAIN FRAME switch to UNLOAD position, release when main frame is fully extended.	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

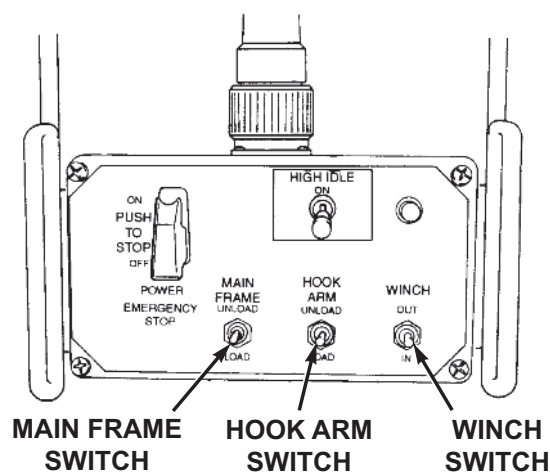


Figure 6.

- 
- 
9. Set HOOK ARM switch to UNLOAD position, release when winch cable hook can be reached from the ground.

**WARNING**



Use care when handling winch cable. Always wear protective gloves when handling winch cable. Ensure cut ends are taped and securely

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p>fastened down. Failure to comply may result in injury or death to personnel.</p> <p><b>NOTE</b></p> <p>Ensure assistant maintains tension on winch cable.</p> <p>10. Set WINCH switch to OUT position, release when winch cable has been paid out approximately 8 ft. (2.4 m).</p> <p><b>NOTE</b></p> <p>Ensure assistant maintains tension on winch cable.</p> <p>11. Set WINCH switch to IN position, release when winch cable hook is in the saddle.</p>	

Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

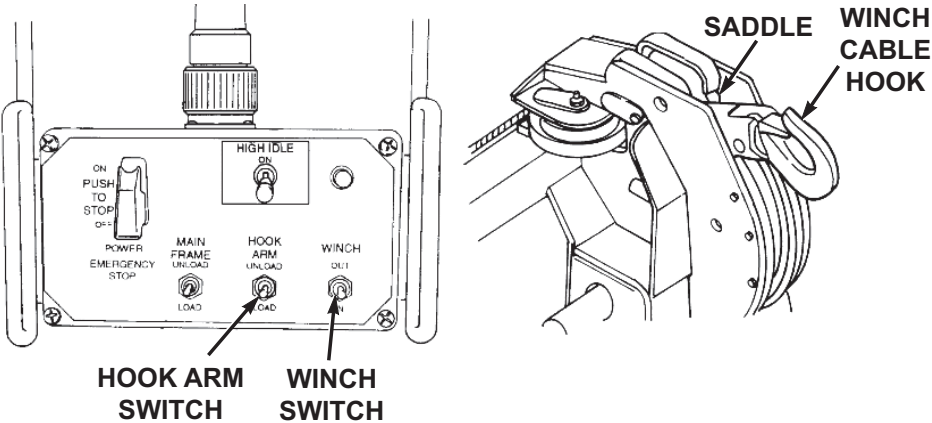


Figure 7.

			12. Set HOOK ARM switch to UNLOAD position, release when hook arm cylinders extend approximately 6 in. (15 cm).	
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Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

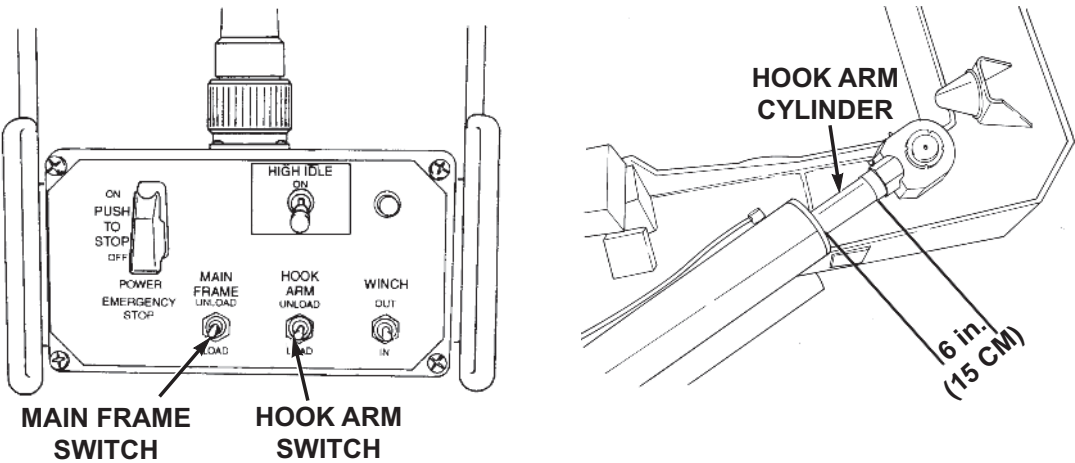


Figure 8.

			<p><b>NOTE</b></p> <p>Ensure main frame stows completely.</p> <p>13. Set MAIN FRAME switch to LOAD position, release when main frame is in stowed position.</p> <p>14. Set HOOK ARM switch to LOAD position, release when hook arm cylinders are fully retracted (stowed).</p> <p>15. Disconnect remote-control cable from remote-control unit and either driver side (shown) or passenger side LHS receptacle.</p>
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Table 1. PMCS - DURING - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			Stow remote-control unit and remote-control cable in stowage box.	

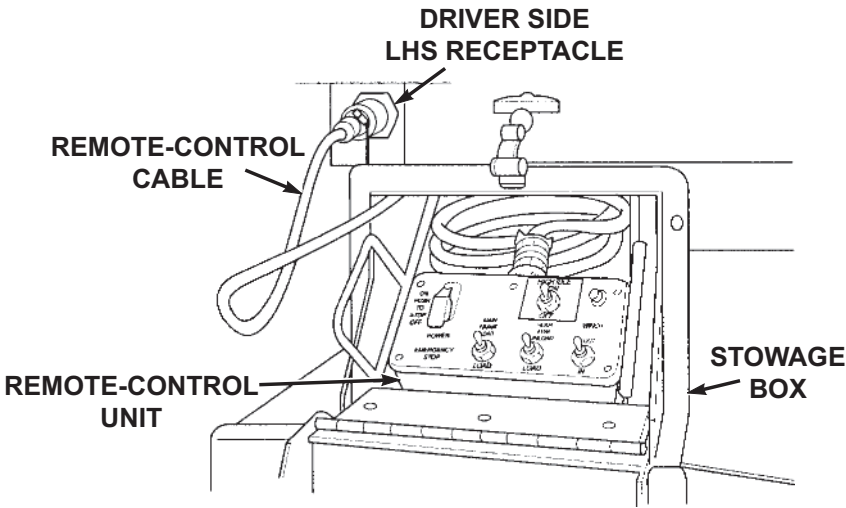


Figure 9.

END OF WORK PACKAGE





OPERATOR MAINTENANCE  
AFTER - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools  
Gloves, Leather (WP 0166, Table 2)

Table 1. PMCS - AFTER



Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<div><p><b>WARNING</b></p><p>Do not start engine or move vehicle when personnel are under vehicle or working on brake lines. Failure to comply may result in injury or death to personnel.</p><p><b>WARNING</b></p><p>Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.</p></div>	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p><b>NOTE</b></p> <p>Perform Operator's Before, After, and Weekly PMCS checks if:</p> <ul style="list-style-type: none"><li>• You are the assigned driver but have not operated the vehicle since the last weekly inspection.</li><li>• You are operating the vehicle for the first time.</li></ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing.</li><li>• When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated.</li><li>• Always refer to lubrication instructions (WP 0154) to ensure equipment has correct lubricants appropriate to operating environment (expected continuous temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as</li></ul>	

**Table 1. PMCS - AFTER - Continued**


Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
1	After	Underneath Vehicle	<p>prescribed in lubrication instructions. (WP 0154)</p> <ol style="list-style-type: none"> <li>1. Check entire underside of vehicle for fluid and air leaks.</li> <li>2. Check entire underside of vehicle for signs of fluid leakage (fuel, oil, and coolant).</li> </ol> <p><b>WARNING</b></p>  <p>Prolonged contact with lubricating oil may cause skin rash. Immediately wash skin and clothing that come in contact with lubricating oil thoroughly and remove saturated clothing. Keep area well-ventilated to keep fumes at a minimum. Failure to comply may result in injury or death to personnel.</p> <p><b>CAUTION</b></p> <p>Do not fill hydraulic reservoir past FULL COLD mark. Fail-</p>	<p>Any fuel, Class III leak, or air lines/fittings leaking or damaged.</p> <p>Any fuel leak. Class III leak of any other fluid.</p>

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
2	After	Hydraulic Fluid Reservoir	<p>ure to comply may result in damage to equipment.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• Hydraulic oil expands when heated, which may give the operator false (high) fluid level readings if the vehicle has been recently operated.</li><li>• If possible, wait until hydraulic reservoir is completely cooled down (minimum of 2 hours) prior to adding hydraulic oil, otherwise fill reservoir to FULL COLD mark.</li></ul> <p>1. Check that hydraulic fluid level in sight glass on hydraulic fluid reservoir is at FULL COLD mark (may be above FULL COLD mark if vehicle has been recently operated). If low, add hydraulic oil to FULL COLD mark:</p>	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

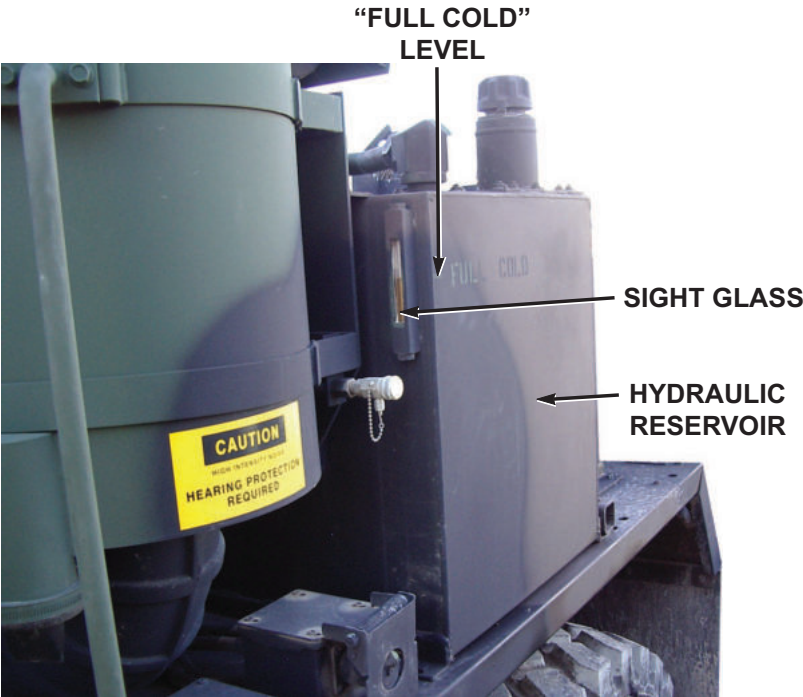


Figure 1.

			<div>a. Remove cap from hydraulic reservoir.</div> <div>b. Fill hydraulic reservoir with lubricating oil (WP 0154, Table 4) until sight glass reads at FULL COLD mark.</div> <div>c. Install cap on hydraulic reservoir.</div>
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**Table 1. PMCS - AFTER - Continued**

<b>Item No.</b>	<b>Interval</b>	<b>Item to be Checked or Serviced</b>	<b>Procedure</b>	<b>Equipment Not Ready/ Available If:</b>
3	After	Driver Side Wheels	2. Check appearance of hydraulic fluid in sight glass. Make sure it is clear and not milky or foamy.  1. Check wheels for broken, cracked, and bent surfaces.  2. Check lugnuts and wheel studs for obvious looseness and damage. If loose, tighten and report to maintenance as soon as practical.	Fluid appears milky or foamy.  Wheel is broken, cracked, or bent.  Two or more lugnuts or studs on the same wheel are missing, broken, or bent.
4	After	Driver Side Shock Absorbers	Check driver side shock absorbers for leaks and damage.	Damaged or Class III leak present.
5	After	Rear Exterior	Check rear of vehicle for obvious damage that would impair operation.	Any damage that would impair operation.
6	After	Towing Gladhands	Check for presence and condition of towing gladhands and rubber grommets.	
7	After	Passenger side Wheels	1. Check wheels for broken, cracked, and bent surfaces.	Wheel is broken,

Table 1. PMCS - AFTER - Continued


Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
8	After	Passenger Side Shock Absorbers	<p>2. Check lugnuts and wheel studs for obvious looseness and damage. If loose, tighten and report to maintenance as soon as practical.</p> <p>Check passenger side shock absorbers for leaks and damage.</p> <p><b>WARNING</b></p>  <p>Vehicles air system is pressurized, be sure to wear proper eye protection and keep face away from drain valves while draining air reservoirs. Open air drain valves slowly to prevent sudden blast of air. Failure to comply may result in injury to personnel.</p>	<p>cracked, or bent.</p> <p>Two or more lugnuts or studs on the same wheel are missing, broken, or bent.</p> <p>Damaged or Class III leak present.</p>



Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
9	After	Air Reservoirs	<div><b>NOTE</b><ul style="list-style-type: none"><li>Only drain air reservoirs that are located under the passenger side battery box.</li><li>The M983 has three air reservoirs under the battery box, all other models have two.</li></ul></div> <div>1. Drain only air reservoirs under battery box as follows:</div>	

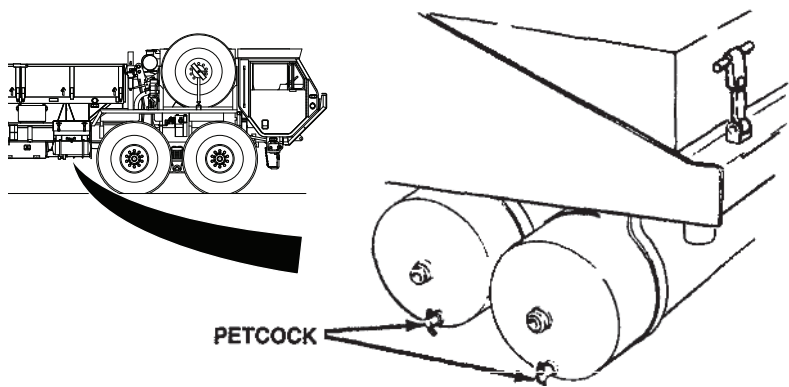


Figure 2.

			<div>a. Turn petcock on bottom of reservoir to open position.</div> <div>b. Let condensation drain off.</div>	
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*Table 1. PMCS - AFTER - Continued*

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
10	After	Transmission	<p>c. Turn petcock on bottom of reservoir to closed position.</p> <p><b>CAUTION</b></p> <p>Clean around end of fill tube prior to removing dipstick. This will aid in preventing dirt or foreign matter from entering the transmission and causing damage.</p> <p><b>NOTE</b></p> <p>Vehicle is parked (WP 0065) on a flat, level surface.</p> <p>Engine is at idle.</p> <p>Transmission is at normal operating temperature, 160-200°F (71-93°C).</p> <p>1. With engine running, check transmission fluid level on dipstick:</p>	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

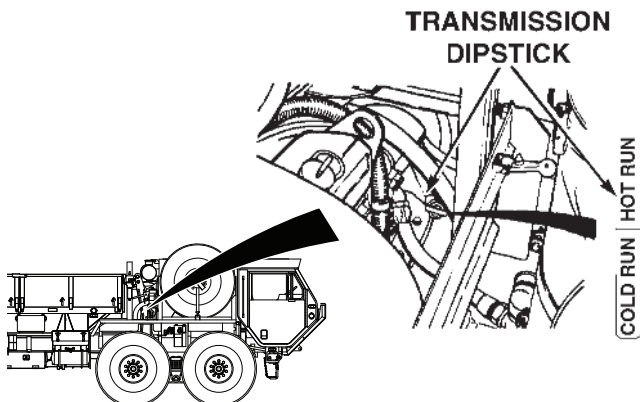


Figure 3.

11	After	Spare Tire/ Wheel	<b>NOTE</b> Fluid level should be between HOT FULL and HOT ADD marks.	Tire has cuts, gouges, or cracks that could result in tire failure. Tire is missing or
			2. Add OE/HDO (WP 0154, Table 2) as required or notify field level maintenance if overfull.  1. Check spare tire for cuts, gouges, cracks, or scratches. Remove any sharp objects.	

**Table 1. PMCS - AFTER - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
12	After	Exterior of Cab	<p>2. Check wheel for broken, cracked, and bent surfaces.</p> <p>3. Check lugnuts and wheel studs for obvious looseness and damage.</p> <p>1. Visually inspect cab and components for damage.</p> <p><b>NOTE</b></p> <p>Operation of vehicle with broken/missing mirrors may violate AR 385-55. (WP 0164)</p>	<p>unserviceable.</p> <p>Wheel is broken, cracked, or bent.</p> <p>Two or more lugnuts or studs are missing, broken, or bent.</p> <p>Any component is damaged that would impair vehicle mission.</p>
13	After	Mirrors	Check condition of mirrors.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

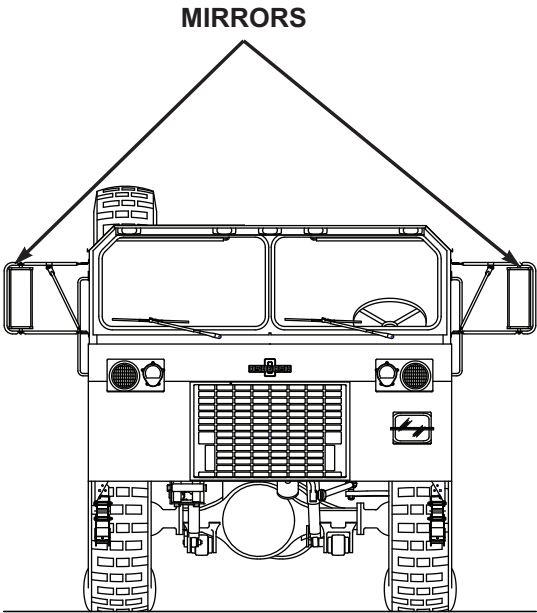


Figure 4.

14	After	Windshield and Wiper Arms/Blades	<p style="text-align: center;"><b>NOTE</b></p> <p>Operation of vehicle with damaged or missing windshield may violate AR 385-55. (WP 0164)</p>	
			1.	Check windshield glass for presence and condition.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

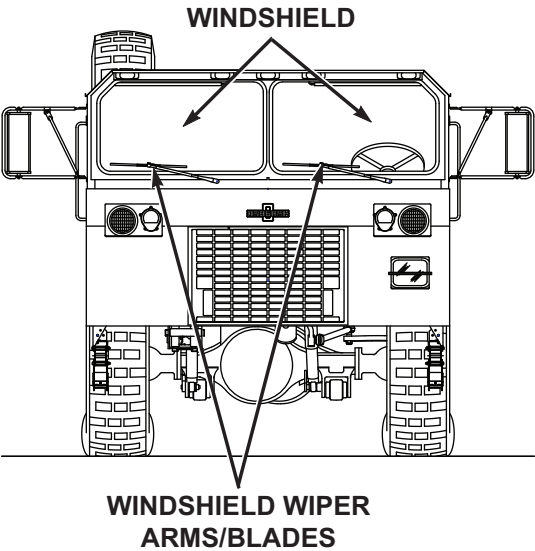


Figure 5.

			<b>NOTE</b>  Operation of vehicle with damaged wiper arms/blades may violate AR 385-55. (WP 0164)  2. Check condition of wiper arms and blades.	
15	After	Fan Switch	Check fan control switch for proper operation (WP 0036) in LO and HI positions.	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

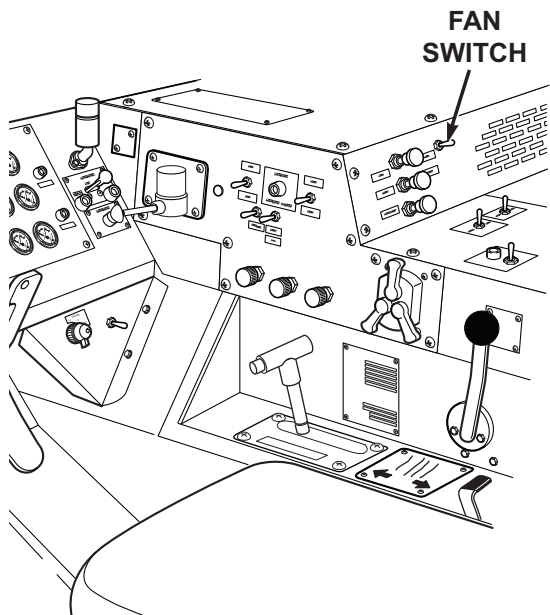


Figure 6.

16	After	WIPER/ Washer Controls	<b>NOTE</b> Operation of vehicle with mal- functioning windshield wiper may violate AR 385-55. (WP 0164)	
			1. Check WIPER controls (driver and passenger side) for proper operation. (WP 0035)	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

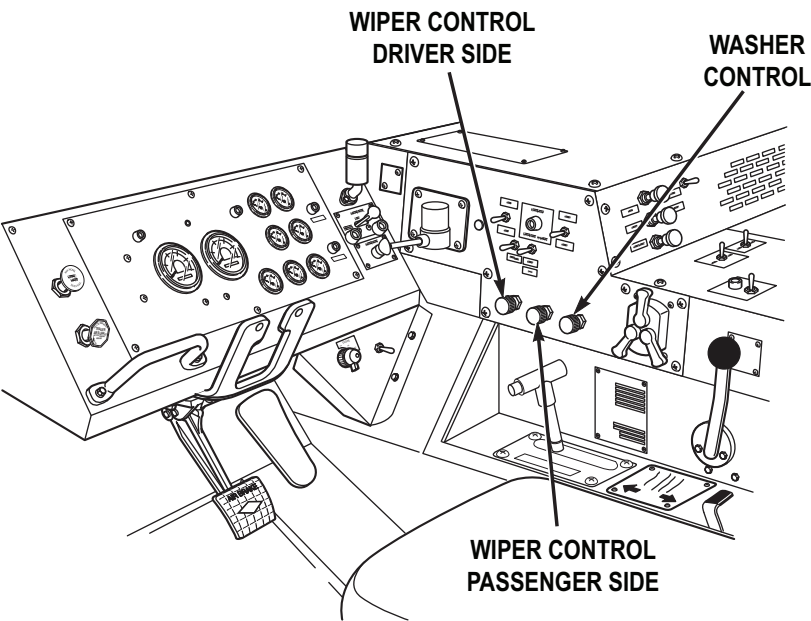


Figure 7.

			<div>2. Check windshield washer control for proper operation.</div> <div><b>NOTE</b> Operation of vehicle with malfunctioning horn may violate AR AR 385-55. (WP 0164)</div>
17	After	Horns	Check both horns (air and electric) for proper operation.



Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
18	After	Turn Signal Control And Indicators	<div><b>NOTE</b><ul style="list-style-type: none"><li>• Light checks will require assistance.</li><li>• Operation of vehicle with malfunctioning turn signal control may violate AR 385-55. (WP 0164)</li></ul><ol style="list-style-type: none"><li>1. Check turn signal control for proper operation. (WP 0019)</li></ol></div>	

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

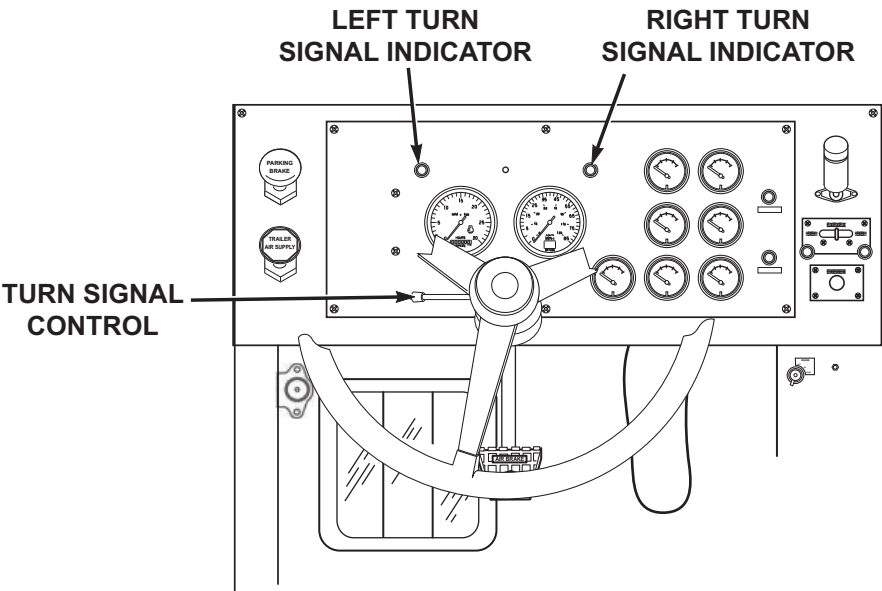


Figure 8.

2. Check turn signal indicators for proper operation. (WP 0021)

**NOTE**

- Light checks will require assistance.
- Operation of vehicle with malfunctioning emergency flasher control may violate AR 385-55. (WP 0164)

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
19	After	Emergency Flasher Control	Check emergency flasher control for proper operation. (WP 0019)	

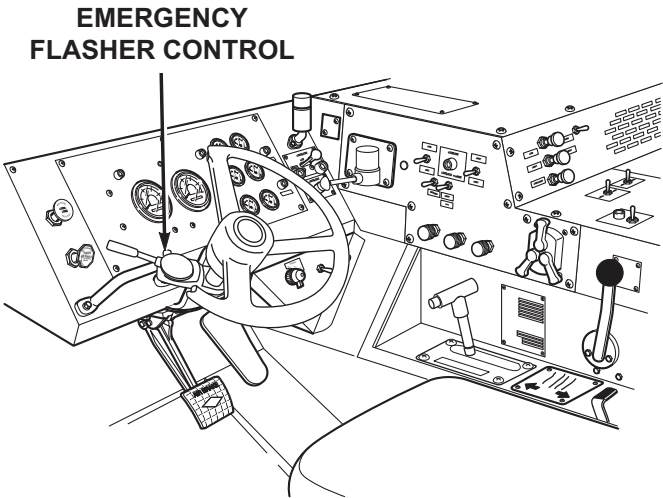


Figure 9.

NOTE

- Light checks will require assistance.
- Operation of vehicle with malfunctioning service lights may violate AR 385-55. (WP 0164)

**Table 1. PMCS - AFTER - Continued**

<b>Item No.</b>	<b>Interval</b>	<b>Item to be Checked or Serviced</b>	<b>Procedure</b>	<b>Equipment Not Ready/ Available If:</b>
20	After	Lights	<p>Check headlights, clearance lights, turn signals, and brake lights for proper operation.</p> <p style="text-align: center;"><b>NOTE</b></p> <p>Operation of vehicle with malfunctioning beacon light may violate AR 385-55. (WP 0164)</p>	
21	After	Portable Beacon Light (If equipped )	Remove beacon light from glove box and check for proper operation. (WP 0086)	
22	After	LHS	1. Check the LHS for loose or missing mounting hardware.	Mounting hardware is missing.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

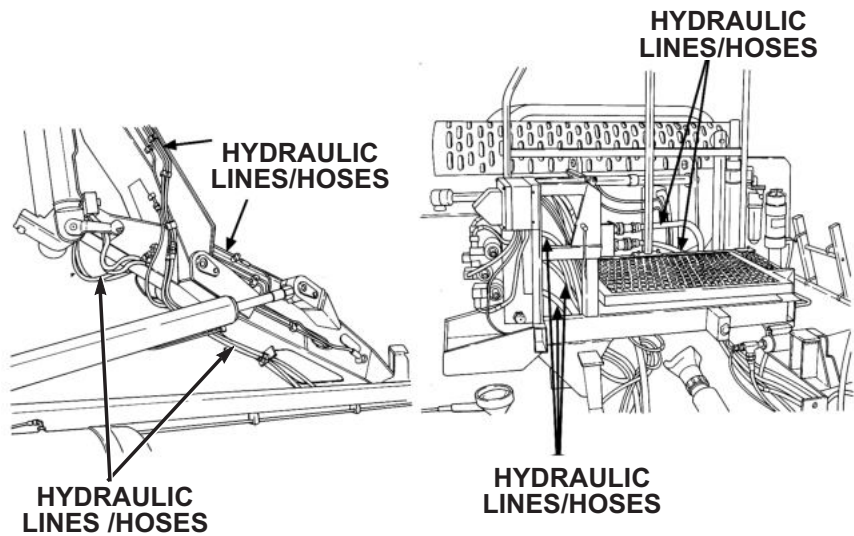


Figure 10.

			<div>2. Visually check hydraulic hoses and lines for leaks.</div> <div>3. Visually check for cracked and kinked lines.</div> <div>4. Visually check lift cylinders for leaks and damaged or missing hardware.</div>	<div>Class III leak present.</div> <div>Cracked or kinked lines that will impair operation.</div> <div>Class III leak present or cylinders are damaged.</div>
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Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

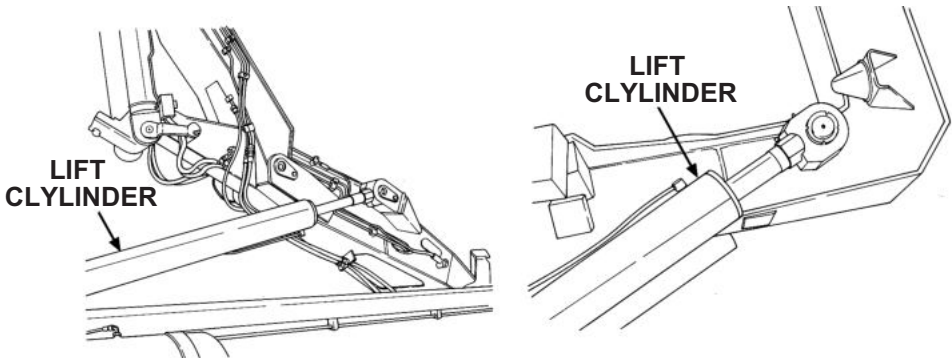


Figure 11.

23	After	LHS Rollers	Check LHS hook bail bar lock for damage or missing hardware.  Check rollers for damage and binding.	Any rollers are broken, missing, or inoperative.
24	After	Hydraulic Manifold	Visually check hydraulic manifold for leaks or damaged hardware.	Class III leak present or hardware is damaged.

Table 1. PMCS - AFTER - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

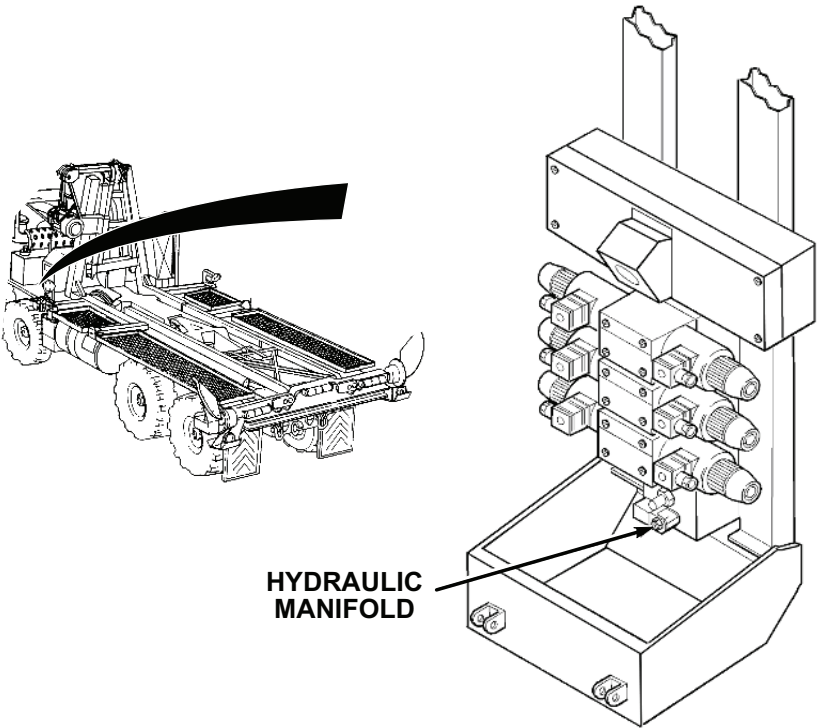


Figure 12.

END OF WORK PACKAGE

OPERATOR MAINTENANCE  
WEEKLY - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools  
Gloves, Leather (WP 0166, Table 2)

Table 1. PMCS - WEEKLY



Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<div><p><b>WARNING</b></p><p>Do not start engine or move vehicle when personnel are under vehicle or working on brake lines. Failure to comply may result in injury or death to personnel.</p><p><b>WARNING</b></p><p>Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.</p></div>	



Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p><b>NOTE</b></p> <p>Perform Operator's Before, After, and Weekly PMCS checks if:</p> <ul style="list-style-type: none"><li>• You are the assigned driver but have not operated the vehicle since the last weekly inspection.</li><li>• You are operating the vehicle for the first time.</li></ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• Lubrication intervals are for normal operating conditions. Intervals may be shortened as required for severe operating conditions.</li><li>• Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing.</li><li>• When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated.</li><li>• Always refer to lubrication instructions (WP 0154) to ensure equipment has correct lubricants appropriate to operating environment (expected continuous</li></ul>	

Table 1. PMCS - WEEKLY - Continued


Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p>temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as prescribed in lubrication instructions. (WP 0154)</p> <p><b>WARNING</b></p>  <p>Do not operate a vehicle with a tire in an over-inflated or under-inflated condition, or with a questionable defect. Failure to comply may result in injury or death to personnel and damage to equipment.</p>	
1	Weekly	Driver Side Tires	Check tires for correct air pressure.	
2	Weekly	Propeller Shafts and U-Joints	<ol style="list-style-type: none"> <li>1. Check propeller shafts and U-joints for excessive movement, obvious damage, and loose, missing or broken nuts and screws.</li> </ol>	Propeller shaft or U-Joint has excessive movement, obvious damage, or one or more nuts or screws are loose, miss-

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				ing, or damaged.

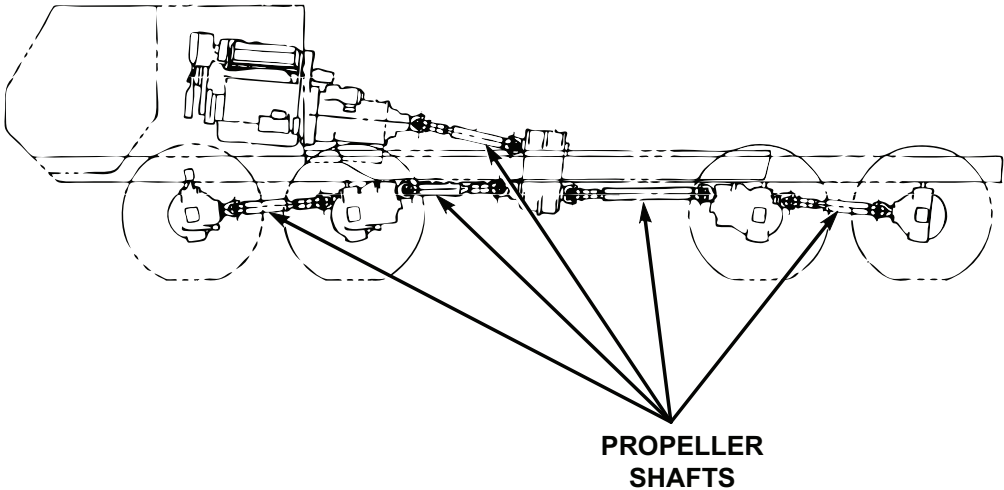


Figure 1.

		<p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• When vehicle is operating under severe conditions, lubricate propeller shafts and universal joints every 50 hours of vehicle operation.</li><li>• Complete Step 2 only if vehicle is operating under severe conditions.</li></ul> <p>2. Lubricate all propeller shafts, transmission to transfer case</p>
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**Table 1. PMCS - WEEKLY - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
3	Weekly	Axle Breathers	<p>propeller shaft, and U-joints with GAA (WP 0154) as required (refer to operator's semiannual PMCS table (item no. 2) for procedures. (WP 0152)</p> <p>Check four axle breathers for damage and free movement of vent caps on breather body.</p>	Any axle breather caps are damaged or vent caps do not move freely on breather body.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

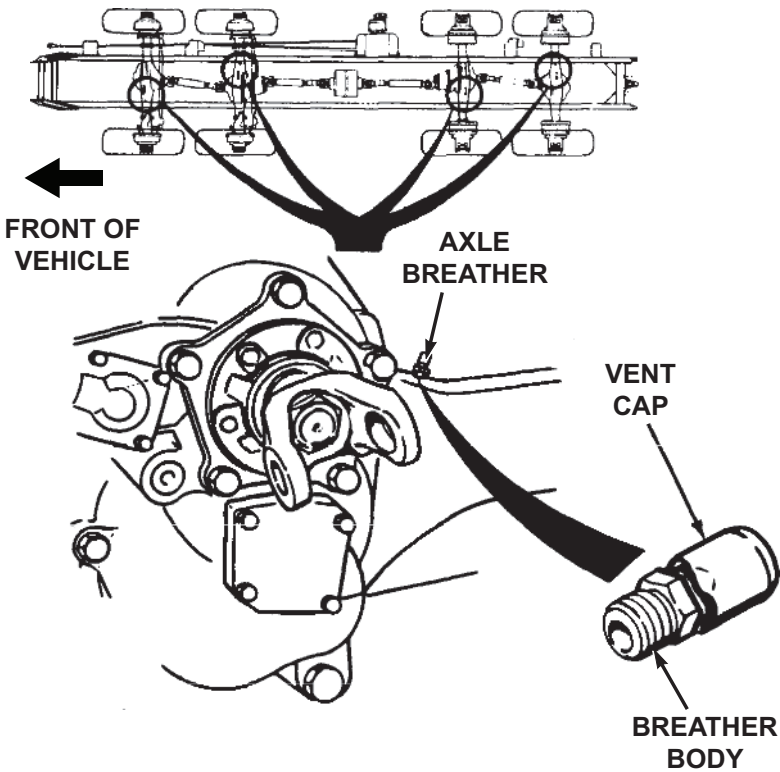


Figure 2.

4	Weekly	Drive Belts, Fan, and Pulleys	1. Check drive belts for cracking, fraying, and breaks. Check for tightness. Play should be about 1/2 in. (13 mm).	Any drive belt is broken, cracked to the belt fiber, has more than one crack
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Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				(1/8 in. in depth or 50% of belt thickness), has frays more than 2 in. long or excessive play.

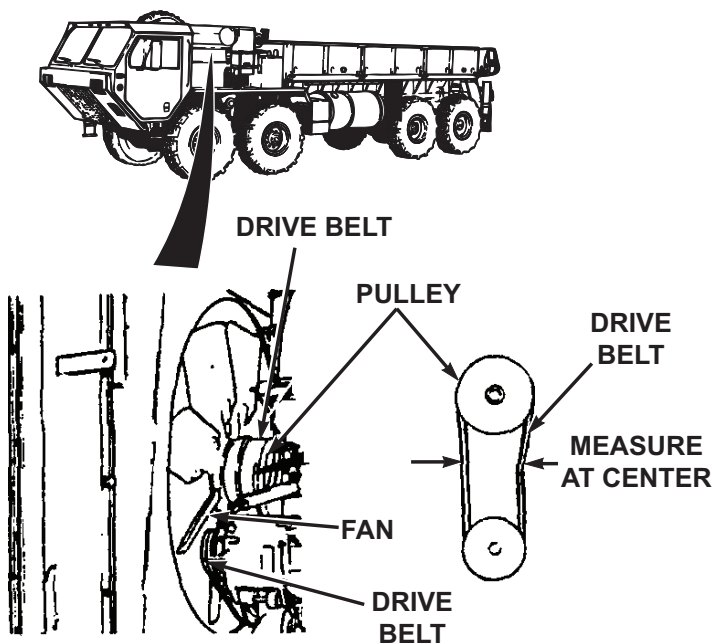


Figure 3.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
5	Weekly	Exhaust System	<p>2. Check condition of fan for broken or cracked blades.</p> <p>3. Check for bent or damaged pulley.</p> <p><b>NOTE</b></p> <p>Operation of vehicle with any exhaust leaks may violate AR 385-55. (WP 0164)</p> <p>Check exhaust pipe, muffler, heatshield, tailpipe, raincap, clamps, and mounting for obvious damage, looseness, exhaust leak, and carbon buildup.</p>	<p>Fan damaged or un-serviceable.</p> <p>Pulley damaged or un-serviceable.</p> <p>Exhaust pipe between turbocharger and exhaust manifold leaks. Any exhaust pipe missing or damaged.</p>

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

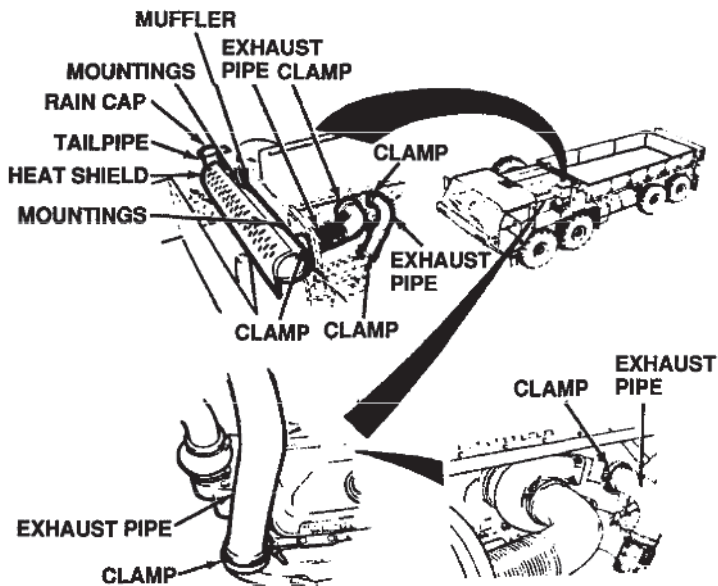


Figure 4.

6	Weekly	Air Intake System/ Ether Starting Aid	1. Squeeze air cleaner dust cap to remove excess dirt from canister.	
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Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

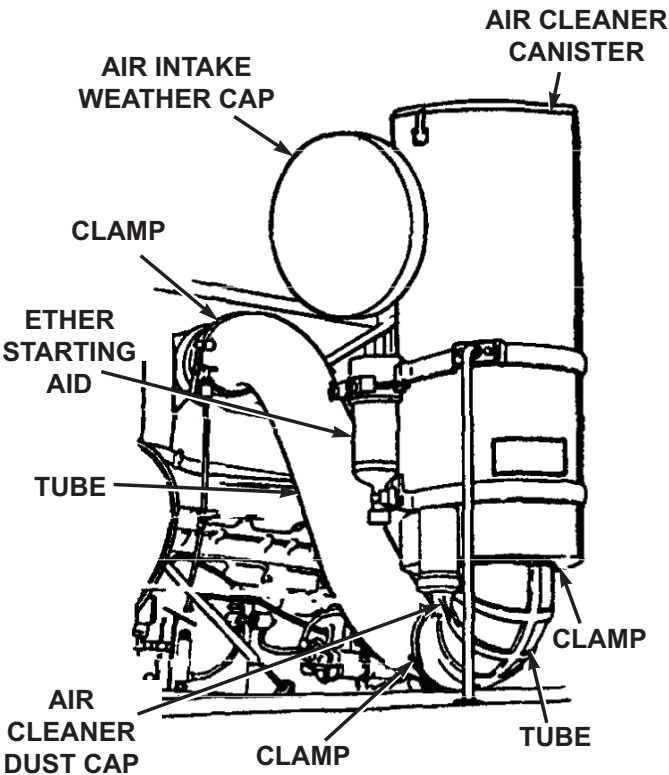


Figure 5.

2. Check that air intake weather cap is secure on air cleaner canister.

**NOTE**

Ether starting aid cartridges will be removed and solenoid

**Table 1. PMCS - WEEKLY - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
7	Weekly	Fuel Tank	<p>valve will be capped in tropical environment.</p> <p>3. Check ether starting aid for damage and missing hardware.</p> <p>4. Check air intake system for loose or damaged clamps and damage to tube.</p> <p>Check fuel tank, fuel hoses, fuel tank connections, and fuel tank socket head pipe plug for leaks and/or damage.</p>	<p>Air intake system has missing or inoperable clamps, or damage to tube.</p> <p>Any fuel leak.</p>

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

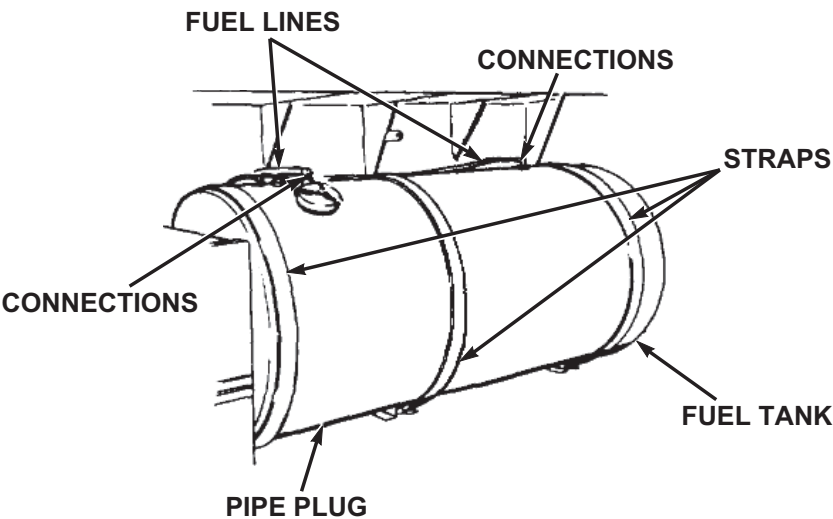
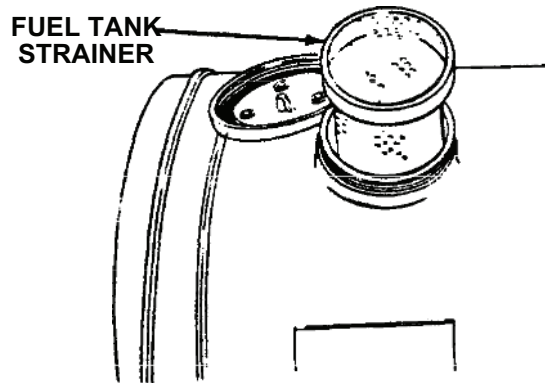


Figure 6.

8	Weekly	Fuel Tank Strainer	Check fuel tank strainer for clogs or damage. If strainer is clogged, clean strainer.	
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**Table 1. PMCS - WEEKLY - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

*Figure 7.*

9	Weekly	Hydraulic Pump	Check hydraulic pumps for loose screws, leaks, and damage. Check for loose hose fittings.	Class III leak present or any mounting screw is loose or missing.
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Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

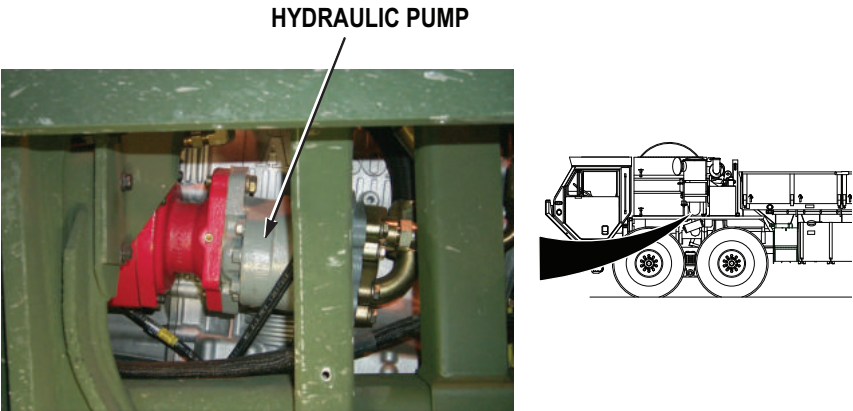


Figure 8.

10	Weekly	Hydraulic Hoses	Check all hydraulic hose routing for obvious damage to hydraulic hoses, chaffing, and leaks.	Class III leak present. Chaffing or obvious damage to hydraulic hose present.
11	Weekly	Stowage Boxes	<ol style="list-style-type: none"><li>1. Check all stowage boxes/ compartments for missing hardware and other obvious damage.</li><li>2. Check inside all stowage boxes/ compartments for torn or damaged seals, water in bottom</li></ol>	

**Table 1. PMCS - WEEKLY - Continued**

<b>Item No.</b>	<b>Interval</b>	<b>Item to be Checked or Serviced</b>	<b>Procedure</b>	<b>Equipment Not Ready/ Available If:</b>
12	Weekly	Rear Spring/ Parking Brake Chambers	<p>of stowage box/compartments, or other obvious damage.</p> <p>Check rear spring/parking brake chambers to ensure dust covers are in place and secure.</p>	
13	Weekly	Towing Shackles	<p>Check towing shackles for serviceability.</p> <p><b>NOTE</b></p> <p>Vehicle may be equipped with either a standard pintle hook, or self-guided coupler.</p>	
14	Weekly	Pintle Hook/ Self-Guided Coupler	<p>1. If vehicle is equipped with a standard pintle hook, perform the following:</p> <p>a. Check pintle hook for looseness and damaged locking mechanism of locking pin.</p>	<p>Pintle hook loose or locking mechanism damaged/ unserviceable.</p>

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

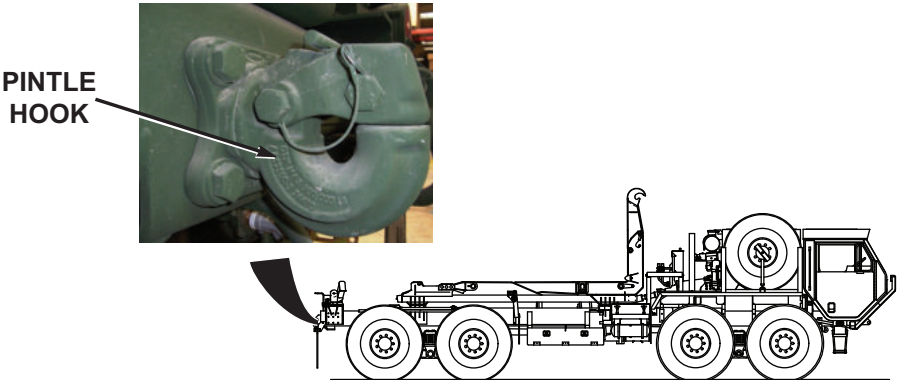


Figure 9.

			<div>b. Clean pintle hook and coat with GAA. (WP 0154, Table 8)</div> <div>2. If vehicle is equipped with self-guided coupler, perform the following:</div> <div>a. Check self-guided coupler for obvious damage and presence of indicator lock.</div>	<div>Self-guided coupler is damaged or loose. Indicator lock is missing.</div>
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Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

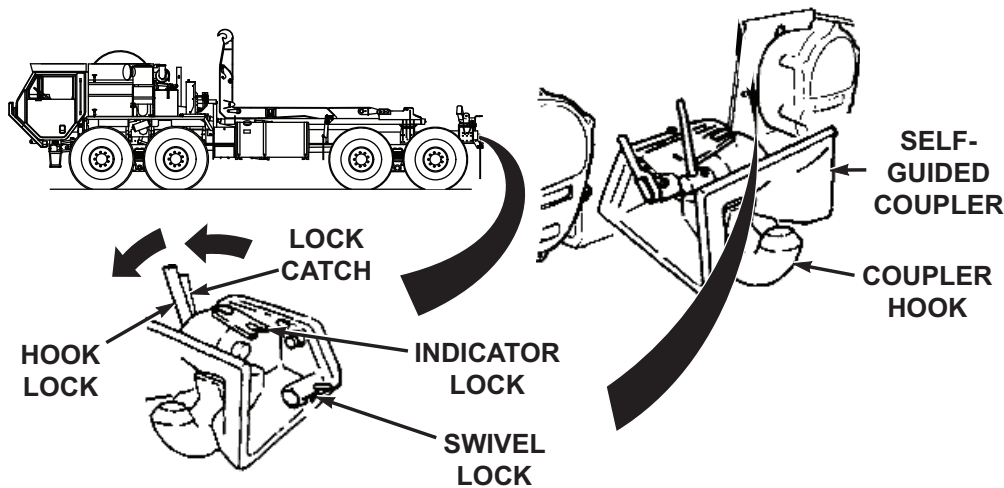


Figure 10.

			<div>b. Disengage swivel lock, ensure self-guided coupler rotates freely.</div> <div>c. Engage swivel lock.</div> <div>d. Open indicator lock away from hook lock.</div> <div>e. Pull out on hook lock catch and pull out on hook lock to release coupler hook.</div>	Self-guided coupler does not rotate freely.
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Table 1. PMCS - WEEKLY - Continued


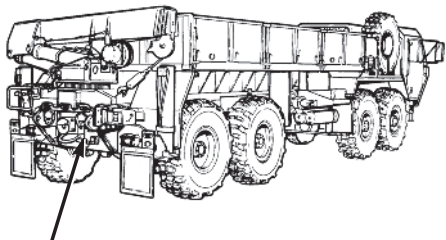
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<div><p><b>WARNING</b></p></div> <p>Keep fingers clear of hook. Failure to comply may result in injury or death to personnel and/or damage to equipment.</p> <p>f. Push up on coupler hook.</p> <p>g. Close indicator lock.</p>	
15	Weekly	Rear Lifting Shackles	Check rear lifting shackles for serviceability.	
16	Weekly	Inter-vehicle Connector	Check inter-vehicle connector seal and cable for damage.	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:



INTER-VEHICLE  
ELECTRICAL  
CONNECTOR

Figure 11.

WARNING



Do not operate a vehicle with a tire in an over-inflated or under-inflated condition, or with a questionable defect. Failure to comply may result in injury or death to personnel and damage to equipment.

NOTE

Inspection of passenger side tires includes spare tire.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
17	Weekly	Passenger Side Tires	Check tires for correct air pressure.  <b>NOTE</b> Operation of vehicle with damaged/malfunctioning air compressor may violate AR 385-55. (WP 0164)	
18	Weekly	Air Compressor	Check air compressor for loose screws, damaged mounting flange and air hoses, and loose fittings/connections.	Screws missing, mounting flange broken, air hoses damaged or fittings/connections loose.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:



Figure 12.

19	Weekly	Secondary Fuel Filter	Check secondary fuel filter for leaks or damage.	Any fuel leak.
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Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

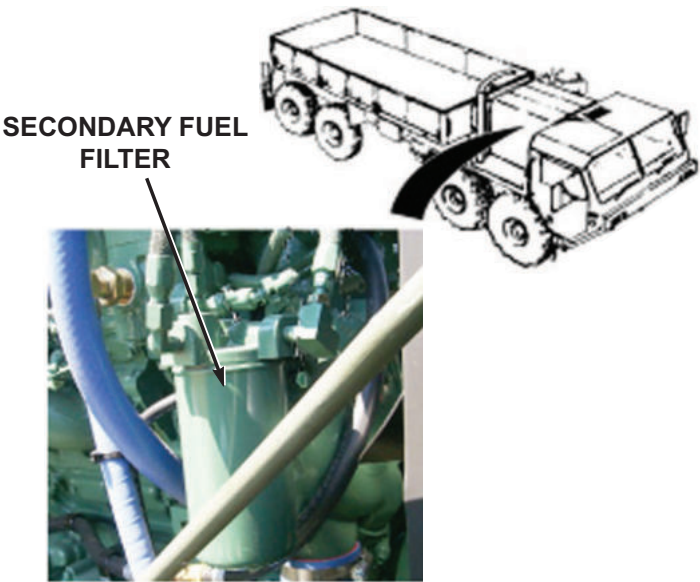


Figure 13.

20	Weekly	Turbocharger Oil Line	Check turbocharger oil line and fittings from rear of engine for signs of leaks and damage.	Any Class III leak present.
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Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

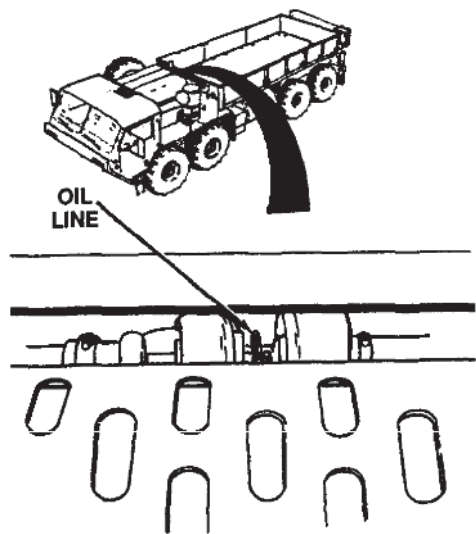


Figure 14.

WARNING



Wear proper eye and skin protection when working around batteries. Do not smoke, have open flames, or

Table 1. PMCS - WEEKLY - Continued

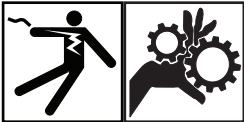
Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
21	Weekly	Batteries	<p>make sparks around batteries, especially if caps are off. Batteries can explode. Failure to comply may result in injury or death to personnel.</p> <p><b>WARNING</b></p>  <p>Remove all jewelry such as rings, ID tags, bracelets, etc. prior to working on or around vehicle. Jewelry and tools can catch on equipment, contact positive electrical circuits, and cause a direct short, severe burns, or electrical shock. Failure to comply may result in injury or death to personnel.</p> <p>1. Check battery box for damage.</p>	Cracks or holes in battery box.

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

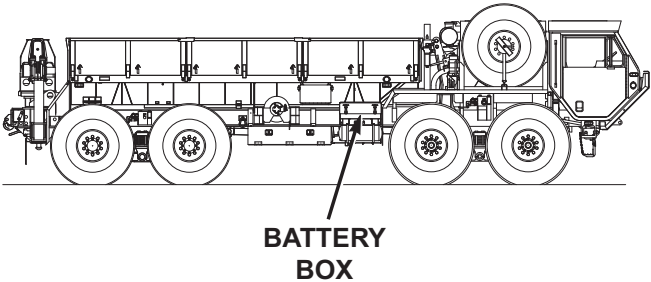


Figure 15.

			<div>2. Check battery cables for presence, frays, splits, and looseness.</div> <div>3. Check for loose, missing, or damaged batteries and corroded or burnt battery terminals.</div>	<div>Battery cables missing, frayed, split, or loose.</div> <div>One or more batteries missing, cracked, or unserviceable. Any battery terminal corroded or burnt. Any hold down not secure.</div>
22	Weekly	Spare Tire Davit And Carrier	Check spare tire davit and carrier for damage, missing parts.	



Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

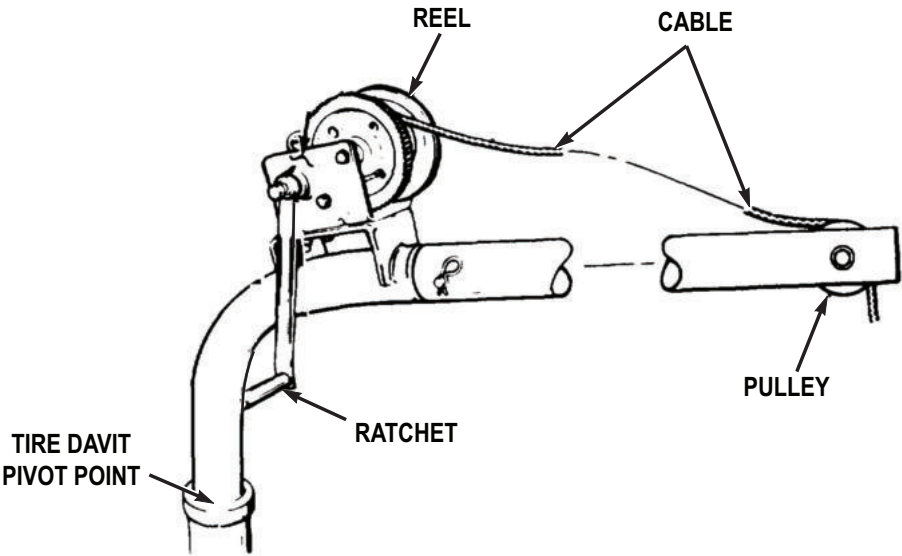


Figure 16.

23	Weekly	Spare Tire Retainer	Check spare tire retainer correctly seated and locking handle tight.	
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Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

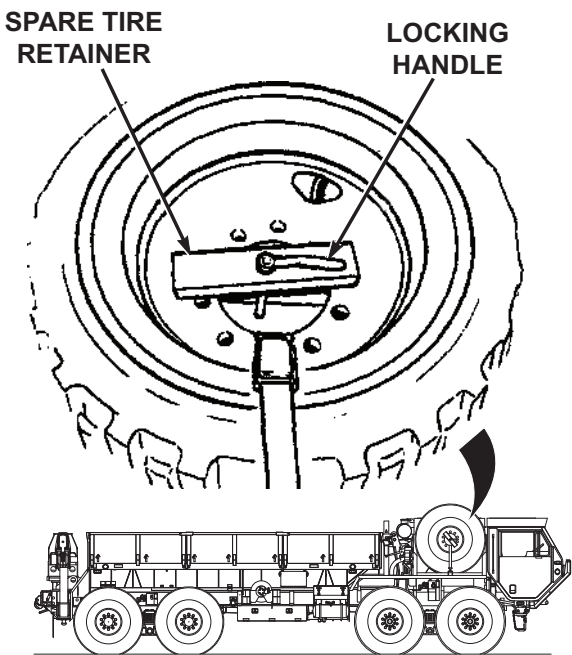


Figure 17.

24	Weekly	Air Dryer	Check air dryer for loose screws and connections.
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Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

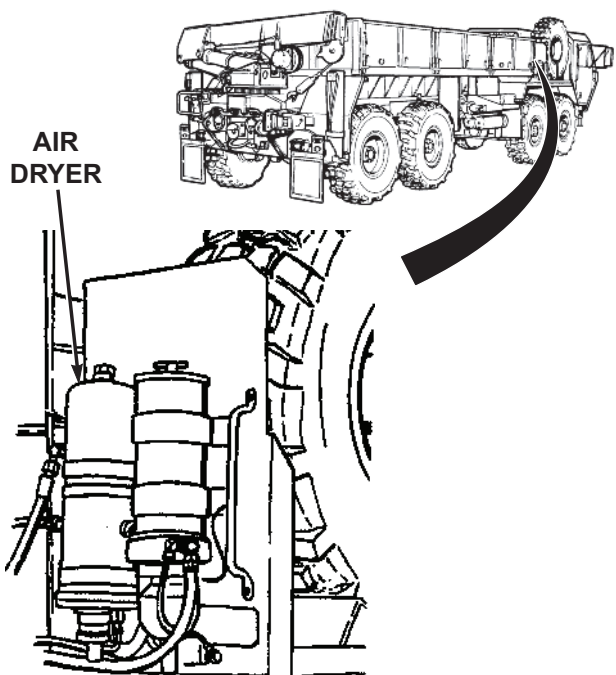


Figure 18.

25	Weekly	Air Lines and Hoses	<b>NOTE</b> Pressurize air system prior to performing this check.	Any leaks or damage to air lines, hoses, or fit-
			Check routing, for obvious damage to air lines and hoses. Check for leaks.	

**Table 1. PMCS - WEEKLY - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
26	Weekly	Doors, Handles, and Windows	<p style="text-align: center;"><b>NOTE</b></p> <p>Operation of vehicle with damaged doors or windows may violate AR 385-55. (WP 0164)</p> <p>Check condition and operation of door, handles, and windows. (WP 0018)</p>	things are found.
27	Weekly	Cab Temperature Controls	<p style="text-align: center;"><b>NOTE</b></p> <p>Start Engine. (WP 0053) Engine must be running for remaining PMCS checks.</p> <p>1. Check cab temperature controls for proper for proper operation: (WP 0036)</p>	

Table 1. PMCS - WEEKLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

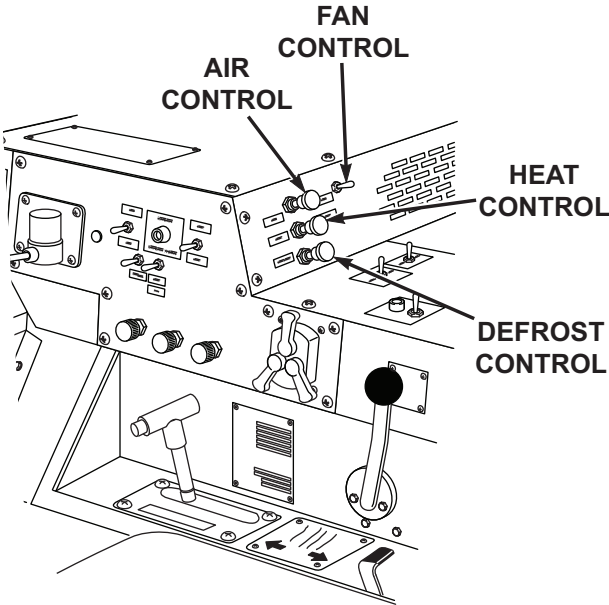


Figure 19.

- |  |  |  |  |
|--|--|--|--|
|  |  |  | <ul style="list-style-type: none"><li>a. Check AIR control.</li><li>b. Check HEAT control.</li><li>c. Check DEFROST control.</li><li>d. Check FAN control.</li></ul> |
|--|--|--|--|

END OF WORK PACKAGE

OPERATOR MAINTENANCE  
SEMIANNUAL - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools  
Gloves, Leather (WP 0166, Table 2)

Table 1. PMCS- SEMIANNUAL



Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<div><p><b>WARNING</b></p><p>Do not start engine or move vehicle when personnel are under vehicle or working on brake lines. Failure to comply may result in injury or death to personnel.</p><p><b>WARNING</b></p><p>Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.</p></div>	

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• Lubrication intervals are for normal operating conditions. Intervals may be shortened as required for severe operating conditions.</li><li>• Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing.</li><li>• When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated.</li><li>• Always refer to lubrication instructions (WP 0154) to ensure equipment has correct lubricants appropriate to operating environment (expected continuous temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as prescribed in lubrication instructions. (WP 0154)</li></ul>	
1	Semian nual	Brake System	Lubricate axles No. 1, No. 2, No. 3, and No. 4 brake camshafts and slack	Fitting will not purge old lubricant

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			adjusters (four fittings per axle) with GAA. (WP 0154, Table 8)	out of component.

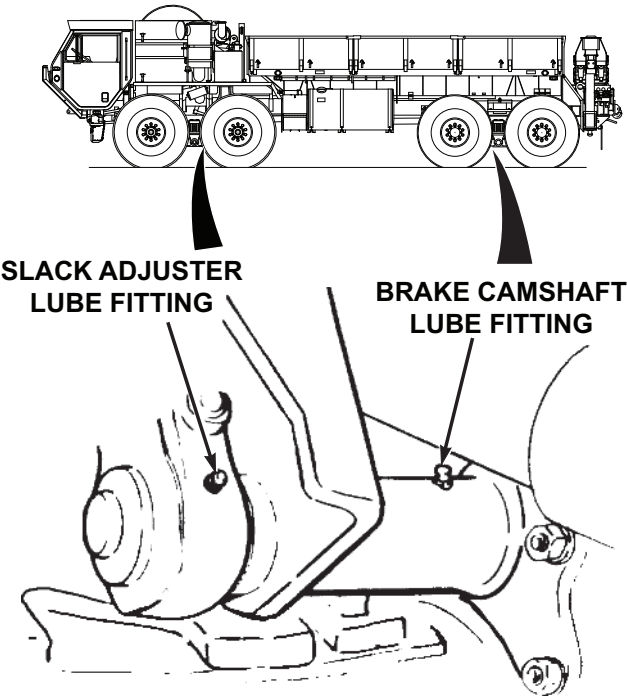


Figure 1.

**NOTE**

- When vehicle is operating under severe conditions, lubricate propeller shafts and universal joints every 50 hours of vehicle operation.



Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<ul style="list-style-type: none"><li>• Use the proper lubricant to purge all four bearing seals of each universal joint. This flushes abrasive contaminants from each bearing and assures all four bearings are filled properly. Pop the seals, these seals are made to be popped.</li><li>• If any seals fail to purge, move propeller shaft from side-to-side while applying gun pressure. This allows greater clearance on thrust end of bearing that is not purging. If seals still do not purge, rock vehicle by releasing the parking brake, start engine, put transmission in D (drive) or R (reverse), and allow vehicle to roll. This removes the windup in the drive line and allows for a greater clearance on the thrust end of the universal joint.</li><li>• Because of the design of the universal joint seal, there will occasionally be one or more bearing seals of a joint that may not purge. If this occurs, notify field level maintenance.</li></ul>	

**Table 1. PMCS- SEMIANNUAL - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
2	Semianual	Propeller Shafts and U-Joints	<ul style="list-style-type: none"> <li>• Universal joint may have one or two grease fittings. If there are two grease fittings, either fitting can be greased. It is not necessary to grease both fittings.</li> </ul> 1. Lubricate all axle propeller shafts, transmission to transfer case propeller shaft, and U-joints with GAA: (WP 0154, Table 8)	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

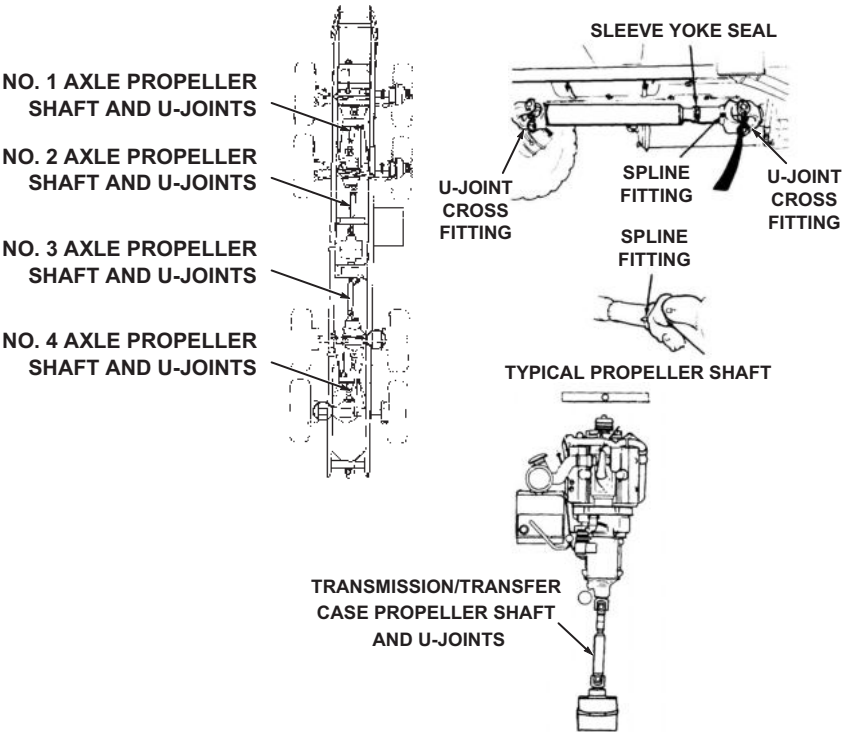


Figure 2.

			<p>a. Complete the following when lubricating the spline end of the propeller shafts:</p> <p>(1) Apply GAA (WP 0154, Table 8) to spline fitting</p>	<p>Fitting will not purge old lubricant out of component.</p>
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**Table 1. PMCS- SEMIANNUAL - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
3	Semianual	Steering System	<p>until lubricant appears at pressure relief hole.</p> <p>(2) Cover pressure relief hole with finger and continue adding grease until it appears at sleeve yoke seal.</p> <p>1. Lubricate intergear link with GAA. (WP 0154, Table 8)</p>	Fitting will not purge old lubricant out of component.

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

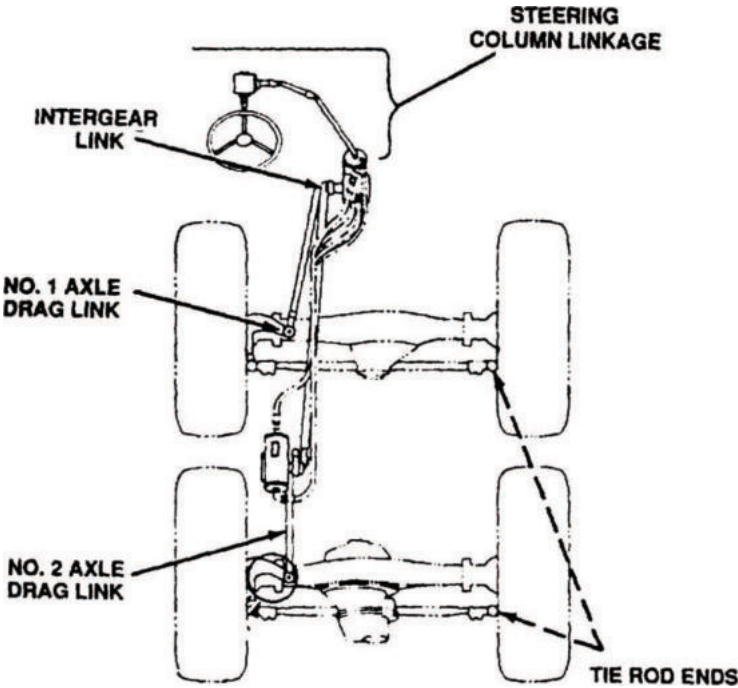


Figure 3.

			2. Lubricate No. 1 axle drag link with GAA. (WP 0154, Table 8)	Fitting will not purge old lubricant out of component.
			3. Lubricate No. 2 axle drag link with GAA. (WP 0154, Table 8)	Fitting will not purge old lubricant

**Table 1. PMCS- SEMIANNUAL - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p>4. Lubricate tie rod ends with GAA. (WP 0154, Table 8)</p> <p>5. Lubricate steering linkage U-joints and shafts with GAA. (WP 0154)</p> <p style="text-align: center;"><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• The top trunnion bearing should be given 10 to 12 strokes with a grease gun through existing fitting.</li> <li>• The plug below the bottom should temporarily be removed and a grease fitting installed. The lower trunnion bearing should be lubricated with 10 to 12 strokes from a grease gun. The grease fitting should then be removed and the plug reinstalled.</li> </ul> <p>6. Lubricate No. 1 and No. 2 axle trunnion bearings with GAA. (WP 0154, Table 8)</p>	<p>out of component.</p> <p>Fitting will not purge old lubricant out of component.</p> <p>Fitting will not purge old lubricant out of component.</p>

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

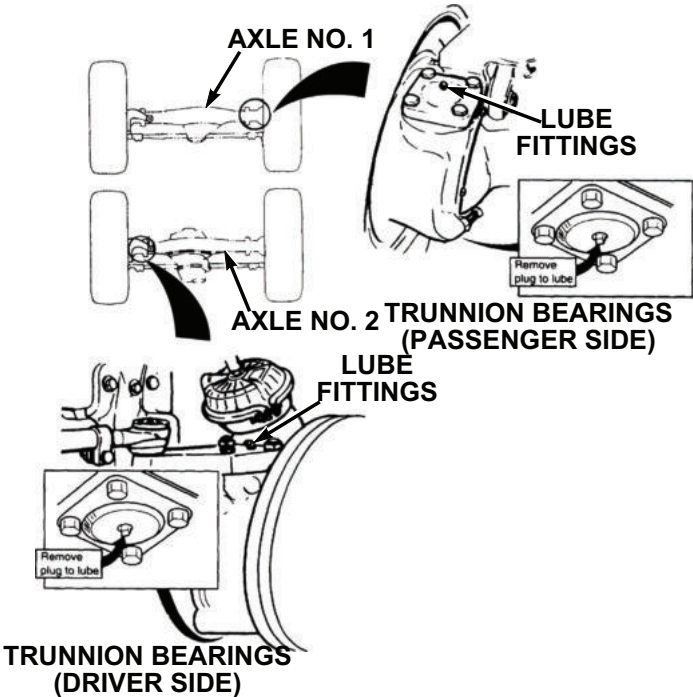
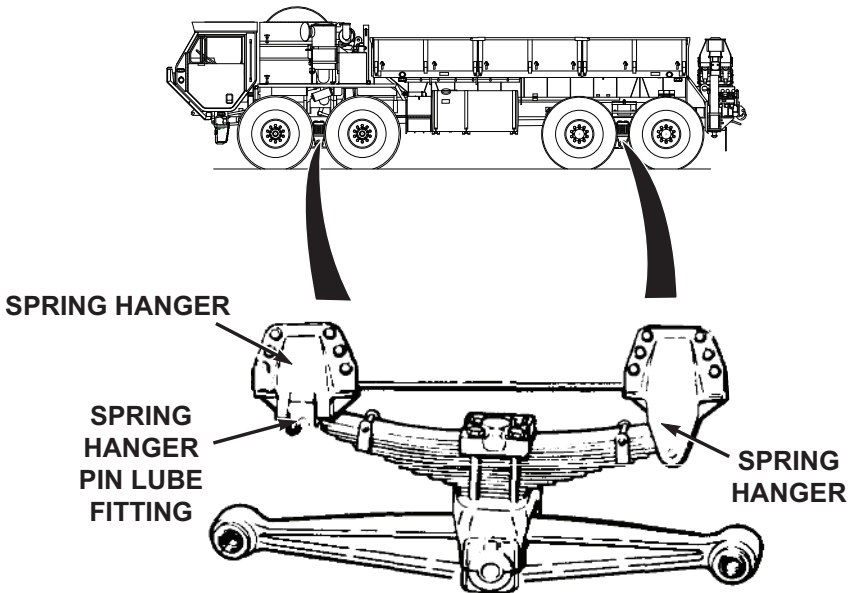


Figure 4.

4	Semian nual	Spring Hanger	1. Lubricate spring hanger pivot points (one fitting per spring) with GAA. (WP 0154, Table 8)	Fitting will not purge old lubricant out of component.
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*Table 1. PMCS- SEMIANNUAL - Continued*

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:



*Figure 5.*

			<ol style="list-style-type: none"> <li>2. If spring hanger pin does not accept grease, perform the following: <ol style="list-style-type: none"> <li>a. Relieve load on spring hanger pin by jacking up vehicle at frame rails, as close to spring hanger pin as possible.</li> <li>b. Lubricate spring hanger pin pivot.</li> </ol> </li> </ol>	
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Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
5	Semian nual	Battery Electrical System	<p>c. If springer hanger pin still fails to take grease, notify field level maintenance to remove spring hanger pin and replace as necessary.</p> <p><b>NOTE</b></p> <p>Vehicle may be equipped with either a slave receptacle incorporated in bottom rear of battery box, or separate unit on driver side front fender.</p> <p>Coat slave receptacle with corrosion preventive compound.</p>	

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

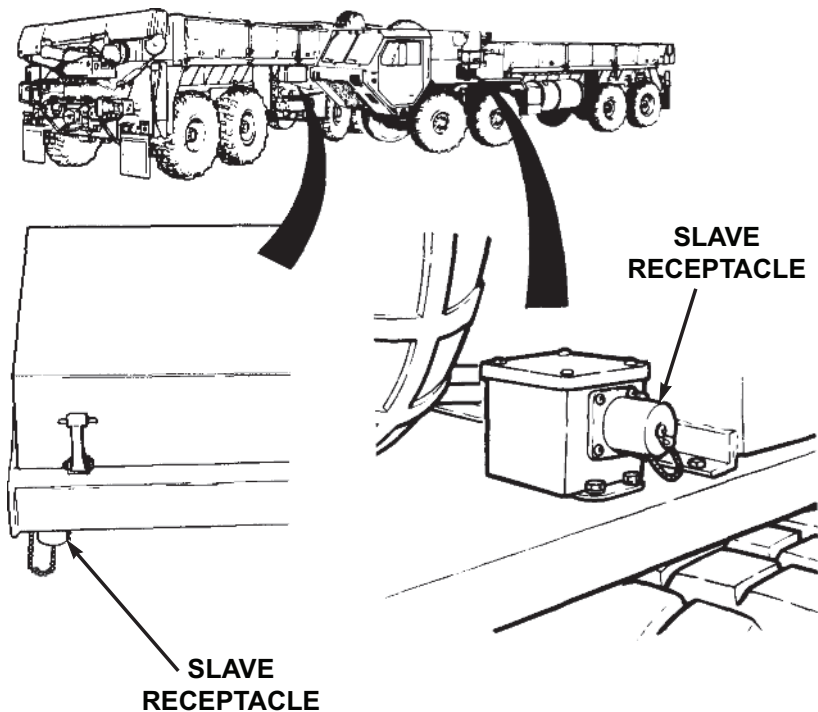


Figure 6.

6	Semian nual	Mirror Assembl es	Lubricate mirror assembly swivel joints with GAA. (WP 0154, Table 8)
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Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

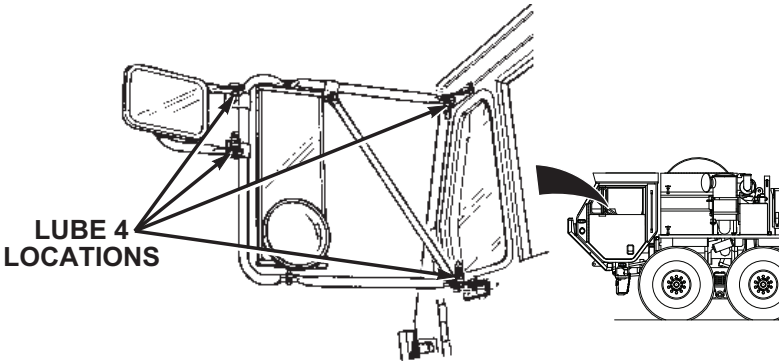


Figure 7.

7	Semian nual	Pintle Hook/ Self- Guided Coupler	<b>NOTE</b> Vehicle may be equipped with either a standard pintle hook, or self-guided coupler.	
			1. If vehicle is equipped with a standard pintle hook, perform the following:	

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:



Figure 8.

**NOTE**

Pintle hook plate lubrication fitting can be on any side.

- a. Lubricate pintle hook (3 fittings) with GAA. (WP 0154, Table 8)
- 2. If vehicle is equipped with self-guided coupler, perform the following:

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

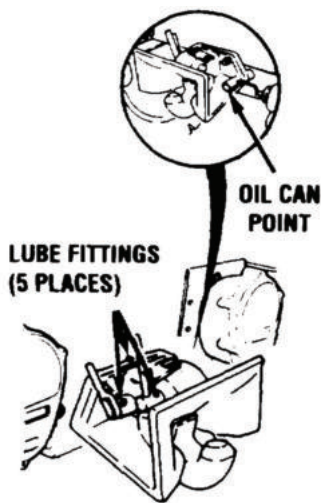
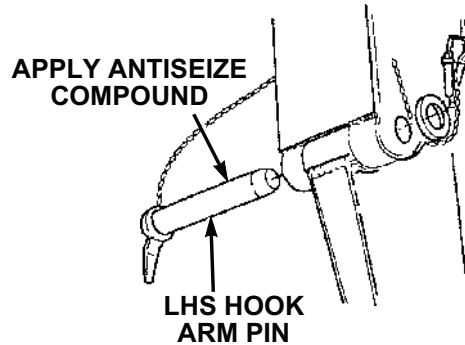


Figure 9.

8	Semian nual	CBT Assembly	<div><div>a. Lubricate self-guided coupler (5 fittings) with GAA. (WP 0154, Table 8)</div><div>b. Lubricate swivel lock with OE/HDO. (WP 0154, Table 7)</div></div> <div>With aid of an assistant lubricate LHS hook arm pin with anti-seize compound.</div>
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**Table 1. PMCS- SEMIANNUAL - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

*Figure 10.*

9	Semian nual	Self- Recovery Winch	<ol style="list-style-type: none"> <li>1. Unreel, (WP 0098) clean, and lubricate cable with OE/HDO. (WP 0154, Table 6)</li> <li>2. Lubricate front and rear cable tensioner rollers (three fittings per tensioner) with GAA. (WP 0154, Table 8)</li> </ol>	Fitting will not purge old lubricant out of component.
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Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

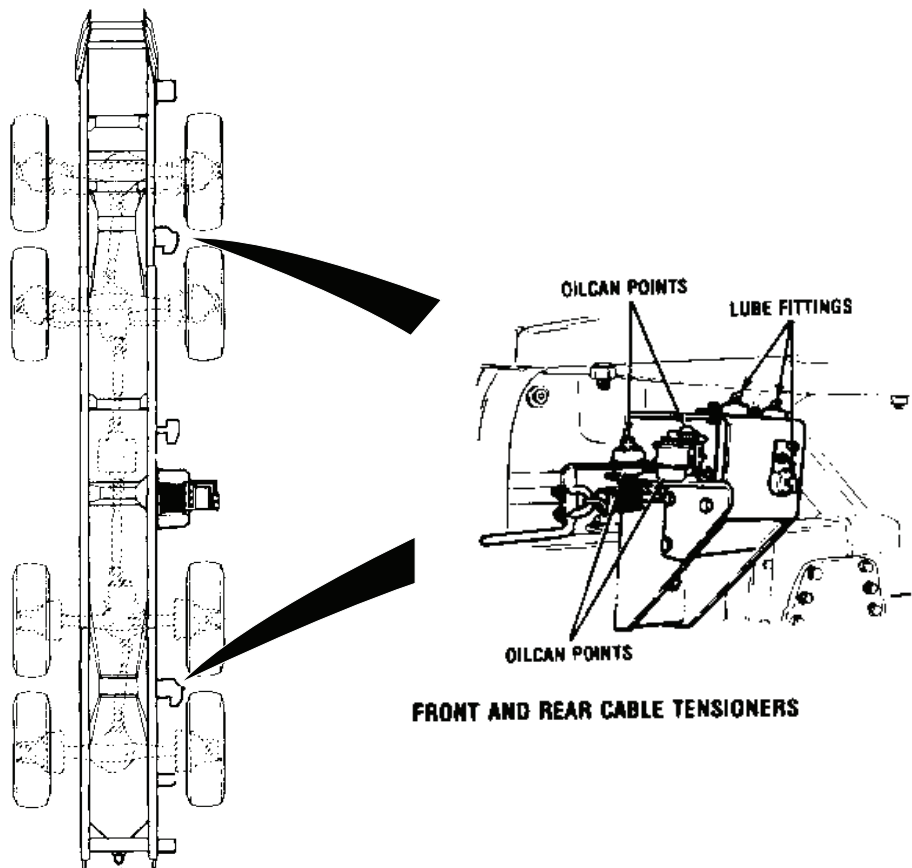


Figure 11.

- |  |  |  |  |  |
|--|--|--|--|--|
|  |  |  | 3. Lubricate pivot points and pressure rollers with OE/HDO. (WP 0154, Table 7) |  |
|--|--|--|--|--|

Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			4. Lubricate rear cable guide roller (four fittings) with GAA. (WP 0154, Table 8)	Fitting will not purge old lubricant out of component.

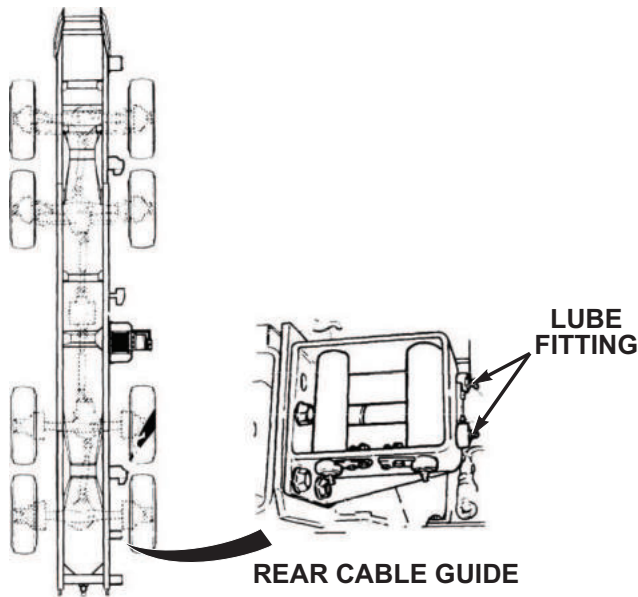


Figure 12.

			5. Lubricate front cable guide (four fittings) with GAA. (WP 0154, Table 8)	Fitting will not purge old lubricant
--	--	--	---	--------------------------------------



Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
				out of component.

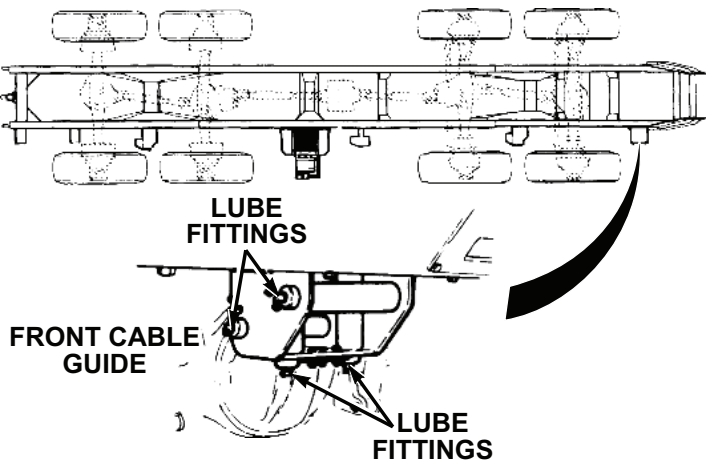


Figure 13.

10	Semian nual	Spare Tire Davit	1. Lubricate tire davit pivot point with light coating of GAA. (WP 0154, Table 8)	
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Table 1. PMCS- SEMIANNUAL - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

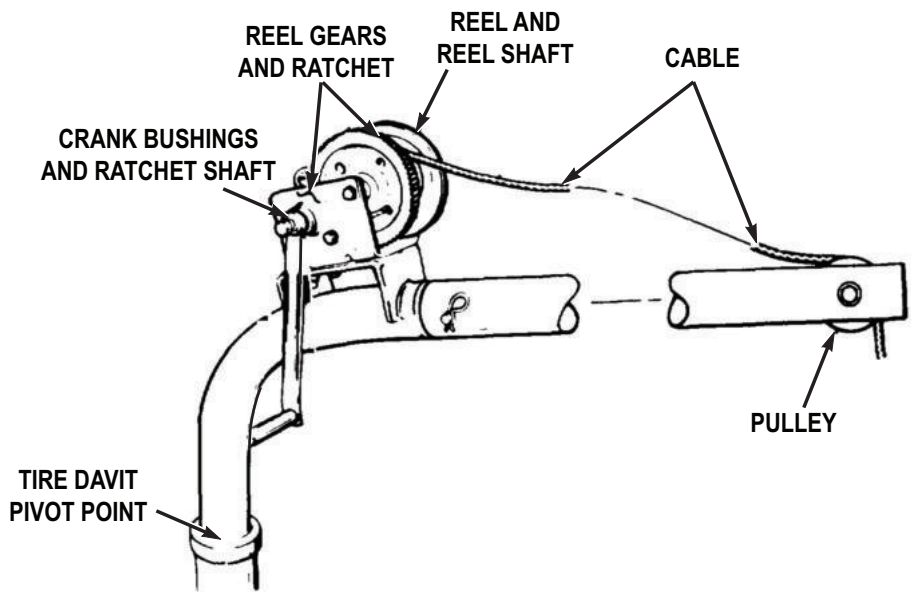


Figure 14.

			2. Lubricate reel gears and ratchet with light coating of GAA. (WP 0154, Table 8)
			3. Lubricate crank bushings and ratchet shaft with OE/HDO. (WP 0154, Table 7)
			4. Lubricate reel and reel shaft with OE/HDO. (WP 0154, Table 7)
			5. Lubricate cable with OE/HDO. (WP 0154, Table 7)

*Table 1. PMCS- SEMIANNUAL - Continued*

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			6. Lubricate pulley with OE/HDO. (WP 0154, Table 7)	

END OF WORK PACKAGE

OPERATOR MAINTENANCE  
MONTHLY - PREVENTIVE MAINTENANCE

INITIAL SETUP:

Tools and Special Tools  
Gloves, Leather (WP 0166, Table 2)

Table 1. PMCS - MONTHLY



Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<div><p><b>WARNING</b></p><p>Do not start engine or move vehicle when personnel are under vehicle or working on brake lines. Failure to comply may result in injury or death to personnel.</p><p><b>WARNING</b></p><p>Ensure engine is OFF and eye protection is worn when checking for leaks. Failure to comply may result in injury or death to personnel.</p></div>	

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			<p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• Lubrication intervals are for normal operating conditions. Intervals may be shortened as required for severe operating conditions.</li><li>• Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing.</li><li>• When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated.</li><li>• Always refer to lubrication instructions (WP 0154) to ensure equipment has correct lubricants appropriate to operating environment (expected continuous temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as prescribed in lubrication instructions. (WP 0154)</li></ul>	
1	Monthly	Damage And	Check entire vehicle for obvious damage and/or corrosion.	Any broken, cracked, bent frame

**Table 1. PMCS - MONTHLY - Continued**

<b>Item No.</b>	<b>Interval</b>	<b>Item to be Checked or Serviced</b>	<b>Procedure</b>	<b>Equipment Not Ready/ Available If:</b>
2	Monthly	Corrosion Check		rails, cross-members, or screws are found.
		Lubricate Oilcan Points	<ol style="list-style-type: none"> <li>1. Lubricate cabin door latching mechanisms and hinges with OE/HDO. (WP 0154)</li> <li>2. Lubricate all side panel and engine cover hinges, locks, and latches with OE/HDO. (WP 0154)</li> </ol> <p style="text-align: center;"><b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Vehicle may be equipped with either a standard pintle hook, or self-guided coupler.</li> <li>• If vehicle is equipped with pintle hook, skip this step.</li> </ul> <ol style="list-style-type: none"> <li>3. Lubricate self-guided coupler swivel lock with OE/HDO. (WP 0154, Table 7)</li> </ol> <p style="text-align: center;"><b>NOTE</b></p> <p>Steady illumination of the arctic engine heater indicator light indicates proper operation.</p>	
3	Monthly	Arctic Engine Heater	<ol style="list-style-type: none"> <li>1. Position arctic engine heater ON/OFF switch to ON position, indicator light will illuminate.</li> </ol>	

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

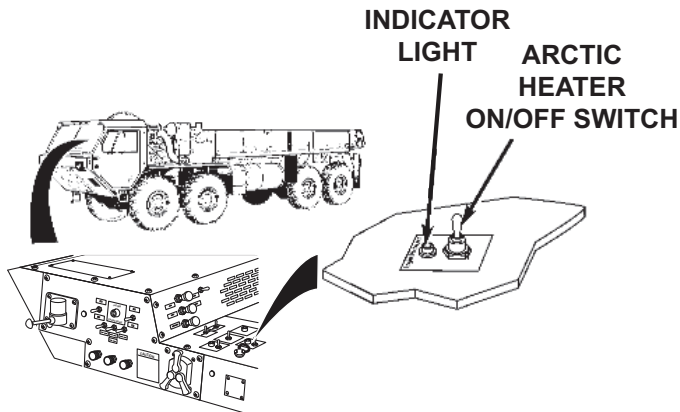


Figure 1.

		2. Visually check all fuel lines for leaks, cuts, loose clamps, and other obvious damage.	Any Class III leak.
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Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

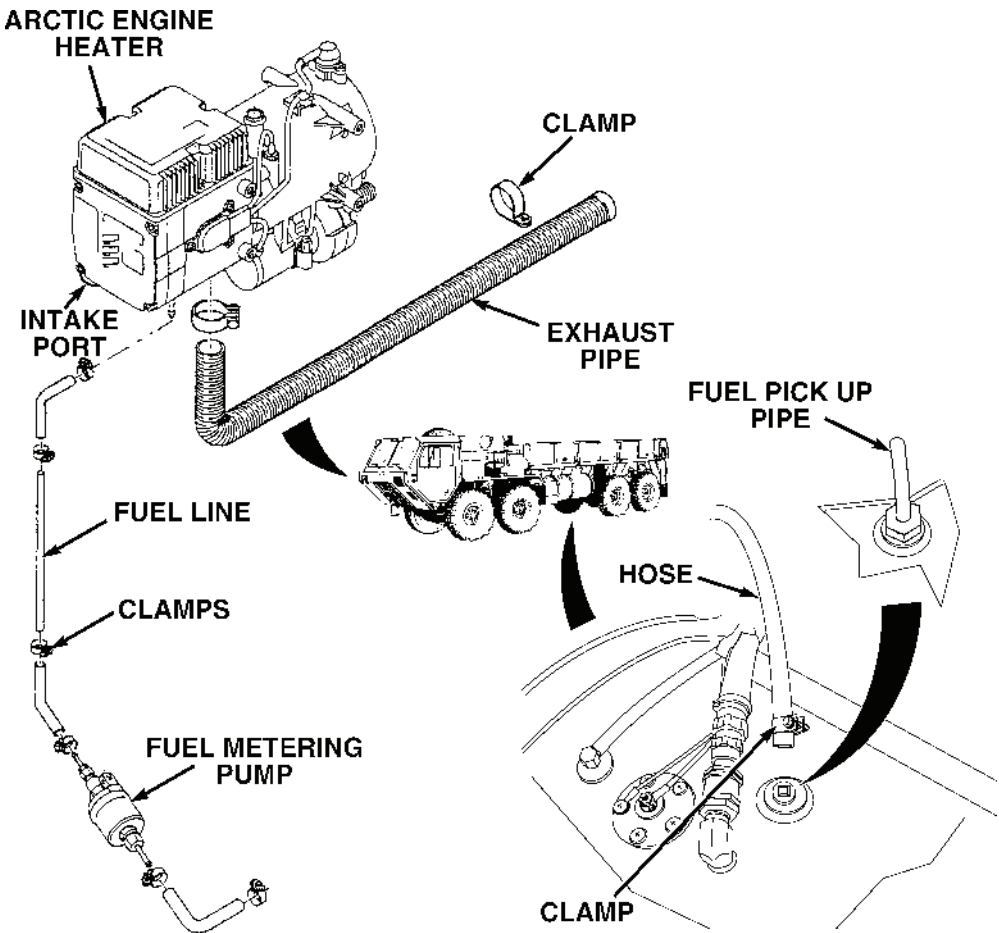


Figure 2.

- |  |  |  |  |  |
|--|--|--|--|--|
|  |  |  | 3. Visually check intake port and exhaust pipe for blockage. |  |
|--|--|--|--|--|



Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
			4. Check water pump for unusual noise.	

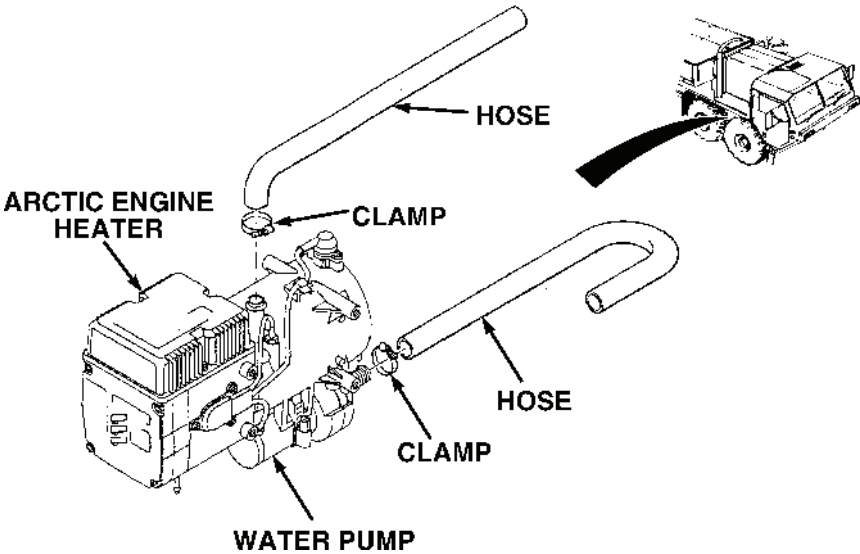
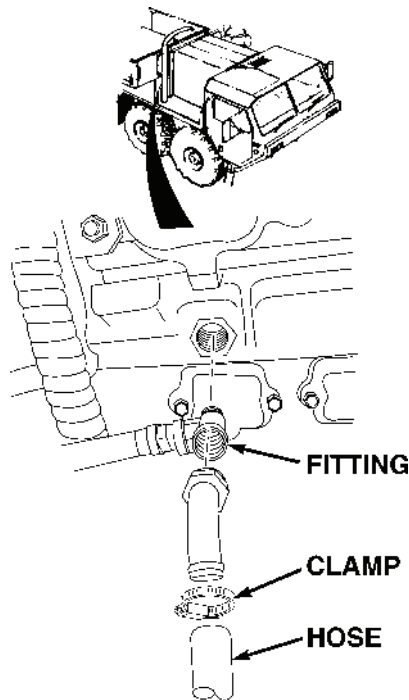


Figure 3.

			5. Check coolant hoses at arctic engine heater for leaks, cuts, loose hose clamps, and other obvious damage.	Any Class III leak.
			6. Check coolant hoses and fittings at passenger side of engine for leaks, cuts, loose hose clamps, and other obvious damage.	Any Class III leak.

**Table 1. PMCS - MONTHLY - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

*Figure 4.*

- |  |  |   |  |
|--|--|---|--|
|  |  | 7. Check coolant hoses and fittings at passenger side of engine for leaks, cuts, loose hose clamps, and other obvious damage. |  |
|--|--|---|--|

Any Class III leak.

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

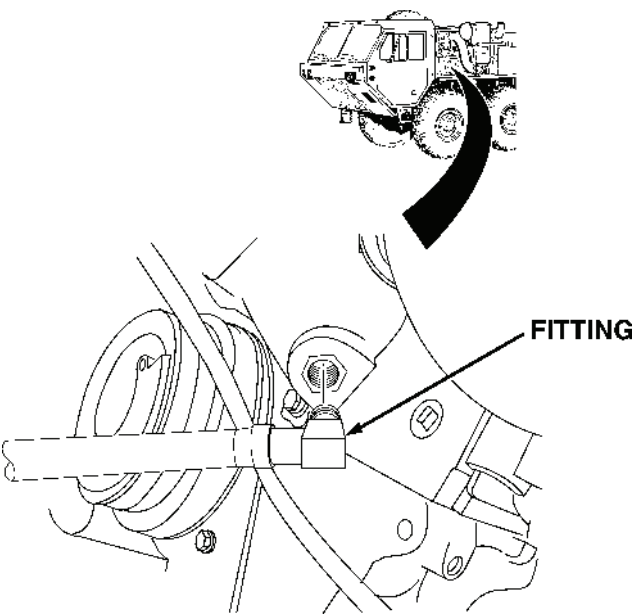


Figure 5.

- |  |  |  |  |  |
|--|--|--|--|--|
|  |  |  | 8. Run arctic engine heater for a minimum of 15 minutes at least once a month. |  |
|--|--|--|--|--|

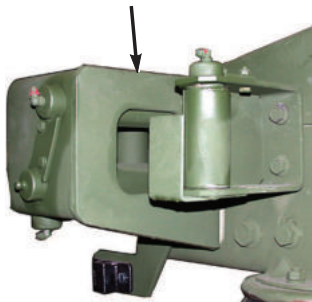
**Table 1. PMCS - MONTHLY - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
4	Monthly	Self-Recovery Winch (SRW)	<p style="text-align: center;"><b>WARNING</b></p> <div> </div> <ul style="list-style-type: none"> <li>• Always wear protective gloves when handling winch cable. Never let cable run through hands. Frayed cables can cut severely. Failure to comply may result in injury or death to personnel.</li> <li>• Never operate winch with less than five wraps of cable on winch drum. Failure to comply may result in injury or death to personnel.</li> </ul> <ol style="list-style-type: none"> <li>1. Check winch cable for kinks, frays, and breaks.</li> <li>2. Check self-recovery winch (SRW) lever (WP 0020) for proper operation in both directions.</li> </ol>	Self-recovery winch (SRW) lever does not function.

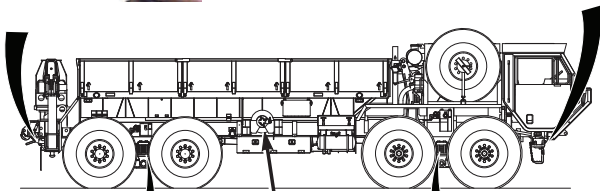
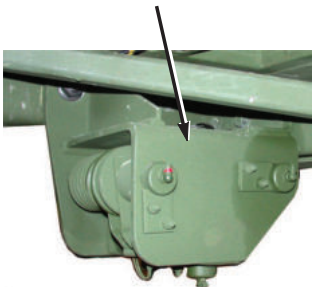
Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

REAR CABLE GUIDE



FRONT CABLE GUIDE



REAR TENSIONER



SELF-RECOVERY WINCH

FRONT TENSIONER



Figure 6.

			3. Inspect front cable guide for any loose or missing parts and any obvious damage.	Front cable guide has loose/missing parts or
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**Table 1. PMCS - MONTHLY - Continued**

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
5	Monthly	Gas Particulate Filter Unit (GPFU)	<p>4. Inspect front tensioner for loose or missing parts and any obvious damage.</p> <p>5. Inspect rear tensioner for loose or missing parts and any other obvious damage.</p> <p>6. Inspect rear cable guide for loose or missing parts and any obvious damage.</p>	<p>is unserviceable.</p> <p>Front tensioner has loose/missing parts or is unserviceable.</p> <p>Rear tensioner has loose/missing parts or is unserviceable.</p> <p>Rear cable guide has loose/missing parts or is unserviceable.</p>
			<p style="text-align: center;"><b>NOTE</b></p> <p>Gas particulate filter unit must be in operation (WP 0070) to perform the following checks.</p> <p>1. Check heater for unusual loud noise or improper operation.</p>	<p>Heater does not operate/ operates abnormally and GPFU is required for mission.</p>

Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:

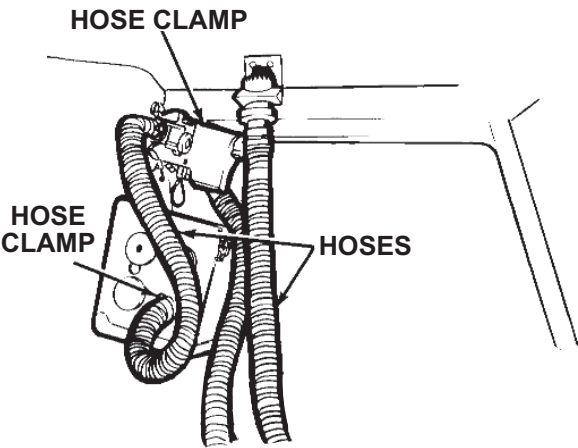


Figure 7.

			<div>2. Disconnect two air duct breakaway sockets from mount and feel for airflow.</div> <div>3. Turn heater control knob clockwise to make sure indicator light illuminates.</div> <div>4. Check hoses for cuts, tears, and other obvious damage.</div>	<div>No airflow or not enough air-flow and GPFU is required for mission.</div> <div>Heater is in-operative and GPFU is required for mission.</div> <div>Hoses cut, torn, or damaged and GPFU</div>
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Table 1. PMCS - MONTHLY - Continued

Item No.	Interval	Item to be Checked or Serviced	Procedure	Equipment Not Ready/ Available If:
6	Monthly	Rifle Stowage Mount	<div>5. Make sure hose clamps are secure.</div> <div>1. Check that mounting screws on top mount and lower mount are not broken or missing.</div>	<div>is required for mission.</div> <div>Clamps loose and GPFU is required for mission.</div>

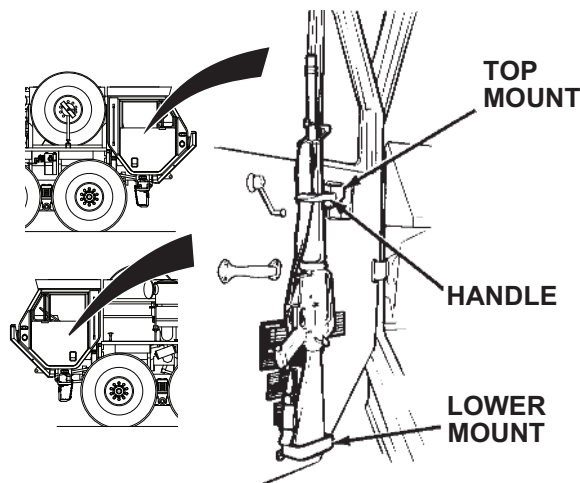


Figure 8.

			2. Check handle for excessive looseness or binding.	
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**Table 1. PMCS - MONTHLY - Continued**

<b>Item No.</b>	<b>Interval</b>	<b>Item to be Checked or Serviced</b>	<b>Procedure</b>	<b>Equipment Not Ready/ Available If:</b>
7	Monthly	Machine Gun Operator's Platform Support	Check machine gun operator's platform support for loose, broken, or missing mounting screws.	
8	Monthly	Machine Gun Operator's Platform	Check machine gun operator's platform for cracks, loose or broken leg, missing or broken tie down strap.	
9	Monthly	Ring Mount	Check machine gun mounts for loose, broken, or missing mounting screws.	
10	Monthly	M-13 Decontamination Unit	Refer to TM 3-4230-214-12&P (WP 0164) for M-13 Decontamination Unit PMCS.	
11	Monthly	M-8 Chemical Alarm	Refer to TM 3-6665-225-12 (WP 0164) for M-8 Chemical Alarm PMCS.	
12	Monthly	Radio	Refer to TM 11-5820-498-12 (WP 0164) for radio PMCS.	

**END OF WORK PACKAGE**

## CHAPTER 5

### MAINTENANCE INSTRUCTIONS



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## OPERATOR MAINTENANCE LUBRICATION INSTRUCTIONS

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### INITIAL SETUP:

Not Applicable

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### WARNING



Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. Keep away from open fire and use in well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water. Failure to comply may result in injury or death to personnel.

### NOTE

- The lowest level of maintenance authorized to lubricate a specific point is indicated by where that lubrication point falls within the PMCS tables. Operator/crew are only authorized to lubricate those points within the operator PMCS tables. Field level maintenance personnel are authorized to lubricate all points regardless of which tables (operator or field level) those lubrication points are listed.
- Refer to PMCS tables for specific lubrication points and localized views.
- Lubrication intervals are for normal operating conditions. Intervals may be shortened as required for severe operating conditions.
- Clean all lubrication points with cleaning compound, solvent and allow to dry prior to servicing.
- When using a grease gun, apply lubricant to the fitting until clean lubricant squeezes out of the part being lubricated.
- After a thorough high pressure washing, lubricate all grease fittings and oil can points outside and underneath vehicle.

- If vehicle fords water obstacle, service all lubrication points below fording depth and check submerged gearboxes for presence of water.
- Ensure equipment has correct lubricants appropriate to operating environment (expected continuous temperatures). If not, remove/drain and reapply/refill equipment with appropriate lubricants for operating environment as prescribed in these lubrication instructions.

**Table 1. Engine Lubrication.**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Desert Conditions	Interval
Engine Oil (with filter change)	30 qt. (28.38 L)	OE/HDO-15W/40 MIL-PRF-2104	OE/HDO-15W/40 MIL-PRF-2104 or OEA MIL-PRF-46167 (Notes 1, 2, and 3)	OE/HDO-15W/40 MIL-PRF-2104 or OEA MIL-PRF-46167 (Notes 1, 2, and 3)	OE/HDO-40 MIL-PRF-2104	A-Annual (1 year)
Engine Oil (without filter change)	28 qt. (26.49 L)	OE/HDO-15W/40 MIL-PRF-2104	OE/HDO-15W/40 MIL-PRF-2104 or OEA MIL-PRF-46167 (Notes 1, 2, and 3)	OE/HDO-15W/40 MIL-PRF-2104 or OEA MIL-PRF-46167 (Notes 1, 2, and 3)	OE/HDO-40 MIL-PRF-2104	A-Annual (1 year)

**Table 1. Engine Lubrication. - Continued**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Desert Conditions	Interval
<p style="text-align: center;"><b>NOTE</b></p> <ol style="list-style-type: none"> <li>1. After changing to OEA, drain one pint (0.5 L) of oil from the oil sampling valve.</li> <li>2. OEA must be used when temperatures are consistently below 0°F (-18°C).</li> <li>3. OE/HDO-15W/40 must be used when temperatures are consistently above 0°F (-18°C).</li> </ol>						

**Table 2. Transmission and Transfer Case Lubrication.**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Transmission Oil	31 qt. (29.33 L)	OE/HDO-15W/40 MIL-PRF-2104	OE/HDO-15W/40 MIL-PRF-2104 (Note 2)	OE/HDO-15W/40 MIL-PRF-2104 (Note 2)	A-Annual (1 year)
Transfer Case	5 qt. (4.73 L)	OE/HDO-40 MIL-PRF-2104	OE/HDO-40 MIL-PRF-2104 or OEA MIL-PRF-46167 (Notes 1 and 2)	OE/HDO-40 MIL-PRF-2104 or OEA MIL-PRF-46167 (Notes 1 and 2)	A-Annual (1 year)

**Table 2. Transmission and Transfer Case Lubrication. - Continued**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
All Other Transmission and Transfer Case Lubrication Points	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 2)	GAA MIL-PRF-10924 (Note 2)	As Required (Note 3)
<p style="text-align: center;"><b>NOTE</b></p> <ol style="list-style-type: none"> <li>1. OE/HDO-40 must be used when temperatures are consistently above 0°F (-18°C).</li> <li>2. Refer to FM 9-207 (WP 0164) for arctic operation.</li> <li>3. Refer to PMCS tables for specific lubrication intervals.</li> </ol>					

**Table 3. Axle Lubrication.**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Axle 1	17.5 qt. (16.56 L)	GO-85W/140 MIL-PRF-2105	GO-85W/140 MIL-PRF-2105 or GO-80W/90 MIL-PRF-2105 (Notes 1 and 3)	GO-80W/90 MIL-PRF-2105 or GO-75 MIL-PRF-2105 (Notes 2 and 3)	B-Biennial (2 Years) (Note 4)

**Table 3. Axle Lubrication. - Continued**

<b>Item</b>	<b>Capacities</b>	<b>Expected Temperatures Above +15°F (-9°C)</b>	<b>Expected Temperatures +40 to -15°F (+4 to -26°C)</b>	<b>Expected Temperatures +40 to -50°F (+4 to -46°C)</b>	<b>Interval</b>
Axle 2 (and Power Divider)	21.5 qt. (20.34 L)	GO-85W/ 140 MIL- PRF-2105	GO-85W/ 140 MIL- PRF-2105 or GO-80W/90 MIL- PRF-2105 (Notes 1 and 3)	GO-80W/90 MIL- PRF-2105 or GO-75 MIL- PRF-2105 (Notes 2 and 3)	B-Biennial (2 Years) (Note 4)
Axle 3 (and Power Divider)	21 qt. (19.87 L)	GO-85W/ 140 MIL- PRF-2105	GO-85W/ 140 MIL- PRF-2105 or GO-80W/90 MIL- PRF-2105 (Notes 1 and 3)	GO-80W/90 MIL- PRF-2105 or GO-75 MIL- PRF-2105 (Notes 2 and 3)	B-Biennial (2 Years) (Note 4)
Axle 4	16.5 qt. (15.61 L)	GO-85W/ 140 MIL- PRF-2105	GO-85W/ 140 MIL- PRF-2105 or GO-80W/90 MIL- PRF-2105 (Notes 1 and 3)	GO-80W/90 MIL- PRF-2105 or GO-75 MIL- PRF-2105 (Notes 2 and 3)	B-Biennial (2 Years) (Note 4)
Oil Lubed Wheel Bearings	N/A	GO-85W/ 140 MIL- PRF-2105	GO-85W/ 140 MIL- PRF-2105	GO-80W/90 MIL- PRF-2105 or	B-Biennial (2 Years)



**Table 3. Axle Lubrication. - Continued**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
			or GO-80W/90 MIL- PRF-2105 (Notes 1 and 3)	GO-75 MIL- PRF-2105 (Notes 2 and 3)	
All Other Axle Lubrication Points	As Required	GAA MIL- PRF-10924	GAA MIL- PRF-10924 (Note 3)	GAA MIL- PRF-10924 (Note 3)	As Required (Note 5)

**NOTE**

1. GO-85W/140 must be used when temperatures are consistently above 30°F (-1°C).
2. GO-85W/90 must be used when temperatures are consistently above -15°F (-26°C).
3. Refer to FM 9-207 (WP 0164) for arctic operation.
4. An initial lubrication change on new or rebuilt axles should occur between 500 mi. (805 km) and 1,000 miles (1 609 km). Refer to Field Level Annual PMCS for more information.
5. Refer to PMCS tables for specific lubrication intervals.

**Table 4. Hydraulic Reservoir Servicing.**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Hydraulic Reservoir	120 qt. (113.52 L)	OE/HDO-10 MIL- PRF-2104	OE/HDO-10 MIL- PRF-2104	OEA MIL- PRF-46167	A-Annual (1 year)

**Table 4. Hydraulic Reservoir Servicing. - Continued**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
		or OE/HDO-30 MIL- PRF-2104 (Note 1)	(Note 2)	(Notes 2 and 3)	
<p style="text-align: center;"><b>NOTE</b></p> <ol style="list-style-type: none"> <li>1. OE/HDO-30 must be used only when temperatures are consistently above 60°F (16°C).</li> <li>2. Refer to FM 9-207 (WP 0164) for arctic operation.</li> <li>3. OEA must be used when temperatures are consistently below 0°F (-18°C).</li> </ol>					

**Table 5. Radiator Servicing.**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Antifreeze (CID A-A-52624) (Note 1)	80 qt. (75.68 L)	80 qt. (75.68 L) 50% Ethylene Glycol Type IC (Recycled) (Notes 1 and 2)	80 qt. (75.68 L) 50% Ethylene Glycol Type IC (Recycled) (Notes 1 and 2)	80 qt. (75.68 L) 60% Ethylene Glycol Arctic Type IB (Recycled) (Notes 1, 2, and 3)	A-Annual (1 year) (Note 4)

**Table 5. Radiator Servicing. - Continued**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Antifreeze (CID A-A-52624) (Note 1)	80 qt. (75.68 L)	40 qt. (37.84 L) 100% Ethylene Glycol Type IA (Recycled) plus 40 qt. (37.84 L) water (Notes 1 and 5)	40 qt. (37.84 L) 100% Ethylene Glycol Type IA (Recycled) plus 40 qt. (37.84 L) water (Notes 1 and 5)	48 qt. (45.41 L) 100% Ethylene Glycol Type IA (Recycled) plus 32 qt. (30.27 L) water (Notes 1, 3, and 6)	A-Annual (1 year) (Note 4)
Antifreeze (CID A-A-52624) (Note 1)	80 qt. (75.68 L)	40 qt. (37.84 L) 100% Propylene Glycol Type IIA (virgin) plus 40 qt. (37.84 L) water (Notes 1 and 7)	40 qt. (37.84 L) 100% Propylene Glycol Type IIA (virgin) plus 40 qt. (37.84 L) water (Notes 1 and 7)	48 qt. (45.41 L) 100% Propylene Glycol Type IIA (virgin) plus 32 qt. (30.27 L) water (Notes 1, 3, and 8)	A-Annual (1 year) (Note 4)
Corrosion Inhibitor (Note 1)	2.4 qt. (2.27 L)	(Note 1)	(Note 1)	(Notes 1 and 3)	As Required

**NOTE**

1. Refer to TB 750-651 (WP 0164) for more information on antifreeze and additives used in the HEMTT series vehicle engine cooling system, and TM 750-254 (WP 0164) for detailed instructions for draining, cleaning, and flushing cooling systems of tactical vehicles.

**Table 5. Radiator Servicing. - Continued**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
2. Type 1C (normal) and Type 1B (arctic) antifreeze is premixed, and DOES NOT REQUIRE the addition of water. Never add water or inhibitor to Type 1B antifreeze. 3. Refer to FM 9-207 (WP 0164) for arctic operation. 4. Engine coolant contaminant level is checked annually. Engine coolant does not need to be changed until it fails check. 5. A mixture of 50% Ethylene Glycol (EG) antifreeze to 50% water will provide freeze protection down to -34°F (-37°C). 6. A mixture of 50% Propylene Glycol (PG) antifreeze to 50% water will provide freeze protection down to -27°F (-33°C). 7. A mixture of 60% Ethylene Glycol (EG) antifreeze to 40% water will provide freeze protection down to -62°F (-52°C). 8. A mixture of 60% Propylene Glycol (PG) antifreeze to 40% water will provide freeze protection down to -56°F (-49°C).					

**Table 6. Self-Recovery Winch Lubrication.**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Self-Recovery Winch Gearbox (Note 1)	2 qt. (1.89 L)	GO-85W/140 MIL-PRF-2105	GO-75 MIL-PRF-2105 or GO-80W/90 MIL-PRF-2105 (Note 2)	GO-75 MIL-PRF-2105 (Note 2)	A-Annual (1 year)
Winch Cable	As Required	OE/HDO-30 MIL-PRF-2104	OE/HDO-10 MIL-PRF-2104	OEA MIL-PRF-46167	S-Semiannual (WP 0152)

**Table 6. Self-Recovery Winch Lubrication. - Continued**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
			(Note 1)	(Note 1)	(6 Months)
All Other Self-Recovery Winch Lubrication Points	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 2)	GAA MIL-PRF-10924 (Note 2)	As Required (Note 3)
<p style="text-align: center;"><b>NOTE</b></p> <ol style="list-style-type: none"> <li>1. Pre-lubricated from manufacturer.</li> <li>2. Refer to FM 9-207 (WP 0164) for arctic operation.</li> <li>3. Refer to PMCS tables for specific lubrication intervals.</li> </ol>					

**Table 7. Oil Can Point Lubrication.**

Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Intervals
As Required	OE/HDO-30 MIL-PRF-2104	OE/HDO-10 MIL-PRF-2104 (Note 1)	OEA MIL-PRF-46167 (Note 1)	As Required (Note 2)
<p style="text-align: center;"><b>NOTE</b></p> <ol style="list-style-type: none"> <li>1. Refer to FM 9-207 (WP 0164) for arctic operation.</li> <li>2. Refer to PMCS tables for specific oilcan lubrication intervals.</li> </ol>				

**Table 8. Miscellaneous Lubrication Points.**

<b>Item</b>	<b>Capacities</b>	<b>Expected Temperatures Above +15°F (-9°C)</b>	<b>Expected Temperatures +40 to -15°F (+4 to -26°C)</b>	<b>Expected Temperatures +40 to -50°F (+4 to -46°C)</b>	<b>Interval</b>
Engine Throttle Lever	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	A-Annual (1 year)
Load Handling System	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	S-Semiannual (WP 0152) (6 Months)
Pintle Hook	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	W-Weekly (WP 0151) S-Semiannual (WP 0152) (6 Months) (service fittings)
Propeller Driver Shafts and U-Joints	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	S-Semiannual (WP 0152) (6 Months) (Note 2)
Self-Guided Coupler	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	W-Weekly (WP 0151) (coat with GAA) S-Semiannual (WP 0152) (6 Months) (service fittings)

**Table 8. Miscellaneous Lubrication Points. - Continued**

Item	Capacities	Expected Temperatures Above +15°F (-9°C)	Expected Temperatures +40 to -15°F (+4 to -26°C)	Expected Temperatures +40 to -50°F (+4 to -46°C)	Interval
Spare Tire Davit	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	S-Semiannual (WP 0152) (6 Months)
Spring Hanger Pins	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	S-Semiannual (WP 0152) (6 Months)
Steering System	As Required	GAA MIL-PRF-10924	GAA MIL-PRF-10924 (Note 1)	GAA MIL-PRF-10924 (Note 1)	S-Semiannual (WP 0152) (6 Months)

**Table 9. Vehicle Cleaning.**

Item	Capacities	Expected Temperature	Intervals
Cleaning Compound, Solvent (Note 1)	As Required	SD All Temperatures (Note 2)	As Required
<p style="text-align: center;"><b>NOTE</b></p> <ol style="list-style-type: none"> <li>1. After a thorough high pressure washing, lubricate all grease fittings and oil can points outside and underneath vehicle.</li> <li>2. Refer to FM 9-207 (WP 0164) for arctic operation.</li> </ol>			

**END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE CLOSE/OPEN HEATER VALVES

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### INITIAL SETUP:

#### Equipment Condition

Engine OFF. (WP 0066)

#### Equipment Condition - Continued

Wheels chocked. (WP 0089)

Open passenger side engine cover.  
(WP 0163)

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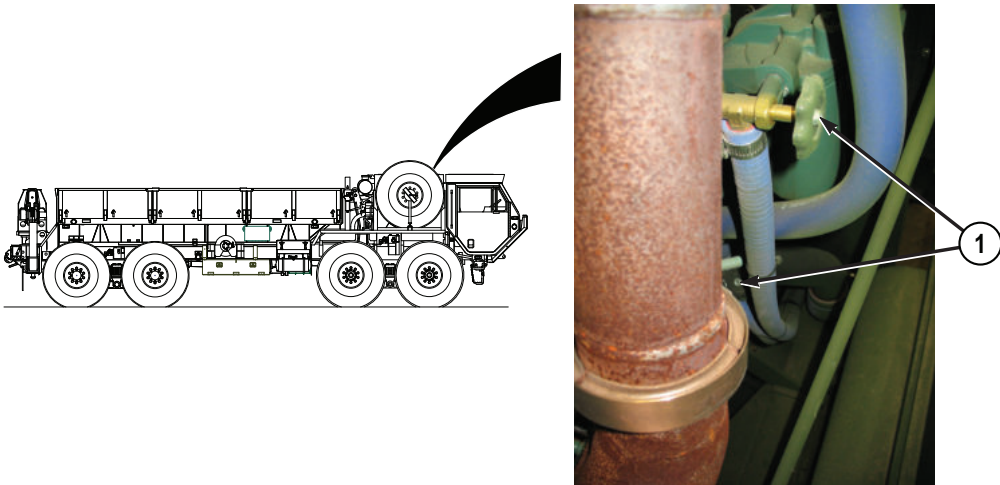
### CLOSE HEATER VALVES

#### NOTE

- Closing two heater valves will improve efficiency of air conditioning kit.
- Closing two heater valves will disable cabin heat.
- Two heater valve knobs are located on front passenger side of engine, the bottom valve is located approximately 18 in. (46 cm) below the top valve.

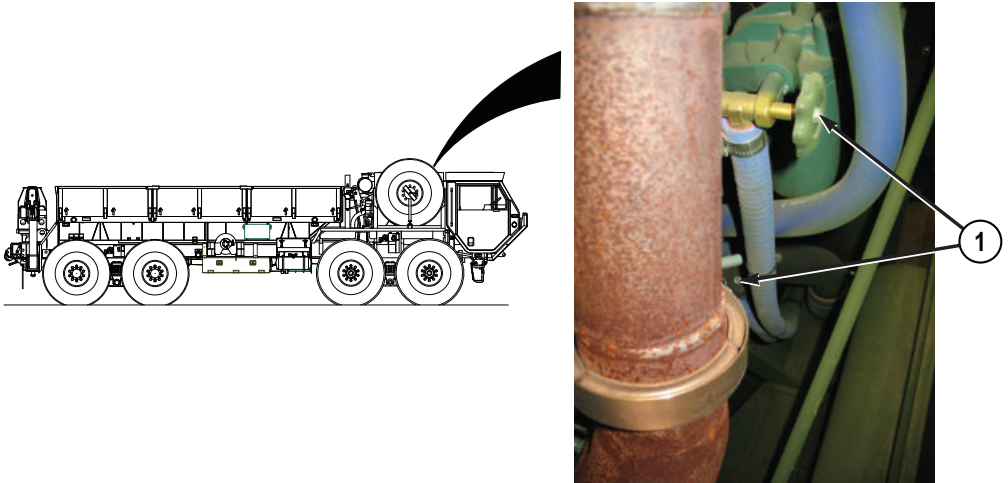
1. Turn two heater valve knobs (1) counterclockwise to close.



**CLOSE HEATER VALVES - Continued***Figure 1.***END OF TASK****OPEN HEATER VALVES****NOTE**

- Opening two heater valves will diminish efficiency of air conditioning kit.
- Opening two heater valves will enable cabin heat.
- Two heater valve knobs are located on front passenger side of engine, the bottom valve is located approximately 18 in. (46 cm) below the top valve.

1. Turn two heater valve knobs (1) clockwise to close.

**OPEN HEATER VALVES - Continued***Figure 2.***END OF TASK****FOLLOW-ON MAINTENANCE**

1. Close passenger side engine cover. (WP 0163)
2. Remove wheel chocks.

**END OF WORK PACKAGE**



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**OPERATOR MAINTENANCE  
PRE/POST TOWING PROCEDURE (FRONT LIFT ONLY)**

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**INITIAL SETUP:**

**Tools and Special Tools**

Chain, 8 ft. (supplied by wrecker)  
Chain, 7 ft. (supplied by wrecker)  
(WP 0165, Table 3, Item 8)

**Equipment Condition**

Engine OFF. (WP 0066)

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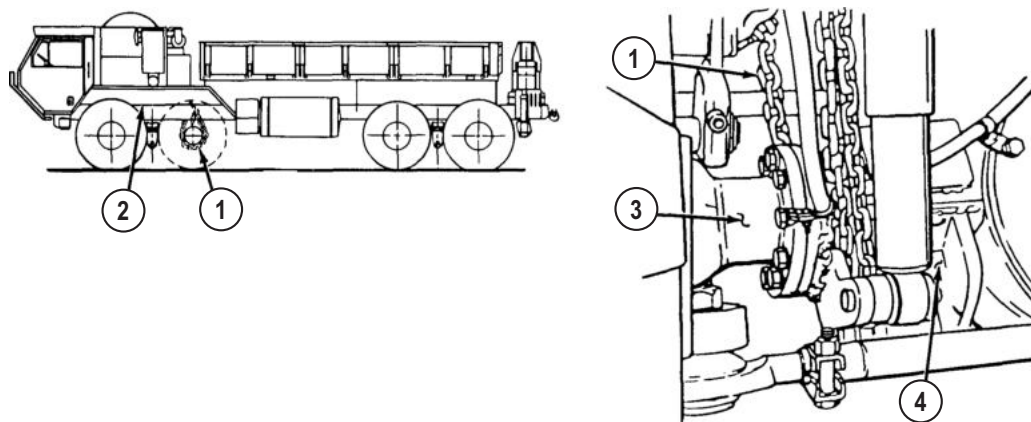
**PREPARE VEHICLE FOR TOWING**

**CAUTION**

When installing axle restraint chains, route chains so hoses or lines are not between frame and chain or axle and chain. Failure to comply may result in damage to equipment.

**NOTE**

- This procedure is applicable to preparation for towing a HEMTT series vehicle from the front ONLY (refer to tow HEMTT-front lift for further information).
  - If disabled vehicle is either a BASE or A2 model HEMTT series vehicle (refer to data plate on inside of driver side door), complete Step (1).
  - If disabled vehicle is an A4 model HEMTT series vehicle (refer to data plate on inside of driver side door), skip to Step (2).
1. Perform the following on disabled vehicle:
    - a. Remove propeller shaft between transfer case and No. 3 axle.
    - b. Install axle restraint chains (1):

**PREPARE VEHICLE FOR TOWING - Continued***Figure 1.***NOTE**

- Axle restraint chains are installed the same way, driver side shown.
- No. 2 axle should be restrained with chains on both sides of vehicle.

- (1) Route axle restraint chain (1) over frame rail (2) and around axle (3) beside walking beam (4).
- (2) Hook axle restraint chain (1) back into itself.
- (3) Repeat Steps (1) and (2) for opposite side of No. 2 axle (3).

**CAUTION**

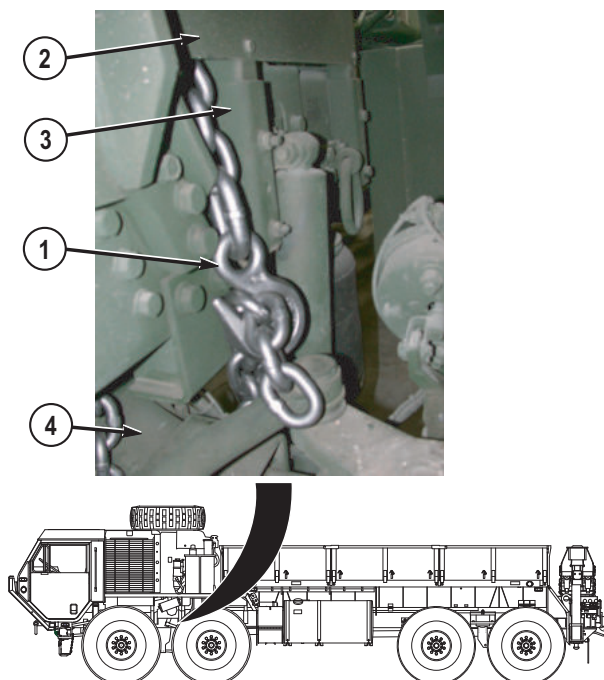
When installing axle restraint chains, route chain around frame rail and axle only. Do not wrap chain around lateral torque rod, shock absorber, shift cables, etc. as they could be crushed. Route chains so hoses or lines are not between frame and chain or axle and chain. Failure to comply may result in damage to equipment.

**NOTE**

- This procedure is applicable to preparation for towing a HEMTT series vehicle from the front **ONLY** (refer to tow HEMTT-front lift for further information).
- If disabled vehicle is an A4 model HEMTT series vehicle (refer to data plate on inside of driver side door), complete Step (2).

**PREPARE VEHICLE FOR TOWING - Continued**

2. Perform the following on disabled vehicle:
  - a. Remove propeller shaft between transfer case and No. 3 axle.
  - b. Install axle restraint chains (1):



*Figure 2.*

**NOTE**

- Axle restraint chains are installed the same way, driver side shown.
- No. 2 axle should be restrained with chains on both sides of vehicle.

- (1) Route axle restraint chain (1) under engine shroud (2), over frame rail (3), and around axle (4).
- (2) Hook axle restraint chain (1) back into itself as shown.
- (3) Repeat Steps (1) and (2) for opposite side of No. 2 axle (3).

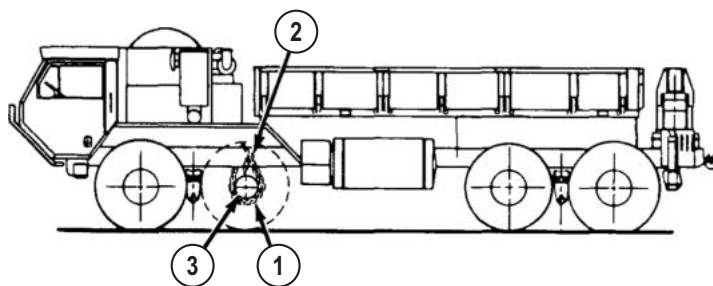
**END OF TASK**

**POST TOWING PROCEDURE****NOTE**

- This post towing procedure is applicable to a HEMTT series vehicle that has been towed from the front ONLY (refer to tow HEMTT-front lift for further information).
- If disabled vehicle is either a BASE or A2 model HEMTT series vehicle (refer to data plate on inside of driver side door), complete Step (1).
- If disabled vehicle is an A4 model HEMTT series vehicle (refer to data plate on inside of driver side door), skip to Step (2).

**1. Perform the following to disabled vehicle:**

- a. Remove two axle restraint chains (1) from around frame rails (2) and No. 2 axle (3).

*Figure 3.*

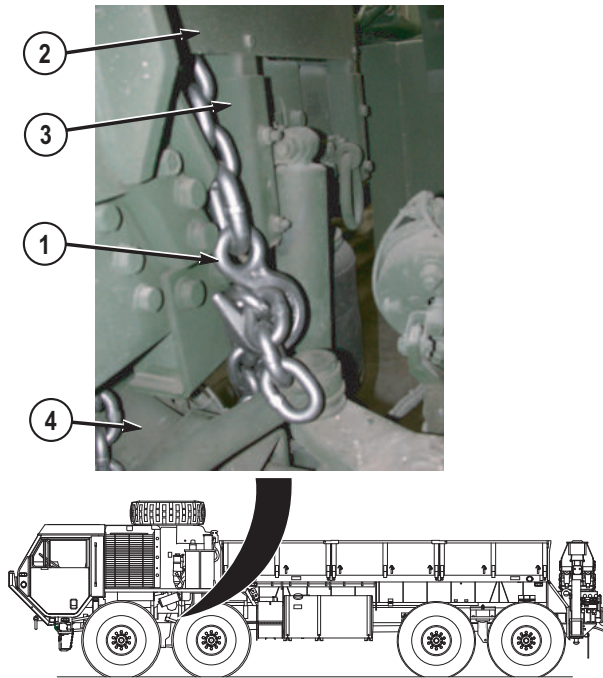
- b. Return two axle restraint chains (1) to wrecker stowage.
- c. Install propeller shaft between transfer case and No. 3 axle.

**NOTE**

- This post towing procedure is applicable to a HEMTT series vehicle that has been towed from the front ONLY (refer to tow HEMTT-front lift for further information).
- If disabled vehicle is an A4 model HEMTT series vehicle (refer to data plate on inside of driver side door), complete Step (2).

**2. Perform the following to disabled vehicle:**

- a. Remove two axle restraint chains (1) from under engine shroud (2), around frame rail (3), and No. 2 axle (4).

**POST TOWING PROCEDURE - Continued**

*Figure 4.*

- b. Return two axle restraint chains (1) to wrecker stowage.
- c. Install propeller shaft between transfer case and No. 3 axle.

**END OF TASK**

**END OF WORK PACKAGE**





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## OPERATOR MAINTENANCE CLEAN VEHICLE

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### INITIAL SETUP:

#### Materials/Parts

Rag, Wiping (WP 0167, Table 1,  
Item 50)

#### Equipment Condition

Engine OFF. (WP 0066)  
Wheels chocked. (WP 0089)

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### CLEAN EXTERIOR

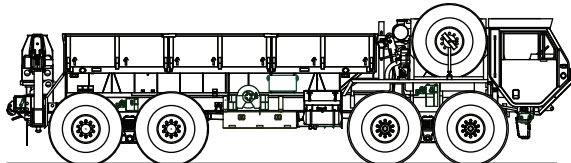
#### CAUTION

Do not wipe dirt off vehicle when vehicle is dry. Dirt, stones, or debris may scratch and damage vehicle.

#### NOTE

After a thorough high pressure washing, lubricate all grease fittings and oil can points outside and underneath vehicle (refer to lubrication instructions (WP 0154) for more information).

1. Wash vehicle often with cool or warm water. Do not use strong detergent or abrasives.



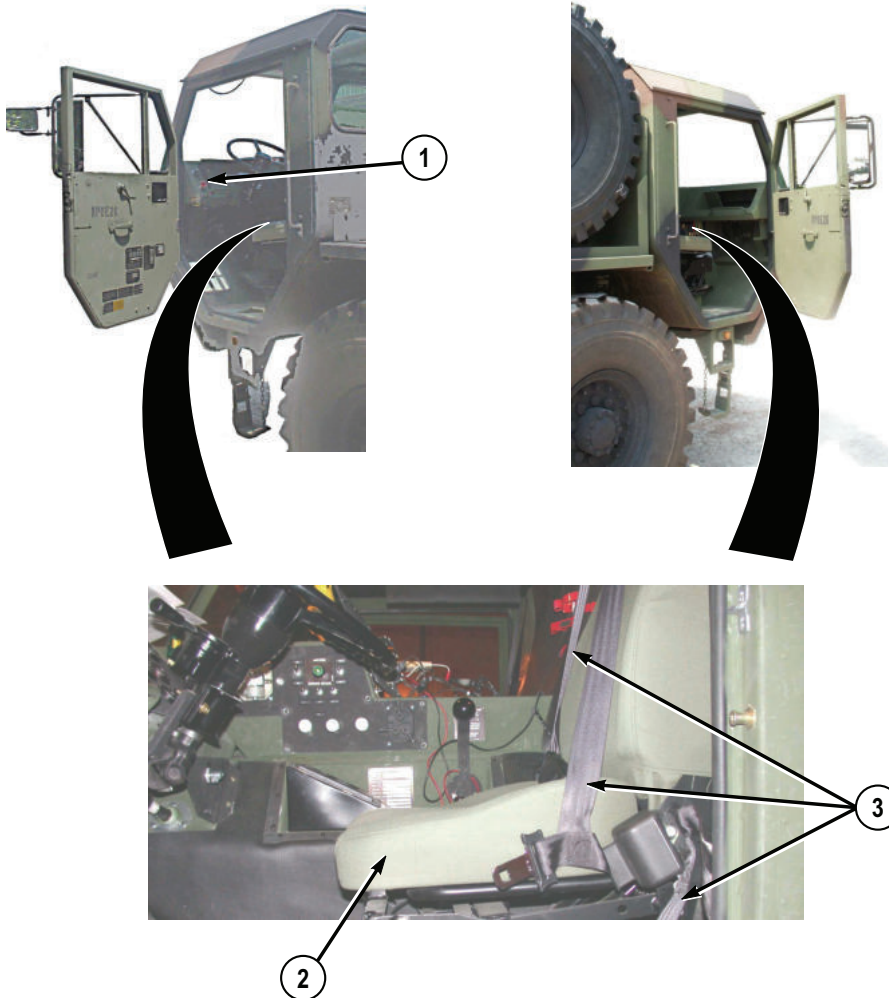
*Figure 1.*

2. While cleaning vehicle, look closely for rust, corrosion, bare metal, or other damage. Report any damage to Field Level Maintenance.

### END OF TASK

### CLEAN INTERIOR

1. Remove loose dirt and dust from cab interior components (1).
2. Clean seat cushions (2) and seatbelts (3) with warm soapy water. Do not use abrasives or solvents.

**CLEAN INTERIOR - Continued**

*Figure 2.*

3. Wipe seat cushions (2) and seatbelts (3) dry.

**END OF TASK**

**END OF WORK PACKAGE**

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## OPERATOR MAINTENANCE CHANGE WHEEL AND TIRE ASSEMBLY

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### INITIAL SETUP:

#### Tools and Special Tools

Chocks, Wheel (2) (WP 0165, Table 3, Item 10)  
Extension, Handle (WP 0165, Table 3, Item 17)  
Handle, Wrench (WP 0165, Table 3, Item 19)  
Jack, 12-ton, With Handle (WP 0165, Table 3, Item 24)  
Jack, Base Plate (WP 0165, Table 3, Item 28)

#### Tools and Special Tools - Continued

Warning Device Set, Triangular (WP 0165, Table 3, Item 32)  
Wrench, Wheel Lugnut (WP 0165, Table 3, Item 44)  
Wrench, Adjustable (WP 0165, Table 3, Item 42)

#### Personnel Required

Operator and Assistant - - - (2)

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### PREPARE VEHICLE

1. Shut off engine. (WP 0066)

### WARNING



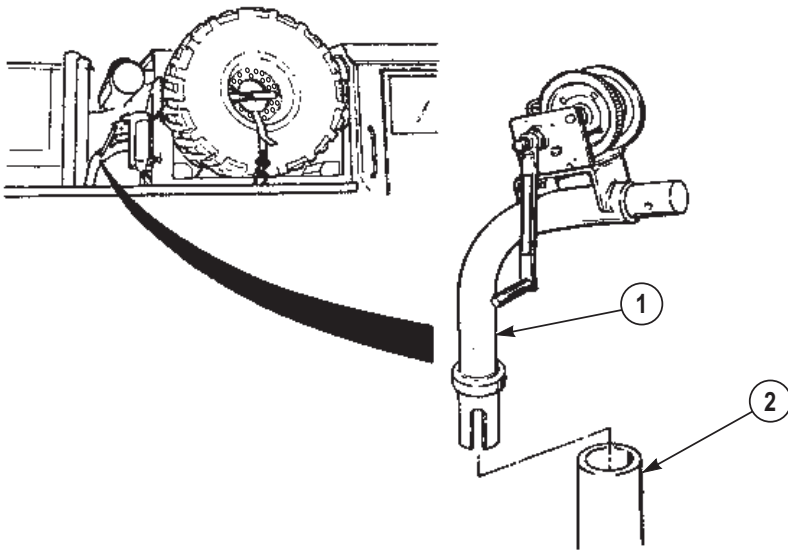
Park vehicle in safe area, out of traffic, where there is no danger to personnel changing tire assembly. Park vehicle on hard level ground. Failure to comply may result in injury or death to personnel.

2. Turn on emergency flashers. (WP 0088)
3. Set up emergency marker kit, as necessary. (WP 0116)

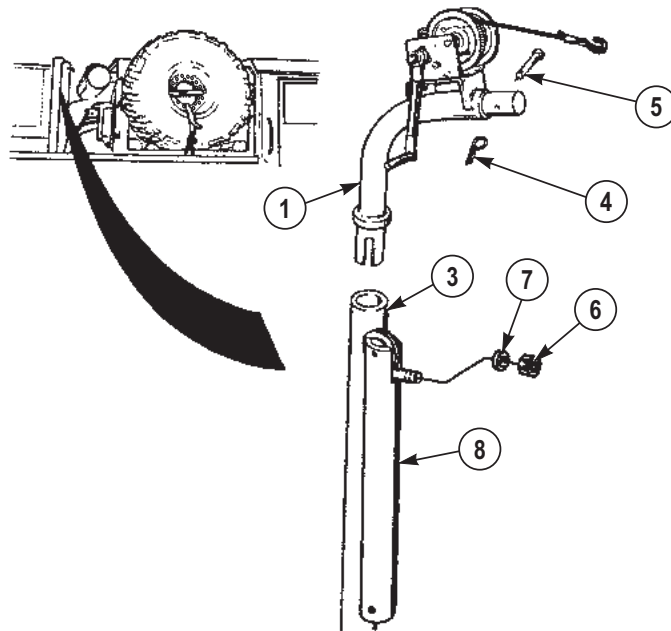
### END OF TASK

#### SET UP TIRE DAVIT WINCH

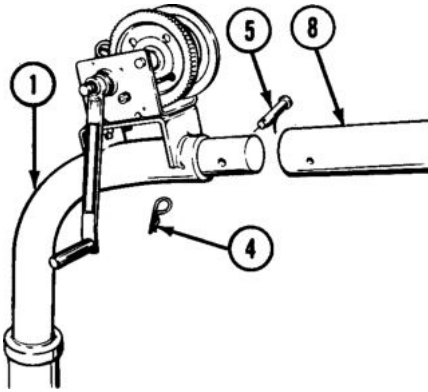
1. Remove hoist arm (1) from mounting bracket (2).

**SET UP TIRE DAVIT WINCH - Continued***Figure 1.*

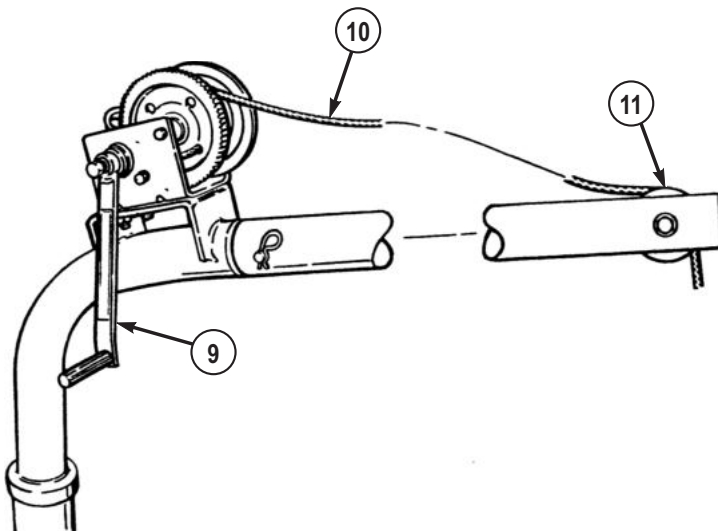
2. Install hoist arm (1) in mount (3).

**SET UP TIRE DAVIT WINCH - Continued***Figure 2.*

3. Remove and keep safety pin (4) and pin (5) from hoist arm (1).
4. Remove nut (6), washer, and extension (8) from mount (3).
5. Install extension (8) in hoist arm (1).

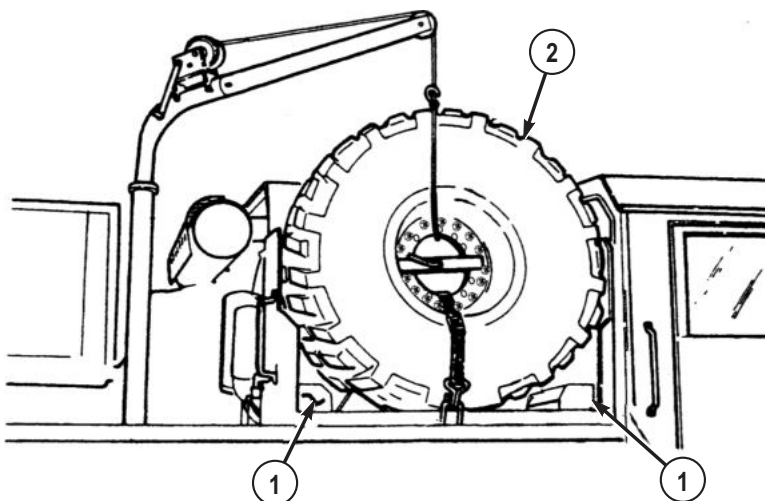
**SET UP TIRE DAVIT WINCH - Continued***Figure 3.*

6. Line up holes in extension (8) and hoist arm (1).
7. Install pin (5) and safety pin (4).
8. Turn hand crank (9) CCW and route cable (10) over end of pulley (11).

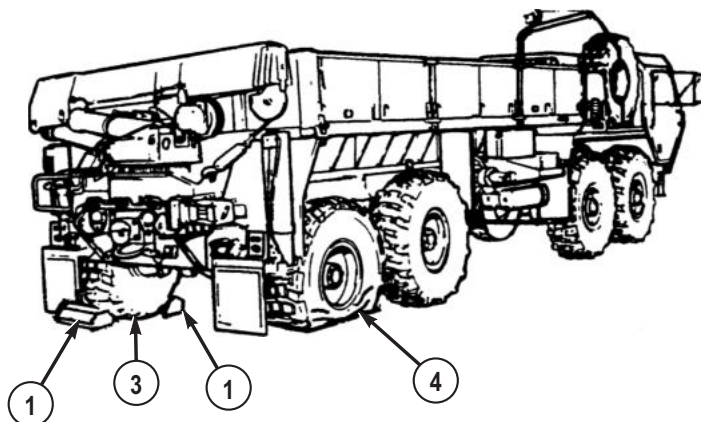
*Figure 4.***END OF TASK**

**REMOVE SPARE WHEEL AND TIRE ASSEMBLY**

1. Remove two wheel chocks (1) from under spare wheel and tire assembly (2).

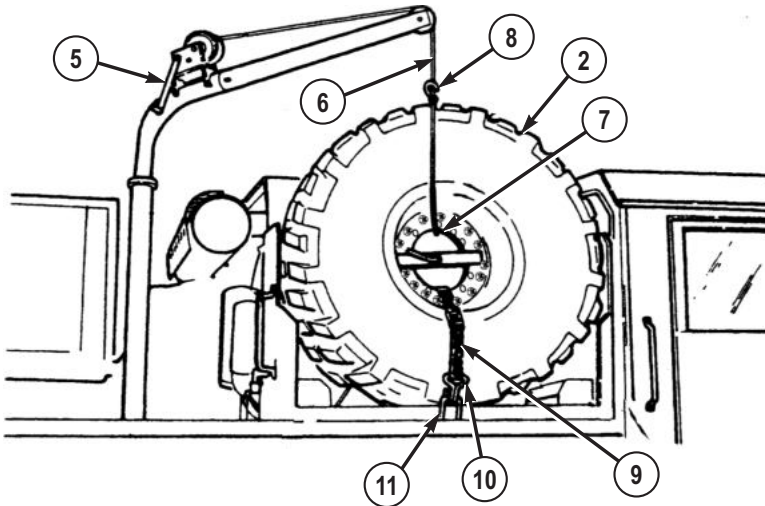
*Figure 5.*

2. Install two wheel chocks (WP 0089) (1) on wheel and tire assembly (3) that is across from flat wheel and tire assembly (4).

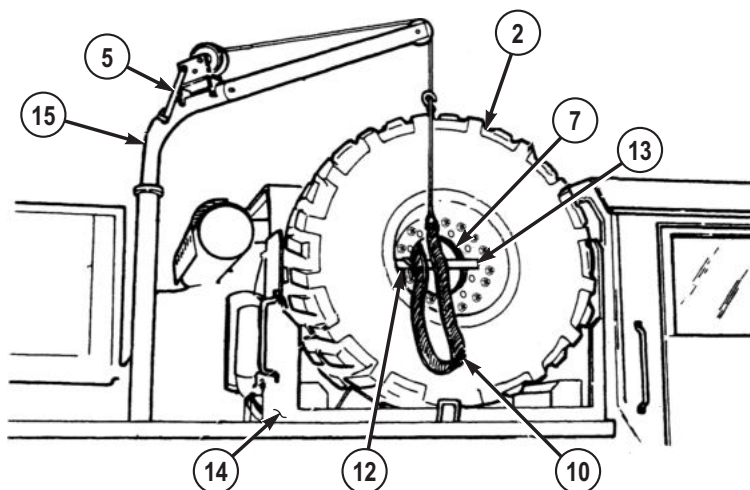
*Figure 6.*

3. Turn hand crank (5) counterclockwise to let out enough cable (6) to push through hole in wheel (7) and wrap around spare wheel and tire assembly (2).



**REMOVE SPARE WHEEL AND TIRE ASSEMBLY - Continued***Figure 7.*

4. Wrap cable (6) through hole in wheel (7) and around spare wheel and tire assembly (2), and secure with hook (8).
5. Turn hand crank (5) clockwise to put light tension on cable (6).
6. Release clamp (9), and disconnect tie down strap (10) from bracket (11) on both sides of spare wheel and tire assembly (2).
7. Hook tie down strap (10) on hole in wheel (7) on both sides of spare wheel and tire assembly (2).

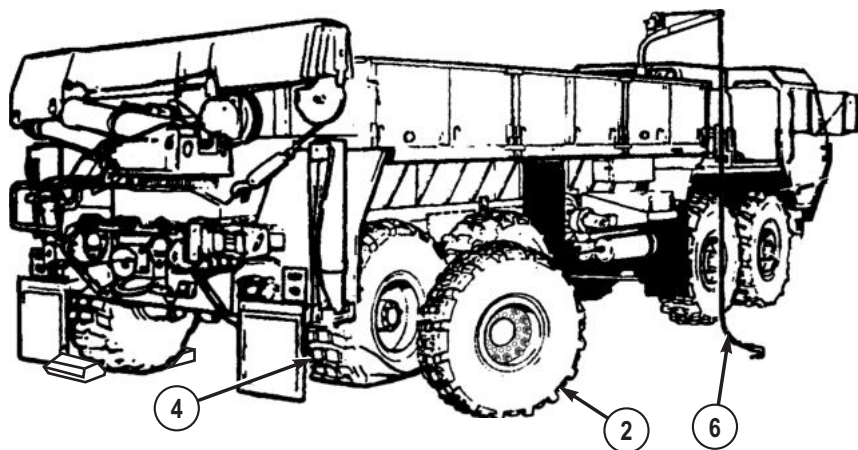
**REMOVE SPARE WHEEL AND TIRE ASSEMBLY - Continued***Figure 8.*

8. Turn lever (12) counterclockwise.
9. Remove lever (12) and holddown plate (13). Set aside lever (12) and holddown plate (13) for later use.

**NOTE**

Stand on passenger side front fender to operate tire davit winch while other assistant stands on ground near second axle to guide wheel and tire assembly down.

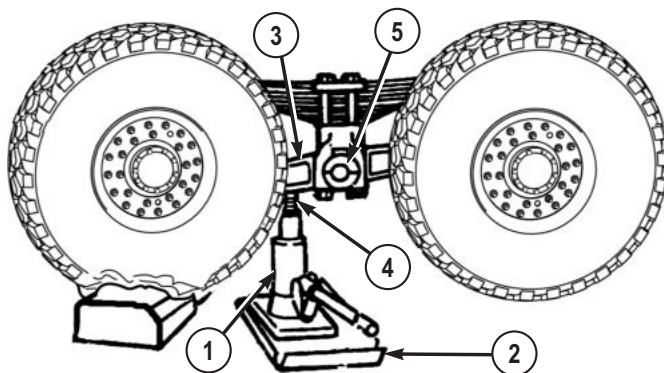
10. Turn hand crank (5) clockwise to lift spare wheel and tire assembly (2) just above carrier (14).
11. Swing hoist arm (15) so spare wheel and tire assembly (2) is clear of vehicle, while assistant pulls on tie down strap (10) to guide spare wheel and tire assembly out of carrier (14).
12. Turn hand crank (5) counterclockwise to lower spare wheel and tire assembly (2) to ground, while assistant holds spare wheel and tire assembly (2) steady with tie down strap (10).
13. Remove tie down strap (10).
14. Push spare wheel and tire assembly (2) against vehicle.

**REMOVE SPARE WHEEL AND TIRE ASSEMBLY - Continued***Figure 9.*

15. Remove cable (6) from spare wheel and tire assembly (2), and roll spare wheel and tire assembly (2) next to axle of flat wheel and tire assembly (4).
16. Check spare wheel and tire assembly (2) air pressure and service as required. (WP 0161)

**END OF TASK****REMOVE WHEEL AND TIRE ASSEMBLY**

1. Remove jack (1) and jack base plate (2) from stowage.

*Figure 10.*

**REMOVE WHEEL AND TIRE ASSEMBLY - Continued****NOTE**

It may be necessary to place wheel chock under flat wheel and tire assembly to get jack and jack base plate under equalizing beam.

2. Position jack (1) and jack base plate (2) under equalizing beam (3).
3. Unscrew jack ram (4) until it touches equalizing beam (3) approximately 4 to 5 in. (102 to 127 mm) from beam center pivot point (5).

**NOTE**

Studs and lugnuts on driver side of vehicle have left-hand threads. Rotate lugnuts clockwise to loosen, counterclockwise to tighten. Studs and lugnuts on passenger side of vehicle have right-hand threads. Rotate lugnuts counterclockwise to loosen, clockwise to tighten.

4. Loosen 10 lugnuts (6) until they turn easily.

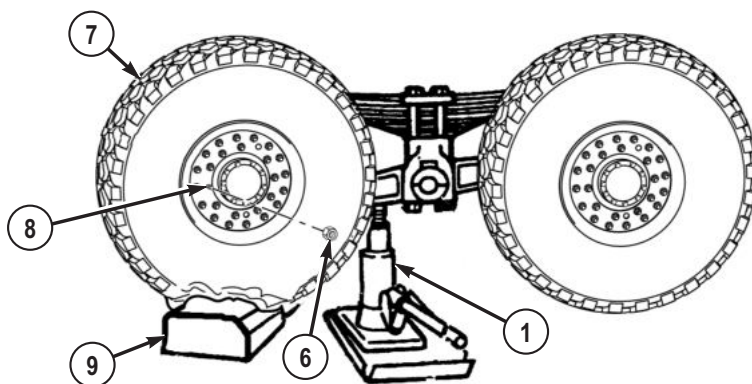


Figure 11.

**NOTE**

If chock was used to help position jack, wheel and tire assembly does not have to be clear of chock.

5. Raise jack (1) until flat wheel and tire assembly (7) can be removed.
6. Remove 10 lugnuts (6) from studs (8) and set lugnuts (6) aside.

**NOTE**

If wheel chock was not used to position jack, skip to Step (8).

7. Remove wheel chock (9) and return it to vehicle stowage.

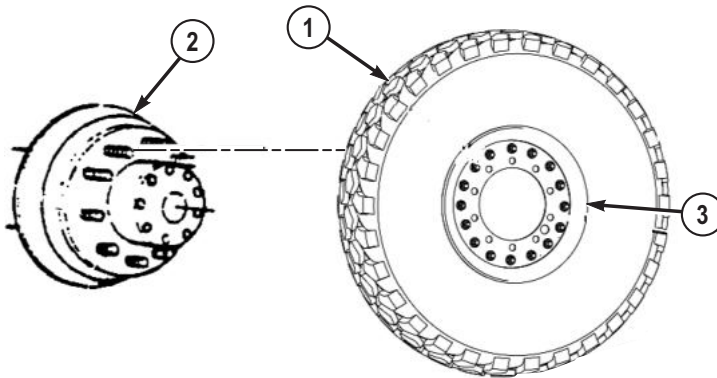
**REMOVE WHEEL AND TIRE ASSEMBLY - Continued**

8. Using jack (1), lower vehicle until flat wheel and tire assembly (7) is just touching ground.
9. Tilt top of flat wheel and tire assembly (7) forward, while assistant raises jack (1) slightly. Wheel and tire assembly (7) should move forward.
10. Repeat Steps (8) and (9) to walk flat wheel and tire assembly (7) off studs (8).
11. Remove flat wheel and tire assembly (7) and lean flat wheel and tire assembly against vehicle.

**END OF TASK****INSTALL WHEEL AND TIRE ASSEMBLY****NOTE**

Tire tread is non-directional. Vehicle operation is not affected by direction of traction bars.

1. With aid of an assistant, roll wheel and tire assembly (1) up to axle (2).



*Figure 12.*

**NOTE**

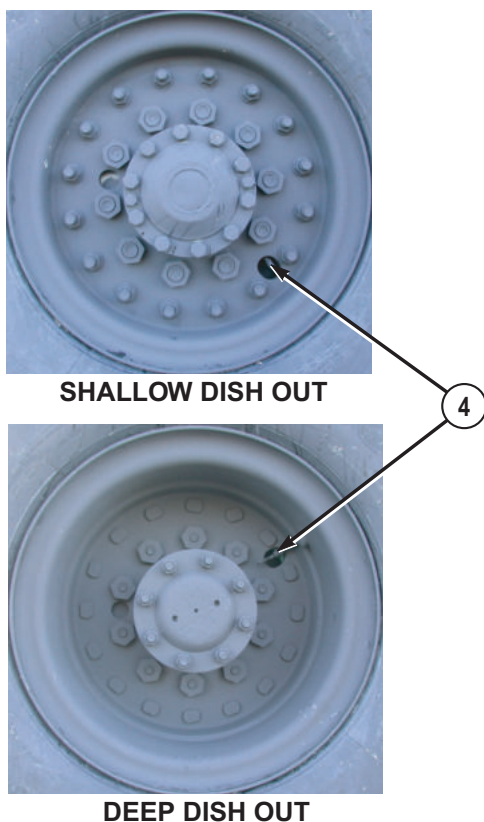
Check that spare wheel and tire assembly wheel dish is in same position as flat wheel and tire assembly wheel dish. Deep side of wheel dish will face toward vehicle on four front wheels. Deep side of wheel dish will face away from vehicle on four rear wheels except M984A. All eight wheels on M984A are installed with deep side of wheel dish facing toward vehicle.

**INSTALL WHEEL AND TIRE ASSEMBLY - Continued**

2. Make sure deep side of spare wheel and tire assembly wheel dish (3) is in same position as flat/shredded wheel and tire assembly wheel dish when flat/shredded wheel and tire assembly was removed.

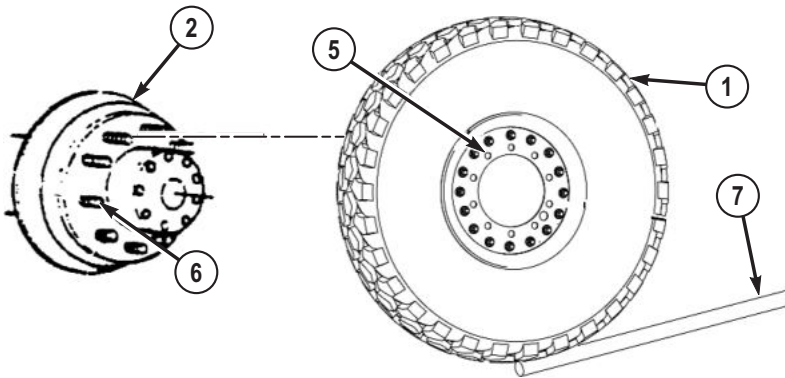
**NOTE**

- Tire valve stem extension must be removed to reposition wheel and tire assembly valve stem extension.
  - It may be necessary to reposition valve stem to accomplish installation of valve stem extension.
3. Make sure wheel and tire assembly valve stem (4) is pointing out, away from vehicle.



*Figure 13.*

4. Line up holes in rim (5) of wheel and tire assembly (1) with studs (6) on axle (2).

**INSTALL WHEEL AND TIRE ASSEMBLY - Continued***Figure 14.***WARNING**

Wheel/tire assembly weighs 540 lbs (245 kg). Do not attempt to lift or move wheel/tire assembly without the aid of an assistant and a lifting device. Failure to comply may result in injury or death to personnel.

5. Lean top of wheel and tire assembly (1) against studs (6) and axle (2).

**NOTE**

Install a lugnut on top stud, and hand-tighten to hold wheel and tire assembly in place.

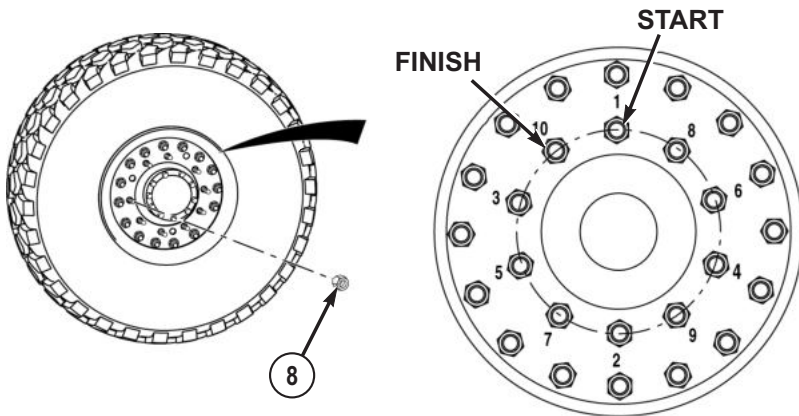
6. Using handle extension (7), slide spare wheel and tire assembly onto studs (6) while assistant raises vehicle with jack. Bottom of wheel and tire assembly (1) should swing toward axle (2).
7. Assistant lowers vehicle until wheel and tire assembly (1) just touches ground.
8. Repeat Steps (5) through (7) until wheel and tire assembly (1) is seated on axle (2) and studs (6).

**NOTE**

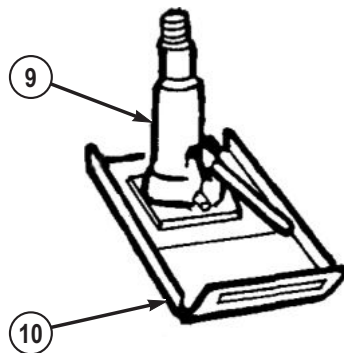
- Studs and lugnuts on driver side of vehicle have left-hand threads. Rotate lugnuts counterclockwise to tighten.

**INSTALL WHEEL AND TIRE ASSEMBLY - Continued**

- Studs and lugnuts on passenger side of vehicle have right-hand threads. Rotate lugnuts clockwise to tighten.
9. Install and tighten 10 lugnuts (8) in order shown using wheel lugnut wrench.

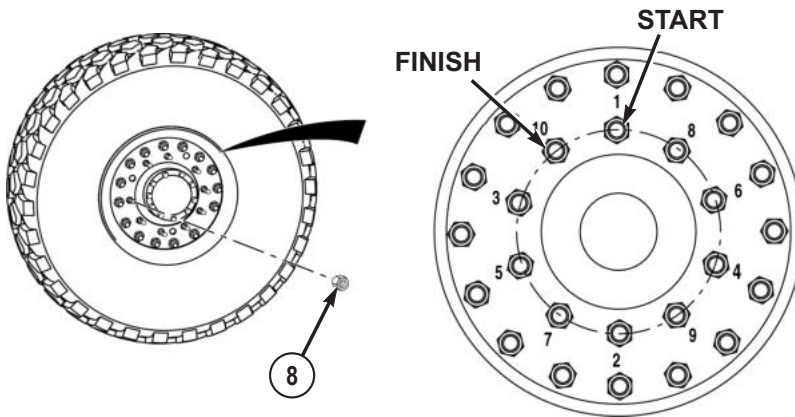
*Figure 15.*

10. Assistant lowers jack (9) until vehicle weight is fully supported by suspension system.
11. Remove jack (9) and jack base plate (10) from under vehicle.

*Figure 16.*

12. Tighten 10 lugnuts (8) in order shown until they no longer tighten.

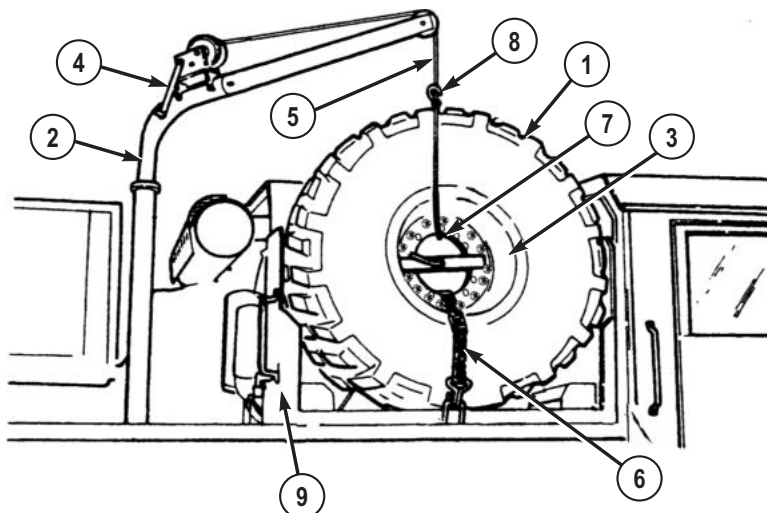


**INSTALL WHEEL AND TIRE ASSEMBLY - Continued***Figure 17.*

13. Return all tools and equipment to proper stowage boxes.
14. Return vehicle to field level maintenance and have lugnuts (8) tightened to torque requirements as soon as possible.

**END OF TASK****STOW FLAT WHEEL AND TIRE ASSEMBLY**

1. Roll flat wheel and tire assembly (1) under hoist arm (2) so deep side of wheel dish (3) is facing out and away from vehicle.

**STOW FLAT WHEEL AND TIRE ASSEMBLY - Continued***Figure 18.***NOTE**

Assistant stands on passenger side front fender to operate tire davit winch while other assistant stands on ground near second axle to guide wheel and tire assembly into carrier.

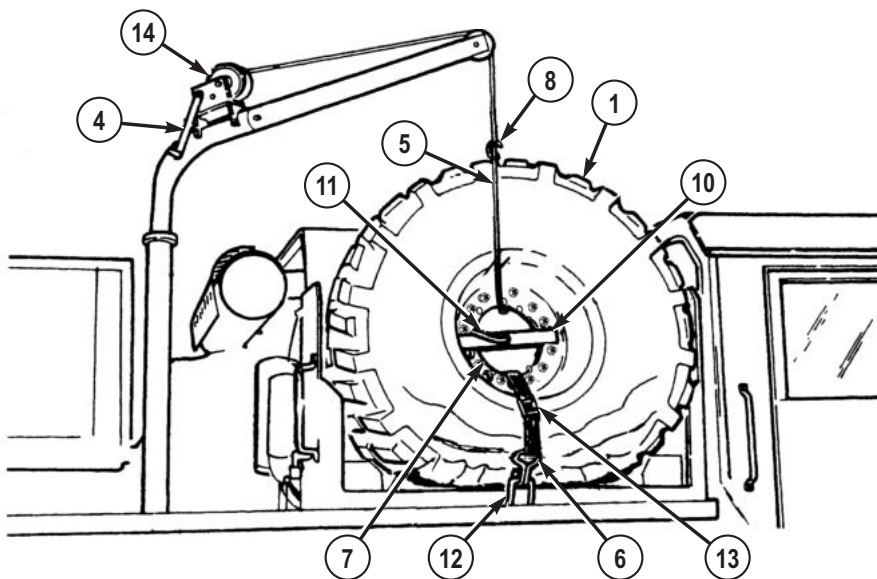
2. Turn hand crank (4) counterclockwise to let out cable (5).
3. Pull tie down strap (6) through hole in wheel (7), and hook ends to hole on both sides of wheel.
4. Hook ends of tie down strap (6) to both sides of hole in wheel (7).
5. Pull cable (5) through hole in wheel (7) and secure hook (8) back into cable as shown.

**WARNING**

Inner wheel weighs 105 lbs (48 kg). Do not attempt to lift or move inner wheel without the aid of an assistant and a lifting device. Failure to comply may result in injury or death to personnel.

**STOW FLAT WHEEL AND TIRE ASSEMBLY - Continued**

6. Turn hand crank (4) clockwise to raise flat wheel and tire assembly (1) just above carrier (9) while assistant holds tie down strap (6) to steady wheel and tire assembly (1).
7. Swing hoist arm (2) so flat wheel and tire assembly (1) is over carrier (9) while assistant guides wheel and tire assembly with tie down strap (6).
8. Turn hand crank (4) counterclockwise to lower flat wheel and tire assembly (1) into carrier (9).
9. Remove tie down strap (6).
10. Hold flat wheel and tire assembly (1) steady, while assistant installs holddown plate (10).

*Figure 19.*

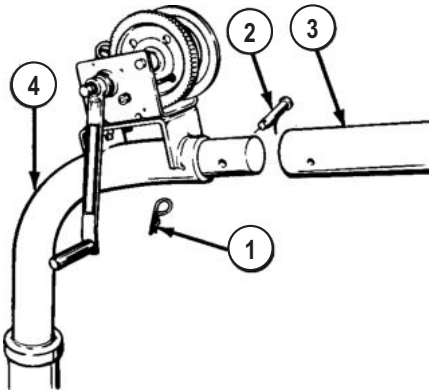
11. Install lever (11) and turn clockwise to tighten.
12. Slide tie down strap (6) through hole in wheel (7).
13. Connect tie down strap (6) to outside holddown bracket (12), while assistant connects tie down strap to inside holddown bracket.
14. Pull latch (13) down and lock to secure flat wheel and tire assembly (1).
15. Turn hand crank (4) counterclockwise to loosen cable (5).
16. Remove hook (8) and cable (5) from wheel and tire assembly (1).

**STOW FLAT WHEEL AND TIRE ASSEMBLY - Continued**

17. Turn hand crank (4) clockwise and wind cable (5) fully onto reel (14).

**END OF TASK****STOW TIRE DAVIT WINCH**

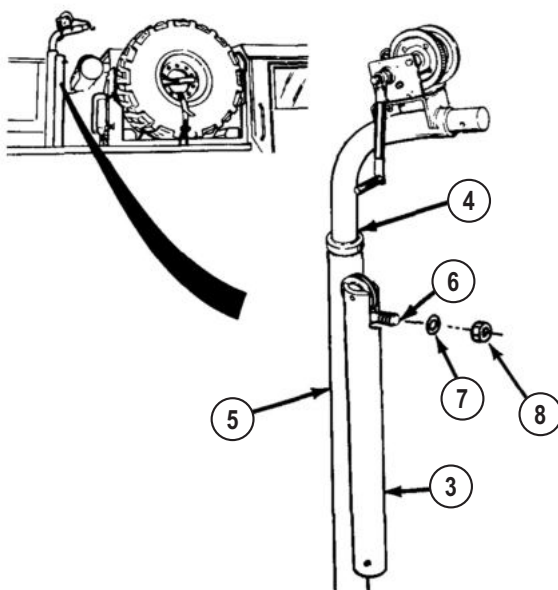
1. Remove safety pin (1) and pin (2) from extension (3).



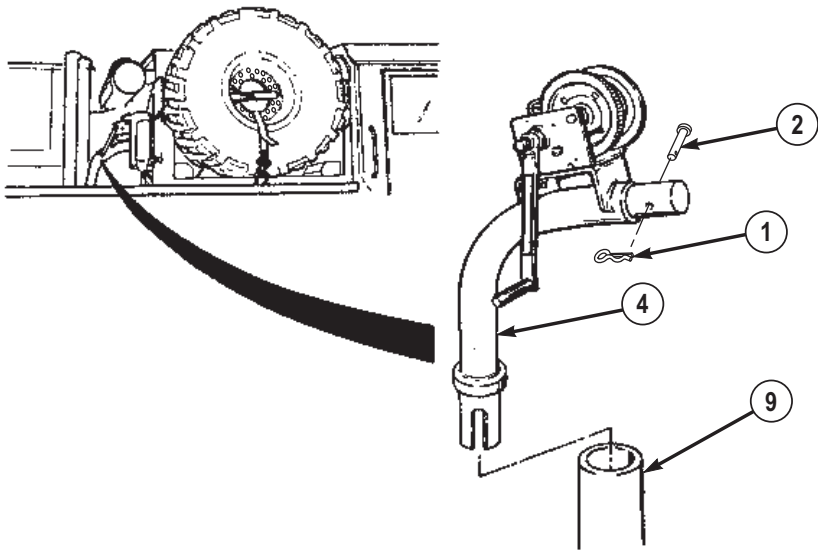
*Figure 20.*

2. Pull extension (3) from hoist arm (4).
3. Install extension (3) on mount (5).

## STOW TIRE DAVIT WINCH - Continued

*Figure 21.*

4. Slide top of extension (3) over stud (6).
5. Secure extension (3) with washer (7) and nut (8).
6. Pull hoist arm (4) from mount (5).
7. Put hoist arm (4) into mounting bracket (9).

**STOW TIRE DAVIT WINCH - Continued***Figure 22.*

8. Install pin (10) through hoist arm (4).
9. Secure pin (10) with safety pin (11).
10. Pick up and stow emergency marker kit (as necessary).

**END OF TASK****END OF WORK PACKAGE**



---

## OPERATOR MAINTENANCE CLEAN FUEL TANK STRAINER

---

### INITIAL SETUP:

#### Materials/Parts

Rag, Wiping (WP 0167, Table 1, Item 50)

#### Equipment Condition

Engine OFF. (WP 0066)  
Wheels chocked. (WP 0089)

---

### REMOVE/CLEAN FUEL TANK STRAINER

#### WARNING



Fuel is very flammable and can explode easily. Keep fuel away from open fire and keep fire extinguisher within easy reach when working with fuel. Do not work on fuel system when engine is hot. Fuel can be ignited when engine is hot. When working with fuel, post signs that read NO SMOKING WITHIN 50 FEET OF VEHICLE. Failure to comply may result in injury or death to personnel.

1. Wipe off dirt from fuel filler cap (1).

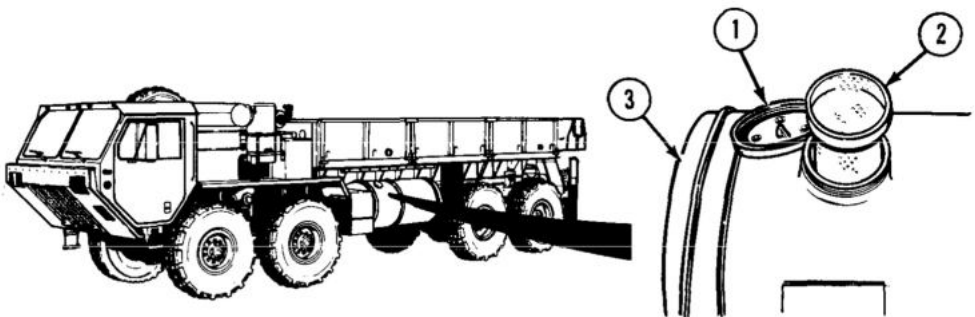


Figure 1.

2. Remove fuel filler cap (1).
3. Pull strainer (2) out of fuel tank (3).

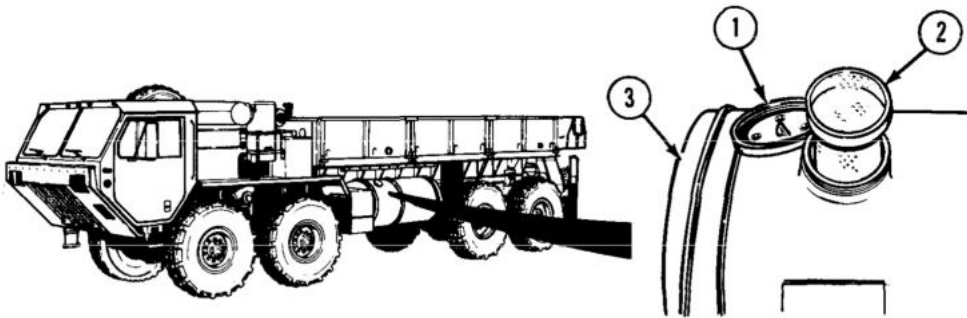


**REMOVE/CLEAN FUEL TANK STRAINER - Continued**

4. Clean strainer (2) with clean dry rag.

**END OF TASK****INSTALL FUEL TANK STRAINER**

1. Put strainer (2) in fuel tank (3).



*Figure 2.*

2. Install and tighten fuel filler cap (1).

**END OF TASK****FOLLOW-ON MAINTENANCE**

1. Remove wheel chocks.

**END OF WORK PACKAGE**

---

## OPERATOR MAINTENANCE SERVICE AIR CLEANER ELEMENT

---

### INITIAL SETUP:

#### Tools and Special Tools

Ladder (WP 0165, Table 2, Item 2)

#### Equipment Condition

Engine OFF. (WP 0066)

Wheels chocked. (WP 0089)

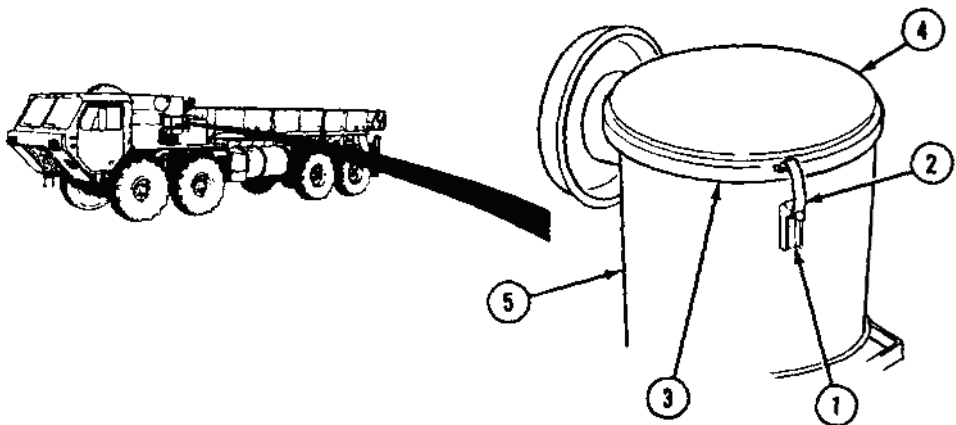
#### Materials/Parts

Rag, Wiping (WP 0167, Table 1, Item 50)

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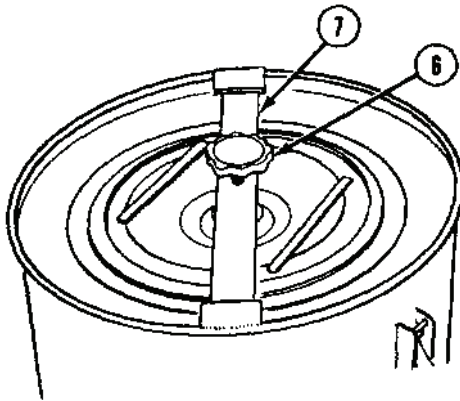
### REMOVE AIR CLEANER ELEMENT

1. Lift up three levers (1).



*Figure 1.*

2. Unhook three latches (2) from cover groove (3).
3. Remove cover (4) from canister (5).
4. Unscrew knob (6) until retaining bar (7) is loose.

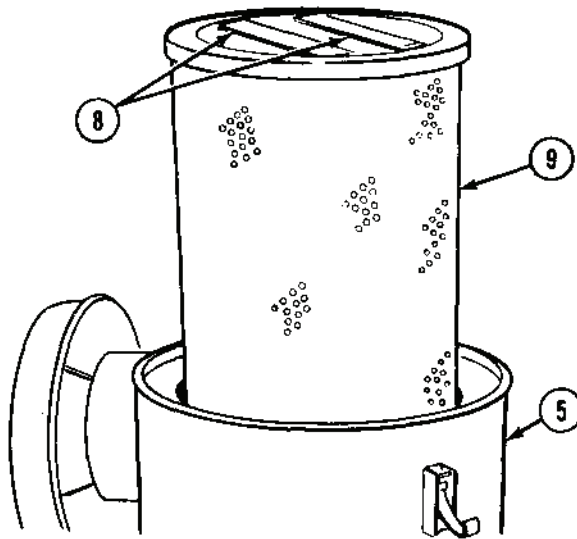
**REMOVE AIR CLEANER ELEMENT - Continued***Figure 2.*

5. Remove knob (6) and retaining bar (7).

**CAUTION**

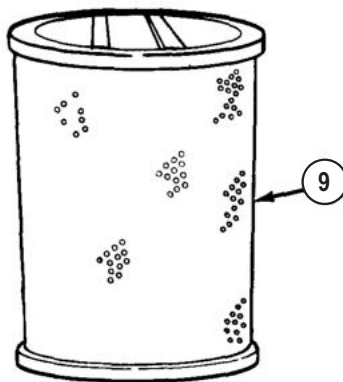
Do not remove secondary filter element. Dirt and debris can fall into canister and cause damage to engine.

6. Take hold of handles (8) and remove primary element (9) from canister (5).

**REMOVE AIR CLEANER ELEMENT - Continued***Figure 3.***END OF TASK****CLEAN AIR CLEANER ELEMENT****NOTE**

Notify field level maintenance if primary filter element is damaged or cannot be cleaned by tapping.

1. Tap side of primary element (9) lightly against hand.

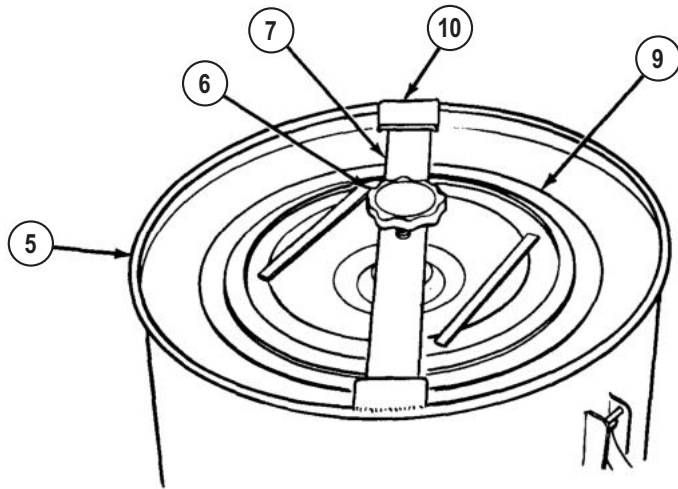
**CLEAN AIR CLEANER ELEMENT - Continued**

*Figure 4.*

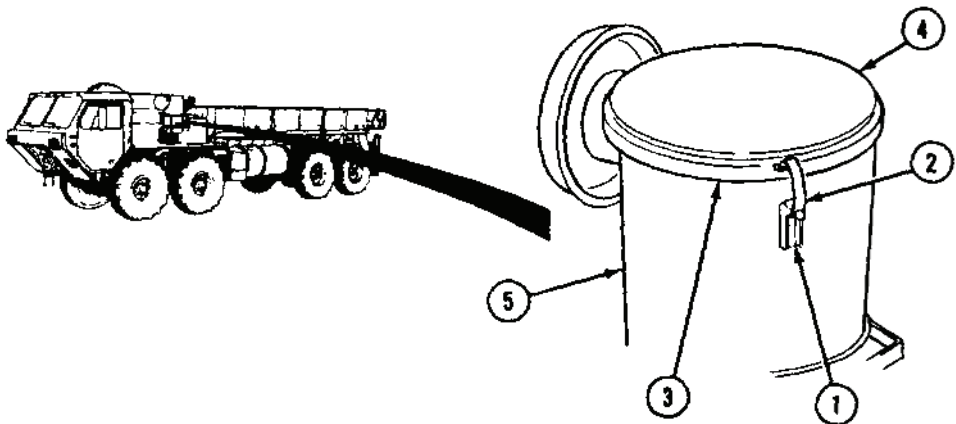
2. Dump out dirt and dust from primary element (9).
3. Wipe primary element (9) with clean rag.

**END OF TASK****INSTALL AIR CLEANER ELEMENT**

1. Install primary element (9) in air cleaner canister (5).

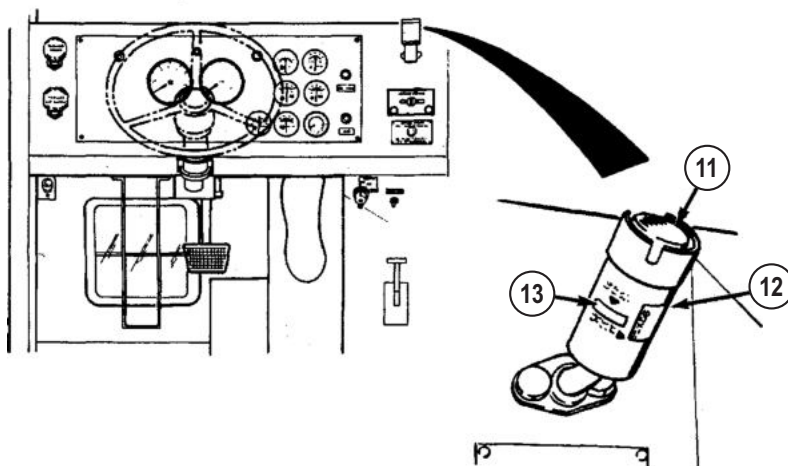
**INSTALL AIR CLEANER ELEMENT - Continued***Figure 5.*

2. Position knob (6) and retainer bar (7) over primary element (9). Make sure ends of retaining bar are in tabs (10).
3. Tighten knob (6) to secure primary element (9).
4. Put cover (4) on top of air cleaner canister (5).

*Figure 6.*

**INSTALL AIR CLEANER ELEMENT - Continued**

5. Put three latches (2) in cover groove (3).
6. Push three levers (1) down to secure cover (4).
7. Start engine. (WP 0053)
8. Push button (11) to reset air cleaner restriction indicator (12). If indicator window (13) shows VACUUM INCHES H2O below 20, continue with vehicle operation but notify Field Level Maintenance as soon as possible. If indicator window shows VACUUM INCHES H2O above 20, notify Field Level Maintenance.

*Figure 7.*

9. Shut OFF engine. (WP 0066)

**END OF TASK****FOLLOW-ON MAINTENANCE**

1. Remove wheel chocks.

**END OF WORK PACKAGE**

---

## OPERATOR MAINTENANCE SERVICE TIRES

---

### INITIAL SETUP:

#### Tools and Special Tools

Gauge, Tire Pressure (WP 0165,  
Table 3, Item 16)

#### Tools and Special Tools - Continued

Gauge, Tire Pressure (WP 0165,  
Table 3, Item 23)  
Hose: Air, Pneumatic (WP 0165,  
Table 3, Item 20)

#### Equipment Condition

Engine OFF. (WP 0066)  
Wheels chocked. (WP 0089)

---

### CHECK TIRE PRESSURE

#### WARNING



Failure to comply with these procedures may result in faulty positioning of the tire and/or rim parts and cause the assembly to burst with explosive force. Never mount or use damaged tires or rims. Failure to comply may result in injury or death to personnel.

#### NOTE

There are two types of air pressure gauges. One is a separate handheld gauge. The other is a combined pressure gauge/inflation hose.

Both may be used to check air pressure in tire.

ALWAYS use combined pressure gauge/inflation hose to inflate tire.

1. Check tire air pressure with tire pressure gauge.
2. Ensure tires have correct air pressure for road conditions and driving speed .

### END OF TASK



**INFLATE TIRE**

1. Remove air hose (1) from stowage and connect air hose (1) to quick disconnect coupling (2) by pushing back sleeve (3).

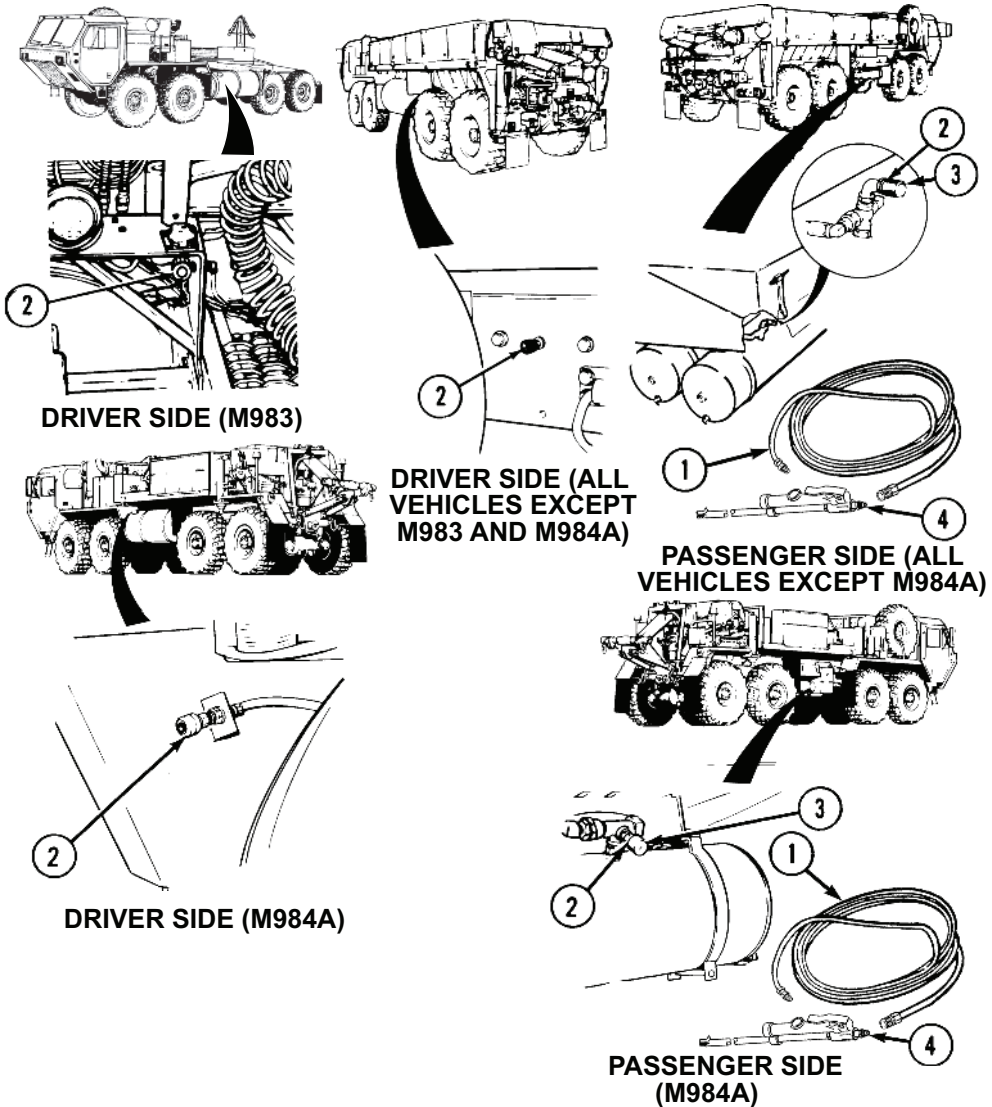
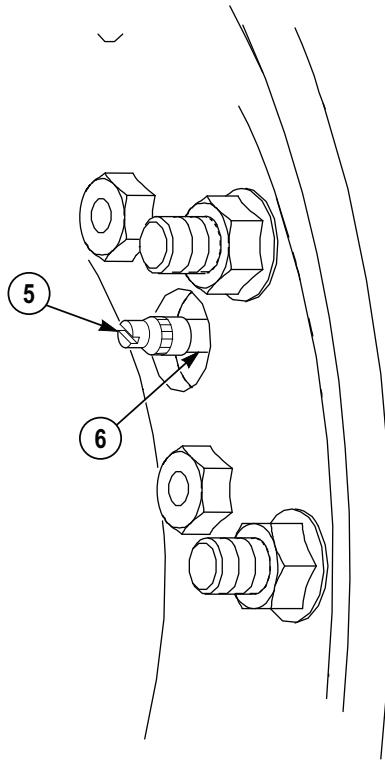


Figure 1.

2. Connect combined pressure gauge/inflation hose (4) to air hose (1).
3. Start engine. (WP 0053)

**INFLATE TIRE - Continued**

4. Remove valve stem cap (5) from valve stem (6).



*Figure 2.*

**WARNING**

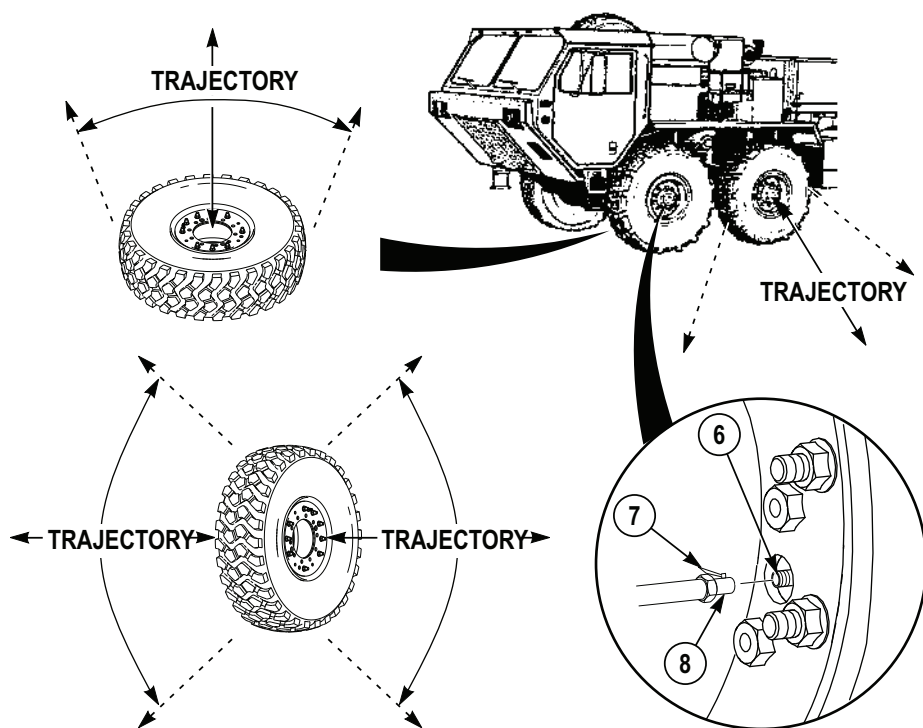
Prior to inflating or deflating tire, stand clear of trajectory area. Failure to comply may result in injury or death to personnel.

**NOTE**

- Trajectory area as shown applies to all wheel/tire assemblies.
- Air chuck must clamp securely with no leaks or air pressure gauge readings will be inaccurate.

**INFLATE TIRE - Continued**

- There are two types of air pressure gauges. One is a separate handheld gauge used on vehicle serial number 51130 and below. The other is a combined pressure gauge/inflation hose.
  - Both may be used to check air pressure in tire.
  - ALWAYS use combined pressure gauge/inflation hose to inflate tire.
5. Push latch handle (7) inward, while pushing air chuck (8) onto valve stem (6). Release latch handle (7) and immediately step out of the trajectory area and read tire air pressure gauge.

*Figure 3.*

**INFLATE TIRE - Continued****WARNING**

Prior to inflating or deflating tire, stand clear of trajectory area. Failure to comply may result in injury or death to personnel.

**NOTE**

Trajectory area as shown applies to all wheel/tire assemblies.

6. Inflate or deflate until proper pressure is attained. Press latch handle (7) and pull air chuck (8) from valve stem (6). Install valve stem cap (5).

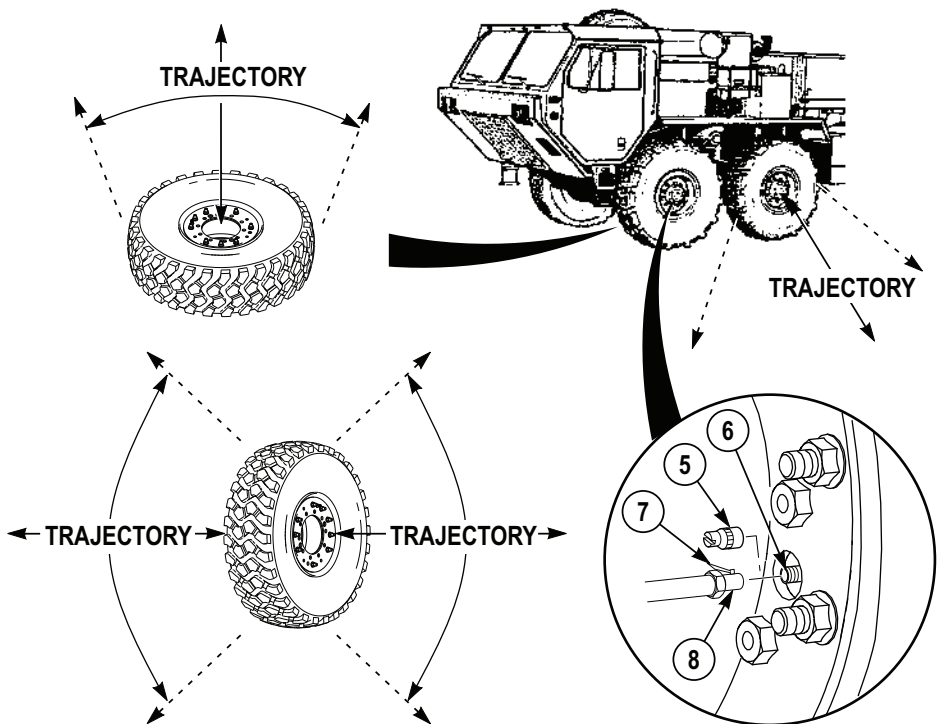


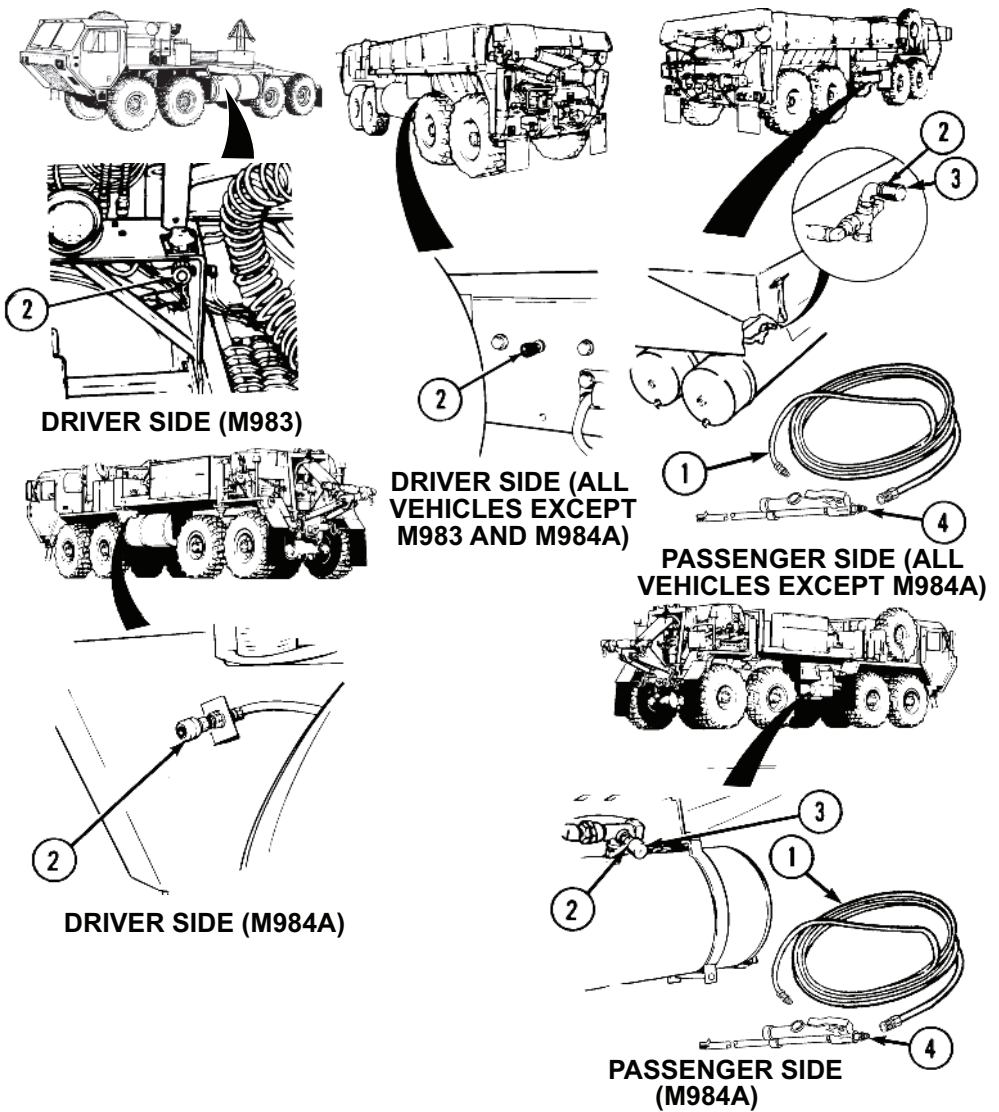
Figure 4.

7. Shut OFF engine. (WP 0066)

**INFLATE TIRE - Continued****WARNING**

Hold end of air line when disconnecting from quick-disconnect coupling.  
Air line is under pressure and can be ejected at a high rate of speed.  
Failure to comply may result in injury or death to personnel.

8. Remove combined pressure gauge/inflation hose (4) from air hose (1).

**INFLATE TIRE - Continued***Figure 5.*

9. Hold end of air hose (1) and push sleeve (3) back and remove air hose (1) from quick-disconnect coupling (2).
10. Stow air hose (1) and combined pressure gauge/inflation hose (4).

**END OF TASK**

**FOLLOW-ON MAINTENANCE**

1. Remove wheel chocks. (WP 0089)

**END OF WORK PACKAGE**

---

## OPERATOR MAINTENANCE OPEN/CLOSE BATTERY BOX

---

### INITIAL SETUP:

#### Equipment Condition

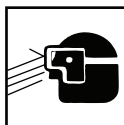
Engine OFF. (WP 0066)

Wheels chocked. (WP 0089)

---

### OPEN BATTERY BOX

#### WARNING



Wear proper eye protection when working around batteries. Failure to comply may result in injury or death to personnel.

#### WARNING



Batteries produce explosive gases. Do not smoke or use open flame near batteries. Do not allow hot, sparking, or glowing objects near batteries. If batteries are giving off gases, presence of a heat, flame, or spark may cause fire and/or explosion. Failure to comply may result in injury or death to personnel.

#### WARNING

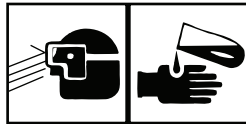


Use extreme care not to short out battery terminals. Remove all jewelry such as rings, ID tags, bracelets, etc. prior to working on or around vehicle. Jewelry and tools can catch on equipment, contact positive



**OPEN BATTERY BOX - Continued**

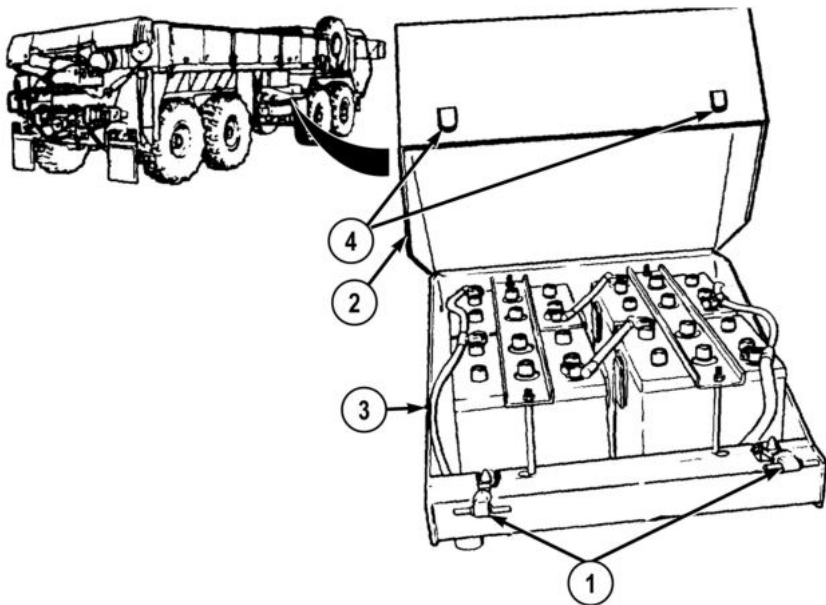
electrical circuits, and cause a direct short, severe burns, or electrical shock. Failure to comply may result in injury or death to personnel.

**WARNING**

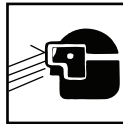
**LEAD-ACID BATTERIES - Avoid battery electrolyte contact with skin, eyes, or clothing. If battery electrolyte spills, take immediate action to stop burning effects:**

- External - If battery electrolyte contacts skin, immediately flush effected area with cold running water to remove all acid. Failure to comply may result in injury or death to personnel.
- Eyes - If battery electrolyte contacts eyes, immediately flush eyes with cold water for 15 minutes and seek immediate medical attention. **IMPORTANT** - If only one eye is affected, ensure the affected eye is always (during both flushing and transport) kept lower (the lower the better) than unaffected eye. This will help keep affected eye from draining into (and contaminating) the unaffected eye. Failure to comply may result in injury or death to personnel.
- Internal - If battery electrolyte is ingested (swallowed), drink large amounts of water or milk. Follow with milk of magnesia, a beaten egg, or vegetable oil and seek immediate medical attention. Failure to comply may result in injury or death to personnel.
- Clothing or vehicle - Immediately flush area with cold water and neutralize battery electrolyte with baking soda or household ammonia solution. Failure to comply may result in injury or death to personnel.

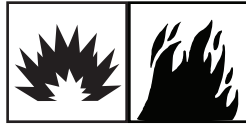
1. Disconnect two rubber hooks (1).

**OPEN BATTERY BOX - Continued***Figure 1.*

2. Slide cover (2) up and out.
3. Hold cover (2) in place or remove cover.

**END OF TASK****CLOSE BATTERY BOX****WARNING**

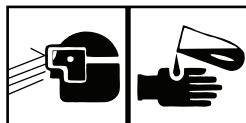
Wear proper eye protection when working around batteries. Failure to comply may result in injury or death to personnel.

**CLOSE BATTERY BOX - Continued****WARNING**

Batteries produce explosive gases. Do not smoke or use open flame near batteries. Do not allow hot, sparking, or glowing objects near batteries. If batteries are giving off gases, presence of a heat, flame, or spark may cause fire and/or explosion. Failure to comply may result in injury or death to personnel.

**WARNING**

Use extreme care not to short out battery terminals. Remove all jewelry such as rings, ID tags, bracelets, etc. prior to working on or around vehicle. Jewelry and tools can catch on equipment, contact positive electrical circuits, and cause a direct short, severe burns, or electrical shock. Failure to comply may result in injury or death to personnel.

**WARNING**

**LEAD-ACID BATTERIES - Avoid battery electrolyte contact with skin, eyes, or clothing. If battery electrolyte spills, take immediate action to stop burning effects:**

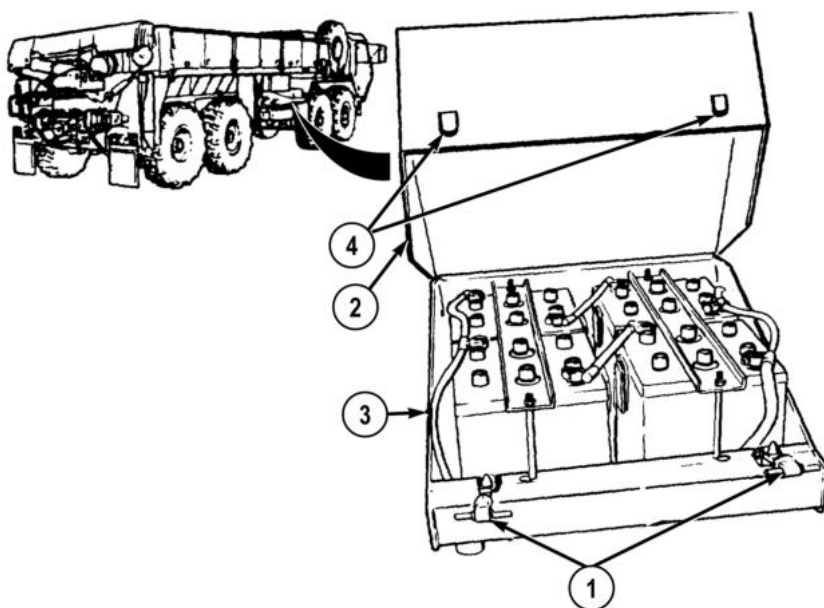
- External - If battery electrolyte contacts skin, immediately flush effected area with cold running water to remove all acid. Failure to comply may result in injury or death to personnel.
- Eyes - If battery electrolyte contacts eyes, immediately flush eyes with cold water for 15 minutes and seek immediate medical attention. **IMPORTANT** - If only one eye is affected, ensure the affected eye is always (during both flushing and transport) kept lower (the lower the better) than unaffected eye. This will help keep affected eye from

**CLOSE BATTERY BOX - Continued**

draining into (and contaminating) the unaffected eye. Failure to comply may result in injury or death to personnel.

- Internal - If battery electrolyte is ingested (swallowed), drink large amounts of water or milk. Follow with milk of magnesia, a beaten egg, or vegetable oil and seek immediate medical attention. Failure to comply may result in injury or death to personnel.
- Clothing or vehicle - Immediately flush area with cold water and neutralize battery electrolyte with baking soda or household ammonia solution. Failure to comply may result in injury or death to personnel.

1. Slide cover (2) on battery box (3).



*Figure 2.*

2. Align rubber hooks (1) and brackets (4).
3. Connect rubber hooks (1).

**END OF TASK**

**FOLLOW-ON MAINTENANCE**

1. Remove wheel chocks. (WP 0089)

**END OF WORK PACKAGE**

---

**OPERATOR MAINTENANCE  
OPEN/CLOSE ENGINE COVERS AND ENGINE SIDE PANEL REMOVAL/  
INSTALLATION**

---

**INITIAL SETUP:**

**Equipment Condition**

Engine OFF. (WP 0066)

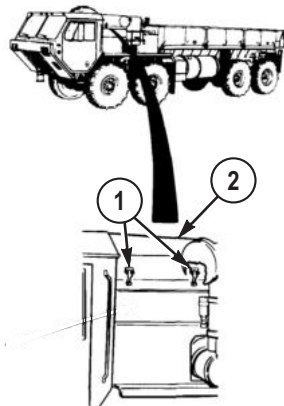
**Equipment Condition - Continued**

Wheels chocked. (WP 0089)  
Spare tire removed (if removing  
passenger side engine panel).  
(WP 0158)

---

**OPEN ENGINE COVERS**

1. Pull top rubber hooks (1) up and out.



*Figure 1.*

2. Lift hood (2) slowly until hood (2) lies on top of engine compartment.

**END OF TASK**

## ENGINE SIDE PANELS REMOVAL

### NOTE

- Driver side and passenger side engine side panels are removed the same way, except where noted.
- Passenger side engine side panel removal shown.

1. Pull bottom rubber hook (3) up and out.

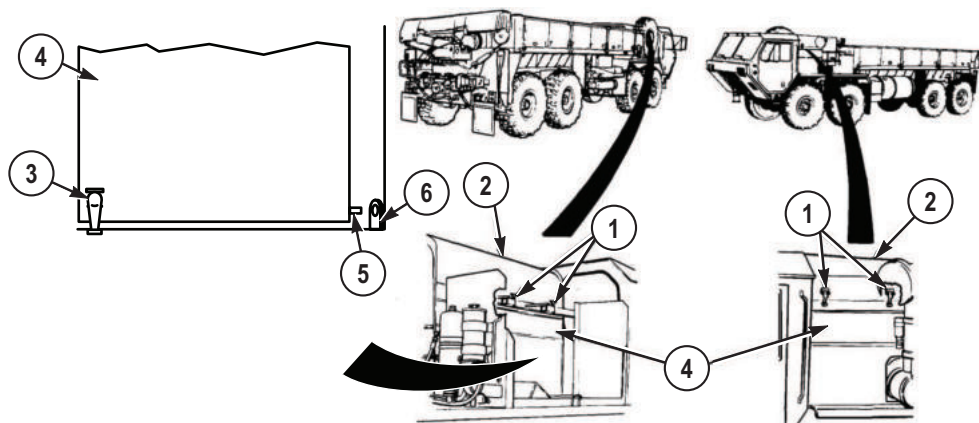


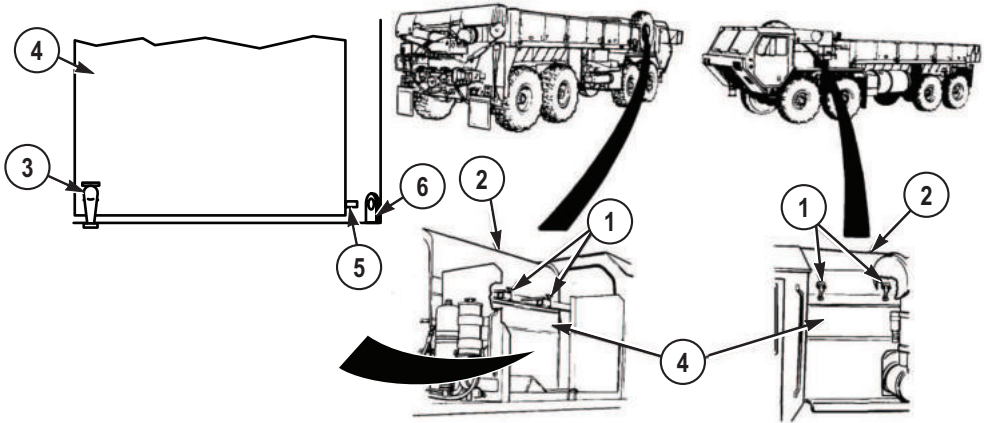
Figure 2.

2. Slide engine side panel (4) toward rear of vehicle so stud (5) clears mount (6).
3. Lift and remove engine side panel (4) from vehicle.

## END OF TASK

## ENGINE SIDE PANELS INSTALLATION

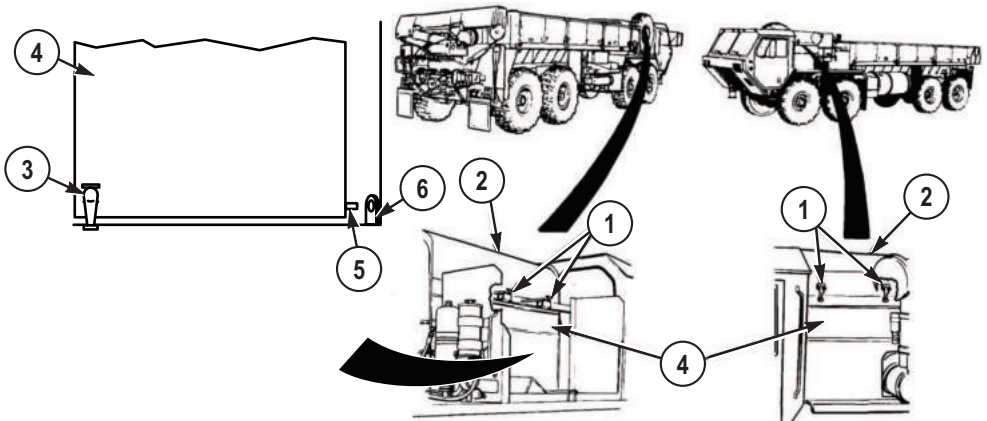
1. Lift and install engine side panel (4) on vehicle.

**ENGINE SIDE PANELS INSTALLATION - Continued***Figure 3.*

2. Slide engine side panel (4) toward front of vehicle so stud (5) inserts into mount (6).
3. Pull bottom rubber hook (3) up and connect to engine side panel (4).

**END OF TASK****CLOSE ENGINE COVERS**

1. Pull hood (2) forward.

*Figure 4.*



**CLOSE ENGINE COVERS - Continued**

2. Push in engine side panel (4) and lower hood (2).
3. Pull top rubber hooks (1) up and connect to hood (2).

**END OF TASK****FOLLOW-ON MAINTENANCE**

1. Stow spare tire (if removed). (WP 0158)
2. Remove wheel chocks. (WP 0089)

**END OF WORK PACKAGE**

## CHAPTER 6

### SUPPORTING INFORMATION



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## FIELD MAINTENANCE REFERENCES

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### SCOPE

This work package lists all pamphlets, forms, field manuals, technical manuals, and other publications referenced in this manual. Also, those publications that should be consulted for additional information about vehicle operations are listed.

### DEPARTMENT OF ARMY PAMPHLETS

The following indexes should be consulted frequently for latest changes or revisions and for new publications relating to material covered in this technical manual.

DA PAM 25-30	Consolidated Index of Army Publications and Blank Forms
DA PAM 25-33	User's Guide for Army Publications and Forms
DA PAM 710-2-1	Using Unit Supply System (Manual Procedures)
DA PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual

### FORMS

DA FORM 2028	Recommended Changes to Publications and Blank Forms
DA FORM 2062	Hand Receipt
DA FORM 2401	Organization Control Record for Equipment
DA FORM 2402	Maintenance Tag
DA FORM 2404	Equipment Inspection and Maintenance Worksheet
DA FORM 2407	Maintenance Request
DA FORM 2407-1	Maintenance Request Continuation Sheet
DA FORM 2408	Equipment Log Assembly (Records)
DA FORM 2408-9	Equipment Control Record
DA FORM 5988-E	Equipment Inspection Maintenance Worksheet (EGA)
DD FORM 250	Material Inspection and Receiving Report
DD FORM 314	Preventive Maintenance Schedule and Record
DD FORM 1149	Requisition and Invoice/Shipping Document
DD FORM 1348-1	DOD Single Line Item Release/Receipt Document

**FORMS - Continued**

DD FORM 1397	Processing and Deprocessing Record for Shipment, Storage, and Issue of Vehicles and Spare Engines
DD FORM 2282	Reinspection Decal Convention for Safe Containers
OPTIONAL FORM 346	U.S. Government Motor Vehicle Operator Identification Card
STANDARD FORM 91	Motor Vehicle Accident Report
STANDARD FORM 364	Report of Discrepancy (ROD)
STANDARD FORM 368	Product Quality Deficiency Report
STANDARD FORM 4895	Equipment Preservation Data Sheet (EPDS)

**FIELD MANUALS**

FM 3-6	Field Behavior of NBC Agents (Including Smoke and Incendiaries)
FM 3-11.3	Multiservice Tactics, Techniques, and Procedures For Chemical, Biological, Radiological, and Nuclear Decontamination Avoidance {MCWP 3-37.2A, NTTP 3-11.25, AFTTP(I) 3-2.56}
FM 3-11.4	Multiservice Tactics, Techniques, and Procedures For Nuclear, Biological, and Chemical (NBC) Protection {MCWP 3-37.2; NTTP 3-11.27; AFTTP (I) 3-2.46} (This Item is included on EM 0205)
FM 3-11.5	Multiservice Tactics, Techniques, and Procedures For Chemical, Biological, Radiological, and Nuclear Decontamination {MCWP 3-37.3; NTTP 3-11.26; AFTTP(I) 3-2.60}
FM 4-25.11	First Aid
FM 4-30.31	Recovery and Battle Damage Assessment and Repair
FM 5-100-15	Corps Engineer Operations
FM 5-125	Rigging Techniques, Procedures, and Applications
FM 9-207	Operation and Maintenance of Ordnance Materiel in Cold Weather
FM 10-16	General Fabric Repair
FM 10-67-1	Concepts and Equipment of Petroleum Operations
FM 20-3	Camouflage, Concealment, and Decoys
FM 21-10	Field Hygiene and Sanitation
FM 21-305	Manual for the Wheeled Vehicle Driver
FM 31-70	Basic Cold Weather Manual

**FIELD MANUALS - Continued**

FM 31-71	Northern Operations
FM 55-21	Railway Operating and Safety Rules
FM 55-30	Army Motor Transport Units and Operations
FM 90-3	Desert Operations
FM 90-13	River Crossing Operations

**TECHNICAL BULLETINS**

TB ORD 1030	Manufacture of Data Plates
TB 5-5420-234-15	Warranty Program for Common Bridge Transporter (CBT)
TB 9-2300-281-35	Standards for Oversea Shipment or Domestic Issue of Special Purpose Vehicles, Combat, Tactical, Construction, and Selected Industrial and Troop Support US Army Tank-Automotive Materiel Readiness Command Managed Items
TB 9-2300-422-20	Security of Tactical Wheeled Vehicles
TB 43-0001-62-SERIES	Equipment Improvement Report and Maintenance Digest for Tank, Automotive, and Armament Equipment
TB 43-0142	Safety Inspection and Testing of Lifting Devices
TB 43-0209	Color, Marking and Camouflage Painting of Military Vehicles, Construction Equipment, and Materials Handling Equipment
TB 43-0212	Purging, Cleaning, and Coating Interior Ferrous and Terne Sheet Vehicle Fuel Tanks
TB 43-0216	Safety and Hazard Warnings for Operation and Maintenance of TACOM Equipment
TB 750-651	Use of Antifreeze Solutions, Antifreeze Extender, Cleaning Compounds and Test Kit in Engine Cooling Systems
TB 9-289	Reconditioning of Type I and Type II Reusable Metal Containers

**TECHNICAL MANUALS**

TM 3-4230-214-12&P	Operator's and Unit Maintenance Manual Including Repair Parts and Special Tools List for Decontamination Apparatus
TM 3-4240-280-10	Operator's Manual for Mask, Chemical-Biological: Aircraft, ABC-M24 and Accessories and Mask, Chemical-Biological, Tank, M25A1 and Accessories (Reprinted W/Basic Incl C1-2) (This item is included on EM 0045)
TM 3-6665-225-12	Operator's and Organizational Maintenance Manual: for Alarm Chemical
TM 5-1940-277-10	Operator's Manual for Boat, Bridge Erection, Twin Jet, Aluminum Hull, Models USCSBMK 1 (NSN 1940-01-105-5728) and USCSBMK 2 (1940-01-218-9165)

**TECHNICAL MANUALS - Continued**

TM 5-2090-202-12&P	Operator's and Unit Maintenance Manual (Including Repair Parts and Special Tools List) for Cradle, Bridge Erection Boat, Twin Jet, Aluminum Hull (NSN 2090-01-106-9789)
TM 5-5420-208-12&P	Operator and Unit Maintenance Manual Including Repair Parts and Special Tools List for Cargo Pallet, Ribbon Bridge Transporter (NSN 5420-01-006-7436)
TM 5-5420-209-12	Operator's and Unit Maintenance Manual for Improved Float Bridge (Ribbon Bridge)
TM 5-5420-277-14&P	Operator's, Unit, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools List) for Cradle, Boat, Improved, M14, (NSN 3990-01-442-1914)
TM 9-214	Inspection, Care and Maintenance of Antifriction Bearings
TM 9-243	Use and Care of Hand Tools and Measuring Tools
TM 9-1005-245-13&P	Operator's, Unit, and Direct Support Maintenance Manual with Repair Parts and Special Tools List (RPSTL) for Machine Gun Mounts and Combinations for Tactical/Armored Vehicles
TM 9-1440-600-10	Operator's Manual, Launching Station, M901 Guided Missile, Semitrailer Mount
TM 9-2320-279-10HR	Hand Receipt Covering Contents Of Components Of End Item (COEI), Basic Issue Items (BII), And Additional Authorization List (AAL) for M977 Series, 8x8 Heavy Expanded Mobility Tactical Trucks
TM 9-2330-357-14&P	Operator's, Organizational, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools Lists) For Semitrailer, Flatbed, Radar Set and Launching Station M860A1 (NSN 2330-01-117-3280) (This Item Is Included On EM 0049)
TM 9-2330-385-14	Operator's, Unit, Direct Support and General Support Maintenance Manual for Palletized Load System Trailer (PLST) Model M1076 (NSN 2330-01-303-5197)
TM 9-2330-385-24P	Unit, Direct Support and General Support Maintenance Repair Parts and Special Tools List for Trailer, Palletized Load System (PLST) Model M1076 (NSN 2330-01-303-5197)
TM 9-2320-279-20	Maintenance Instructions for Organizational Maintenance, M977 Series, 8x8 Heavy Expanded Mobility Tactical Trucks
TM 9-2320-279-34	Maintenance Instructions, Direct Support and General Support for M977 Series, 8x8 Heavy Expanded Mobility Tactical Trucks
TM 9-2610-200-14	Operator's, Unit, Direct Support, and General Support Maintenance Manual for Care, Maintenance, Repair, and Inspection of Pneumatic Tires and Inner Tubes
TM 9-3990-206-14&P	Operator's Unit, Direct Support and General Support Maintenance Manual (Including Repair Parts and Special Tools List) for Palletized Load System (PLS) Flatrack Model M1077/ M1077A1

**TECHNICAL MANUALS - Continued**

TM 9-3990-260-14&P	Operator's, Unit, Direct Support and General Support Maintenance Manual (Including Repair Parts and Special Tools List) For Container Roll-In/Out Platform (CROP) Model M3 (NSN 3990-01-442-2751); Container Roll-In/Out Platform (CROP) Model M3A1 (3990-01-450-5671) (This Item is Included on EM 0038 and EM 0052)
TM 9-2330-366-14&P	Operator's, Organizational, Direct Support, and General Support Maintenance Including Repair Parts and Special Tools Lists For Semitrailer, Lowbed, 12-Ton, XM974 (NSN 2330-01-116-0288)
TM 9-4910-571-12&P	Operator's and Organizational Maintenance Manual (Including Repair Parts and Special Tools List) for Simplified Test Equipment for Internal Combustion Engines (STE/ICE-R)
TM 9-4910-783-13&P	Operator's, Unit, and Direct Support Maintenance Manual (Including Repair Parts and Special Tools List) for Standard Automotive Test Set (SATS)
TM 9-4940-468-13	Operator's, Unit, and Direct Support Maintenance Manual for Tool Outfit, Hydraulic Systems Test and Repair Unit (HSTRU)
TM 9-4940-568-10	Operator's Maintenance Manual for Forward Repair System (FRS)
TM 9-6115-465-24P	Unit, Direct Support and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools List) for Generator Set, Diesel Engine-Driven, Tactical
TM 9-6140-200-14	Operator's, Unit, Direct Support and General Support Maintenance Manual for Lead-Acid Storage Batteries
TM 9-8000	Principles of Automotive Vehicles
TM 11-5820-498-12	Operator's and Organizational Maintenance Manual: Radio Sets
TM 11-5820-498-35	Direct Support, General Support, and Depot Maintenance Manual for Radio Sets
TM 38-250	Preparing Hazardous Materials for Military Air Shipments
TM 43-0139	Painting Instructions for Army Materiel
TM 55-2200-001-12	Transportability Guidance for Application of Blocking, Bracing and Tie Down Materials for Rail Transport
TM 55-2320-279-14	Transportability Guidance Heavy Expanded Mobility Tactical Truck (HEMTT)
TM 750-244-3	Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command)
TM 750-244-6	Procedures for Destruction of Tank Automotive Equipment to Prevent Enemy Use (U.S. Army Tank-Automotive Command)
TM 750-254	Cooling Systems: Tactical Vehicles



**TECHNICAL MANUALS - Continued**

TM 5-2330-378-14&P	Operator's, Unit, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools List) for Semitrailer, Lowbed: 40-Ton Construction Equipment Transporter, M870 (CCE) (CMI/Load King Model 403LF), and M870A1
TM 5-2330-325-14&P	Operator's, Unit, and Direct Support Maintenance Manual with Repair Parts and Special Tools List (RPSTL) for Trailer, Medium Heavy Equipment Transporter (MHET), 40-Ton, M870A3
TM 9-2330-213-14&P	Operator's, Unit, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools Lists) For Trailer, Chassis: 1-1/2-Ton, 2-Wheel M103A1 (NSN 2330-00-835-8629) M103A3 (NSN 2330-00-141-8052) Trailer, Cargo: 1-1/2-Ton, 2-Wheel M105A1 (NSN 2330-00-835-8631) M105A2 (NSN 2330-00-141-8050) M105A2C (NSN 2330-00-542-5689) Trailer, Tank, Water: 1-1/2-Ton, 2-Wheel, 400-Gallon M107A1 (NSN 2330-00-835-8633) M107A2 (NSN 2330-00-141-8049) M107A2C (NSN 2330-00-542-5688) Trailer, Van, Shop: Folding Sides, 1-1/2-Ton, 2-Wheel M448 (NSN 2330-00-631-5692)
TM 9-2330-231-14&P	Technical Manual Operator's, Organizational, Direct Support, And General Support Maintenance (Including Repair Parts and Special Tools List) Trailer, Ammunition: 1 1/2-Ton, 2-Wheel, M332 (NSN 2330-00-200-1785)
TM 9-2330-368-14&P	Operators, Organizational, Including Repair Parts and Special Tools List For Trailer, Ammunition, Heavy Expanded Mobility, 11-Ton, M989 (NSN 2330-01-109-4258)

**MISCELLANEOUS PUBLICATIONS**

AR 70-1	Army Acquisition Policy
AR 200-1	Environmental Protection and Enhancement
AR 385-55	Prevention of Motor Vehicle Accidents
AR 700-138	Army Logistics Readiness and Sustainability
AR 700-139	Army Warranty Program
AR 702-7	Product Quality Deficiency Report Program
AR 750-1	Army Materiel Maintenance Policy
AR 750-10	Army Modification Program
CTA 8-100	Army Medical Department Expendable/Durable Items
CTA 50-970	Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items)

**MISCELLANEOUS PUBLICATIONS - Continued**

GPM 94-02	Maintenance Advisory for Purging all Fuel Tankers using a Biodegradable Purging Solution
SB 725-92-1	US Army Missile Command Nonexpendable Reusable Shipping and Storage Containers
TC 9-237	Welding Theory and Application
TC 9-510	Metal Body Repair and Related Operations
TO 00-25-234	General Shop Practice Requirements for Repair, Maintenance, and Test of Electronic Equipment

**END OF WORK PACKAGE**



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## OPERATOR MAINTENANCE COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

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### INTRODUCTION

#### Scope

This work package lists COEI and BII for the HEMTT series vehicles to help you inventory items required for safe and efficient operation.

#### General

The Components of End Item and Basic Issue Items Lists are divided into the following lists:

**Components of End Item (COEI)** This listing is for informational purposes only and is not authority for requisition replacements. These items are part of the HEMTT series vehicle. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

**Basic Issue Items (BII)** These are the minimum essential items required to place the HEMTT series vehicle in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the vehicle during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on your authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

#### Explanation of Entries in the COEI List and BII List

The following provides an explanation of columns found in the tabular listings:

**Item Number.** Gives you the reference number of the item listed.

**National Stock Number (NSN) and Illustration.** Identifies the stock number of the item to be used for requisitioning purposes and provides an illustration of the item.

**Description, Part Number/(CAGEC).** Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this entry. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

**Usable On Code.** When applicable, gives you a code if the item you need is not the same for different models of equipment. These codes are identified below:

## INTRODUCTION - Continued

**Table 1. List of Usable On Codes**

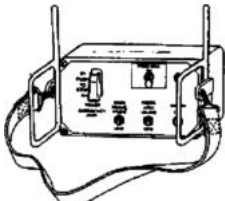
Code	Used On
CBW	M1977 CBT with winch
CBT	M1977 CBT w/o winch

**Column (5) - U/I Unit of Issue (U/I)** U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).



**Column (6) - Qty.** Indicates the quantity required.

## COMPONENTS OF END ITEM

**Table 2. Components of End Item**

(1)	(2)	(3)	(4)	(5)	(6)
Illus No.	National Stock Number (NSN)	Description, Part Number/(CAGEC)	Usable On Code	U/I	Qty Rqr
1	5895-01-467-7784 	CONTROL POWER SUPPLY GROUP: LHS RCU (Located in driver side remote-control stowage box) DA-00E-100(OENJ2)	CBT, CBW	EA	1


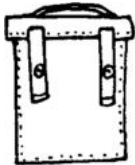


**Table 2. Components of End Item - Continued**

(1)  Illus No.	(2)  National Stock Number (NSN)	(3)  Description, Part Number/(CAGEC)	(4)  Usable On Code	(5)  U/I	(6)  Qty Rqr
2	5440-01-342-0700  	LADDER, STRAIGHT (Located on driver side frame rail, forward of rear tires) 2019940(45152)	CBT, CBW	EA	1
3	6150-01-453-9023  	WIRING HARNESS: RCU Cable Assembly (Located in driver side remote-control stowage box) 3055065(45152)	CBT, CBW	EA	1

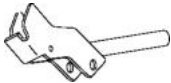



**Table 3. Basic Issue Items**

(1)  Illus No.	(2)  National Stock Number (NSN)	(3)  Description, Part Number/(CAGEC)	(4)  Usable On Code	(5)  U/I	(6)  Qty Rqr
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**Table 3. Basic Issue Items - Continued**


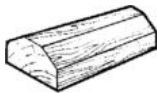

(1)  Illus No.	(2)  National Stock Number (NSN)	(3)  Description, Part Number/(CAGEC)	(4)  Usable On Code	(5)  U/I	(6)  Qty Rqr
1	4730-01-338-2123  	ADAPTER, STRAIGHT, TUBE TO BOSSNOTE: Reference only - subassembly of HOSE ASSEMBLY, NONMETALLIC: SLAVE, NSN: 4720-01-493-6466, P/N: 3294652, CN: 45152 (refer for more information). 8-16 520120C(81343)	CBT, CBW	EA	2
2	8105-01-353-2497  	BAG, TEXTILE: Pamphlet (Located in cabin in glove box forward of passenger/ crew seat) 1362710(45152)	CBT, CBW	EA	1
3	7510-00-889-3494  	BINDER, LOOSE-LEAF (Located on passenger side of cab in glove box) 11677003(19207)	CBT, CBW	EA	1
4	3940-01-163-2319  	BLOCK, TACKLE: 20 Ton (Located in driver side tool box) 168400(75535)	CBW	EA	1

**Table 3. Basic Issue Items - Continued**


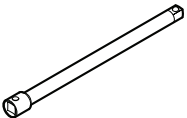

(1)	(2)	(3)	(4)	(5)	(6)
Illus No.	National Stock Number (NSN)	Description, Part Number/(CAGEC)	Usable On Code	U/I	Qty Rqr
5	5340-01-462-1757 	BRACKET, MOUNTING: Bail Bar Lock (Located in LHS hook) 3191030(45152)	CBT, CBW	EA	1
6	6150-01-180-6035 	CABLE ASSEMBLY, POWER, ELECTRICAL: Worklamp (Located in driver side tool box) 1419770U(45152)	CBT, CBW	EA	1
7	6150-01-320-0719 	CABLE ASSEMBLY, SPECIAL PURPOSE, ELECTRICAL: Worklamp (Located in driver side tool box) 1771530W(45152)	CBT, CBW	EA	1
8	4010-01-200-1506 	CHAIN ASSEMBLY, SINGLE LEG: 7 ft. Limp Home (Located in driver side tool box) 1452490(45152)	CBT, CBW	EA	1



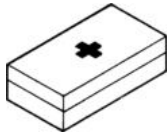
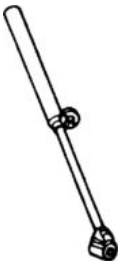

**Table 3. Basic Issue Items - Continued**

(1)  Illus No.	(2)  National Stock Number (NSN)	(3)  Description, Part Number/(CAGEC)	(4)  Usable On Code	(5)  U/I	(6)  Qty Rqr
9	4010-01-249-0548  	CHAIN ASSEMBLY, SINGLE LEG: 14 ft. Utility (Located in driver side tool box) 00044-9973(96508)	CBT, CBW	EA	1
10	2540-01-165-6136  	CHOCK, WHEEL- TRACK (Located in wheel chock stowage box [carries a maximum of two wheel chocks], vehicle mounted stowage boxes, and/or under spare tire) CS-2540-0067(16236)	CBT, CBW	EA	4
11	4730-01-221-2080  	COUPLING, HALF, QUICK DISCONNECTNOTE: Reference only - subassembly of HOSE ASSEMBLY, NONMETALLIC: SLAVE, NSN: 4720-01-493-6466, P/N: 3294652, CN: 45152 (refer for more information). FD45-1169-16-16(012 76)	CBT, CBW	EA	1

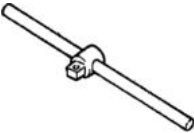


**Table 3. Basic Issue Items - Continued**

(1)	(2)	(3)	(4)	(5)	(6)
Illus No.	National Stock Number (NSN)	Description, Part Number/(CAGEC)	Usable On Code	U/I	Qty Rqr
12	4730-01-220-8297	 <p>COUPLING, HALF, QUICK DISCONNECTNOTE: Reference only - subassembly of HOSE ASSEMBLY, NONMETALLIC: SLAVE, NSN: 4720-01-493-6466, P/N: 3294652, CN: 45152 (refer for more information). FD45-1168-16-16(012 76)</p>	CBT, CBW	EA	1
13	5130-01-400-0129	 <p>EXTENSION, SOCKET WRENCH: Impact 3/4 in. Drive, 13 in. Long 07569(1CV05)</p>	CBT, CBW	EA	1
14	4210-01-133-9053	 <p>EXTINGUISHER, FIRE: 2.7 lbs, 10 BC (Located in cabin to right of driver's seat) 429101(03670)</p>	CBT, CBW	EA	1



**Table 3. Basic Issue Items - Continued**

(1)  Illus No.	(2)  National Stock Number (NSN)	(3)  Description, Part Number/(CAGEC)	(4)  Usable On Code	(5)  U/I	(6)  Qty Rqr
15	6545-00-922-1200  	FIRST AID KIT, GENERAL PURPOSE (Located in cabin in glove box forward of passenger/crew seat) SCC-6545- ILVOL2(64616)	CBT, CBW	EA	1
16	4910-01-003-9599  	GAUGE, TIRE PRESSURE, SELF- CONTAINED (Located in cabin in glove box forward of passenger/ crew seat) 61-J2-1506(94894)	CBT, CBW	EA	2
17	5340-01-209-7841  	HANDLE, EXTENSION (for lug wrench) (Located in driver side tool box) 1347720(45152)	CBT, CBW	EA	1

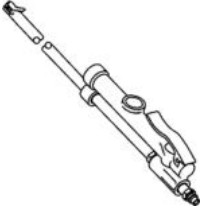


**Table 3. Basic Issue Items - Continued**

(1)  Illus No.	(2)  National Stock Number (NSN)	(3)  Description, Part Number/(CAGEC)	(4)  Usable On Code	(5)  U/I	(6)  Qty Rqr
18	5120-01-242-7218  	HANDLE, SOCKET WRENCH: Sliding "T" 1505380(45152)	CBT, CBW	EA	1
19	5120-01-233-9508  	HANDLE, SOCKET WRENCH: Wheel Lugnut (Located in driver side toolbox) ORR301(66784)	CBT, CBW	EA	1
20	4720-01-558-6415  	HOSE ASSEMBLY, NONMETALLIC: Air 50 ft. 2155210U(45152)	CBT, CBW	EA	2





**Table 3. Basic Issue Items - Continued**

(1)	(2)	(3)	(4)	(5)	(6)
Illus No.	National Stock Number (NSN)	Description, Part Number/(CAGEC)	Usable On Code	U/I	Qty Rqr
21	4720-01-493-6466 	HOSE ASSEMBLY, NONMETALLIC: Slave (Located in passenger side stowage box)NOTE: This item is entire (assembled) slave hose assembly which accompanies the vehicle. There are six individual subassemblies listed in the BII data which the soldier can order to repair the slave hose assembly, or the entire assembly can be ordered using this information. 3294652(45152)	CBT, CBW	EA	1
22	4720-01-342-0595 	HOSE ASSEMBLY, NONMETALLIC: SlaveNOTE: Reference only - subassembly of HOSE ASSEMBLY, NONMETALLIC: SLAVE, NSN: 4720-01-493-6466, P/N: 3294652, CN: 45152 (refer for more information). 1793550(45152)	CBT, CBW	EA	1




**Table 3. Basic Issue Items - Continued**

(1)  Illus No.	(2)  National Stock Number (NSN)	(3)  Description, Part Number/(CAGEC)	(4)  Usable On Code	(5)  U/I	(6)  Qty Rqr
23	4910-01-386-4300  	INFLATOR-GAUGE, PNEUMATIC TIRE (Located in cabin in glove box forward of passenger/crew seat) I-405M(63900)	CBT, CBW	EA	2
24	5120-01-146-8096  	JACK, HYDRAULIC, HAND: 12 Ton with Handle (Located in driver side tool box) EBJ-12GC(26952)	CBT, CBW	EA	1
25	5340-00-158-3807  	PADLOCK: With Chain (for stowage boxes) AA59487-2SC(58536)	CBT, CBW	EA	4

**Table 3. Basic Issue Items - Continued**





(1)  Illus No.	(2)  National Stock Number (NSN)	(3)  Description, Part Number/(CAGEC)	(4)  Usable On Code	(5)  U/I	(6)  Qty Rqr
26	5340-00-158-3805  	PADLOCK: Without Chain (for steering column) (Located in steering column lock bracket under dash) AA59487-2S(58536)	CBT, CBW	EA	1
27	5315-01-431-0602  	PIN, SHOULDER, HEADLESS: Bail Lock (Located in LHS hook) 2207830(05FJ2)	CBT, CBW	EA	1
28	2540-01-165-5987  	PLATE, BASE, JACK (Located in driver side toolbox) 2540V0730(16236)	CBT, CBW	EA	1
29	5120-01-480-0640  	PLIERS, SLIP JOINT: 10 in. Adjustable (Located in driver side toolbox - part of tool roll) 1350150(45152)	CBT, CBW	EA	1

**Table 3. Basic Issue Items - Continued**




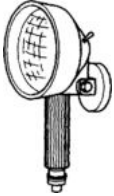
(1)  Illus No.	(2)  National Stock Number (NSN)	(3)  Description, Part Number/(CAGEC)	(4)  Usable On Code	(5)  U/I	(6)  Qty Rqr
30	5340-01-223-9986  	PLUG, PROTECTIVE, DUST AND MOISTURE NOTE: Reference only - subassembly of HOSE ASSEMBLY, NONMETALLIC: SLAVE, NSN: 4720-01-493-6466, P/N: 3294652, CN: 45152 (refer for more information). FD45-1040-16(01276)	CBT, CBW	EA	1
31	5340-01-260-6009  	PLUG, PROTECTIVE, DUST AND MOISTURE NOTE: Reference only - subassembly of HOSE ASSEMBLY, NONMETALLIC: SLAVE, NSN: 4720-01-493-6466, P/N: 3294652, CN: 45152 (refer for more information). FD45-1041-16(01276)	CBT, CBW	EA	1
32	9905-01-480-0644  	REFLECTOR SET, HIGHWAY WARNING, TRIANGULAR (Located in cabin mounted under glove box forward of passenger/crew seat) 6432GBX(45152)	CBT, CBW	SE	1






**Table 3. Basic Issue Items - Continued**

(1)	(2)	(3)	(4)	(5)	(6)
Illus No.	National Stock Number (NSN)	Description, Part Number/(CAGEC)	Usable On Code	U/I	Qty Rqr
33	5140-01-167-1541 	ROLL, TOOLS AND ACCESSORIES (Located in driver side stowage box) 1350190(45152)	CBT, CBW	EA	1
34	5120-01-398-8053 	SCREWDRIVER, CROSS TIP: Phillips No. 3 (Located in driver side toolbox - part of tool roll) SDFP56(96508)	CBT, CBW	EA	1
35	5120-00-293-3309 	SCREWDRIVER, FLAT TIP: No. 6 (Located in driver side toolbox - part of tool roll) 66-110(03914)	CBT, CBW	EA	1
36	4030-00-377-1397 	SHACKLE: Anchor, Limp Home (Located in driver side toolbox) RR-C-271 TY4AGRBCL2SZ 1.000(81348)	CBT, CBW	EA	1


**Table 3. Basic Issue Items - Continued**

(1)  Illus No.	(2)  National Stock Number (NSN)	(3)  Description, Part Number/(CAGEC)	(4)  Usable On Code	(5)  U/I	(6)  Qty Rqr
37	4030-01-197-2334  	SHACKLE: Slings (Located on rear towing eyes) 1451750(45152)	CBT, CBW	EA	2
38	4030-01-316-1552  	SHACKLE: Towing: (Located on front towing eyes) RR-C-271D TYIVAGRACL1 3/8 IN(81348)	CBT, CBW	EA	2
39	5130-00-541-7839  	SOCKET, SOCKET WRENCH: 1-1/2 in. DDP486A(1DJ82)	CBT, CBW	EA	1
40	6220-01-326-2286  	SPOTLIGHT: Worklamp 1401182(78422)	CBT, CBW	EA	1

**Table 3. Basic Issue Items - Continued**

(1)	(2)	(3)	(4)	(5)	(6)
Illus No.	National Stock Number (NSN)	Description, Part Number/(CAGEC)	Usable On Code	U/I	Qty Rqr
41	6220-01-456-2746 	TOW LIGHT ASSEMBLY (Located in passenger side stowage box) J-43173(33287)	CBT, CBW	EA	1
42	5120-01-436-2924 	WRENCH, ADJUSTABLE: 8 in. (Located in driver side toolbox - part of tool roll) AC18(96508)	CBT, CBW	EA	1
43	5120-00-264-3796 	WRENCH, ADJUSTABLE: 12 in. (Located in driver side toolbox - part of tool roll) 120405A(45152)	CBT, CBW	EA	1

**Table 3. Basic Issue Items - Continued**

(1)	(2)	(3)	(4)	(5)	(6)
Illus No.	National Stock Number (NSN)	Description, Part Number/(CAGEC)	Usable On Code	U/I	Qty Rqr
44	5120-01-070-8386 	WRENCH, SOCKET: Wheel Nut (Located in driver side tool box) 1048-TR(45152)	CBT, CBW	EA	1

**END OF WORK PACKAGE**



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## OPERATOR MAINTENANCE ADDITIONAL AUTHORIZATION LIST (AAL)

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### Introduction

#### Scope

This work package lists additional authorization items that are needed to operate and maintain the HEMTT Series Vehicles.

#### General

This list identifies items that do not have to accompany the HEMTT Series Vehicles and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

#### Explanation of Columns in the AAL

Column (1) - National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (2) - Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (3) - Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

***Table 1. List of Usable On Codes***

Code	Used On
CBW	M1977 CBT with winch
CBT	M1977 CBT w/o winch

Column (4) - U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number.

Column (5) - Qty Recm. Indicates the quantity recommended.

**Table 2. Additional Authorization List**

(1) National Stock Number (NSN)	(2) Description, Part Number/ (CAGEC)	(3) Usable On Code	(4) U/I	(5) Qty Recom
5110-00-293-2 336	AXE, SINGLE BIT 6150925(19207)	CBT, CBW	EA	1
4910-00-347-9 703	BAR ASSEMBLY, HOISTING 8690061(52793)	CBT, CBW	EA	1
3940-01-247-3 682	BEAM, HOISTING: DOUBLE AC200000364(28620)	CBT, CBW	EA	1
3940-01-247-3 681	BEAM, HOISTING: SINGLE AC200000354(28620)	CBT, CBW	EA	1
2540-00-409-8 891	BRACKET ASSEMBLY, TOOL: PIONEER MS53053-1(96906)	CBT, CBW	EA	1
6150-01-022-6 004	CABLE ASSEMBLY, POWER, ELECTRICAL: NATO 11682336-1(19207)	CBT, CBW	EA	1
2540-01-152-7 813	CHAIN, TIRE, EMERGENCY 2624-10-8(46156)	CBT, CBW	PR	2
4230-01-220-3 221	DECONTAMINATION KIT, INDIVIDUAL EQUIPMENT 5705588(19207)	CBT, CBW	EA	1
4240-01-220-6 373	GAS PARTICULATE KIT 3SK663(45152)	CBT, CBW	KT	1
8415-00-634-4 658	GLOVES, LEATHER 37G2940(90142)	CBT, CBW	PR	2
5120-00-288-6 574	HANDLE, MATTOCK-PICK 10501973(56161)	CBT, CBW	EA	1

**Table 2. Additional Authorization List - Continued**

(1) National Stock Number (NSN)	(2) Description, Part Number/ (CAGEC)	(3) Usable On Code	(4) U/I	(5) Qty Recom
2990-01-509-1 954	HEATER, COOLANT, ENGINE: ARCTIC 3460259(45152)	CBT, CBW	EA	1
3940-01-247-3 681	HOISTING BEAM, SINGLE AC200000354(28620)	CBT, CBW	EA	1
4720-01-341-4 912	HOSE ASSEMBLY 1759750U(45152)	CBT, CBW	EA	1
4720-01-254-0 189	HOSE ASSEMBLY, NONMETALLIC: INTER- VEHICULAR MS39325-9-140-8(96906)	CBT, CBW	EA	2
5895-01-506-4 503	INSTALLATION KIT, ELECTRONIC EQUIPMENT: C4ISR 3418900(45152)	CBT, CBW	EA	1
1005-01-519-2 126	INSTALLATION KIT: MOUNTING, MACHINE GUN 1301740UW/OR45152	CBT, CBW	KT	1
6665-01-220-3 220	KIT, CHEMICAL ALARM 5705589(19207)	CBT, CBW	KT	1
6220-01-250-5 190	LIGHT, WARNING: BEACON 3145661(45152)	CBT, CBW	EA	1
5120-00-243-2 395	MATTOCK: PICK 11677022(19207)	CBT, CBW	EA	1
5120-00-892-5 709	MIRROR, INSPECTION UH1487(11676)	CBT, CBW	EA	1



**Table 2. Additional Authorization List - Continued**

(1) National Stock Number (NSN)	(2) Description, Part Number/ (CAGEC)	(3) Usable On Code	(4) U/I	(5) Qty Recom
1005-01-266-1 233	MOUNT, RIFLE: INSTALLATION 5705590(19207)	CBT, CBW	EA	1
5120-00-197-9 473	PUNCH, BLACKSMITH'S: 17 in. 647008(60903)		EA	1
4030-01-316-1 552	SHACKLE: TOWING (used with tow bar, 10 ton) 1307540(45152)	CBT, CBW	EA	2
5120-00-293-3 336	SHOVEL: HAND 11655784(19207)	CBT, CBW	EA	1
3940-01-209-6 008	SLING AND WIRE ROPE ASSEMBLY SET AC 2000 00331(28620)	CBW	EA	1
3940-00-040-2 297	SLING, MULTIPLE LEG 8330151(19207)	CBW	EA	1
3940-01-083-9 313	SLING, MULTIPLE LEG SW71M(91796)	CBT, CBW	EA	1
3940-01-241-7 400	SLING, MULTIPLE LEG AC200000332(28620)	CBT, CBW	EA	1
3940-01-270-3 389	SLING, MULTIPLE LEG: 16 FT. SAFETY CHAINTwo (2) 16 ft. safety chains should be used in conjunction with Tow Bar: 10 Ton NSN: 2540-00-378-2012, P/N: 8383802, C/C: 19207. 1482010(45152)	CBT, CBW	EA	2

**Table 2. Additional Authorization List - Continued**

(1) National Stock Number (NSN)	(2) Description, Part Number/ (CAGEC)	(3) Usable On Code	(4) U/I	(5) Qty Recom
5130-01-400-0 164	SOCKET, SOCKET WRENCH (3/4 in. drive, 1 3/4 in. hex, impact) J07528L(1CV05)	CBT, CBW	EA	1
5420-00-071-5 273	SUPPLEMENTARY SET: USED WITH BRIDGE ADAPTER PALLET (BAP) SC 5420-98-E51(19207)	CBT, CBW	EA	1
3990-01-204-3 009	TIE DOWN, CARGO, VEHICLE MIL-PRF-71224-1(OHK26)	CBT, CBW	EA	8
2540-00-378-2 012	TOW BAR, MOTOR VEHICLE: 10 tonShould be used in conjunction with two (2) safety chains: 16 ft. NSN: 3940-01-270-3389, P/N: 1482010, C/C: 45152. 8383802(19207)	CBT, CBW	EA	1
2540-01-408-1 538	TOW BAR, MOTOR VEHICLE: TOW BAR ADAPTER KIT 2075150U(45152)	CBT, CBW	EA	1
5130-01-428-3 751	WRENCH, IMPACT, PNEUMATIC 1789100U(45152)	CBT, CBW	EA	1

**END OF WORK PACKAGE**



## OPERATOR MAINTENANCE EXPENDABLE AND DURABLE ITEMS LIST

### Introduction

### Scope

This work package lists expendable supplies and materials that are needed to operate and maintain the HEMTT Series Vehicles. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/Durable Items.

### Explanation of Entries in the Expendable/Durable Items List

**Item No.** This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (e.g., Use brake fluid (Expendable/Durable Items List)).

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

- C -- Operator/Crew
- O -- Unit/AMC
- F -- Direct Support/ASB
- H -- General Support
- D -- Depot

**National Stock Number (NSN).** This is the NSN assigned to the item which you can use to requisition it.

**Item Name, Description, Part Number/(CAGEC).** This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

**(U/I).** Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

**Table 1. Expendable and Durable Items List**

(1)	(2)	(3)	(4)	(5)
Item No.	Level	National Stock Number (NSN)	Item Name, Description, Part Number/ (CAGEC)	U/I

**Table 1. Expendable and Durable Items List - Continued**

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
			<b>Antifreeze, Arctic Type</b>	
1	C	6850-01-464-9 096	Antifreeze, Arctic Type 55-gal drum A-A-52624 (58536)	DR
			<b>Antifreeze, Permanent, Glycol, Inhibited</b>	
2	C	6850-01-464-9 125	Antifreeze, Permanent, Glycol, Inhibited 1-gal container AA52624 (58536)	GL
3	C	6850-00-464-9 137	Antifreeze, Permanent, Glycol, Inhibited 5-gal container MILA46153 (81349)	CO
4	C	6850-01-464-9 152	Antifreeze, Permanent, Glycol, Inhibited 55-gal drum A-A-52624 TY I RECYCLED (58536)	DR
			<b>Cleaner, Lubricant</b>	
5	C	9150-01-079-6 124	Cleaner, Lubricant A, 4 oz bottle w/ extender tube MIL-PRF-63460 (81349)	BT
			<b>Cleaning Compound, Solvent</b>	
6	C	6850-01-474-2 319	Cleaning Compound, Solvent 1 gallon can MIL-PRF-680 Type II (81349)	GL
7	C	6850-01-474-2 317	Cleaning Compound, Solvent 5 gallon can MIL-PRF-680 Type II (81349)	CO

**Table 1. Expendable and Durable Items List - Continued**

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
8	C	6850-01-474-2316	Cleaning Compound, Solvent 55 gallon drum MIL-PRF-680 Type II (81349)	DR
9	C	6850-01-474-2318	Cleaning Compound, Solvent 1 gallon can MIL-PRF-680 Type III (81349)	GL
10	C	6850-01-474-2320	Cleaning Compound, Solvent 5 gallon can MIL-PRF-680 Type III (81349)	BX
11	C	6850-01-474-2321	Cleaning Compound, Solvent 55 gallon drum MIL-PRF-680 Type III (81349)	DR
			<b>Compound, Cleaning Windshield</b>	
12	C	6850-00-926-2275	Compound, Cleaning Windshield 1-pt can 0854-000 (0FTT5)	BX
			<b>Fuel, DF-1, Winter</b>	
13	C	9140-01-413-7511	Fuel, DF-1, Winter Bulk VV-F-800 (81348)	GL
14	C	9140-00-286-5286	Fuel, DF-1, Winter Bulk ASTM D 975 (81346)	GL
15	C	9140-00-286-5287	Fuel, DF-1, Winter 5-gal can ASTM D 975 (81346)	CN
16	C	9140-00-286-5288	Fuel, DF-1, Winter 55-gal drum, 16 gauge ASTM D 975 (81346)	DR
17	C	9140-00-286-5289	Fuel, DF-1, Winter 55-gal drum, 18 gauge ASTM D 975 (81346)	DR

**Table 1. Expendable and Durable Items List - Continued**

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
			<b>Fuel</b>	
18	C	9130-01-031-5816	Fuel, JP8 Bulk MILT83133 GR JP8 (81349)	GL
19	C	9140-01-412-1311	Fuel, DF-2, Regular Bulk VV-F-800 (81348)	GL
20	C	9140-00-286-5294	Fuel, DF-2, Regular Bulk ASTM D 975 (81346)	GL
21	C	9140-00-286-5295	Fuel, DF-2, Regular 5-gal can ASTM D 975 (81346)	CN
22	C	9140-00-286-5296	Fuel, DF-2, Regular 55-gal drum, 16 gauge ASTM D 975 (81346)	DR
23	C	9140-00-286-5297	Fuel, DF-2, Regular 55-gal drum, 18 gauge ASTM D 975 (81346)	DR
			<b>Grease, Automotive and Artillery GAA</b>	
24	C	9150-01-197-7688	Grease, Automotive and Artillery GAA 2-1/2 oz tube M-10924-A (81349)	TU
25	C	9150-01-197-7693	Grease, Automotive and Artillery GAA 14-oz cartridge M-10924-B (81349)	CA
26	C	9150-01-197-7690	Grease, Automotive and Artillery GAA 1-lb can M-10924-C (81349)	CN

**Table 1. Expendable and Durable Items List - Continued**

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
27	C	9150-01-197-7689	Grease, Automotive and Artillery GAA 5-lb can M-10924-D (81349)	CN
28	C	9150-01-197-7692	Grease, Automotive and Artillery GAA 35-lb can M-10924-E (81349)	CN
			<b>Oil, Lubricating Gear, GO 75 (MIL-L-2105)</b>	
29	C	9150-01-035-5390	Oil, Lubricating Gear, GO 75 (MIL-L-2105) 1-qt can M2105-1-75W (81349)	QT
30	C	9150-01-035-5391	Oil, Lubricating Gear, GO 75 5-gal can MIL-PRF-2105 (81349)	CN
			<b>Oil, Lubricating Gear, GO 80W/90 (MIL-L-2105C)</b>	
31	C	9150-01-035-5393	Oil, Lubricating Gear, GO 80W/90 (MIL-L-2105C) 5-gal can J2360 (81343)	CN
			<b>Oil, Lubricating OEA Ice, Subzero</b>	
32	C	9150-00-403-2372	Oil, Lubricating OEA Ice, Subzero 1-qt can EMERY3908D (33358)	QT
33	C	9150-00-402-2372	Oil, Lubricating OEA Ice, Subzero 5-gal can MIL-PRF-46167 (81349)	CN



**Table 1. Expendable and Durable Items List - Continued**

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
34	C	9150-00-491-7 197	Oil, Lubricating OEA Ice, Subzero 55-gal drum, 16 gauge MIL-PRF-46167 (81349)	DR
			<b>Oil, Lubricating OE/HDO 10</b>	
35	C	9150-01-518-9 471	Oil, Lubricating OE/HDO 10 1-qt can M2104-1-10W (81349)	QT
36	C	9150-00-186-6 668	Oil, Lubricating OE/HDO 10 5-gal can M2104-3-10W (81349)	CN
37	C	9150-00-191-2 772	Oil, Lubricating OE/HDO 10 55-gal drum, 18 gauge M2104-4-10W (98308)	DR
			<b>Oil, Lubricating OE/HDO 30, (SAE 30)</b>	
38	C	9150-01-496-1 962	Oil, Lubricating OE/HDO 30, (SAE 30) Bulk M2104-2-30W (81349)	GL
39	C	9150-00-186-6 681	Oil, Lubricating OE/HDO 30, (SAE 30) 1-qt can M2104-3-30W (81349)	QT
40	C	9150-00-188-9 858	Oil, Lubricating OE/HDO 30, (SAE 30) 5-gal can MIL-PRF-2104 (81349)	CN
41	C	9150-01-433-7 978	Oil, Lubricating OE/HDO 30, (SAE 30) 55-gal can M2104-4-30W (81349)	DR
42	C	9150-01-433-7 978	Oil, Lubricating OE/HDO 30, (SAE 30) 55-gal drum, 18 gauge M2104-4-30W (81349)	DR

**Table 1. Expendable and Durable Items List - Continued**

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
			<b>Oil, Lubricating OE/HDO 50</b>	
43	C	9150-00-188-9 865	Oil, Lubricating OE/HDO 50 5-gal drum BRAYC0423H (98308)	CN
			<b>Oil, Lubricating Gear, GO 85W/140</b>	
44	C	9150-01-035-5 396	Oil, Lubricating Gear, GO 85W/140 55-gallon drum J2360 (81343)	DR
45	C	9150-01-035-5 395	Oil, Lubricating Gear, GO 85W/140 5-gallon can J2360 (81343)	CN
			<b>Oil, Lubricating, Internal Combustion Engine, Tactical Service OE/HDO 15W/ 40 (MIL-L-2104)</b>	
46	C	9150-01-421-1 432	Oil, Lubricating, Internal Combustion Engine, Tactical Service OE/HDO 15W/40 (MIL-L-2104) 55-gal drum, 18 gauge M2104-5-15W40 (81349)	DR
47	C	9150-01-518-9 477	Oil, Lubricating, Internal Combustion Engine, Tactical Service OE/HDO 15W/40 (MIL-L-2104) 1-quart can M2104-1-15W40 (81349)	QT
48	C	9150-01-421-1 427	Oil, Lubricating, Internal Combustion Engine, Tactical Service OE/HDO 15W/40 (MIL-L-2104) 24-quart box MIL-PRF-2104 (81349)	QT

**Table 1. Expendable and Durable Items List - Continued**

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
			<b>Oil, Lubricating, OE/HDO 40</b>	
49	C	9150-00-188-9 862	Oil, Lubricating, OE/HDO 40 55-gal drum MIL-PRF-2104 (81349)	DR
			<b>Rag, Wiping</b>	
50	C	7920-00-205-1 711	Rag, Wiping 50-pound bale 7920-00-205-1711 (80244)	BE
			<b>Rope</b>	
51	C	4020-00-968-1 357	Rope, Fibrous MIL-R-17343 (81349)	RL
			<b>Oil, Lubricating, Preventative</b>	
52	C	9150-01-293-7 696	Oil, Lubricating, Preventative 5-gal drum MIL-L-21260C (81349)	CN
53	C	9150-01-438-6 079	Oil, Lubricating, Preventative 55-gallon drum J2363 (81349)	DR
			<b>Preventative, Rust MIL-C-16173 Texaco Type "L"</b>	
54	C	8030-00-062-5 866	Preventative, Rust MIL-C-16173 Texaco Type "L" 1-gallon can MIL-C-16173 (81349)	GL
55	C	8030-00-231-2 345	Preventative, Rust MIL-C-16173 Texaco Type "L" 1-gallon can MIL-C-16173 (81349)	GL

**Table 1. Expendable and Durable Items List - Continued**

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number/ (CAGEC)	(5) U/I
56	C	8030-00-244-1 293	Preventative, Rust MIL-C-16173 Texaco Type "L" 5-gallon can MIL-PRF-16173 (81349)	CN
57	C	8030-00-244-1 29	Preventative, Rust MIL-C-16173 Texaco Type "L" 55-gallon drum; 18 gauge MIL-PRF-16173 (81349)	DR
58	C	8030-00-837-6 557	Preventative, Rust MIL-C-16173 Texaco Type "L" 1-pint can 230-1313P1 (49956)	PT
59	C	8030-00-231-2 344	Preventative, Rust MIL-C-16173 Texaco Type "L" 5-gallon can MIL-R-10036 (81349)	CN

**END OF WORK PACKAGE**



[illegible]

<b>TO:</b> <i>(Forward to proponent of publication or form) (Include ZIP Code)</i>				<b>FROM:</b> <i>(Activity and location) (Include ZIP Code)</i>			<b>DATE</b>	
<b>PART II- REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS</b>								
PUBLICATION/FORM NUMBER				DATE		TITLE		
PAGE NO.	COLM NO.	LINE NO.	FEDERAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPROTED	RECOMMENDED ACTION
<b>PART III - REMARKS</b> <i>(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)</i>								
TYPED NAME, GRADE OR TITLE			TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION			SIGNATURE		

[illegible]



<b>TO:</b> <i>(Forward to proponent of publication or form) (Include ZIP Code)</i>				<b>FROM:</b> <i>(Activity and location) (Include ZIP Code)</i>			<b>DATE</b>	
<b>PART II- REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS</b>								
PUBLICATION/FORM NUMBER				DATE		TITLE		
PAGE NO.	COLM NO.	LINE NO.	FEDERAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPROTED	RECOMMENDED ACTION
<b>PART III - REMARKS</b> <i>(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)</i>								
TYPED NAME, GRADE OR TITLE			TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION			SIGNATURE		

By Order of the Secretary of the Army:

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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches  
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches  
1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces  
1 Kilogram = 1000 Grams = 2.2 Lb  
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces  
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

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

CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches  
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

TEMPERATURE

$5/9 (^{\circ}\text{F} - 32) = ^{\circ}\text{C}$   
212° Fahrenheit is equivalent to 100° Celsius  
90° Fahrenheit is equivalent to 32.2° Celsius  
32° Fahrenheit is equivalent to 0° Celsius  
 $9/5 \text{ C}^{\circ} + 32 = \text{F}^{\circ}$

APPROXIMATE CONVERSION FACTORS

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

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



