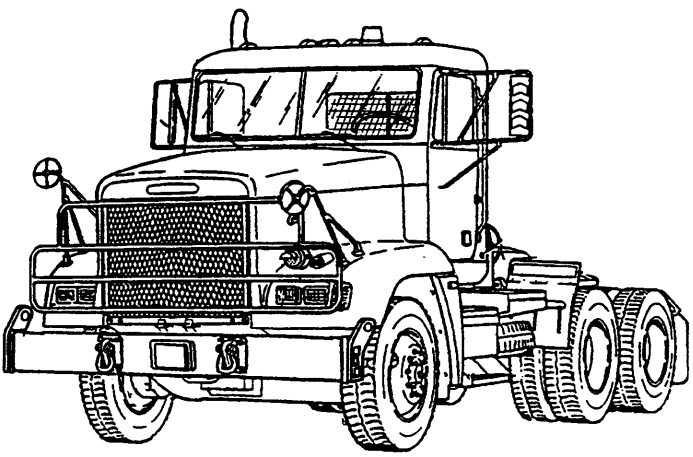
OPERATOR'S MANUAL

FOR

TRUCK, TRACTOR, LINE HAUL:
52,000 GVWR, 6 X 4, M915A4
(NSN 2320-01-458-1207)



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HEADQUARTERS, DEPARTMENT OF THE ARMY

15 OCTOBER 2001

LIST OF EFFECTIVE PAGES

Dates of issue for original and changed pages/work packages are:

Original.....October 2001
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FOR INFORMATION ON FIRST AID, REFER TO FM 21-11.

WARNING

CARBON MONOXIDE (EXHAUST GASES) CAN KILL!

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

- **Carbon monoxide occurs in exhaust fumes of internal combustion engines. Carbon monoxide can become dangerously concentrated under conditions of inadequate ventilation. The following precautions must be observed to ensure safety of personnel when engine of truck is operated.**

1. DO NOT operate truck engine in enclosed areas.

2. DO NOT idle truck engine without adequate ventilation.

3. DO NOT drive truck with inspection plates or cover plates removed.

4. BE ALERT for exhaust poisoning symptoms. They are:

   - Headache
   - Dizziness
   - Sleepiness
   - Loss of muscular control

5. If you see another person with exhaust poisoning symptoms:

   - Remove person from area.
   - Expose to fresh air.
   - Keep person warm.
   - Do not permit physical exercise.
   - Administer cardiopulmonary resuscitation (CPR), if necessary.
   - Notify a medic.

6. BE AWARE. The field protective mask for nuclear-biological-chemical (NBC) protection will not protect you from carbon monoxide poisoning.

The Best Defense Against Carbon Monoxide Poisoning Is Good Ventilation!

WARNING

BATTERIES

- **To avoid eye injury, eye protection is required when working around batteries. Do not smoke, use open flame, make sparks, or create other ignition sources around batteries. If a battery is giving off gases, it can explode and cause injury to personnel. Remove all jewelry such as rings, ID tags, watches, and bracelets. If jewelry or a tool contacts a battery terminal, a direct short will result in instant heating, damage to equipment and injury to personnel.**

- **Sulfuric acid contained in batteries can cause serious burns. If battery corrosion or electrolyte makes contact with skin, eyes, or clothing, take immediate action to stop the corrosive burning effects. Failure to follow these procedures may result in death or serious injury to personnel.**

a. **Eyes.** Flush with cold water for no less than 15 minutes and seek medical attention immediately.

b. **Skin.** Flush with large amounts of cold water until all acid is removed. Seek medical attention as required.

c. **Internal.** If corrosion or electrolyte is ingested, drink large amounts of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Seek medical attention immediately.

d. **Clothing/Equipment.** Wash area with large amounts of cold water. Neutralize acid with baking soda or household ammonia.

WARNING

BRAKES

- **Do not use trailer handbrake to prevent trailer from jackknifing because this may cause trailer to jackknife. Modern airbrake systems are designed to deliver the right amount of air to all wheels to stop vehicle without jackknifing. Failure to follow this warning may result in death or injury to personnel or damage to equipment.**

- **Do not use trailer handbrake as primary brake to keep tension on coupling system. This will cause undue tension on brakes and coupling which could result in injury to personnel or damage to equipment. Prevent problems with slack in fifth wheel by using good braking habits and adjusting coupling and braking systems properly.**

- **When caging brakes, block wheels to keep truck from moving when brakes are released. Failure to follow this warning may result in death or injury to personnel or damage to equipment.**

- **DO NOT use engine brake if road surfaces are slippery. Use of engine brake on wet, icy or snow-covered roads could result in loss of vehicle control. Failure to follow this warning could result in death or injury to personnel or damage to equipment.**

- **Brake chamber contains spring under great pressure. To prevent personnel injury, never work directly behind chamber. If caging bolt will not engage properly, spring may be broken.**

- **Do not remove clamp ring around spring brake chamber. It is under tension and can cause personnel injury if released.**

- **When spring brakes are applied, vehicle will stop quickly which could result in injury to personnel. Also, vehicle cannot be driven again until malfunction is repaired and enough air supply is present for operation of service brakes.**

WARNING

COMPRESSED AIR

Compressed air used for cleaning or drying purposes, or for clearing restrictions, should never exceed 30 psi (207 kPa). Wear protective clothing (goggles/shield, gloves, etc.) and use caution to avoid injury to personnel.

WARNING

DIESEL FUEL HANDLING

- **DO NOT smoke or permit any open flame in area of truck while you are servicing diesel fuel system. Be sure hose nozzle is grounded against filler tube during refueling to prevent static electricity. Failure to follow this warning may result in injury to personnel or equipment damage.**

- **Auxiliary arctic heater must be switched to OFF while refueling. Fuel may ignite, causing damage to vehicle and injury or death to personnel.**

- **DO NOT perform fuel system checks, inspections, or maintenance while smoking or near fire, flames, or sparks. Fuel may ignite, causing damage to vehicle and injury or death to personnel.**

- **Fuel tank cap may become hot during vehicle operation. Use hand protection when removing fuel cap.**

WARNING

DRY CLEANING SOLVENT

Dry cleaning solvent is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-138°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contact eyes, immediately wash your eyes and get medical aid.

WARNING

FIRE EXTINGUISHER

Discharging large quantities of dry chemical fire extinguisher in cab may result in temporary breathing difficulty during and immediately after the discharge event. If at all possible, discharge fire extinguisher from outside the cab. Ventilate cab thoroughly prior to reentry.

WARNING

HAZARDOUS WASTE DISPOSAL

When servicing this vehicle, performing maintenance, or disposing of materials such as engine coolant, transmission fluid, lubricants, battery acids or batteries, and CARC paint, consult your unit/local hazardous waste disposal center or safety office for local regulatory guidance. If further information is needed, please contact The Army Environmental Hotline at 1-800-872-3845.

WARNING

HEARING PROTECTION

- **Hearing protection is required when operating vehicle at more than 45 mph (72 kph) with windows open for an extended period of time. Hearing protection is also required when working around truck with engine running for an extended period of time. Failure to follow this warning may result in hearing damage.**

- **Hearing protection is required when personnel are within 1 m (3.1 ft.) of the vehicle when operating at low engine idle (600 rpm) and within 3.5 m (11 ft.) of the vehicle when operating at high idle (1600 rpm).**

WARNING

NBC EXPOSURE

If NBC exposure is suspected, all air cleaner media should be handled by personnel wearing protective equipment. Consult your NBC Officer or NBC NCO for appropriate handling or disposal procedures.

IF NBC EXPOSURE IS SUSPECTED ALL AIR FILTER MEDIA WILL BE HANDLED BY PERSONNEL WEARING FULL NBC PROTECTIVE EQUIPMENT. SEE OPERATOR/MAINTENANCE MANUAL.

7690-01-114-3702

To order this NBC decal use:

National Stock Number (NSN) - 7690-01-114-3702
Part Number (PN) - 12296626
Commercial and Government Entity Code (CAGEC) - 19207

WARNING

PRESSURIZED COOLING SYSTEM

DO NOT remove radiator cap unless engine is cold. Remove cap in two steps. First, place thick cloth over cap and slowly turn cap left to first stop. Pause and allow pressure to escape. Turn cap further left until it can be removed. This is a pressurized cooling system and escaping steam, hot water, or coolant will cause serious burns.

WARNING

SLAVE STARTING

- **When slave starting truck, use NATO slave cable that DOES NOT have loose or missing insulation.**
- **DO NOT proceed if suitable cable is not available.**
- **DO NOT use civilian-type jumper cables.**

WARNING

TIRE CHANGING

Whenever inner and/or outer wheel lug nuts require tightening or a wheel has been removed and replaced, lug nuts must be torqued to the required torque. Failure to follow this warning may result in serious injury to personnel and damage to equipment.

WARNING

TRUCK OPERATION

- **BE ALERT for personnel in area while operating truck. Always check to ensure area is clear of personnel and obstructions before moving out. Failure to follow this warning may result in serious injury or death to personnel.**
- **Use of seat belts while operating vehicle is mandatory. Fasten belt BEFORE driving. Trying to fasten three-point belt while driving creates a hazardous condition. Failure to follow this warning may result in death or injury to personnel.**
- **Serious injury may result if head clearance is not adequate while sifting in seat. Before driving or riding in vehicle, ensure there is adequate clearance at maximum upward travel of seat.**
- **Ensure that tilt steering wheel control lever is in locked (neutral) position before driving truck. NEVER try to adjust tilt or height of steering wheel while driving. Failure to follow this warning may cause death or injury to personnel.**
- **Use caution when coupling to or uncoupling from semitrailer. Be alert for personnel in area. Ensure that hands, arms, and body are clear of potential pinch points. Failure to follow this warning may result in injury to personnel.**

- **Operating truck with an underinflated or defective tire may lead to tire failure and loss of steering control. Damage to equipment or injury to personnel may result.**

- **These vehicles have been designed to operate safely and efficiently within the limits specified in this TM. Operation beyond these limits is prohibited in accordance with AR 70-1 without written approval from: Commander, U.S. Army Tank automotive and Armaments Command, ATTN: AMSTA-DSA-CS, Warren, MI 48397-5000.**

WARNING

WORK SAFETY

- **Use caution when lifting or handling wheel and tire assembly. It is heavy and could cause injury if improperly lifted or if it falls on you.**

- **Hydraulic jack is intended only for lifting truck, not for supporting vehicle to perform maintenance. Do not get under truck after it is raised unless it is properly supported with blocks or jackstands. Failure to observe this warning may result in death or injury to personnel.**

- **Ether is highly -flammable and explosive. DO NOT perform ether quick-start system checks or inspections while smoking or near fire, flame, or sparks. Failure to follow this warning may cause a fire and explosion, causing serious injury or death to personnel.**

- **Failure to completely turn ON or OFF air cutoff valve will cause loss of brakes on trailer or truck.**

- **Lifting cables, chains, hooks, and slings used for lifting truck must be in good condition and of suitable capacity. Failure to follow this warning may result in injury or death to personnel and damage to equipment.**

- **Improper use of lifting equipment and improper attachment of cables to vehicle can result in serious personnel injury and equipment damage. Observe all standard rules of safety.**

- **ALWAYS install hood prop after opening hood. Failure to follow this warning could result in severe injury to personnel.**

WARNING

TOWING

Brakes will be released when air is applied to a disabled vehicle. DO NOT connect air lines to a disabled vehicle without blocking wheels

and connecting tow bar between vehicles. Failure to follow this warning could result in death or injury to personnel and damage to equipment.

WARNING

SINCGARS RADIO

DO NOT make contact with any bare metal/wire surface of active SINCGARS antenna elements. Failure to follow this warning could result in radio frequency (RF) shock or burn.

TECHNICAL MANUAL
TM 9-2320-303-10

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 15 OCTOBER 2001

OPERATOR'S MANUAL

FOR

TRUCK, TRACTOR, LINE HAUL: 52,000 GVWR, 6 X 4, M915A4 (NSN 2520-01-458-1207)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028 (*Recommended Changes to Equipment Technical Publications*), through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is http://aeps.ria.armv.mil. If you need a password, scroll down and click on "ACCESS REQUEST FORM". The DA Form 2028 is located in the ONLINE FORMS PROCESSING section of the AEPS. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax or e-mail your letter, DA Form 2028 direct to: AMSTA-LC-CI/TECH PUBS, TACOM-RI, 1 Rock Island Arsenal, Rock Island, IL 61299-7630. The e-mail address is: TACOM-TECH-PUBS@ria.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726.

TABLE OF CONTENTS

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TABLE OF CONTENTS (Con't)

HOW TO USE THIS MANUAL

This manual is designed to help you operate and maintain the M915A4 truck tractor.

FEATURES OF THIS MANUAL:

- A table of contents is provided at the beginning of this manual. An index of all paragraphs contained within a section is found at the beginning of each section.

- WARNINGs, CAUTIONs, NOTEs, subject headings, and other important information are highlighted in BOLD print as a visual aid.

WARNING

A WARNING indicates a hazard which can result in death or serious injury.

CAUTION

A CAUTION is a reminder of safety practices or directs attention to usage practices that may result in damage to equipment.

NOTE

A NOTE is a statement containing information that will make the procedure easier to perform.

- Statements and words of particular importance are printed in CAPITAL LETTERS to create emphasis.

- Instructions are located with illustrations that show the specific task on which the operator is working.

- Dashed leader lines used in illustrations indicate that called out items are not visible (i.e., they are located within the structure). Dashed leader lines in the Lubrication Chart indicate that lubrication is required on BOTH sides of the equipment.

- Technical instructions include metric units in addition to standard units. A metric conversion chart is provided on the inside back cover.

- An alphabetical index is provided at the end of the manual to assist in locating information not readily found in the table of contents.

FOLLOW THESE GUIDELINES WHEN YOU USE THIS MANUAL:

- Read through this manual and become familiar with its contents before attempting to operate or maintain the truck.

- A warning summary is provided at the beginning of this manual and should be read before attempting to operate or maintain the truck.

CHAPTER 1
INTRODUCTION

Section I. GENERAL INFORMATION

1-1. SCOPE.

a. **Type of Manual.** This manual is for use in operating and maintaining the M915A4 truck tractor.

b. **Equipment Name and Model Number.** Truck, Tractor Line Haul: 52,000 GVWR, 6 X 4, M915A4.

c. **Purpose of Equipment.** The M915A4 truck tractor is a 6 X 4 prime mover of semitrailers used primarily to transport containers, bulk cargo, and petroleum products over primary and secondary roads under worldwide climatic conditions in a military environment.

1-2. MAINTENANCE FORMS AND PROCEDURES.

Department of the Army forms and procedures used for the equipment will be those prescribed by DA Pam 738-750, *Functional User's Manual for the Army Maintenance Management System (TAMMS)*, as contained in the Maintenance Management Update.

1-3. CORROSION PREVENTION AND CONTROL (CPC).

a. Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

b. While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem. If a corrosion problem is identified, it can be reported using SF Form 368 *(Product Quality Deficiency Report)*. Use of key words such as “corrosion,” “rust,” “deterioration,” or “cracking” will ensure that the information is identified as a CPC problem. The form should be submitted to the address specified in DA Pam 738-750.

1-4. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

For destruction of Army materiel to prevent enemy use, refer to TM 750-244-6.

1-5. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs).

If your truck needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF Form *368 (Product Quality Deficiency Report)*. Mail it to us at: Commander U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-AC-NML, Rock Island, Illinois 61299-7630. We'll send you a reply.

1-6. WARRANTY INFORMATION.

The vehicles are warranted by Freightliner Corporation in accordance with TB 9-2320-303-15. Warranty starts on the date found in block 23, DA Form 2408-9 in the logbook. Report all defects in material or workmanship to your supervisor, who will take appropriate action through your Unit Maintenance shop.

1-7. NOMENCLATURE CROSS-REFERENCE LIST.

Common Name	Official Nomenclature
Cold Start System	Ether Quick-Start System
Differential Lock/Unlock	Interaxle Lockout
Engine Coolant	Antifreeze, Ethylene Glycol Mixture
Gladhand	Quick Disconnect Coupling
Jake Brake	Engine Brake
Komfort Loc®	Seat Belt Adjustment
No Spin®	Automatic Locking Positive Traction Differential

1-8. LIST OF ABBREVIATIONS.

NOTE

Refer to MIL-STD-12D for standard abbreviations.

Abbreviation	Definition
AAL	Additional Authorization List
ABS	Anti-Lock Brake System
BII	Basic Issue Items
C	Centigrade or Celsius
CID	Cubic Inch Displacement
cm	Centimeter
COEI	Components of End Item
CWS	Collision Warning System
ECU	Electronic Control Unit
F	Fahrenheit
GCWR	Gross Combination Weight Rating
GVWR	Gross Vehicle Weight Rating
kg	Kilogram
km	Kilometer
kPa	Kilopascal
kph	Kilometers per Hour
kW	Kilowatt
l	Liter
lb	Pound
lb-ft	Pound foot
lph	Liters per Hour
m	Meter
mm	Millimeter
N•m	Newton meter
PMCS	Preventive Maintenance Checks and Services
psi	Pounds per Square Inch
rpm	Revolutions per Minute

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Section II. EQUIPMENT DESCRIPTION AND DATA

1-9. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES.

a. **Characteristics.**

(1) The M915A4 is used to transport M871, M872, and M1062 semitrailers on line haul missions.

(2) It has a Gross Vehicle Weight Rating (GVWR) of 52,000 lb (23,608 kg) and is equipped with a two-way oscillating, sliding fifth wheel compatible with a two-inch kingpin. Maximum towed load on kingpin is 30,000 lb (13,620 kg).

b. **Capabilities and Features.**

(1) While operating on Class I roads, the fully loaded M915A4 can maintain a speed of 55 mph (88 kph) on level roads and 29 mph (47 kph) while ascending a 3 percent grade. It has a minimum turning diameter, curb-to-curb, of 53 ft 9 in. (16.4 m).

(2) Average cruising ranges at Gross Combination Weight Rating (GCWR) with a full tank of fuel will vary based on conditions (e.g., varying loads, prolonged idle, and climatic conditions). Cruising range is optimally 300 miles (483 km).

(3) The M915A4 is equipped with an instrument panel mounted speedometer and tachometer which register truck ground speed and engine speed.

(4) The M915A4 has the following capabilities and features:

(a) air-activated front and rear non-asbestos cam brakes with a four-channel anti-lock brake system (ABS) to provide significantly improved handling and braking during emergency stops;

(b) operation in temperatures from -25°F (-32°C) to +125°F (+52°C), and to -40°F (-40°C) with arctic kit installed;

(c) start and climb capability of a 20 percent grade at GCWR in both forward and reverse directions;

(d) fording capability up to 20 in. (51 cm) deep for 5 minutes without damage or requiring maintenance before operations can continue;

(e) two-passenger aluminum corrosion-proof cab with a 90 degree tilt-forward hood for service accessibility;

1-9. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Con't).

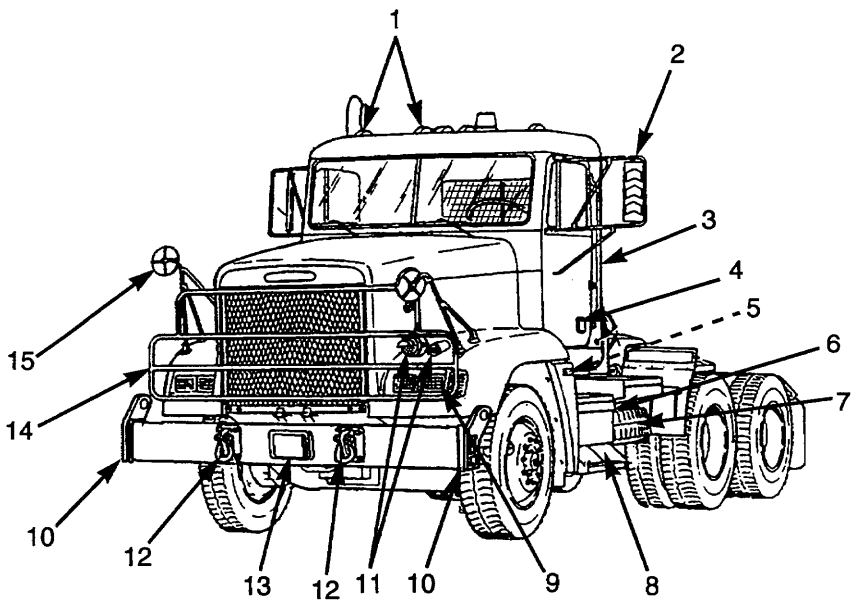
(f) six cylinder, 14 liter, 400 horsepower, in-line turbocharged diesel engine built by Cummins;

(g) Allison HD 4560P four-speed automatic transmission.

(5) When operating in arctic conditions, the M915A4 is equipped with an arctic heater, mounted under the cab, above the battery box. This provides heat for the cab and the engine cooling system. The arctic heater may be operated prior to starting the engine to provide preheating of engine block.

(6) Collision Warning System (CWS) that warns the driver of potentially dangerous driving situations by activating visual and audible alerts.

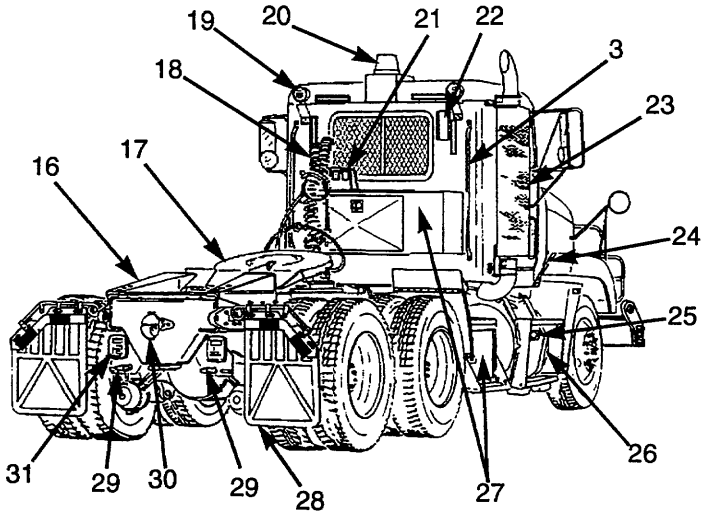
1-10. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.



1-10. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Con't).

Key	Component	Description
1	Marker Clearance Lights	Indicate outline of truck.
2	Side Mirrors (Heated)	Provide driver with a view of sides of truck.
3	Grabhandles	Provide a hand hold for personnel climbing on truck.
4	Utility Power Receptacle	Supplies power for work lights. Located on both sides of truck.
5	Air Horn	Provides an audible alert.
6	Master Battery Switch	Provides battery power to truck.
7	Spare Wheel and Tire	Extra wheel and tire used in case of a flat tire.
8	Battery Box and Steps	Holds vehicle batteries and provides steps to access cab.
9	Front Service Lights	Include headlights and turn signals.
10	Bumper Extensions	Provide adjustable attachment point for slings.
11	Blackout Lights	Used during blackout conditions. Include marker and drive lights.
12	Towing Eyes	Provide attachment points for towing device.
13	CWS Antenna	Forward looking collision warning system antenna.
14	Brush Guard	Protects front of hood and components under hood from damage.
15	Spotting Mirrors	Provide added visibility to sides of truck and semitrailer if towing.

1-10. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Con't).



Key	Component	Description
3	Grabhandles	Provide a hand hold for personnel climbing on truck.
16	Ramp	Sloped surface serves as an approach to fifth wheel and facilitates coupling of semitrailer.
17	Fifth Wheel	Coupling device for semitrailers with kingpins.
18	Hosetenna	Mounting and stowage location for intervehicular air lines.
19	Utility Lights	Illuminate area in back of cab. There is one light on each side of cab.
20	Beacon Warning Light	Amber rotating light alerts other vehicles of presence of truck.
21	Intervehicular Receptacles Installation	Contains 12-volt commercial, 24-volt military, and trailer ABS receptacles.
22	Antenna Mount	Mount for radio antenna.
23	Exhaust Muffler	Deadens noise of engine exhaust.
24	Hood Latch	Locks hood closed. Located on both sides of hood.

1-10. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Con't).

Key	Component	Description
25	CWS Side Sensor	Side looking collision warning system sensor.
26	Fuel Tank	Holds fuel. Steps mounted to tank provide access to cab.
27	Storage Boxes	Provide stowage area for BII and other items.
28	Mud Flaps	Prevent water and debris from spraying up on passers by or towed semitrailer.
29	Trailer Gladhands	Provide air supply for brakes of trailer.
30	Pintle Hook	Coupling device for trailers with lunettes.
31	Taillights	Contain composite tail, stop, backup, and turn signal lights.

1-11. EQUIPMENT DATA.

Dimensions:

Length (Overall)	275.5 in. (700 cm)
Height (Overall)	119 in. (302 cm)
Width (Overall)	98 in. (249 cm)
Wheelbase	162 in. (411 cm)
Ground Clearance	9 in. (23 cm)
Angle of Approach	27°

Weights:

Curb	18,680 lb (8481 kg)
GVWR	52,000 lb (23,608 kg)
GCWR	105,000 lb (46,670 kg)
Front Axle (Loaded)	12,000 lb (5448 kg)
Rear Axle (Loaded)	40,000 lb (18,160 kg)

Capacities:

Engine Oil (Refill w/Filters)	46 qt (43.5 l)
Cooling System	17.25 gal. (65.3 l)
Fuel Tank	100 gal. (378.5 l)
Power Steering Reservoir	2 qt (1.9 l)
Transmission	51 qt (48 l)
Rear Axle (Forward/Rear)	40/36 pts (19/17 l)

1-11. EQUIPMENT DATA (Con't).

Engine:

Manufacturer	Cummins
Type	4-stroke, in-line turbocharged diesel
Model	NTC-400
Cylinders	6
Displacement	855 CID (14 l)
Torque @ 1500 rpm	1150 lb.-ft. (1559 N•m)
Maximum Horsepower @ 2100 rpm	400 (298.3 kW)
Maximum Governed Speed	2100 rpm
Oil Filter Type	1 bypass, 1 primary, replaceable elements
Oil Filter Quantity	3

Fuel System:

Type	diesel fuel injected
Fuel Tank:	
Type	cylinder
Quantity	1
Air Cleaner:	
Type	dry element
Quantity	1

Cooling System:

Radiator Working Pressure	10 psi (69 kPa)

Electrical System:

Type	dual 12/24 volt
Batteries:	
Quantity	4
Voltage	12 volt

Transmission:

Manufacturer	Allison
Model	HD 4560P
Type	4-speed automatic
Shift Selector	pushbutton

Front Axle:

Manufacturer	Rockwell
Type	I-beam, FF961
Rated Capacity	12,000 lb (5448 kg)
Maximum Steering Angle	32°

1-11. EQUIPMENT DATA (Con't).

Rear Axle (Tandem):

Manufacturer	Rockwell, SQHP
Rated Capacity	38,000 lb (17,252 kg)
Ratio	4.44:1
Interaxle Differential	bevel gear
Interaxle Differential Lockup	air control

Brake System:

Actuation	air-mechanical
Pressure Range	60-120 psi (414-827 kPa)
Airbrake Chambers:	
Service	2 on front axle
Failsafe (Spring)	4 on forward-rear and rear-rear axles
ABS (Anti-Lock Brake System):	
Type	4-channel
Location	front axle and rear-rear axle

Wheels:

Size	22.5 x 825 in.
Number of Studs/Stud Size	10/1.125 in.

Tires:

Type	tubeless, radial on-highway
Size	11 R22.5
Ply Rating	14PR
Load Range	H
Inflation Pressure (Maximum Load):	
Front	105 psi (724 kPa)
Rear	100 psi (690 kPa)
Spare	105 psi (724 kPa)

Steering:

Manufacturer	Ross
Steering Gear Type	single gear
Actuation	hydraulic power booster
Power Steering Pump	Eaton B165R
Turning Diameter	53 ft 9 in. (16.4 m)
Steering Column and Wheel:	
Type	tilt, telescoping
Tilt Range	15°
Telescoping Range	2 5/8 in. (67 mm)

1-11. EQUIPMENT DATA (Con't).

Towing Attachments:

Pintle Hook:	
Manufacturer	Holland
Model	no. 760
Rated Capacity	30 tons (27.2 metric tons)
Towing Eyes:	
Quantity	2 front, 2 rear
Maximum Load Capacity, Each (Up to 45° Angle Front Long, Axis)	60,000 lb (27,240 kg)
Fifth Wheel:	
Manufacturer	Holland
Type	36 in. (91.4 cm) diameter, 2-way oscillating, low lube
Capacity	30,000 lb (13,620 kg)
Height (Empty)	51 in. (129.5 cm)
Pitch (Fwd/Aft)	15/10°
Kingpin Size	2 in. (5.1 cm)

Cab:

Manufacturer	Freightliner
Construction	aluminum
Type	2-passenger, tilt-forward hood

Accessories:

Utility Lights	2 fixed, top rear of cab
Air Horn	1, under cab

Military Load Classification:

Vehicle w/o Trailer	8
Vehicle w/Trailer:	
M871	14/35 (unloaded/loaded)
M872	14/46 (unloaded/loaded)
M1062	11/34 (unloaded/loaded)

Section III. PRINCIPLES OF OPERATION

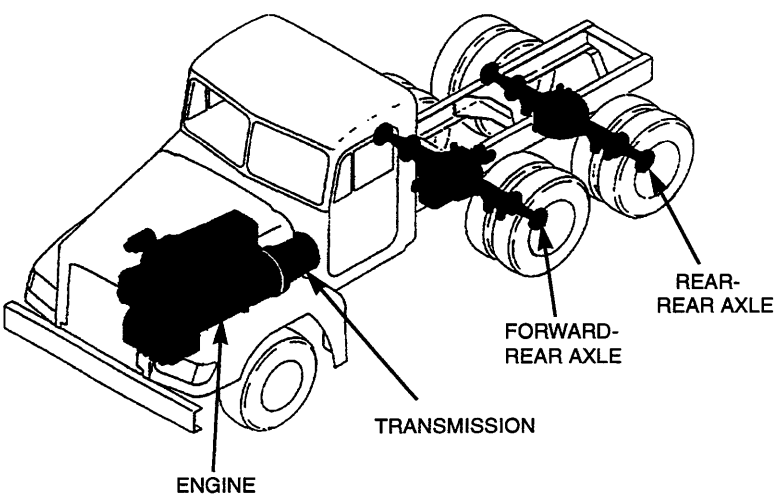
1-12. INTRODUCTION.

a. The M915A4 vehicles consist of nine functional systems: drive train, fuel system, exhaust system, cooling system, electrical system, air system, brakes, steering, air conditioning, and collision warning system.

b. This section explains the overall operation of these systems.

1-13. DRIVE TRAIN.

The drive train of the M915A4 consists of a Cummins NTC-400 engine and an Allison 4-speed automatic transmission connected to Rockwell SQHP rear tandem axles.



1-14. FUEL SYSTEM.

a. Fuel to power the engine is pumped out of the fuel tank by an engine-mounted fuel injector pump.

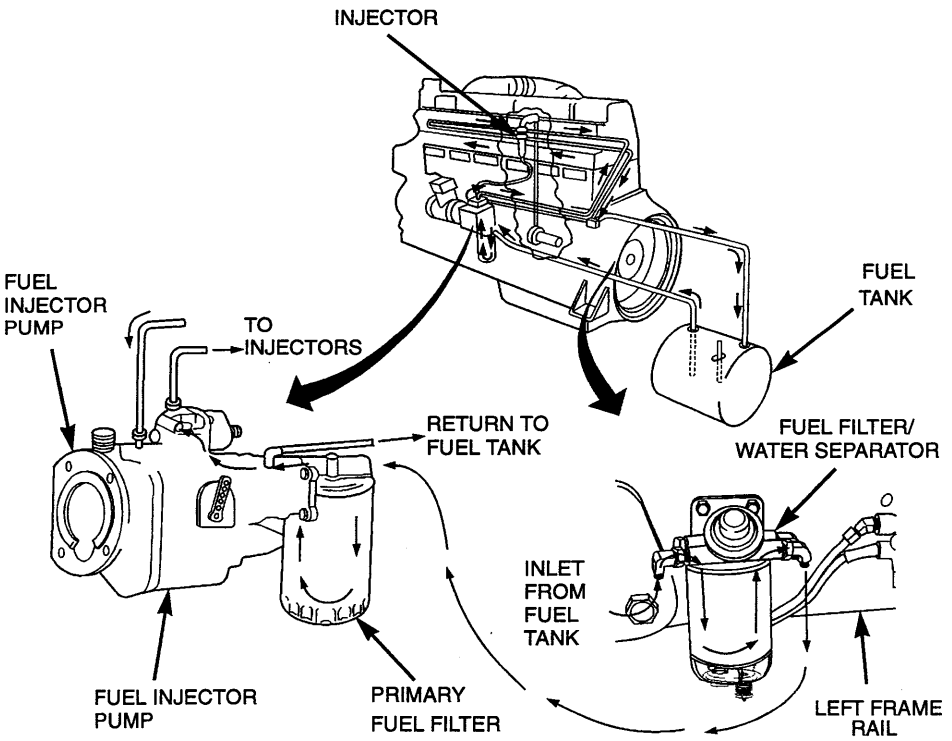
b. The engine fuel system consists of one fuel injector pump, one injector per cylinder, fuel lines, a primary fuel filter, and a fuel filter/water separator.

c. The engine is governed by fuel injector pump built-in governor. The system controls idle speed and limits engine maximum speed. The driver controls engine speed through the position of the foot pedal assembly.

d. Fuel filters am spin-on types. The primary fuel filter has a water drain. The fuel filter/water separator has a hand fuel primer pump and a water drain.

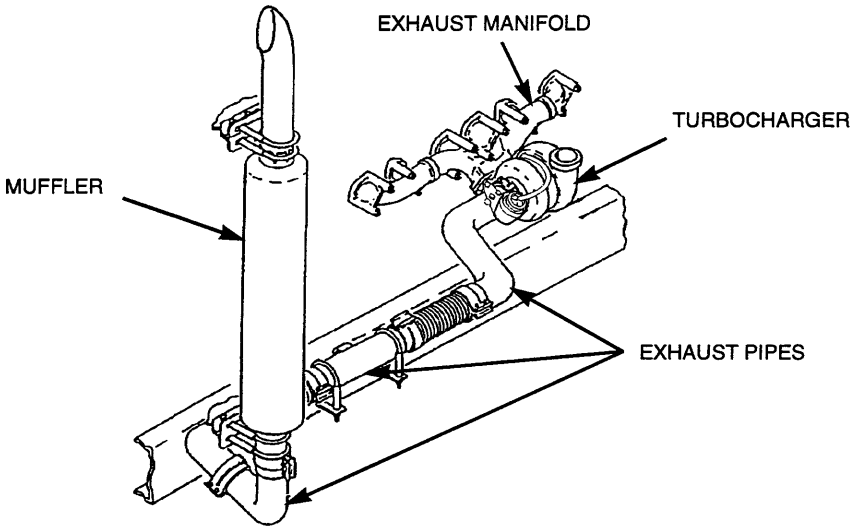
e. Fuel may be drained from the tank through the drain port located on the bottom of the tank.

f. There is an ether quick-start system for use in cold weather. It is manually controlled via a pushbutton on the instrument panel in the cab.



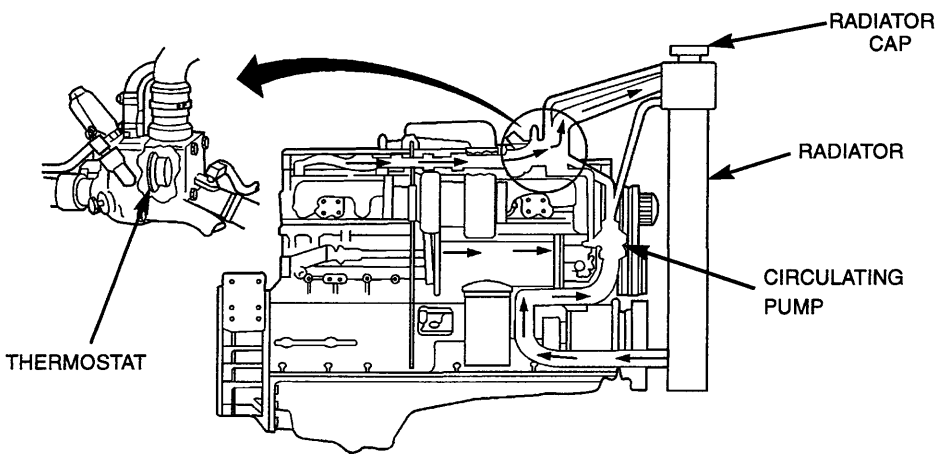
1-15. EXHAUST SYSTEM.

The exhaust system removes exhaust gases from the engine through the exhaust manifold and turbocharger. The gases flow into exhaust pipes and a muffler to the atmosphere above the cab.



1-16. COOLING SYSTEM.

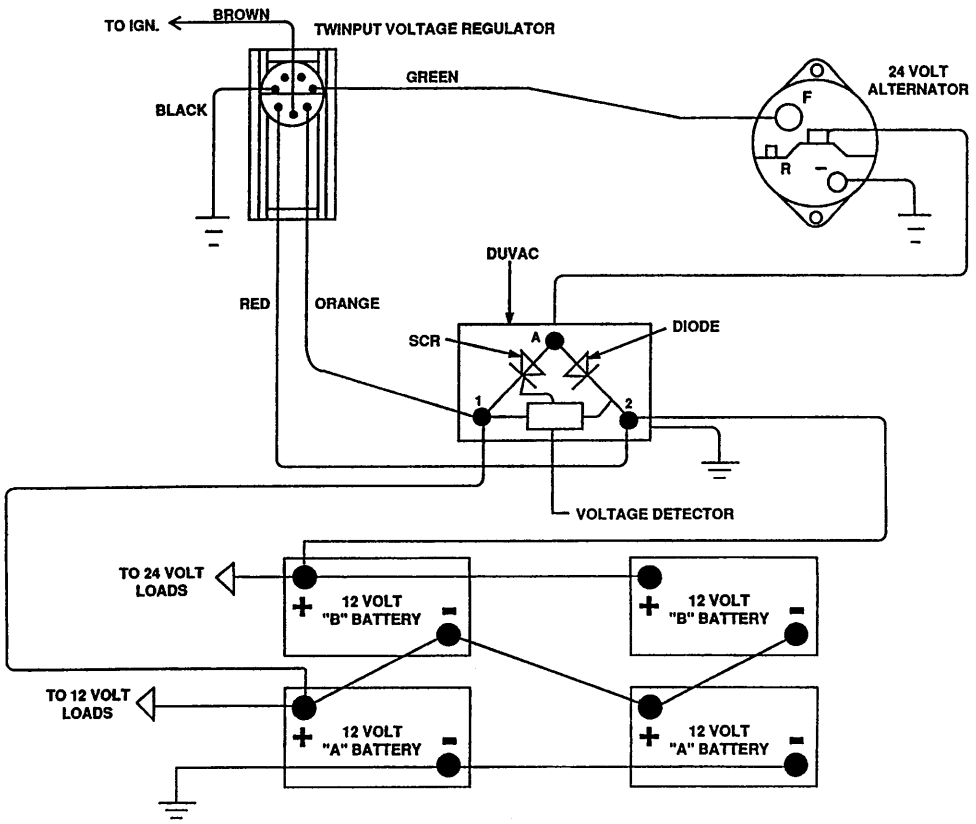
The cooling system consists of one circulating pump, a remote-mounted coolant filter, one 180°F thermostat for controlling fluid flow, a transmission oil cooler a radiator, and a belt-driven fan. The cooling system cools the engine by means of circulating pressurized ethylene-glycol based coolant through the engine and radiator.



1-17. ELECTRICAL SYSTEM.

a. Four 12-volt batteries connected in series-parallel supply the 12-volt electrical system and provide 24 volts for the starter motor, blackout lights, accessories, and trailer connectors.

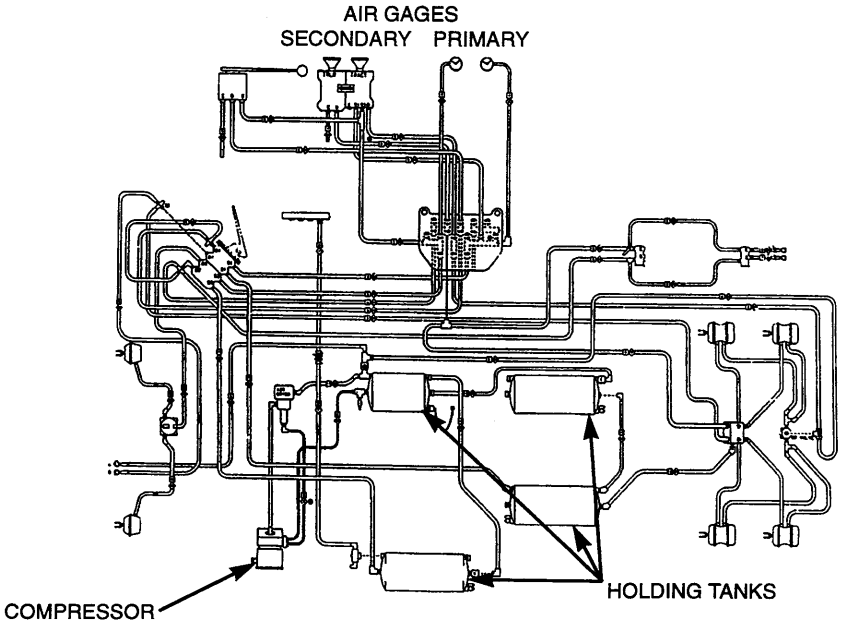
b. The Dual Voltage Alternator Control (DUVAC), mounted on the firewall in the engine compartment, regulates the distribution of 12 and 24 volts.



1-18. AIR SYSTEM.

The air system consists of the air compressor air dryer, air reservoirs, and various air lines. Also included in the air system am the air pressure gages located on the dashboard which are used for monitoring air pressure for safe operation of all air-operated components of the vehicle.

1-18. AIR SYSTEM (Con't).



1-19. BRAKES.

a. The dual air brake system consists of two independent air brake systems that use a single set of brake controls. Each system has its own reservoirs, plumbing, and brake chambers. The primary system operates the service brakes on the rear axle; the secondary system operates the service brakes on the front axle. On tractor-trailer configurations, service brake signals from both systems are sent to the trailer.

b. Loss of air pressure in the primary system causes the rear service brakes to become inoperative; front brakes will continue to be operated by secondary system air pressure. In addition, trailer brakes will be operated by the secondary system. Loss of secondary system air pressure causes the front axle brakes to become inoperative; rear service brakes and trailer brakes will be operated by the primary system.

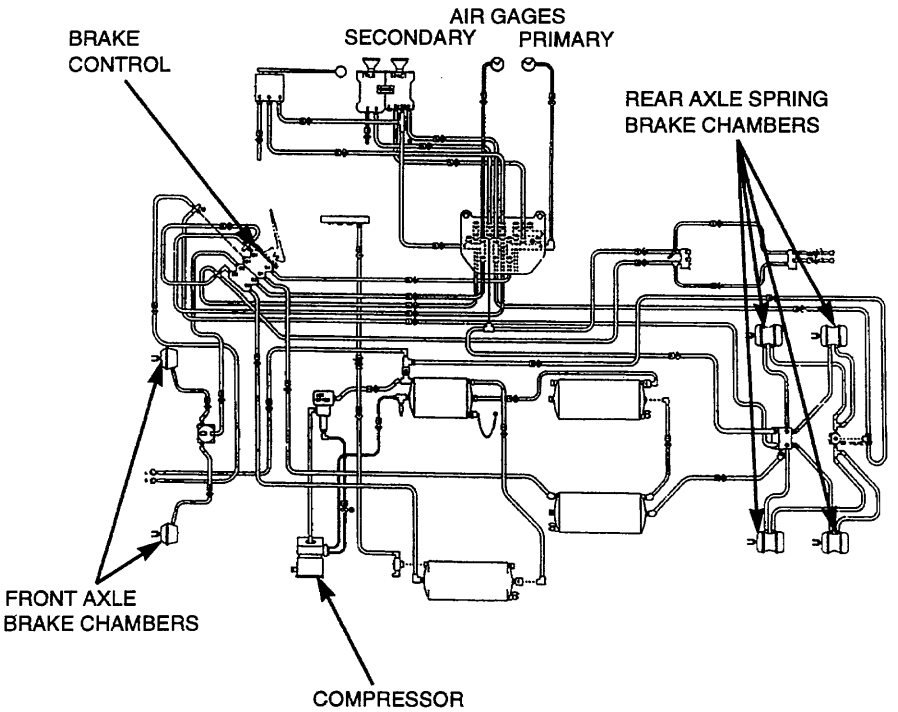
1-19. BRAKES (Con't).

c. The warning light and buzzer inside the cab come on if air pressure drops below 64 psi (441 kPa) in either system. If this happens, check the air pressure gages to determine which system has low air pressure. Although the vehicle's speed can be reduced using the foot brake control pedal, either the front or rear service brakes will not be operating, causing a longer stopping distance. Bring the vehicle to a safe stop and have the air system repaired before continuing.

d. If the primary system become inoperative, the spring parking brakes will automatically apply when air pressure drops to 35-45 psi (241-310 kPa).

e. The vehicle has a four-channel anti-lock brake system (ABS) and cam-operated service brakes with non-asbestos brakeshoes.

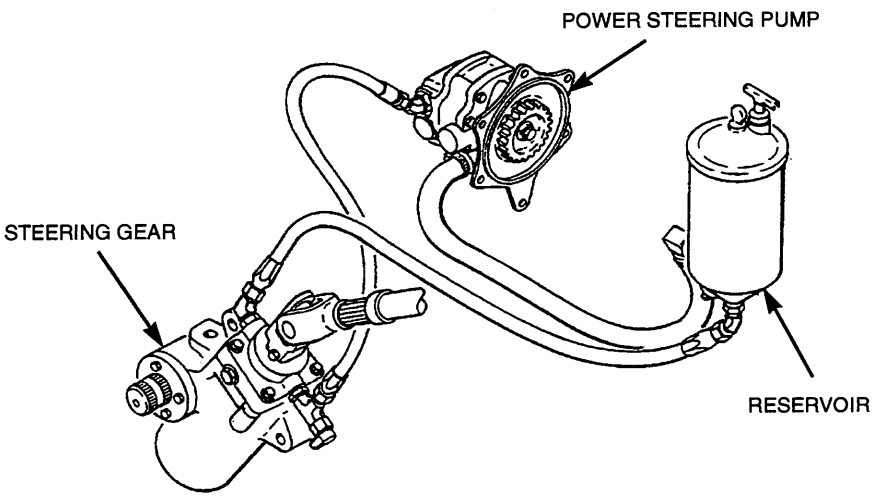
f. The M915A4 has automatically adjusting slack adjusters. On all axles, brake chambers have a stroke alert indicator which allows the operator to monitor brakeshoe wear.



1-20. STEERING.

a. The power steering system consists of an integral steering gear (which includes a manual steering mechanism and hydraulic control valve), hydraulic hoses, power steering pump, reservoir, and other components.

b. The power steering pump, driven by the engine, provides the power-assist for the steering system.

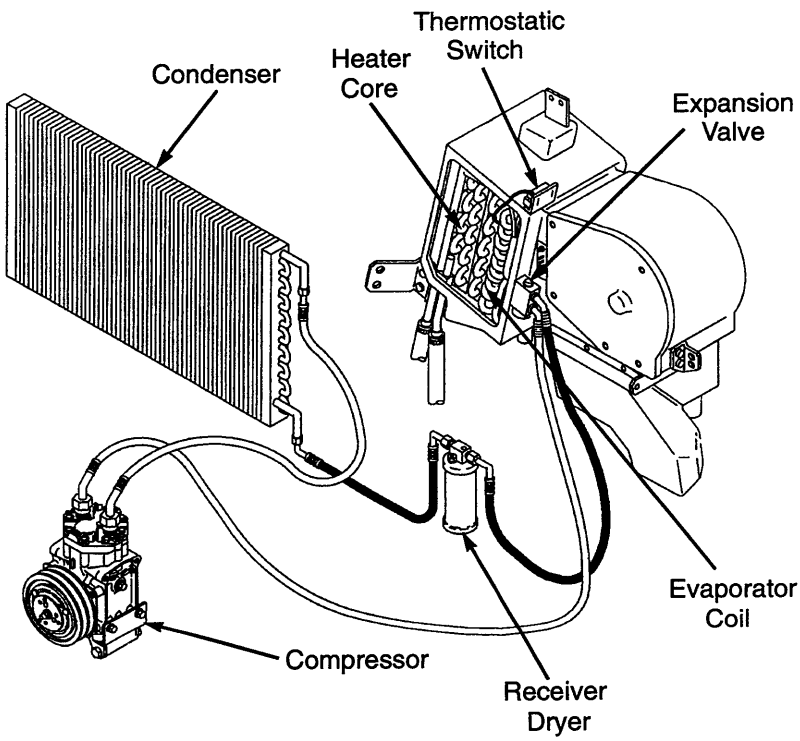


1-21. AIR CONDITIONING SYSTEM.

a. The air conditioning unit is part of the heater and is mounted under the glove compartment. It is a single unit consisting of heater core, air conditioning evaporator coil, blower motor control valves, and air ducts.

b. The system is turned on by the mode control lever on instrument panel in cab. The four-speed blower switch controls flow rate.

c. An even cab temperature is maintained by controlling the coolant flow through the heater core, or refrigerant flow through the evaporator coil.



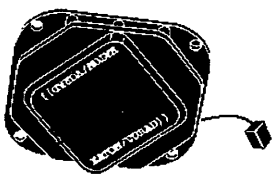
1-22. COLLISION WARNING SYSTEM (CWS).

a. The CWS consists of an antenna assembly, central processing unit, driver display unit, side sensor, side sensor display, and wiring harness.

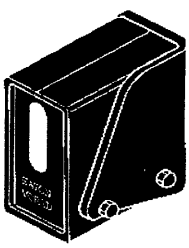
b. The CWS is a forward and side looking radar system that transmits and receives signals reflected off of objects to the front and side of the tractor.

c. The forward looking antenna assembly determines distance, azimuth, and approximate speed of vehicle forward of the tractor.

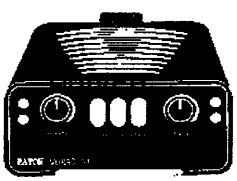
d. The side sensor detects vehicles or objects from two to ten feet, moving or stationary, alongside the tractor.



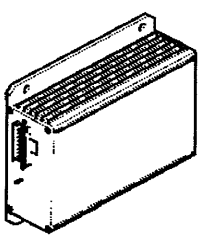
SENSOR



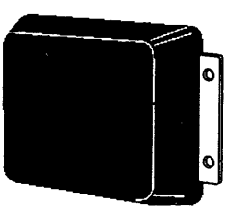
SIDE SENSOR DISPLAY



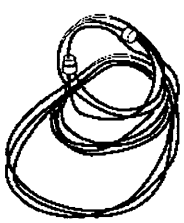
DISPLAY UNIT



CENTRAL PROCESSING UNIT



ANTENNA



WIRING HARNESS

CHAPTER 2
OPERATING INSTRUCTIONS

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

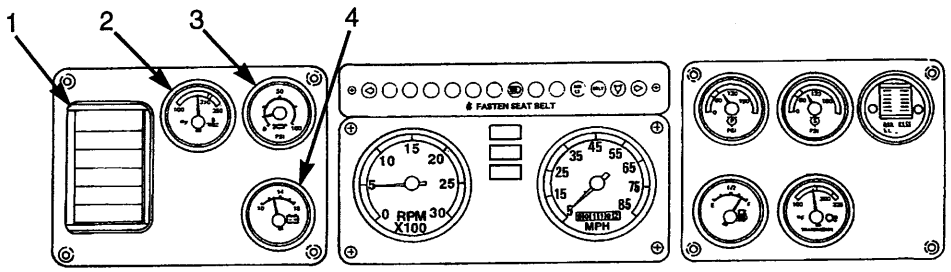
2-1. GENERAL.

Do not attempt to operate the M915A4 until becoming familiar with the location and use of all controls and indicators. The following section describes all operator controls and indicators.

2-2. INSTRUMENT PANEL.

a. **Instrument Cluster.**

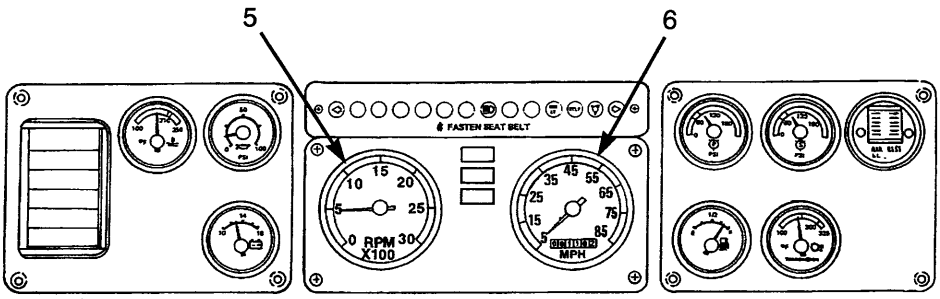
(1) **Left Gage Panel.**



Key	Control or Indicator	Function
1	Air Vent	Vents air into cab from heater/ventilator/defroster and air conditioner, if equipped. Louvered openings are adjustable.
2	Engine Water Temperature Gage	Registers engine coolant temperature in degrees Fahrenheit. Normal range is in green band, 190-210°F (88-99°C). If needle goes into yellow band, 210-215°F (99-120°C), or red band, 216-250°F (102-121°C), stop and investigate cause.
3	Engine Oil Pressure Gage	Registers engine oil pressure in psi (kPa). Normal pressure at rated speed (1200 rpm) is 50-70 psi (345-483 kPa). Pressure at idle speed (600 rpm) is 15 psi (100 kPa) minimum.
4	Voltmeter	Indicates rate of battery charge or discharge in volts. (a) RED BAND. Below 11 volts indicates a possible malfunction. Stop and report problem to Unit Maintenance. (b) YELLOW BAND. 11-12 volts indicates battery is undercharged. Turn off all electrical circuits, if possible, and run engine at highest rpm permitted for existing conditions. If reading is still not in green band, notify Unit Maintenance. (c) GREEN BAND. 13-15 volts indicates normal operating range. (d) RED BAND. Above 15 volts indicates batteries are being overcharged. Notify Unit Maintenance.

2-2. INSTRUMENT PANEL (Con't).

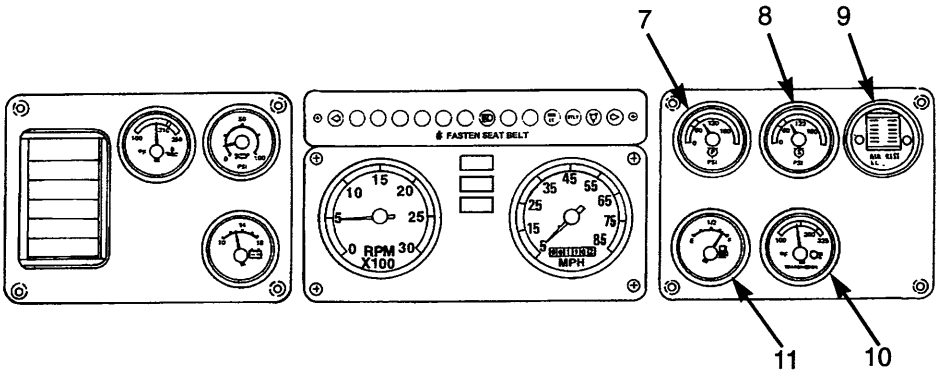
(2) **Center Gage Panel.**



Key	Control or Indicator	Function
5	Tachometer	Registers engine speed in rpm. Maximum governed speed is 2100 rpm. Idle speed is 600 rpm.
6	Speedometer/Odometer	Registers vehicle ground speed in mph/kph (speedometer) and distance traveled (seven-digit odometer) in miles.

2-2. INSTRUMENT PANEL (Con't).

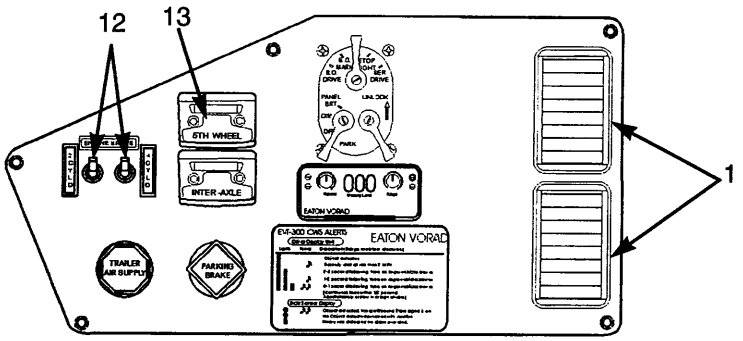
(3) **Right Gage Panel.**



Key	Control or Indicator	Function
7	Primary Air Pressure Gage	Registers air pressure (in psi) in rear brake system. Normal operating range is 90-120 psi (621-827 kPa).
8	Secondary Air Pressure Gage	Registers air pressure (in psi) in front brake system. Normal operating range is 90-120 psi (621-827 kPa).
9	Air Cleaner Restriction Indicator Gage	Indicates air cleaner air flow is adequate if gage is clear. If restricted, indicator window will show up to 20 inches of water. Push yellow reset button to reset after air cleaner has been serviced.
10	Transmission Oil Temperature Gage	Indicates oil temperature in transmission. Normal range in green band is 600-200°F (71-93°C). If needle goes into yellow band or red band, stop and investigate cause.
11	Fuel Gage	Indicates amount of fuel in fuel tank when ignition switch is turned on.

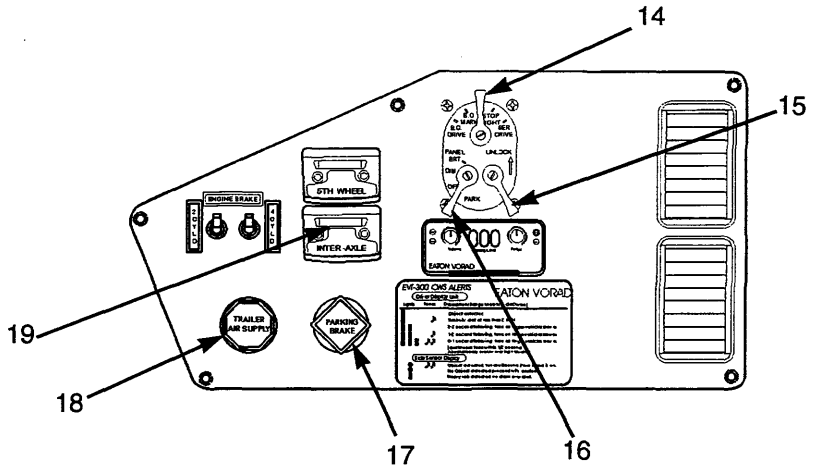
2-2. INSTRUMENT PANEL (Con't).

b. **Upper Right Dash Panel.**



Key	Control or Indicator	Function
1	Air Vents	Vent air into cab from heater/ventilator/defroster and air conditioner. Louvered openings are adjustable.
12	Engine (Jake) Brake Selection Switches	Selects number of engine cylinders desired for braking action (two, four, or six cylinders). Turn on left switch for two cylinders, right switch for four cylinders, and both switches for all six cylinders.
13	Fifth Wheel Slide	Permits repositioning of sliding fifth wheel from inside cab. LOCK position deactivates control valve and locks fifth wheel to baseplate. UNLOCK position activates control valve to allow changes to total length of tractor-trailer and changes to axle loads.

2-2. INSTRUMENT PANEL (Con't).



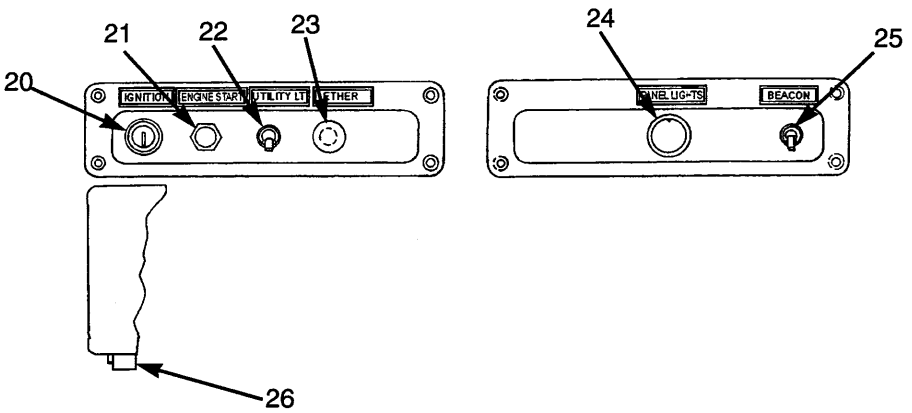
Key	Control or Indicator	Function
14	Main Light Switch	Five-position switch. To engage, mechanical switch must be held in UNLOCK position (up). Switch positions are: (a) BO DRIVE. Same as BO MARKER position, but blackout drive light and trailer circuit will also function. (b) BO MARKER. Blackout marker/tail lights and blackout stop lights will function. No other lights or electrical horn will function. (c) OFF. No lights or electrical horn will function. (d) STOP LIGHT. Electrical horn and all separately controlled lights will function except blackout stop lights. No marker/tail lights or drive/headlights will function. (e) SER DRIVE. Same as STOP LIGHT position, but headlight and “non-blackout” marker/tail lights will function.

2-2. INSTRUMENT PANEL (Con't).

Key	Control or Indicator	Function
15	Mechanical Switch	Spring-loaded, two-position switch. Switch positions are: (a) LOCK. Down position prevents movement of main light switch. (b) UNLOCK position. Up position enables movement of main light switch. Hold lever in UNLOCK position and move main light switch to desired position.
16	Auxiliary Switch	Four-position switch. Will not function if main light switch is OFF. Switch positions are: (a) PANEL BRT. Bright panel lights will function except if main light switch is in OFF, BO DRIVE, or BO MARKER positions. (b) PANEL DIM. Same as PANEL BRT position, but panel lights dimmer switch may dim lights. (c) PANEL OFF. Panel lights will not function. (d) PARK. When main light switch is in SER DRIVE position, headlights will be deactivated, leaving all service marker/tail lights functioning.
17	Parking Brake Control	Yellow diamond-shaped knob operates parking brake valve. Pull out to apply and push in to release parking brake.
18	Trailer Air Supply Control	Red octagonal-shaped knob supplies air to trailer air reservoirs. Push in to charge trailer air supply and release trailer spring brakes. Pull out to shut off air supply and apply trailer spring brakes.
19	Interaxle Lockout Control Valve Lever	Locks and unlocks driveline based on changing driving conditions. (a) LOCK. In poor traction conditions, stop vehicle and place lever in LOCK position to lock up driveline. (b) UNLOCK. When conditions are back to normal, move left to UNLOCK while vehicle is moving.

2-2. INSTRUMENT PANEL (Con't).

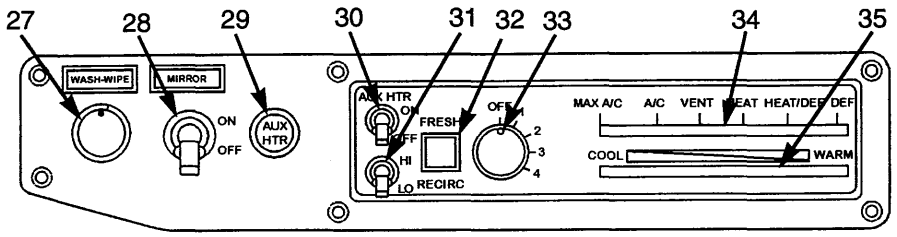
c. **Lower Control Panel.**



Key	Control or Indicator	Function
20	Ignition Switch	Operates gages/switches/sending units, instrument panel lights, and engine start. Turn key in switch to right for ON position. Turn key fully counterclockwise to activate accessories. Turn key to center vertical position to turn all systems OFF.
21	Engine Start Button	Press to energize starter solenoid. Release button as soon as engine starts.
22	Utility Light Switch	ON/OFF toggle switch controls utility lights mounted on back of cab. Up position is ON. Down is OFF.
23	Ether Quick-Start Button	Press and release button to manually inject ether for starting in cold weather.
24	Panel Lights Control Knob	Brightens or dims instrument panel lights. Turn clockwise to brighten and counterclockwise to dim. Turn fully counterclockwise to shut off panel lights.
25	Beacon Light Switch	ON/OFF toggle switch controls beacon warning light on top of vehicle.
26	Pro-Link Connector	Used to connect Pro-Link to fault isolate ABS, transmission, and CWS by Unit Maintenance.

2-2. INSTRUMENT PANEL (Con't).

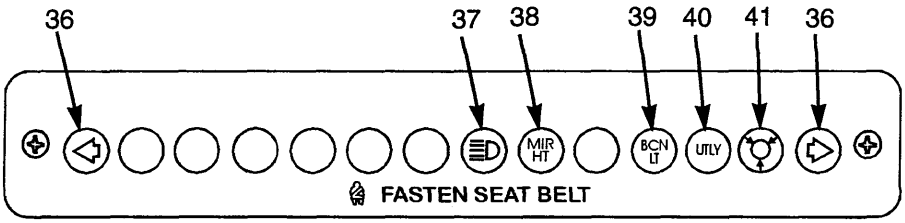
d. **Lower Right Dash Panel.**



Key	Control or Indicator	Function
27	Wiper/Washer Control	Turns windshield wipers on/off. Clockwise is ON. Counterclockwise is OFF To wash windshield, press knob in to spray water and to turn wipers on.
28	Mirror Heat Switch	ON/OFF toggle switch controls mirror heat for defrosting.
29	Auxiliary Heater Indicator Light (if equipped)	Lights up when arctic heater burner is lit.
30	Auxiliary Heater Control Switch (if equipped)	Operates arctic heater. Positions are ON and OFF. When set to ON, a green light integrated into switch is illuminated.
31	HI-LO Switch (if equipped)	Controls rate of heating for arctic heater. If set at HI, heater burner will go on when coolant temperature at inlet to heater is 167°F (75°C). LO is suitable for standby operation.
32	FRESH/RECIRC Air Button	Allows A/C, VENT and HEAT modes to be used with recirculated or fresh air. When mode control lever is at HEAT/DEF or DEF, system draws in fresh air regardless of button setting. When MAX A/C is selected, system draws recirculated air regardless of button setting.
33	Fan Switch	Controls four-speed fan. Positions are OFF, 1, 2, 3, and 4. Position 4 is maximum fan speed.
34	Mode Control Lever	Allows selection of modes of operation. Modes are MAX A/C, A/C, VENT HEAT, HEAT/DEF, and DEF. Lever must be set to HEAT for arctic heater to operate.
35	Temperature Control Lever	Allows selection of a full range of temperatures from COOL to WARM.

2-2. INSTRUMENT PANEL (Con't).

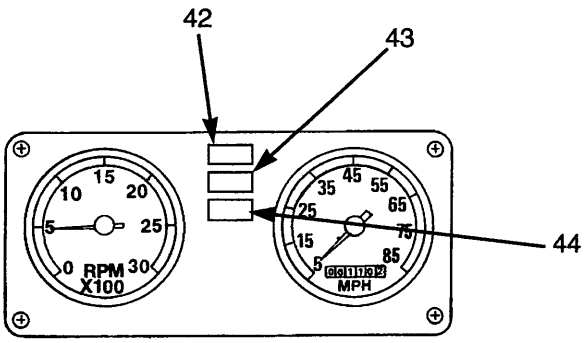
e. **Indicator and Warning Lamps.**



Key	Control or Indicator	Function
36	Turn Signal Indicators	Left/right green light flashes whenever outside turn signal lights are flashing. Both lights flash when four-way flashers are on.
37	High Beam Indicator Light	Green light comes on when high beam headlights are on.
38	Mirror Heater (MIR HT) Indicator Light	Amber light comes on when mirror heater (defroster) is turned ON.
39	Beacon Light (BCN LT)	Amber light comes on when utility lights are turned on.
40	Utility (UTLY) Light	Amber light comes on when beacon warning light is turned on.
41	Low Air Pressure Warning Light	Red light comes on and warning buzzer sounds when air pressure in either section of dual system falls below 65 psi (448 kPa).

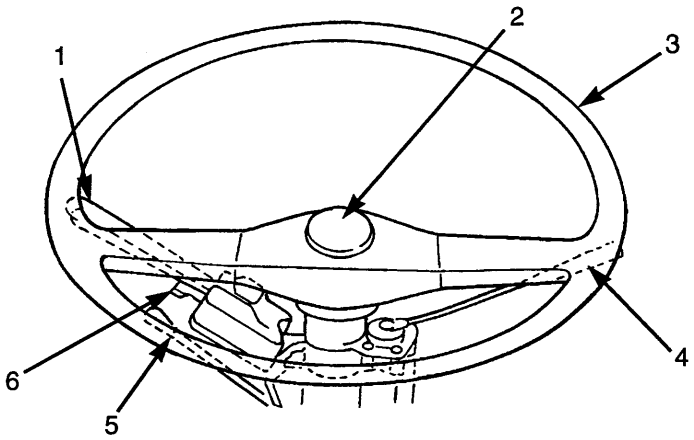
2-2. INSTRUMENT PANEL (Con't).

f. **Indicator and Warning Lamps.**



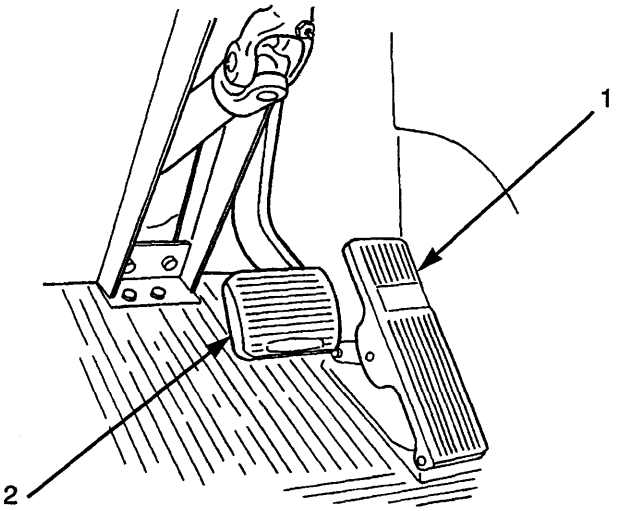
Key	Control or Indicator	Function
42	Parking Brake Indicator Light	Red light comes on when parking broke is activated.
43	Tractor ABS (TRAC ABS) Indicator Light	Red light comes on when Ignition is turned ON. Light goes out after 4 seconds self-test if ABS components are working.
44	Trailer ABS Indicator Light	When trailer ABS electrical cable is connected, red light comes on when ignition is turned ON. Light goes out after 4 second self-test if ABS components are working.

2-3. STEERING WHEEL AND COLUMN-MOUNTED CONTROLS.



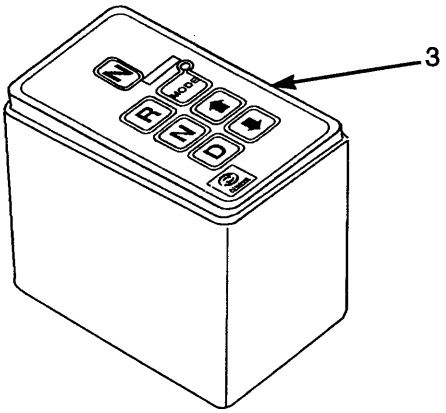
Key	Control or Indicator	Function
1	Turn Signal Lever/ Headlight Dimmer Switch	Move lever forward for right turn signal, rearward for left turn signal, and center for off. Lift end of turn signal lever to turn on high beams. Lift lever again to turn high beams off.
2	Electric Horn	Push to activate. Used instead of air horn in normal city driving.
3	Steering Wheel	Turn clockwise to turn vehicle right and counterclockwise to turn vehicle left.
4	Trailer Brake Hand Control Valve Lever	When pulled rearward, activates trailer brakes.
5	Tilt Steering Wheel Control Lever	Push down on lever to change tilt of steering column and wheel. Release lever to lock tilt adjustment in position. To adjust height of steering wheel, pull up on lever. Release lever to lock height adjustment in position.
6	Hazard Signal Switch	Located under the turn signal. Move switch out (left) to activate hazard lights. Move turn signal lever forward or rearward to deactivate hazard lights.

2-4. CAB FLOOR-MOUNTED CONTROLS.



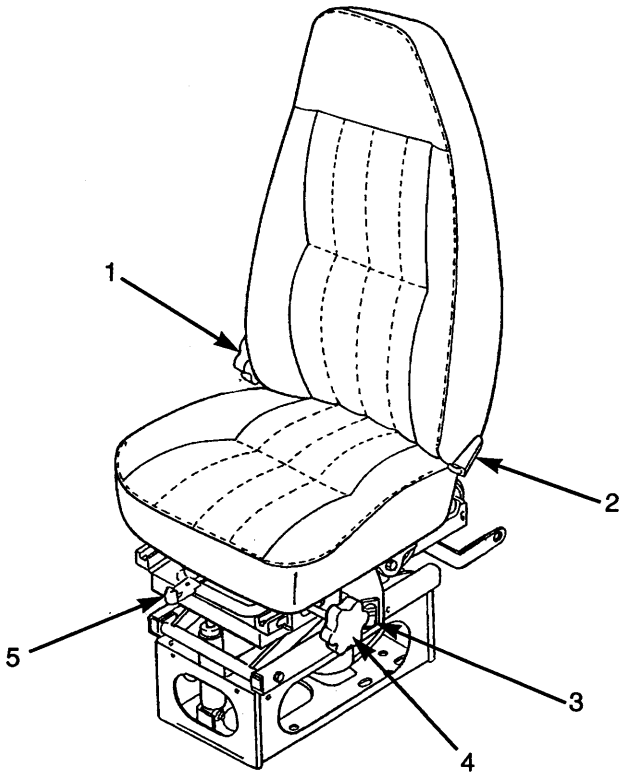
Key	Control or Indicator	Function
1	Accelerator Pedal	Depress to increase engine speed. Release to decrease engine speed.
2	Brake Pedal	Depress to apply service brakes on truck and, if properly coupled to a trailer, trailer service brakes. Release to release service brakes.

2-4. CAB FLOOR-MOUNTED CONTROLS (Con't).



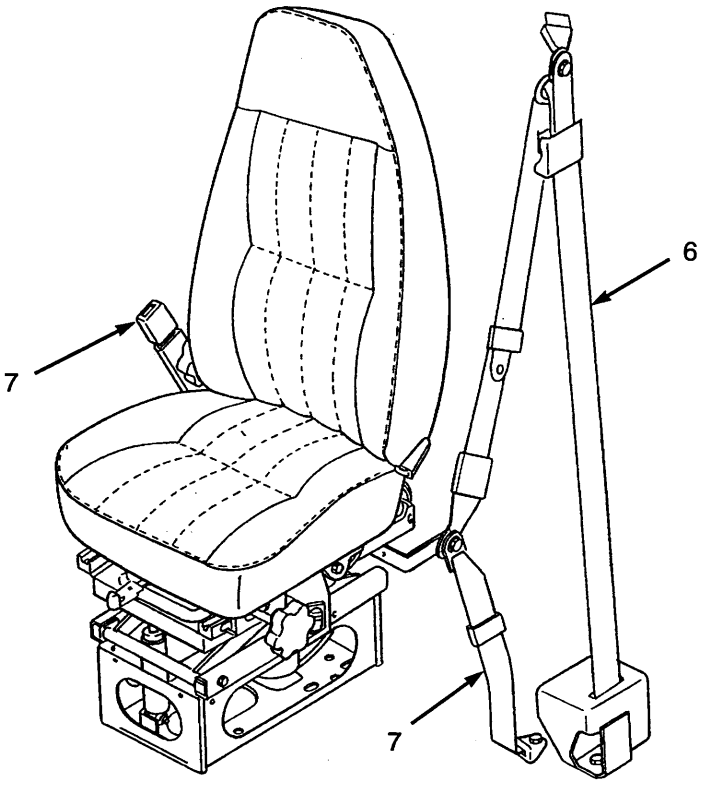
Key	Control or Indicator	Function
3	Transmission Pushbutton Shift Selector	Shifts automatic transmission. Range select positions are Reverse (R), Neutral (N), and Drive (D). In D, selection of a specific gear can be accomplished by pressing up or down arrow buttons; shifting can also be done automatically. MODE button is for unit maintenance use only.

2-5. SEAT CONTROLS.



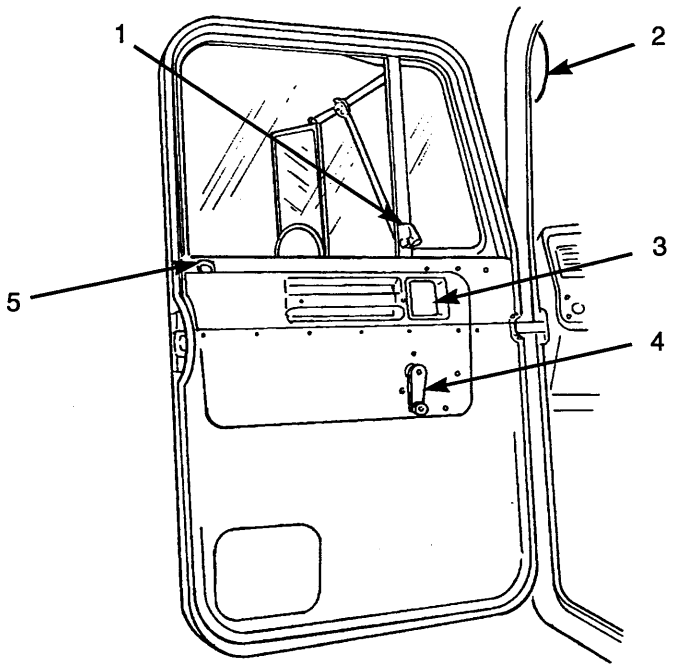
Key	Control or Indicator	Function
1	Lumbar Adjustment Knob	Controls lumbar support in seat. Rotate knob forward to increase and rearward to decrease lumbar support.
2	Seat Back Adjustment Lever	Adjusts seat back angle. Apply or remove pressure from seat back and hold lever rearward to adjust.
3	Seat Height Adjustment Control Valve Lever	Vehicle air pressure must be above 60 psi (414 kPa) to operate lever. Push lever up to raise seat and down to lower seat.
4	Seat Cushion Tilt Adjustment Knob	Rotate knob to increase or decrease seat tilt.
5	Fore and Aft Seat Adjustment Lever	Three-position lever moves seat forward or backward. Right position locks seat in place. Moving lever all the way left adjusts seat. Traveling position is center position which provides a shock-absorbing effect.

2-5. SEAT CONTROLS (Con't).



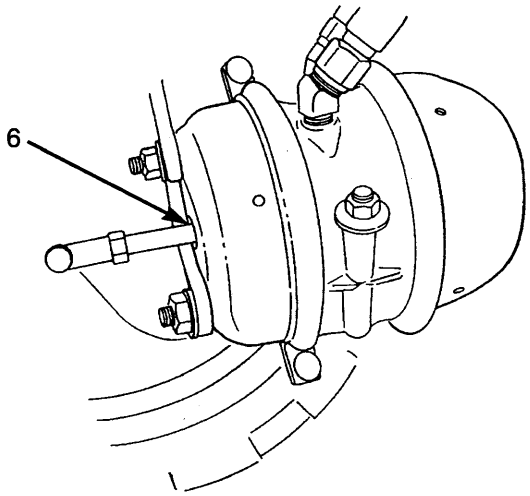
Key	Control or Indicator	Function
6	Seat Belt	Three-point belt locks into tether belt.
7	Tether Belt	Adjustable belt located on both sides of seat.

2-6. ADDITIONAL CONTROLS AND INDICATORS.



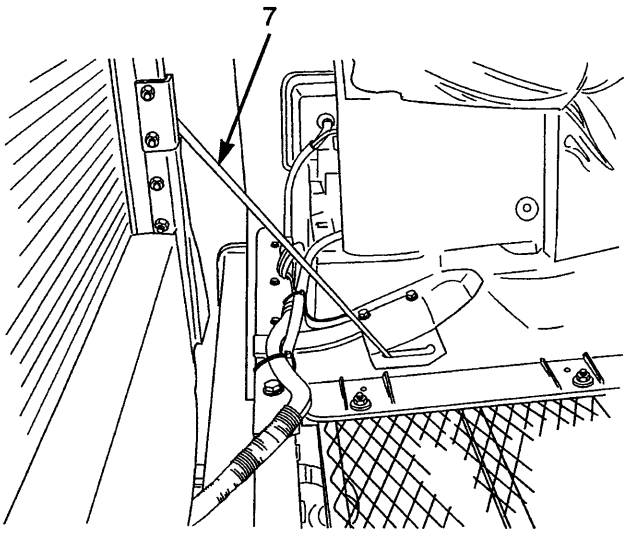
Key	Control or Indicator	Function
1	Cab Vent Window Handle	Push button and raise lever to unlock window. Push out on handle to open window. Pull handle in to close window. Lower lever to lock window.
2	Air Horn Cable	Pull cable to activate air horn. Release cable to deactivate air horn.
3	Door Opening Handle	Pull handle to open cab door.
4	Door Window Glass Regulator Handle	Turn left handle clockwise to lower left window and counterclockwise to raise left window. Turn right handle counterclockwise to lower right window and clockwise to raise right window.
5	Door Lock Button	Push button down to lock door. To unlock, either pull door opening handle or unlock from outside with ignition key.

2-6. ADDITIONAL CONTROLS AND INDICATORS (Con't).



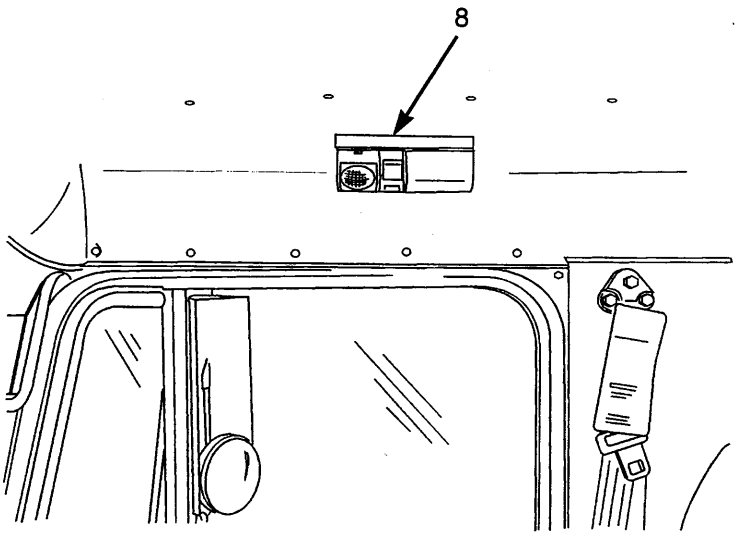
Key	Control or Indicator	Function
6	Stroke Alert Indicator	Bright orange band painted on service pushrod of all brake chambers. When visible, notify Unit Maintenance to perform stroke adjustment or major brake service.

2-6. ADDITIONAL CONTROLS AND INDICATORS (Con't).



Key	Control or Indicator	Function
7	Hood Prop	When installed, prevents hood from accidentally closing.

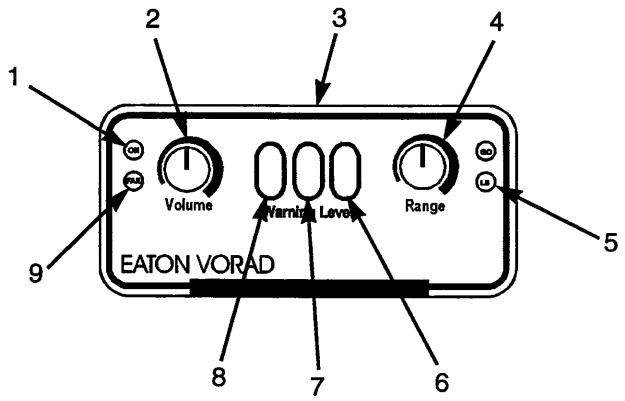
2-6. ADDITIONAL CONTROLS AND INDICATORS (Con't).



Key	Control or Indicator	Function
8	Interior Light	Provides interior cab lighting.

2-6. ADDITIONAL CONTROLS AND INDICATORS (Con't).

g. **CWS Driver's Display Unit.**



Key	Control or Indicator	Function
1	Green, Power On	Illuminates after power is applied to the system and the power-on LED test is complete.
2	Volume Control and Power On/Off	When pushed in until a distinctive click is heard and/or felt, turns the power ON or OFF. Adjusts the volume of the driver display unit speaker. Activates “Failure Display Mode” when the knob is pressed and held for five seconds and released.
3	Speaker	Located under the top cover of the driver display unit. Sounds audible tones to alert the driver of a possible hazard. May be set to limit the volume to a minimum level.

2-6. ADDITIONAL CONTROLS AND INDICATORS (Con't).

Key	Control or Indicator	Function
4	Range Control and Accident Recorder Selection	When rotated, this control provides detection range adjustment of the first alert between 3 and 2.125 seconds. Function may be configured to prevent range adjustment control. Accident Reconstruction is initiated by pushing and holding this knob for 5 seconds thereby freezing the most recent data in half of the allocated memory.
5	Light Sensor	Photo sensor that senses ambient lighting and adjusts intensity of the indicator lights accordingly (i.e., increases brightness of indicator lights in daytime and decreases brightness of indicator lights at nighttime).
6	Red, Accompanied with Yellow and Orange	This indicator illuminates when an object is detected at <1 second with vehicle opening and no tone with vehicle closing accompanied by audible tones. At a 1/2 second or less following interval opening and closing, the tones are repeated, twice per second.
7	Orange, Accompanied with Yellow	This indicator illuminates when an object is detected within a 3 second interval of vehicle opening or closing, 1 to 2 seconds following interval with vehicle opening and no tone, and 1 to 2 seconds following interval with vehicle closing accompanied by a tone.
8	Yellow	This indicator illuminates when an object is detected within the system's maximum range. Maximum range is 350 feet on straight roads and is reduced on curved roads by the road turn radius. It also illuminates when the proximity alarm threshold is crossed.
9	Red, System Failure	Lights when a problem has been detected in the forward looking radar system. A pattern of flashes blink out the faults that are stored in memory when activated by holding in the volume control knob for five seconds.

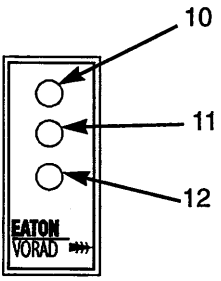
2-6. ADDITIONAL CONTROLS AND INDICATORS (Con't).

Table 1. Miscellaneous Tones.

Light/Tones	Description
Fail, One Low Tone	Sounded when the system diagnostics detect a failure.
One Tone	Each time the volume control is turned a single tone is sounded.

2-6. ADDITIONAL CONTROLS AND INDICATORS (Con't).

h. **CWS Side Sensor Display.**



Key	Control or Indicator	Function
10	Red, Vehicle Detected	Indicator light that illuminates after objects have been detected by the side sensor. When the right turn signal is activated and the side sensor detects an object, the red indicator light comes on and the driver display unit speaker sounds a double tone. The tone is sounded only once per activation of the turn signal. Lights if a failure of the side sensor occurs and if the criteria for heavy rain is met.
11	Light Sensor	Photo sensor that senses ambient light and adjusts intensity of the indicator lights accordingly (i.e., increases brightness of indicator lights in daytime and decreases brightness of indicator lights at nighttime).
12	Yellow, No Vehicle Detected	Indicator light stays on when no objects are detected by the side sensor.
10/ 12	Red and Yellow	Indicates the side sensor is temporarily unable to detect objects in heavy rain.

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-7. GENERAL.

To ensure that the truck is ready for operation at all times, it must be inspected on a regular basis so that defects may be found and corrected before they result in serious damage, equipment failure, or injury to personnel. Table 2-1 contains systematic instructions on inspections, adjustments, and corrections to be performed by the operator/crew to keep your equipment in good operating condition and ready for its primary mission.

2-8. EXPLANATION OF TABLE ENTRIES.

a. **Item Number (Item No.) Column.** Numbers in this column are for reference. When completing DA Form 2404 *(Equipment Inspection and Maintenance Worksheet)*, include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must perform checks and services for the interval listed.

b. **Interval Column.** This column tells you when you must perform the procedure in the procedure column.

(1) *Before* procedures must be done immediately before you operate the truck.

(2) *During* procedures must be done while you are operating the truck.

(3) *After* procedures must be done immediately after you have operated the truck.

(4) *Weekly* procedures must be done once each week.

(5) *Monthly* procedures must be done once each month.

c. **Location, Item to Check/Service Column.** This column provides the location and item to be checked or serviced. The item location is underlined.

2-8. EXPLANATION OF TABLE ENTRIES (Con't).

NOTE

The WARNINGs and CAUTIONs appearing in your PMCS table should always be observed. WARNINGs and CAUTIONs appear before applicable procedures. You must observe these WARNINGs to prevent serious injury to yourself and others, and CAUTIONs to prevent your equipment from being damaged.

d. **Procedure Column.** This column gives the procedure you must perform to check or service the item listed in the Item to Check/Service column to know if the equipment is ready or available for its intended mission or for operation. You must perform the procedure at the time stated in the interval column.

e. **Not Fully Mission Capable If: Column.** Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you make check and service procedures that show faults listed in this column, the equipment is not mission-capable. Follow-standard operating procedures for maintaining the equipment or reporting equipment failure.

2-9. GENERAL PMCS PROCEDURES.

a. Always perform PMCS in the same order so it gets to be a habit. Once you've had some practice, you'll spot anything wrong in a hurry. If the truck does not perform as required, refer to the appropriate troubleshooting procedure in Chapter 3, Section II.

b. If anything looks wrong and you can't fix it, write it on your DA Form 2404. If you find something seriously wrong, IMMEDIATELY report it to your supervisor.

c. Before performing preventive maintenance, read all the checks required for the applicable interval and prepare all the tools you need to make all the checks. You'll always need a rag (Item 15, Appendix D) or two.

WARNING

Dry cleaning solvent is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-130°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

2-9. GENERAL PMCS PROCEDURES (Con't).

(1) **Keep It Clean.** Dirt, grease, oil, and debris get in the way and may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (tem 16, Appendix D) on all metal surfaces. Use detergent (Item 3, Appendix D) and water when you clean rubber, plastic, and painted surfaces.

(2) **Rust and Corrosion.** Check metal parts for rust and corrosion. If any bare metal or corrosion exists, clean and apply a light coat of lubricating oil (Item 13, Appendix D). Report it to your supervisor.

(3) **Bolts, Nuts, and Screws.** Check bolts, nuts, and screws for obvious looseness, missing, bent, or broken condition. You can't try them all with a tool, but look for chipped paint, bare metal, or rust around bolt heads. If you find one you think is loose, tighten it.

(4) **Welds.** Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to your supervisor.

(5) **Electric Wires and Connectors.** Look for cracked or broken insulation, bare wires, and loose or broken connectors. Tighten loose connectors and ensure that the wires are in good condition.

(6) **Hoses and Fluid Lines.** Look for wear, damage, and signs of leaks. Ensure that clamps and fittings are tight. Wet spots indicate leaks, but a stain around a fitting or connector can also mean a leak. If a leak comes from a loose fitting or connector tighten it. If something is broken or worn out, report it to your supervisor.

(7) **Fluid Leakage.** It is necessary for you to know how fluid leakage affects the status of your truck. The following are definitions of the types/classes of leakage you need to know to be able to determine the status of your truck. Learn and be familiar with them, and remember - when in doubt, notify your supervisor.

CAUTION

Operation is allowable with Class I and Class II leakage. WHEN IN DOUBT, NOTIFY YOUR SUPERVISOR. When operating with Class I or Class II leaks, check fluid levels more frequently. Class III leaks must be reported immediately to your supervisor. Failure to do this will result in damage to vehicle and/or components.

Leakage Definitions for PMCS

Class I	Leakage indicated by wetness or discoloration, but not great enough to form drops.
Class II	Leakage great enough to form drops, but not enough to cause drops to drip from the item being checked/inspected.
Class III	Leakage great enough to form drops that fall from the item being checked/inspected.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4.

Item No.	Interval	Location / Item To Check/ Service	Procedure	Not Fully Mission Capable If:
		NOTE • **Review all WARNINGS, CAUTIONs, and NOTES before performing PMCS and operating the truck.** - **Perform all PMCS checks if:** **a. You are the assigned operator but have not operated the truck since the last weekly inspection.** **b. You are operating the truck for the first time.**		
		FRONT AND LEFT SIDE		
1	**Before**	**Overall View**	a. Check under truck for evidence of fluid leakage such as oil, coolant, fuel, or hydraulic fluid. b. Check truck for obvious damage that would impair operation. c. Visually check for missing or damaged tires. Check lug nuts to ensure they are at least finger tight.	a. Class III oil, coolant, or hydraulic leaks or Class II fuel leaks are evident. b. Damage that would impair operation is evident. c. Any tire is missing or damaged. Lug nuts are loose or missing.
2	**Before**	**Cab Exterior**	Check for damage to lights (9), spotting mirrors (1), side mirror (4), windshield (2), windshield wipers and blades (3), cab door (8), grabhandle (5), battery box (7) and steps, and CWS antenna (10).	Damage that would interfere with visibility and impair operation is evident.
3	**Before**	**Spare Wheel and Tire**	Check for presence and condition of spare wheel and tire (6).	Spare wheel and tire is missing or damaged.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

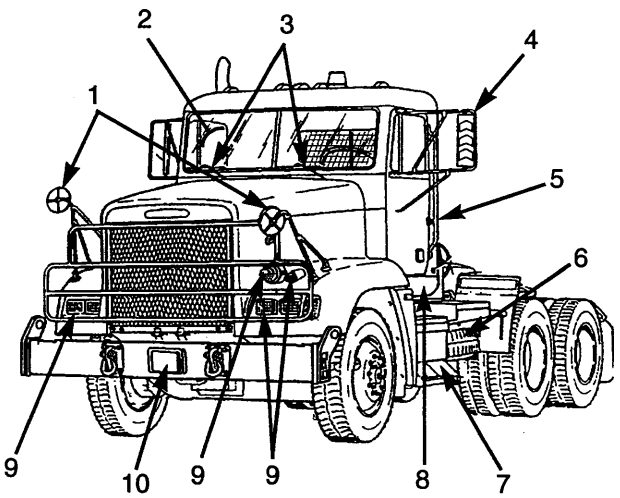
Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
3 (Con't)	**Before**	**Spare Wheel and Tire**		
				
		REAR AND RIGHT SIDE		
4	**Before**	**Overall View**	a. Check truck for obvious damage that would impair operation. b. Visually check for missing or damaged tires. Check lug nuts to ensure they are at least finger tight.	a. Damage that would impair operation is evident. b. Any tire is missing or damaged. Lug nuts are loose or missing.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

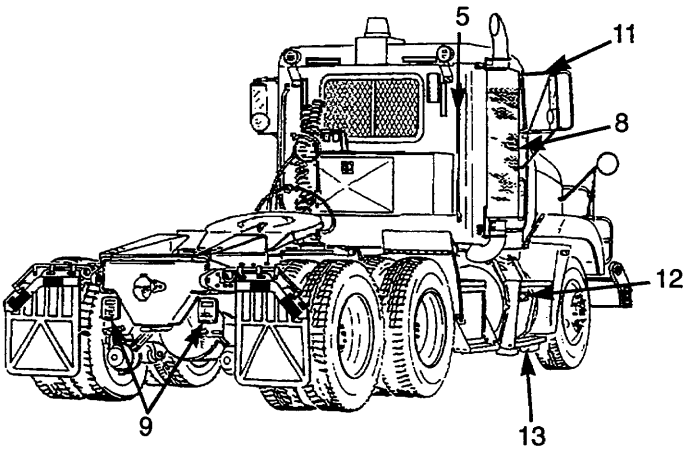
Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
5		**Cab Exterior**	Check for damage to lights (9), side mirror (11), cab door (8), grabhandles (5), steps (13), and CWS side sensor (12).	Damage that would interfere with visibility and impair operation is evident.
				
		CAB INTERI-OR		
6	**Before**	**Instru-ment Panel**	**NOTE** **Refer to Chapter 2, Section I for the location of all gages, switches, and indicator lights.** Check for damage to gages, switches, and indicator and warning lights.	Any gage is broken or unreadable.
7	**Before**	**Fire Extin-guisher**	a. Check for missing or damaged fire extinguisher (14). b. Check gage (15) for proper pressure of approximately 150 psi (1034 kPa).	a. Fire extinguisher is missing or damaged. b. Pressure gage needle is in recharge area.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
7 (Con't)	**Before**	**Fire Extin-guisher**	c. Check for damaged or missing seal (16).	c. Seal is broken or missing.

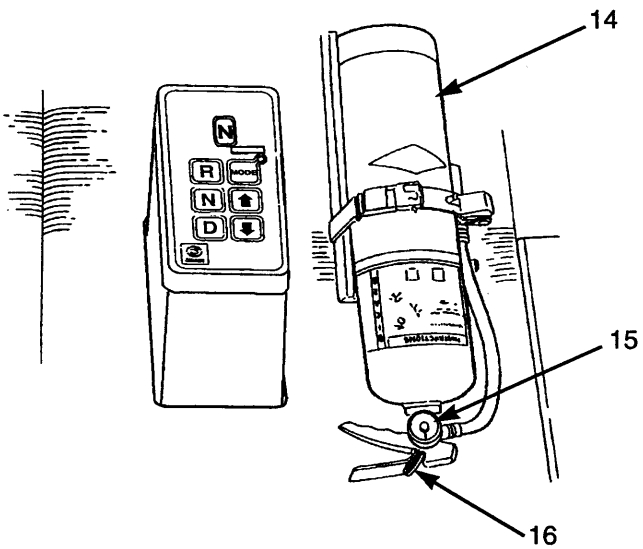


Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
8	**Before**	**Engine Startup**	a. Start engine (paragraph 2-12). Verify that low air pressure warning light (17) and warning buzzer turn off.	a. Engine will not start. Low air pressure or warning light and warning buzzer stay on.
			b. Check that ABS indicator lights (18) turn off after 4 second self-test. If not, notify supervisor.	
			CAUTION **DO NOT run engine above idle speed until oil pressure gage indicates at least 15 psi (100 kPa) at idle speed.**	
			c. Check engine rpm on tachometer.	c. At idle, engine speed is not 600 rpm.

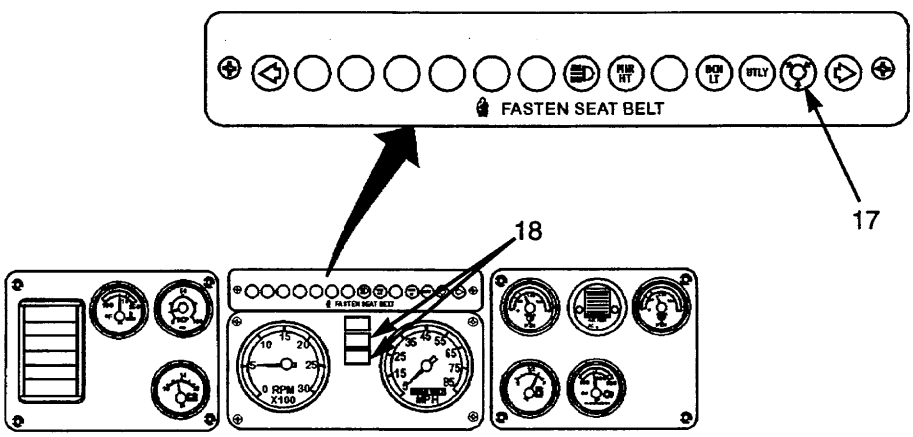


Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

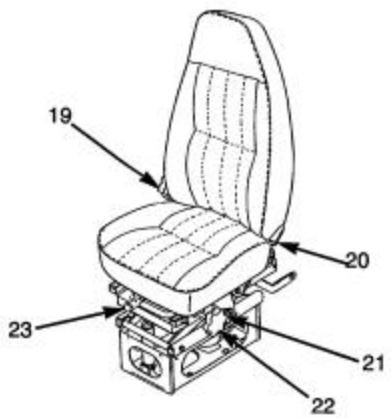
Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
9	**Before**	**Seats and Seat Belts**	a. Check seats and seat belts for security of mounting and damage.	a. Seat belts are not serviceable.
			NOTE **All adjustments should be made while seated. Primary air pressure gage must indicate a minimum of 60 psi (414 kPa) to adjust height of seat.**	
			b. Check for proper operation of seat height adjustment valve lever (21) and fore and aft seat adjustment lever (28). Check for proper operation of lumbar adjustment knob (19), seat back adjustment lever (20), and seat tilt knob (22).	b. Seat missing or inoperative.
				
10	**Before**	**Steering Wheel**	Adjust tilt and height of steering wheel (paragraph 2-3).	Steering wheel does not lock into adjusted position.
11	**Before**	**Side Mirrors**	Adjust side mirrors as required (paragraph 2-11).	

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
12	**Before**	**Instrument Panel Gages and Indicator and Warning Lights**	**At 1700-2100 rpm, minimum engine oil pressure for safe operation is 15 psi (100 kPa). If gage does not show at least 15 psi (100 kPa), shut down engine and notify supervisor. Failure to follow this caution will damage engine.**	
			a. Check oil pressure gage. Reading should be 15-50 psi (100-295 kPa) at idle.	a. Gage reading is not within limits.
			b. Check primary and secondary air pressure gages for 90-120 psi (621-827 kPa) (green band).	b. Gage reads less than 65 psi (448 kPa) (yellow band), warning buzzer stays on, or gage is not operating.
			c. Check that voltmeter registers within green band.	c. Needle is in yellow or red band.
			d. Check that fuel supply gage registers and indicates adequate fuel for mission.	
			e. Check air cleaner restriction indicator.	e. Indicator window shows 20 in. of water.
13	**Before**	**Parking Brake**	With service brake pedal depressed, transmission in Drive (D), and engine at idle, pull out on parking brake valve, then release service brake pedal. Vehicle should not move.	Vehicle moves with parking brake applied.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
14	**Before**	**Service Brakes**	With transmission in Drive (D), release parking brake and apply service brakes. Vehicle should not move.	Vehicle moves with service brakes applied.
15	**Before**	**Trailer Brakes**	**NOTE** **Perform this check with trailer after tractor/trailer are coupled.**	
			a. Listen for air leaks at intervehicular connecting hoses, relay valve, and air reservoirs.	a. Any air leaks are present.
			b. Apply trailer brakes only and attempt to move tractor/trailer combination.	b. Brakes fail to hold tractor/trailer combination from moving.
16	**During**	**Instrument Panel/ CWS Displays**	a. Monitor all gages and indicator and warning lights. Check that engine coolant and transmission oil temperature gages register within normal range (green band). b. Monitor indicator lights on driver's display unit and side sensor display. If system fail light illuminates, continue mission and turn CWS off. Notify supervisor.	a. Any temperature or pressure gage does not register or indicates abnormal reading.
17	**During**	**Brakes**	a. Check brakes for pulling or grabbing. b. Check that brake pedal is firm and does not fully depress to floor.	a. Brakes pull or grab. b. Brake pedal is spongy or depresses fully to floor.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location / Item To Check/ Service	Procedure	Not Fully Mission Capable If:
18	**During**	**Steering**	Check for smooth steering without pulling to one side or excessive play [more than 2 1/2 in. (6.4 cm)] in steering wheel.	Steering is erratic, pulls, and has excessive play.
19	**During**	**Power Train**	Check for unusual noise or vibration from engine, transmission, drive shafts, axles, and wheels.	Unusual noise or vibration is present.
20	**During**	**Air Condi-tioner**	**NOTE** **Perform the following inspection only if air conditioner is required due to climatic conditions.** Turn air conditioner on and set blower to maximum cooling speed settings. Wait five minutes to allow temperature to stabilize. Check outlet ducts for cool air. If air is not cooler than ambient temperature, notify supervisor.	
21	**During**	**Overall Leakage** **FRONT AND LEFT SIDE**	Be alert for evidence of fluid leakage.	Class III oil, coolant, or hydraulic leaks or Class II fuel leaks are evident
22	**After**	**Overall View**	a. Check under truck for evidence of fluid leakage such as oil, coolant, fuel, or hydraulic fluid.	a. Class III oil, coolant, or hydraulic leaks or Class II fuel leaks are evident.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
23 (Con't)	**After**	**Overall View**	b. Check front gladhands for damage. Ensure that gladhand vent holes are not plugged. Ensure that dummy couplings are installed.	
			c. Check truck for obvious damage that would impair operation.	c. Damage that would impair operation is evident.
			d. Check for damage to front service and blackout lights and marker clearance lights.	d. Lights are damaged.
23	**After**	**Wheels and Tires**	**WARNING** **Operating truck with an underinflated or defective tire may lead to tire failure and loss of steering control. Damage to equipment or injury to personnel may result.**	
			Visually check all left side tires for defects, underinflation, or loose or missing wheel studs or lug nuts.	Tire is missing, deflated, unserviceable, or two or more wheel studs or lug nuts are missing.
24	**After**	**Front Axle Wheel Bearings**	Check that lubricating oil is visible in sight glass (25) and rubber plug (24) is installed. If oil is not visible in sight glass, remove plug and add until level is even with plug opening (Appendix F).	

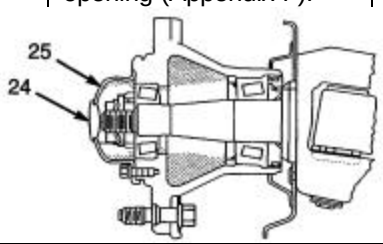


Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

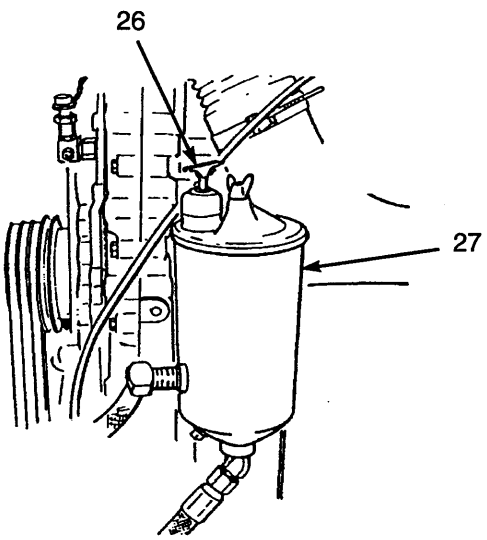
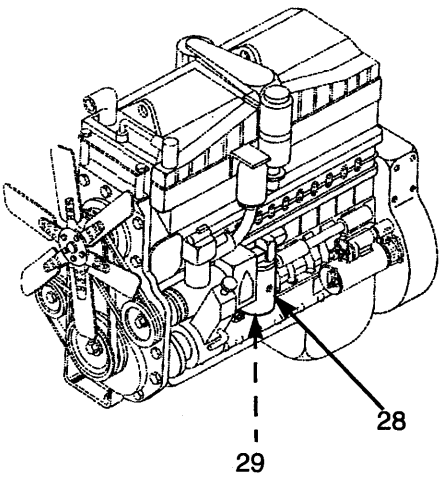
Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
25	**After**	**Power Steering Reservoir**	With fluid at operating temperature and engine running, remove dipstick (26) and check level of power steering fluid in reservoir (27). Add fluid as required if level is below add mark (Appendix F).	
				
26	**After**	**Fuel Filters**	**WARNING** **DO NOT perform fuel system checks, inspections, or maintenance while smoking or near fire, flames, or sparks. Fuel may ignite, causing damage to vehicle and injury or death to personnel.**	

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
26 (Con't)	**After**	**Fuel Filters**	**NOTE** - **Both primary fuel filter mounted on engine and fuel filter/water separator mounted on left frame rail should be drained.** - **Ensure that a suitable container is used to catch fluid.** Turn drain knob (29) counterclockwise and drain all water from fuel filters (28). Turn knob clockwise to close.	



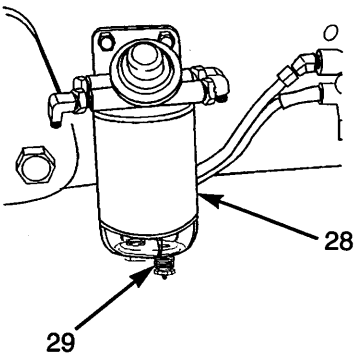


Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

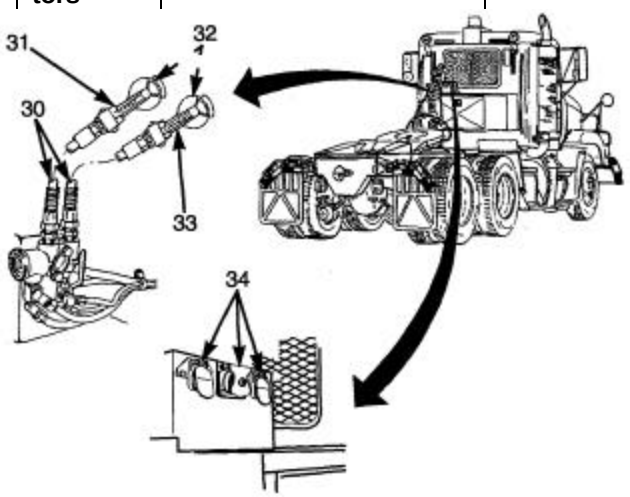
Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
27	**After**	**Intervehicular Air Hoses and Electrical Connectors**	Check for presence and general condition of intervehicular air hoses (30), gladhands (31 and 33), gladhand preformed packings (32), and three electrical connectors.	Air hose, gladhand, or electrical connector is damaged.
				
28	**After**	**Fifth Wheel**	a. Check fifth wheel lube plates (36) for severe chips, wear, cracks, gouges or bends. Check if 25% or more of lube plate coating is missing from one or both plates due to normal wear or damage. b. Check for operation and damage to lock release levers (39), slide locking plungers (38), sliding rails (37), and fifth wheel plate (35).	a. One or both lube plates are loose, missing or damaged. b. Lock release levers do not operate. Locking jaw mechanism is cracked or worn.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

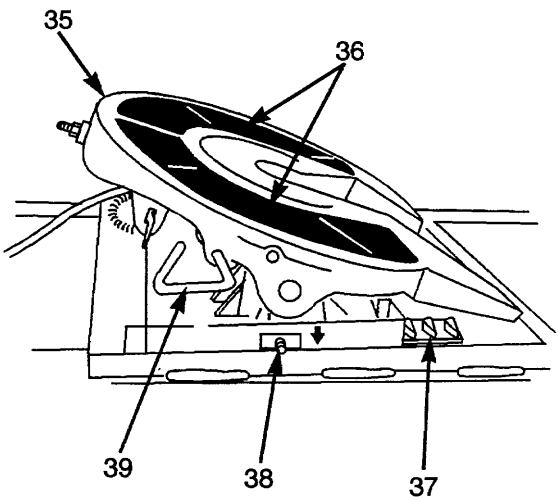
Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
28 (Con't)	**After**	**Fifth Wheel**		
				
		REAR AND RIGHT SIDE		
29	**After**	**Overall View**	a. Check under truck for evidence of fluid leakage such as oil, coolant, fuel, or hydraulic fluid. b. Check rear gladhands for damage. Ensure that gladhand vent holes are not plugged. Ensure that dummy couplings are installed. c. Check truck for obvious damage that would impair operations.	a. Class III oil, coolant, or hydraulic leaks or Class II fuel leaks are evident. c. Damage that would impair operation is evident.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
29 (Con't)	**After**	**Overall View**	d. Check for damage to rear service and blackout lights and marker clearance lights. e. Check for damage to exhaust system components. Ensure that components. Ensure that components are securely mounted and are not leaking. f. Check CWS antenna and side sensor for obvious damage.	d. Lights are damaged. e. Exhaust system components are damaged.
30	**After**	**Wheels and Tires**	**WARNING** **Operating truck with an underinflated or defective tire may lead to tire failure and loss of steering control. Damage to equipment or injury to personnel may result.**	
			Visually check all right side tires for defects, underinflation, or loose or missing wheel studs or lug nuts.	Tire is missing, or deflated, unserviceable, or two or more wheel studs or lug nuts are missing.
31	**After**	**Fifth Wheel Ramps**	Check for damage to fifth wheel ramps (44).	Damage that prevents coupling.
32	**After**	**Taillights**	Check for damage to taillights (41).	Taillights are damaged.
33	**After**	**Trailer Gladhands**	Check for presence of dummy couplings (42) and damage to trailer gladhands (40).	Damage that prevents air from applying trailer brakes when coupled.
34	**After**	**Mud Flaps**	Check for presence and general condition of mud flaps (43).	Mud flaps are missing.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
34 (Con't)	After	Mud Flaps		

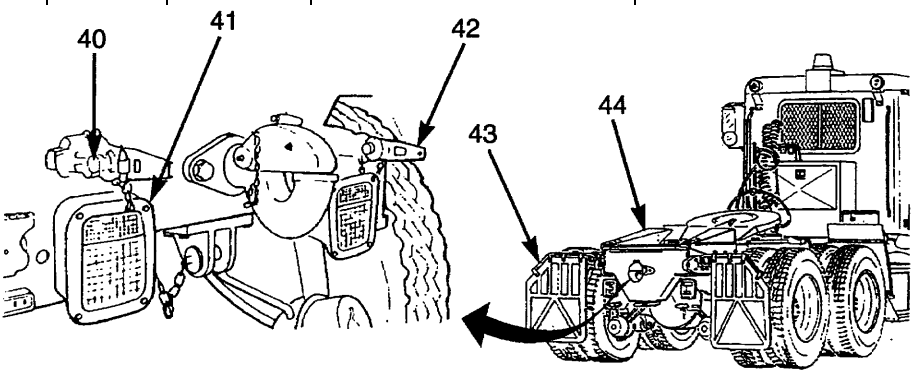


Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

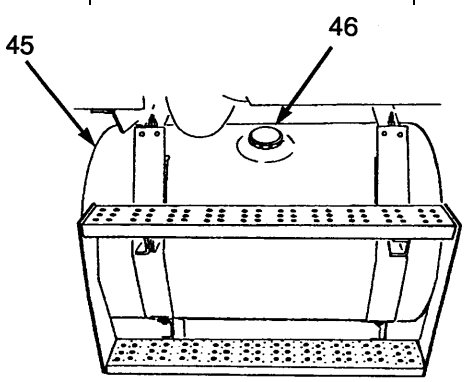
Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
35	After	Fuel Tank	**WARNING** **DO NOT smoke or permit any open flame in area of truck while servicing diesel fuel system. Be sure hose nozzle is grounded against filler tube during refueling to prevent static electricity. Failure to follow this warning may result in injury to personnel or equipment damage.**	
			a. Check for presence and condition of fuel filler cap (46).	a. Filler cap is missing or damaged.
			b. Check fuel tank (45) for leaks, damage, and security of mounting.	b. Class II fuel leaks are evident.
				
			c. Remove fuel tank filler cap (46) and fill fuel tank (45) to holes [approximately 3 in. (7.6 cm)] in filler neck. Ensure that filler cap is free of debris and other material that could interfere with air venting. Install filler cap (paragraph 3-6).	

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
36	**After**	**Front Axle Wheel Bearings**	Check that lubricating oil is visible in sight glass (25) and rubber plug (24) is installed. If oil is not visible in sight glass, remove plug and add until level is even with plug opening (Appendix F).	

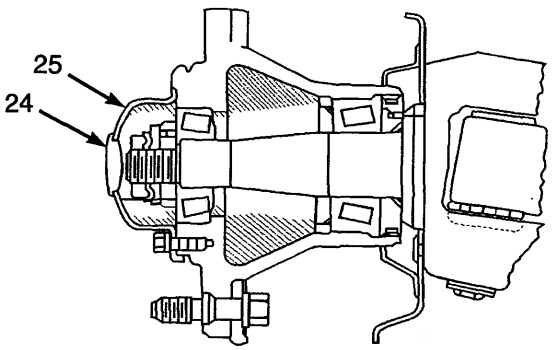


Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
37	After	Trans-mission	**CAUTION** **Transmission must not be operating for extended periods of time until a Hot Check has verified proper fluid level. Transmission damage can result from extended operation at improper fluid level conditions.** With truck on level ground, start engine and run at idle with transmission in Neutral (N) until transmission oil temperature gage registers 60-120°F (16-49°C). Perform cold oil check (Appendix F). When temperature has reached 160-200°F (71-93°C), perform hot oil check (Appendix F). Add transmission fluid as required through fill tube (47) until level on dipstick (48) is correct (Appendix F). Shut down engine.	

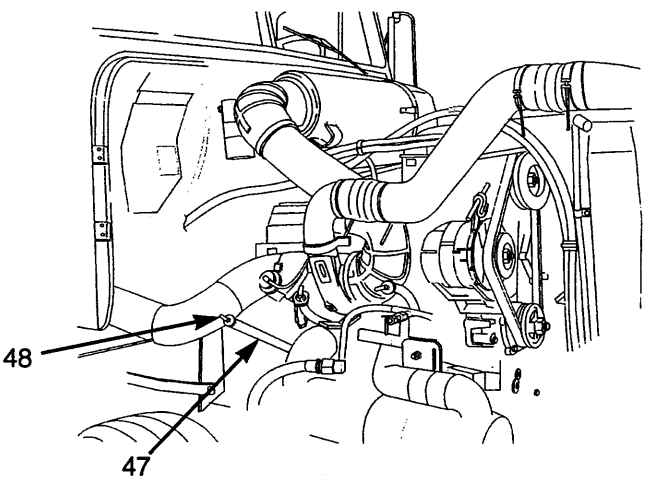


Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
38	**After**	**Air Reservoirs**	**NOTE** **Perform the following service at all air reservoirs.** Open air reservoir drain valves (49), using cable pulls if present and allow all air and liquid condensation to drain. When fully drained, close drain valve.	

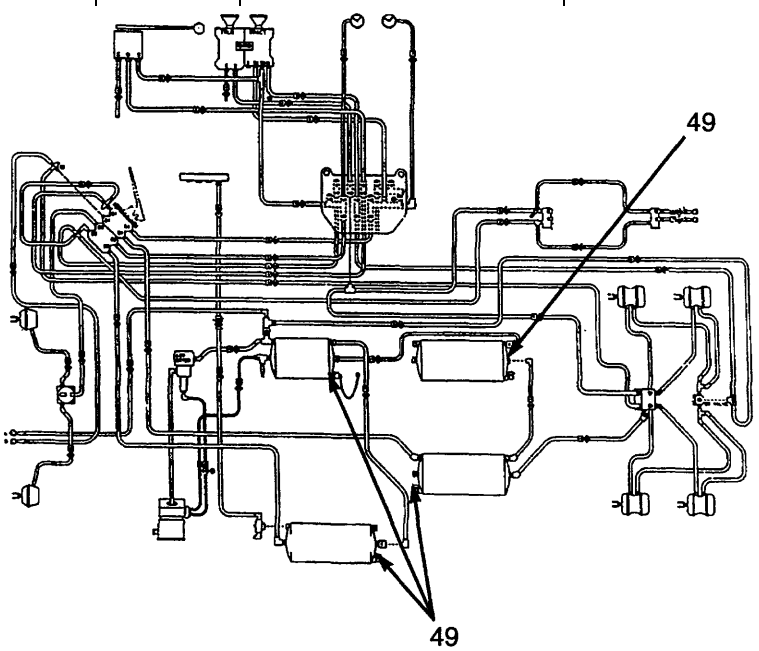


Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
39	**After**	**Engine Crank-case**	**NOTE** **To ensure an accurate reading, vehicle must be parked on level ground. Wait 10 minutes after shutting down engine to allow oil to drain into crankcase.** Remove dipstick (50) and check level of lubricating oil. Safe operating level is between ADD and FULL marks on dipstick. If level is low, add oil through filler opening (51) until level on dipstick is correct (Appendix F).	

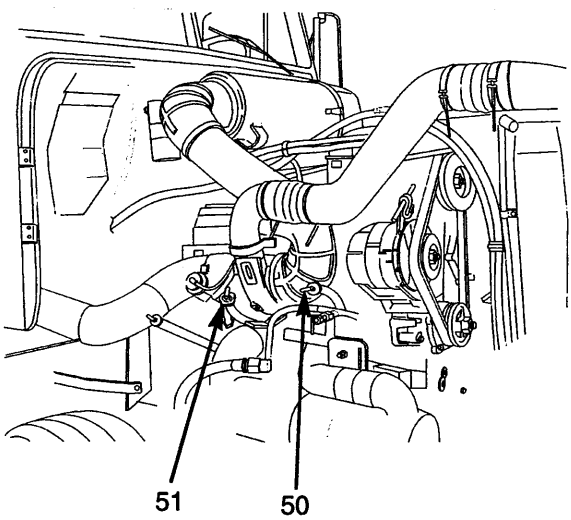


Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

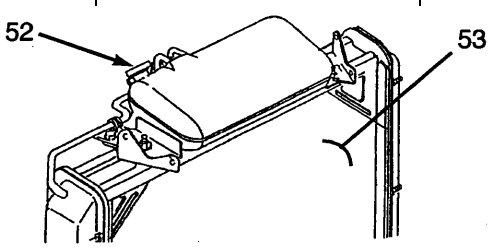
Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
40	After	Radiator	**WARNING** **DO NOT remove radiator cap unless engine is cold. Remove cap in two steps. First, place thick cloth over cap and slowly turn cap left to first stop. Pause and allow pressure to escape. Turn cap further left until it can be removed. This is a pressurized cooling system and escaping steam, hot water or coolant will cause serious burns.** Remove radiator cap (52) and check coolant level in radiator (53). Coolant must be within 2 1/2 in. (6.4 cm) below filler neck. Add coolant as required (Appendix F).	
				
41	After	Horns	**NOTE** **Vehicle operation with inoperative horn may violate AR 385-55.** If tactical situation permits, check operation of electrical and air horns.	
42	After	Acces-sory Items	Verify that windshield wipers and heater/ventilator or air conditioner operate.	
43	After	Lights	**NOTE** **Vehicle operation with damaged or inoperative headlights or stoplights may violate AR 385-55.**	

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location / Item To Check/ Service	Procedure	Not Fully Mission Capable If:
			a. Check for presence and operation of service drive, turn signal, blackout marker blackout drive, and marker clearance lights. b. Check operation of tail/stoplights. Depress brake pedal approximately 1/4 in. (6.4 mm). Tail/ stoplights should come on.	
		FRONT AND LEFT SIDE		
44	**Weekly**	**Drive Belts**	a. Check for loose, missing, broken, frayed, or cracked drive belts (55). Notify supervisor if loose drive belts are suspected. b. Check for damaged pulleys (54).	a. Any drive belt is loose, missing, broken, cracked to the belt fiber, has more than one crack 1/8 in. (3.2 mm) in depth, or has frays more than 2 in. (5.1 cm) long. b. Pulley is damaged.

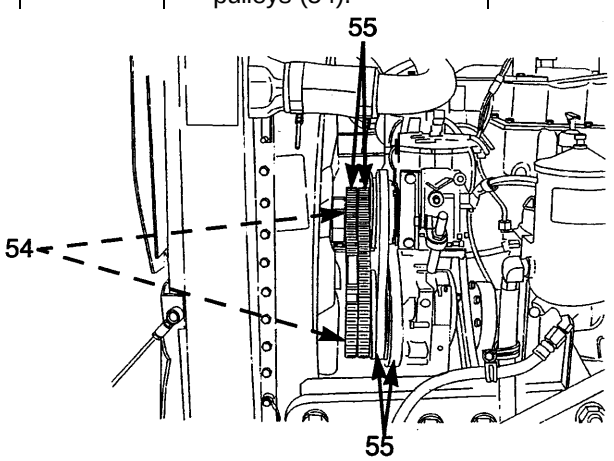


Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
45	**Weekly**	**Ether - Quick Start System**	**WARNING** **Ether is highly flammable and explosive. DO NOT perform ether quick-start system checks or inspections while smoking or near fire, flame, or sparks. Failure to follow this warning may cause a fire and explosion, causing serious injury or death to personnel.**	
			Check for loose connections and damage to lines, fittings, and canister. Be alert for the odor of leaking ether.	Damage or leakage is evident.
46	**Weekly**	**Wind-shield Washer Reser-voir**	Check level of fluid in reservoir located in engine compartment below driver windshield on left firewall. Add windshield cleaning compound (Item 2, Appendix D) as required.	
47	**Weekly**	**Front Wheel and Tires**	**WARNING** **Operating truck with an underinflated or defective tire may lead to tire failure and loss of steering control. Damage to equipment or injury to personnel may result.**	
			a. Check pressure in tires and adjust as required: Empty - 85 psi (586 kPa) Loaded - 105 psi (724 kPa)	
			b. Ensure all wheel stud lug nuts are tight, using wheel stud lug nut wrench and handle.	b. Two or more wheel studs are missing or lug nuts are loose.
			c. Check wheel for cracks, breaks, or bends.	c. Wheel is cracked, broken, or bent.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
48	Weekly	Batteries	**WARNING** **To avoid eye injury, eye protection is required when working around batteries. Do not smoke, use open flame, make sparks, or create other ignition sources around batteries. If a battery is giving off gases, it can explode and cause injury to personnel. Remove all jewelry, such as rings, ID tags, watches, and bracelets. If jewelry or a tool contacts a battery terminal, a direct short will result in an instant heating, damage to equipment, and injury to personnel.** **CAUTION** **To reduce battery damage, do not remove batteries from vehicle/equipment battery compartment unless the battery compartment is corroded (greenish/white powder). Do not jerk or pull on battery cables during visual inspection. Battery replacement will be performed by Unit Maintenance personnel.** a. Release latches (59) and remove cover (56). Check battery compartment for damaged or missing batteries. b. Check for damaged or missing filler caps (57). c. Check for missing, broken, split, or frayed cables (60). d. Check for damaged terminal posts (58).	a. One or more batteries are damaged or missing. b. One or more filler caps are damaged or missing. c. Cables are missing, broken, split, or frayed. d. Terminal posts are damaged.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

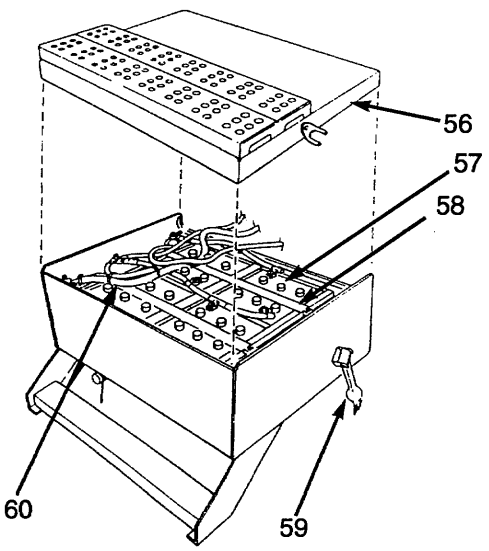
Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
48 (Con't)	**Weekly**	**Batteries**	e. Check for rust and corrosion. f. Check for cleanliness. g. Report any problems to Unit Maintenance.	
				
49	**Weekly**	**Spare Wheel and Tire**	**WARNING** **Operating truck with an underinflated or defective tire may lead to tire failure and loss of steering control. Damage to equipment or injury to personnel may result.** a. Check pressure in tire and adjust as required to achieve 105 psi (724 kPa). b. Check wheel for cracks, breaks, or bends.	b. Wheel is cracked, broken, or bent.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
50	**Weekly**	**Forward-Rear and Rear-Rear Wheels and Tires**	**WARNING** **Operating truck with an underinflated or defective tire may lead to tire failure and loss of steering control. Damage to equipment or injury to personnel may result.**	
			a. Check pressure in tires and adjust as required: Empty - 80 psi (552 kPa) Loaded - 100 psi (690 kPa)	
			b. Ensure all wheel stud lug nuts are tight, using wheel stud lug nut wrench and handle.	b. Two or more wheel studs are missing or lug nuts are loose.
			c. Check wheel for cracks, breaks, or bends.	c. Wheel is cracked, broken, or bent.
51	**Weekly**	**Fifth Wheels**	Lubricate fifth wheel in accordance with Appendix F.	
		UNDER VEHICLE		
52	**Weekly**	**Steering Compo-nents**	Check front axle steering components for cracks, breaks, loose connections, or other damage.	Any steering component is cracked, broken, or loose.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

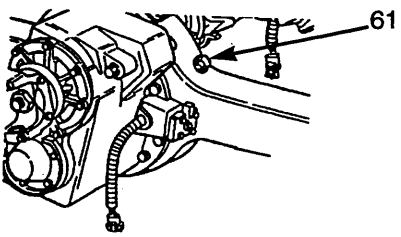
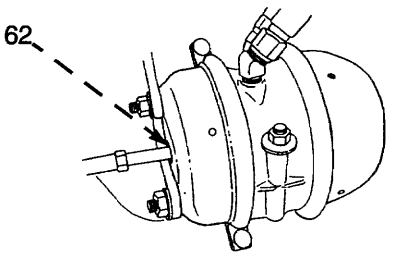
Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
53	Weekly	Axle Breathers	**WARNING** **Dry cleaning solvent is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-138°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.** **NOTE** **Perform the following service at all axles except the front axle.** Without removing breather vent (61), check for a clogged vent. Clean with dry cleaning solvent (Item 16, Appendix D) as required to remove dirt and grease.  	

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
54	**Weekly**	**Brake Chambers**	**NOTE** **Perform the following check at all axles.**	
			Check brake chamber service pushrod for showing of stroke alert indicator (62).	Stroke alert indicator is visible.
		REAR AND RIGHT SIDE		
55	**Weekly**	**Pintle Hook**	Check pintle hook (64) for looseness, damaged locking mechanism, and presence of cotter pin. Lubricate at all four grease fittings (63) (Appendix F), if pintle hook does not rotate freely by hand.	



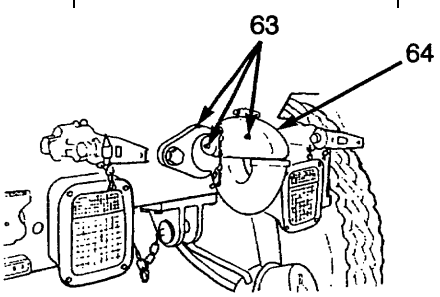


Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
56	**Weekly**	**Rear-Rear and Forward-Rear Wheels and Tires**	**WARNING** **Operating truck with an underinflated or defective tire may lead to tire failure and loss of steering control. Damage to equipment or injury to personnel may result.**	
			a. Check pressure in tires and adjust as required: Empty - 80 psi (552 kPa) Loaded - 100 psi (690 kPa)	
			b. Ensure all wheel stud lug nuts are tight, using wheel stud lug nut wrench and handle.	b. Two or more wheel studs are missing or lug nuts are loose.
			c. Check wheel for cracks, breaks, or bends.	c. Wheel is cracked, broken, or bent.
57	**Weekly**	**Front Wheel and Tire**	**WARNING** **Operating truck with an underinflated or defective tire may lead to tire failure and loss of steering control. Damage to equipment or injury to personnel may result.**	
			a. Check pressure in tires and adjust as required: Empty- 85 psi (586 kPa) Loaded - 105 psi (724 kPa)	
			b. Ensure all wheel stud lug nuts are tight, using wheel stud lug nut wrench and handle.	b. Two or more wheel studs are missing or lug nuts are loose.
			c. Check wheel for cracks, breaks, or bends.	c. Wheel is cracked, broken, or bent.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
		CAB INTERI-OR		
58	**Weekly**	**Doors and Windows**	Check operation and general condition of cab doors and windows.	
		OVER-ALL VEHICLE		
59	**Monthly**	**Under-carriage, Frame, Cab, and Propeller Shafts**	a. Check for obvious damage to frame and undercarriage.	a. Any loose or broken frame side rails, crossmembers, broken welds, or broken bolts are found.
			b. Check propeller shafts and U-joints for loose or broken bolts and nuts.	b. Mounting bolts and nuts are loose or missing.
60	**Monthly**	**Air System**	Check all air lines, fittings, and valves for looseness or damaged.	Any air lines, fittings, or valves are loose or damaged.
61	**Monthly**	**Exhaust System**	Check exhaust system for corrosion, looseness, or damage.	Pipe, clamp or hardware damaged or missing.
62	**Monthly**	**Spare Wheel and Tire and Vehicle Tires**	a. Check spare wheel and tire for cuts, gouges, cracks, or uneven wear.	a. Spare wheel and tire are missing or damaged.
			b. Check for secure mounting of spare wheel and tire.	
			c. Check all vehicle tires for cuts, gouges, cracks, or uneven wear.	c. Any tire is missing or damaged.

Table 2-1. Preventive Maintenance Checks and Services (PMCS) for M915A4 (Con't).

Item No.	Interval	Location Item To Check/ Service	Procedure	Not Fully Mission Capable If:
63	**Monthly**	**Radiator**	Remove dirt and debris from cooling fins.	
64	**Monthly**	**Air Conditioner**	Check air conditioner operation. Operate for at least five minutes to help prevent drying and cracking of tubing seals and reduce refrigerant leaks in the system.	

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Section III. OPERATION UNDER USUAL CONDITIONS

2-10. GENERAL.

WARNING

These vehicles have been designed to operate safely and efficiently within the limits specified in this TM. Operation beyond these limits is prohibited in accordance with AR 70-1 without written approval from: Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-DSA-CS, Warren, MI 48397-5000.

This section contains instructions for safely operating the M915A4 under usual conditions. Unusual conditions are defined and described in Section IV of this chapter.

2-11. INITIAL ADJUSTMENTS, DAILY CHECKS, AND SELF-TESTS.

a. Place master battery switch to ON.

b. Perform *Before* operation Preventive Maintenance Checks and Services (PMCS) (Chapter 2, Section II).

c. Change military load classification (paragraph 1-11), if necessary.

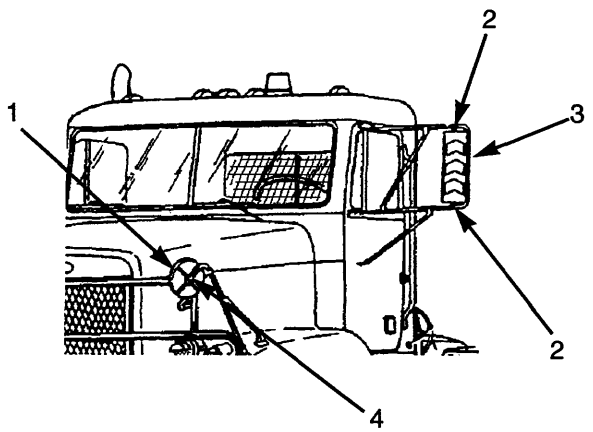
2-11. INITIAL ADJUSTMENTS, DAILY CHECKS, AND SELF-TESTS (Con't).

d. Adjust side mirrors (3) by loosening two nuts (2) and moving side mirror to proper position. Tighten two nuts.

CAUTION

DO NOT attempt to adjust spotter mirrors without loosening screws. Attaching screw may become loose and result in loss of spotter mirror.

e. Adjust spotter mirrors (1) by loosening three screws (4) and moving spotter mirror to proper position. Tighten three screws.



f. Occupy and adjust seat (see paragraph 2-5).

g. Adjust steering wheel (see paragraph 2-3).

WARNING

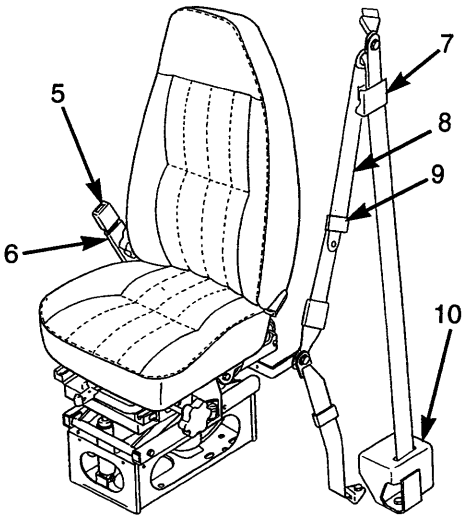
Use of seat belts while operating vehicle is mandatory. Fasten belt BEFORE driving. Trying to fasten three-point seat belt while driving creates a hazardous condition. Failure to follow this warning may result in death or injury to personnel.

h. Adjust tether belt.

(1) Loosen tether belt (6) and turn buckle (5) at a right angle to webbing. Pull buckle away from inner webbing.

2-11. INITIAL ADJUSTMENTS, DAILY CHECKS, AND SELF-TESTS (Con't).

(2) Tighten tether bet (6) to proper tension. Ensure that movement of seat suspension is not restricted.



i. Fasten seat belt.

(1) Slowly pull link (9) out of retractor (10) and across lap far enough to engage buckle (5). If retractor locks too soon, allow belt to retract slightly and then pull slowly.

(2) Push link (9) into buckle (5).

(3) Position shoulder strap (8) diagonally across chest.

NOTE

- **If engaging Komfort Loc®, allow no more than 1 in. (2.5 cm) between chest and shoulder strap.**
- **Komfort Loc® will automatically release if pressure is applied to shoulder strap.**

(4) If desired, engage Komfort Loc® (7) by pulling on shoulder strap (8) and pressing Komfort Loc® lever up.

(5) To release seat belt, press release button on buckle (5). If Komfort Loc® (7) was engaged, give shoulder strap (8) a quick downward tug to release.

2-12. START ENGINE.

NOTE

Refer to paragraph 2-2 for the location of instrument panel controls and indicators.

a. Ensure that parking brake is applied (paragraph 2-2).

b. Depress transmission shift selector Neutral (N) pushbutton.

c. Ensure that all accessories are off and engine brake system switches are in OFF (Down) position.

d. Turn ignition switch to ON position. Low air pressure warning light, PARK BRAKE light (if applied), ABS light(s), and warning buzzer come on. ABS light(s) will go off after passing a four second self-test.

e. Ensure that interaxle lockout control valve lever is in UNLOCK position.

CAUTION

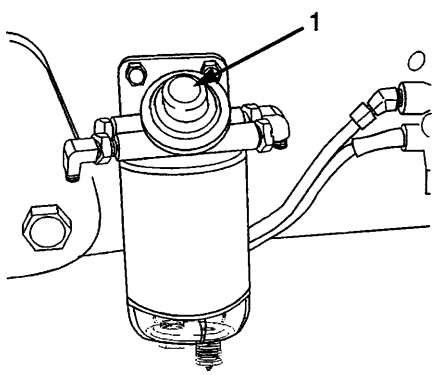
DO NOT operate starter motor for more than 30 seconds at a time. After 30 seconds, allow starter motor to cool for at least two minutes before attempting to start engine again. Excessive heating of starter motor may result in damage or early starter failure.

f. Press engine start button.

NOTE

Fuel filter/water separator is located in engine compartment on left-side frame rail.

g. When engine starts, release engine start button. If engine fails to start, prime fuel system by pumping fuel filter/water separator valve (1) for one minute. Press engine start button. If engine still fails to start, pump valve for 20 seconds. Press engine start button. If engine still fails to start, notify Unit Maintenance.



2-12. START ENGINE (Con't).

NOTE

Perform steps i through l if outside temperature is at or below 32°F (0°C).

h. Perform steps a through e.

CAUTION

- **Never press ether quickstart button unless cranking engine simultaneously. Buildup of ether fumes may result in combustion in intake manifold.**
- **DO NOT operate starter motor for more than 30 seconds at a time. After 30 seconds, allow starter motor to cool for at least two minutes before attempting to start engine again. Excessive heating of starter motor may result in damage or early starter failure.**

i. Press engine start button and at the same time press ether quick-start button once.

j. When engine starts, release engine start button.

CAUTION

DO NOT run engine above idle speed until oil pressure gage indicates at least 15 psi (100 kPa) at idle speed.

k. Do not run engine above 600 rpm until normal oil pressure (15 psi) is indicated on engine oil pressure gage.

l. Monitor gages and indicators. If after ten seconds there is no indication of oil pressure, shut down engine (paragraph 2-16) and perform troubleshooting (Chapter 3, Section II).

2-13. OPERATE TRANSMISSION.

a. **Transmission Ranges.**

(1) **Reverse (R).** Reverse (R) is used to back up the vehicle. Vehicle must be brought to a complete stop before shifting from a forward range to R or visa versa. Light on panel will illuminate and the digital display will display R when reverse is attained.

CAUTION

DO NOT allow truck to coast in Neutral (N). This can result in severe transmission damage. When in N, engine braking is not available.

(2) **Neutral (N).** Neutral (N) is the normal transmission position when vehicle is not in use. Use N to start engine, to check vehicle accessories, and for extended periods of engine idling. Light on panel will illuminate and the digital display will display N when transmission is in neutral. Vehicle ECU automatically selects NEUTRAL when starting vehicle.

(3) **Drive (D).** When placed in Drive (D), the transmission starts out in 1st gear and automatically progresses to the 4th gear. During slowdown, transmission automatically downshifts. Light on panel will illuminate and the digital display will display the highest forward gear attainable.

(a) To select a specific forward gear press the up or down arrow pushbuttons.

NOTE

Even when a lower gear is selected, transmission may not downshift until vehicle speed is reduced.

(b) The digital display will display the selected gear.

(c) The greater the need for engine power or engine braking power, the lower the gear selection should be.

(d) **Gears 2 and 3.** Use 2nd or 3rd gears when road, load or traffic conditions make it preferable to use lower gears.

(e) **Gear 1.** 1st gear is the low gear used for pulling through mud, snow or going up steep grades. This position also offers maximum engine braking power.

(f) When conditions improve, return vehicle to Drive (D).

b. **Operation.**

(1) Depress brake pedal and hold.

(2) Release parking brake (paragraph 2-2).

(3) Press transmission shift selector pushbutton to desired range.

(4) Release brake pedal and begin to move vehicle.

2-13. OPERATE TRANSMISSION (Con't).

(5) As required, select a specific forward gear using up or down arrow pushbuttons.

2-14. DRIVING TIPS.

WARNING

BE ALERT for personnel in area while operating truck. Always check to ensure area is clear of personnel and obstructions before moving out. Failure to follow this warning may result in serious injury or death to personnel.

CAUTION

Governed speed is 2100 rpm. If engine is allowed to exceed governed speed, serious engine or transmission damage may result.

a. Check gages and indicators frequently. If gage or indicator shows an abnormal reading or warning light comes on, bring vehicle to a safe stop, shut down engine (paragraph 2-16), and investigate cause.

CAUTION

Steering wheel should not be held at full steer for more than 10 seconds. This could result in overheating of oil, loss of oil from power steering reservoir, and pump gear damage.

b. Avoid over steering. Become familiar with steering characteristics of vehicle before attempting maneuvers in limited space.

2-14. DRIVING TIPS (Con't).

c. Drive efficiently and economically.

(1) **Driving at Highway Speed.** Recommended normal highway cruising range is 1800 - 1900 rpm. If operating on hilly terrain, in high winds, or in other conditions that make it impractical to operate without reserve power, operate vehicle in lower gear.

(2) **Driving in City.** When slowing for posted speed zones, remain in Drive (D) position and reduce engine rpm.

(3) **Driving Uphill (Under Load).** Proper use of gears shortens time on hills and minimize amount of shifting. As vehicle starts uphill, press accelerator pedal as required to maintain speed.

WARNING

DO NOT use engine brake if road surfaces are slippery. Use of engine brake on wet, icy, or snow-covered roads could result in loss of vehicle control. Failure to follow this warning could result in death or injury to personnel or damage to equipment.

(4) **Use Engine as a Braking Force.** The vehicle is equipped with an engine braking system that enables the engine to act as a brake. The engine brake should be used for descending grades and is most effective between 1750 - 2100 rpm.

(a) If maximum engine braking is required, turn both engine brake selection switches up to engage six cylinders.

(b) If less than maximum engine braking is required, turn left engine brake selection switch up and right engine brake selection switch down to engage two cylinders, or left engine brake selection switch down and right engine brake selection switch up to engage four cylinders.

(5) **Downhill Braking.**

(a) Select a gear that allows engine, with engine brake applied, to control vehicle speed with engine rpm at or below 2100 rpm without applying service brakes. As downgrade is approached, progressively select a gear that, when combined with engine brake, will allow you to maintain engine speed of 1750 - 2100 rpm.

(b) As engine speed exceeds 2100 rpm, use one positive application of service brakes to slow engine speed to 1650 rpm, release engine brake, downshift one gear, and apply engine brake. Repeat this procedure until engine speed can be maintained at 1750 - 2100 rpm.

2-14. DRIVING TIPS (Con't).

CAUTION

Excessive use of service brake to control downhill speed will result in loss of braking power due to heat build-up.

(c) If you experience a total loss of braking due to heat build-up, apply engine brake (six cylinders), upshift as engine speed approaches 2100 rpm, and in Drive (D) position continue to apply engine brake and maintain directional control of vehicle.

CAUTION

Care must be exercised if tractor or trailer ABS light comes on while driving, possibly indicating an ABS malfunction. Although the regular/ normal vehicle system is still fully operational, you should continue at a speed no greater than 40 mph (64 kph), until the mission is complete. When the mission is complete, report to Unit Maintenance to clear the ABS fault and restore full ABS capabilities.

(d) The anti-lock brake system (ABS) will help in controlling wheel lockup and tire skidding during an emergency.

d. Engage interaxle lockout as required.

CAUTION

DO NOT actuate interaxle lockout control valve while tires are spinning. DO NOT operate vehicle continuously with interaxle lockout control valve locked during extended good road conditions. Damage to axle gearing and excessive tire wear could result.

(1) To lock interaxle, ease up on accelerator pedal momentarily and move interaxle lockout control valve lever to LOCK position while maintaining vehicle speed. Proceed over poor road conditions with caution.

(2) To unlock interaxle, place interaxle lockout control valve lever in UNLOCK position and remove foot from accelerator.

2-15. DRIVING.

a. Perform initial adjustments, daily checks, and self-tests (paragraph 2-11).

b. Start engine (paragraph 2-12) and allow truck to warm up.

2-15. DRIVING (Con't).

WARNING

Serious injury may result if head clearance is not adequate while sitting in seat. Before driving or riding in vehicle, ensure there is adequate clearance at maximum upward travel of seat.

c. Adjust seat (paragraph 2-5).

d. Adjust seat belt (paragraph 2-11).

WARNING

Ensure that control lever is in locked (neutral) position before driving truck. NEVER try to adjust tilt or height of steering wheel while driving. Failure to follow this warning may cause death or injury to personnel.

e. Use tilt steering wheel control lever to adjust tilt and steering wheel height (paragraph 2-3).

f. Turn on lights, as necessary (paragraph 2-2).

g. Select transmission gear (paragraph 2-13).

h. Move truck gradually by depressing accelerator.

CAUTION

During long engine idling periods, engine coolant temperature will fall below normal operating range. The incomplete combustion of fuel in a cold engine will cause crankcase dilution, formation of lacquer or gummy deposits on valves, pistons, and rings, and rapid accumulation of engine sludge.

i. Avoid unnecessary engine idling.

NOTE

- **If, during operation, Low Air Pressure warning light comes on, stop vehicle, shut down engine, and investigate cause.**
- **If tractor or trailer ABS light comes on while driving, vehicle braking system is still operational. Continue to operate vehicle in a safe manner. Notify unit maintenance when mission is complete.**

j. Check gages and indicators frequently.

k. Operate engine brakes as required (paragraph 2-2).

2-15. DRIVING (Con't).

l. Operate interaxle lockout, as required (paragraph 2-14).

m. Stop vehicle by applying long even pressure to service brakes. Do not pump brakes.

n. After vehicle is at a complete stop, place transmission in Neutral (N) and pull parking brake control knob OUT. Ensure parking brake light comes on.

WARNING

If vehicle is left with engine running, vehicle can move suddenly causing serious injury or death to personnel or damage to equipment.

o. If you must leave vehicle with engine running, DO NOT leave vehicle without doing the following:

(1) Ensure transmission is in Neutral (N).

(2) Apply truck parking brake and semitrailer brakes.

(3) Chock wheels and take any other steps to keep vehicle from moving.

2-16. SHUT DOWN ENGINE.

CAUTION

Improper engine shutdown could damage turbocharger.

a. Run engine at idle for four to five minutes.

b. Turn all accessories off (paragraph 2-2).

c. Move ignition switch to OFF position.

d. Perform *After* operation PMCS (Chapter 2, Section II).

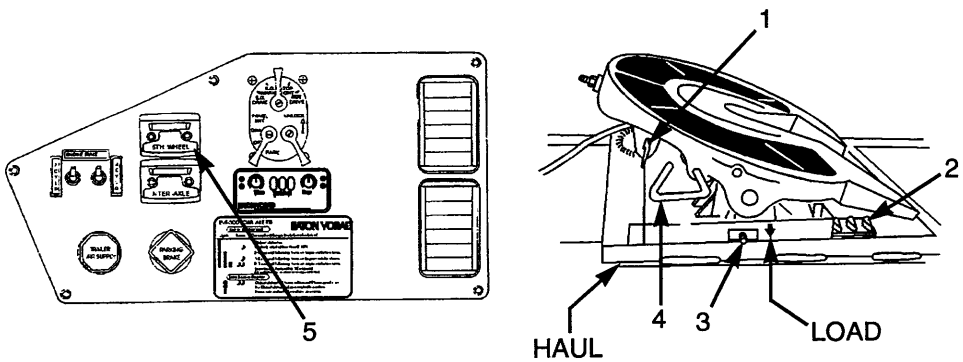
e. Place master battery switch to OFF.

2-17. OPERATE SLIDING FIFTH WHEEL.

CAUTION

- **The M915A4 is designed to be used with M871, M872, and M1062 semitrailers only. Other semitrailers may cause equipment damage.**
- **Semitrailer must be blocked and semitrailer brakes locked to prevent damage to tractor or semitrailer by uncontrolled sliding of fifth wheel.**
- **If towing M872 semitrailer, rear mud flaps must be removed and stowed in brackets provided. Failure to do so will cause equipment damage.**
- **Truck tractors have the capability to turn greater than 90°. Care must be taken to avoid hitting semitrailer with tractor when turning more than 90°.**
- **Operator must use caution when cresting hills which can use the truck tractor to have a nose down angle greater than 4° with respect to towed semitrailer. Damage to vehicle or loss of control could occur.**

a. Lock trailer brakes and/or chock trailer wheels.



b. Place fifth wheel slide control valve lever (5) in UNLOCK position to release two slide locking plungers (3). Ensure that plungers release.

c. Drive tractor slowly forward or backward to position fifth wheel.

d. After sliding to desired position, engage two slide locking plungers (3) by placing fifth wheel slide control valve lever (5) in LOCK position.

2-17. OPERATE SLIDING FIFTH WHEEL (Con't).

CAUTION

Do not operate vehicle if slide locking plungers are not fully engaged and landing gear is not fully retracted. This could result in damage to tractor, semitrailer, and landing gear.

e. Visually check that two slide locking plungers (3) are retracted and fully engaged. It may be necessary to leave semitrailer brakes locked and move tractor slightly to engage plungers in rack teeth (2).

f. If lowered, raise landing gear to fully retracted position.

2-18. COUPLE TO SEMITRAILER.

WARNING

Do not use semitrailer handbrake as primary brake to keep tension on coupling system. This will cause undue tension on brakes and coupling which could result in injury to personnel or damage to equipment. Prevent problems with slack in fifth wheel by using good braking habits and adjusting coupling and braking systems properly.

CAUTION

If towing M872 semitrailer, rear mud flaps must be removed and stowed. Failure to follow this caution may result in equipment damage.

a. Ensure that fifth wheel ramps are level with, or are slightly below, the angle of the pickup ramps.

WARNING

Use caution when coupling to semitrailer. BE ALERT for personnel in area. Ensure that hands, arms, and body are clear of potential pinch points. Failure to follow this warning may result in injury to personnel.

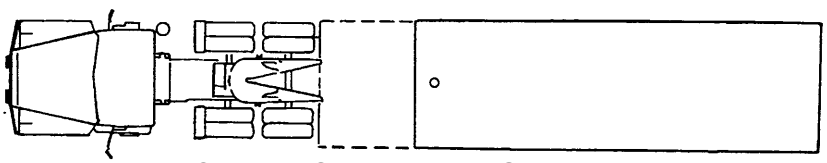
2-18. COUPLE TO SEMITRAILER (Con't).

CAUTION

Be careful not to run kingpin up fifth wheel ramps as this can damage kingpin and/or fifth wheel.

NOTE

- **Truck and semitrailer must be aligned.**
- **Use a ground guide if one is available.**



PROPER ALIGNMENT WITH SEMITRAILER

CAUTION

Fifth wheel lube plates and trailer kingpin plate must be clean and dry prior to coupling. Failure to follow this caution could damage fifth wheel and/or trailer.

b. Slowly back tractor under semitrailer kingpin plate. Stop when kingpin plate is touching guide ramps. Semitrailer kingpin should be centered as closely as possible in throat of fifth wheel.

c. Ensure that semitrailer is picked up with fifth wheel ramps. If kingpin comes in too high, it will not engage in fifth wheel correctly. Adjust semitrailer if needed.

NOTE

One 12-volt light cable and one 24-volt light cable are stored in tool box.

d. Connect air hoses and light cables. Push semitrailer air supply control knob IN (paragraph 2-2), open semitrailer supply valve, and set semitrailer control valve hand brake.

e. If semitrailer is ABS-equipped, connect ABS electrical cable.

CAUTION

Backing SLOWLY helps to prevent hitting too hard in coupling and damaging kingpin.

f. Back up slowly until fifth wheel locks firmly to kingpin.

2-18. COUPLE TO SEMITRAILER (Con't).

g. Check kingpin connection and fifth wheel slide locks by pulling tractor gently forward against locked semitrailer brakes or blocked wheels. As resistance is felt, select transmission shift selector Reverse (R) pushbutton and gently back tractor to verify fifth wheel slide locks in both directions. When resistance is felt, select transmission shift selector Neutral (N) pushbutton and set parking brake.

h. Verify that lock release handles are in.

i. Check semitrailer lights.

j. Stow wheel blocks.

k. Lift and secure semitrailer landing gear and stow float pads.

2-19. UNCOUPLE FROM SEMITRAILER.

WARNING

Use caution when uncoupling from semitrailer. BE ALERT for personnel in area. Ensure that hands, arms, and body are clear of potential pinch points. Failure to follow this warning may result in injury to personnel.

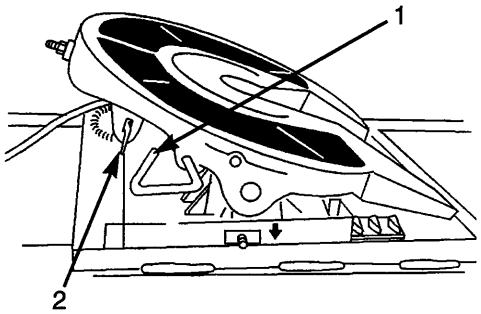
NOTE

- **Truck and semitrailer must be aligned.**
- **Use ground guide if one is available.**

a. Stop truck and semitrailer.
b. Shift transmission into Neutral (N) (paragraph 2-13).
c. Block wheels as required.
d. Pull semitrailer air supply valve OUT.
e. Apply parking brake (paragraph 2-2).
f. Place float pads under semitrailer landing gear and lower landing gear.
g. Set semitrailer hand brake control valve and close semitrailer air supply valve.
h. Disconnect and stow semitrailer air supply lines and intervehicular cable.
i. If connected, disconnect and stow ABS electrical cable.
j. Pull secondary lock release handle (2) out and lift to engage catch.
k. Pull primary lock release handle (1) out.
l. Release parking brake and slowly pull forward until semitrailer clears fifth wheel.

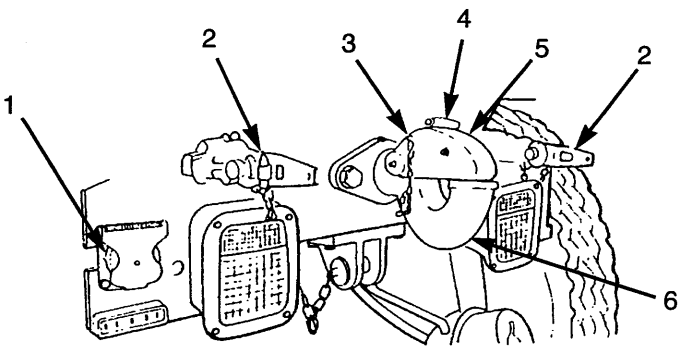
2-19. UNCOUPLE FROM SEMITRAILER (Con't).

m. Stop and set parking brake (paragraph 2-2).



2-20. PINTLE TOWING PROCEDURES.

a. Remove cotter pin (3), engage latch (4), and lift lock (5) to open position.
b. Connect trailer to pintle hook (6).
c. Push lock (5) down ensuring latch (4) engages and install cotterpin (3).
d. Connect intervehicular electric cable from receptacle (1) on rear of vehicle to trailer.
e. Conned air hoses from trailer to quick-disconnect couplings (2) at rear of vehicle.
f. Connect safety chains.



WARNING

Failure to completely turn ON or OFF air cutoff valve will cause loss of brakes on trailer or truck.

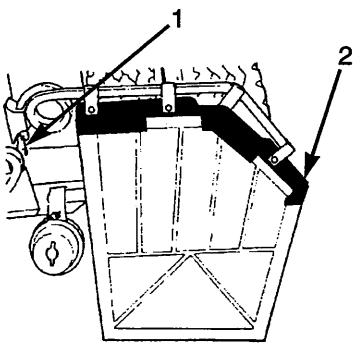
g. Open trailer air supply valve on hosetenna behind cab and push in trailer air supply knob on instrument panel.

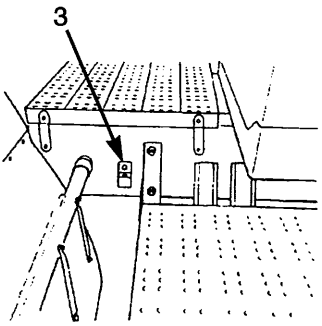
2-21. MUD FLAP STOWAGE.

CAUTION

If towing M872 semitrailer, rear mud flaps must be removed and stowed in brackets. Failure to follow this caution may result in equipment damage.

a. Remove lock pin (1).
b. Pull up on mud flap (2) and remove. Tap spring upward with hammer as required.
c. Place mud flap (2) in stowage bracket (3) and insert lock pin (1).
d. When towing operations am complete, remove lock pin (1) and mud flap (2) from stowage bracket (3).
e. Position mud flap (2) on vehicle and install lock pin (1).





2-22. OPERATE AIR CONDITIONER.

a. If cab is hot inside, open windows and allow hot air to vent.
b. Move mode control lever (2) to VENT and turn fan switch (1) to OFF position.
c. Start engine (paragraph 2-12).

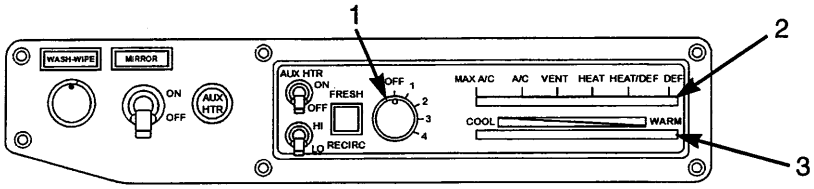
NOTE

If outside air is dusty or smoky, mode control lever should be set to MAX A/C and windows and vent closed to prevent drawing dust or smoke into cab.

d. Move mode control lever (2) to A/C. With control at A/C, fresh air is drawn into cab. With control at MAX A/C, air inside cab is recirculated.

2-22. OPERATOR AIR CONDITIONER (Con't).

e. Move temperature control lever (3) to COOL.



f. Turn fan switch (1) to 4 (highest speed).
g. As soon as cool air is flowing from dashboard outlets, close windows.
h. Adjust temperature control lever (3) and fan switch (1) as required.

2-23. OPERATE PORTABLE FIRE EXTINGUISHER.

WARNING

Discharging large quantities of dry chemical fire extinguisher in the cab may result in temporary breathing difficulty during and immediately after the discharge event. If at all possible, discharge fire extinguisher from outside the cab. Ventilate cab thoroughly prior to reentry.

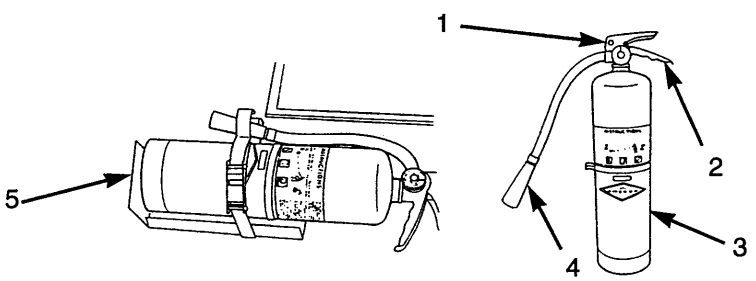
NOTE

This is a type B and C fire extinguisher. Use on oil and electrical fires only.

a. Remove fire extinguisher (3) from bracket (5) located between passenger seat and shift tower.

b. Hold fire extinguisher (3) upright. Point nozzle (4) toward base of fire and pull safety pin (1).

c. Squeeze lever (2), discharging chemical at base of fire. Use a side-to-side motion to spread chemical. After using fire extinguisher, notify Unit Maintenance.



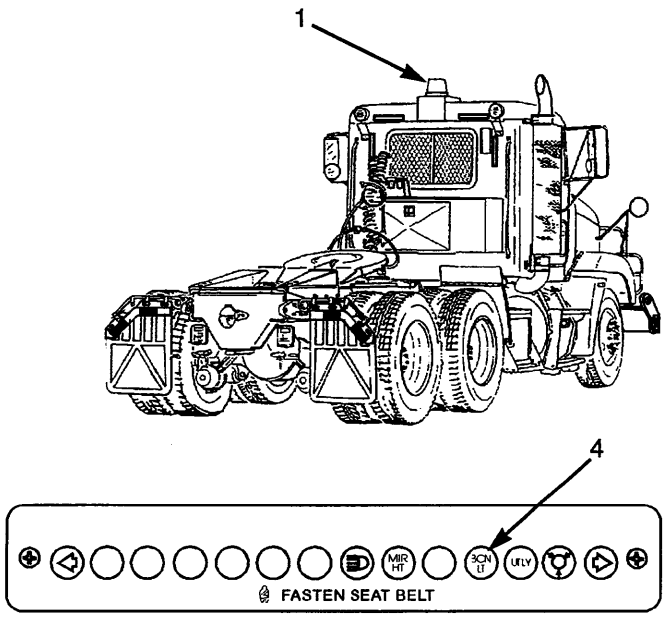
2-24. OPERATE LIGHTS.

NOTE

If engine is not running, ignition switch must be in ON position for lights to operate.

a. **Operate Beacon Warning Light.**

(1) Turn ignition on and main light switch to STOP LIGHT.
(2) Move beacon light switch up to turn on beacon warning light (1). BCN LT indicator (4) should come on.
(3) Move beacon light switch down. BCN LT indicator (4) should go off.
(4) Place ignition key in OFF position.



2-24. OPERATE LIGHTS (Con't).

b. **Operate Work Lights.**

(1) Connect work light plug into receptacle (3) on either side of cab.

(2) Place ignition key in ON position and main light switch in STOP LIGHT or SER DRIVE position.

(3) Position ignition key in OFF position and disconnect work light plug from receptacle (3).

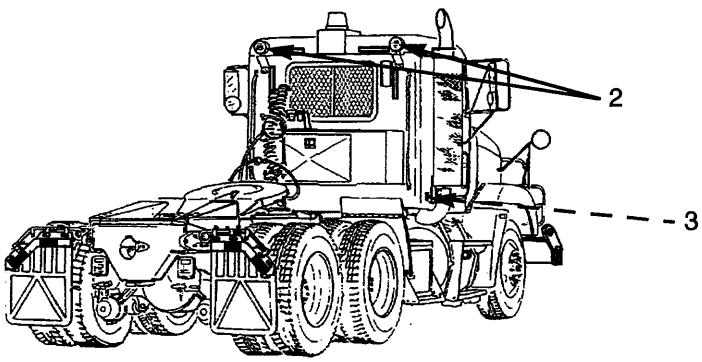
c. **Operate Utility Lights.**

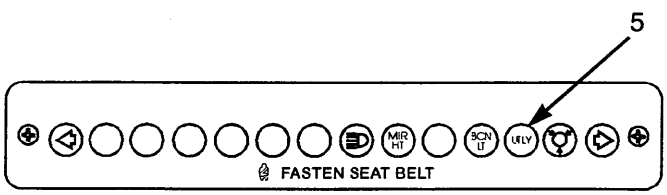
(1) Place ignition key in ON position and main light switch in STOP LIGHT or SER DRIVE position.

(2) Move utility light switch up to turn utility lights turn utility lights (2) on. UTLY light indicator (5) should come on.

(3) Move utility light switch down. UTLY light indicator (5) should go off. Place ignition key in OFF position.

(4) Place ignition key in OFF position.

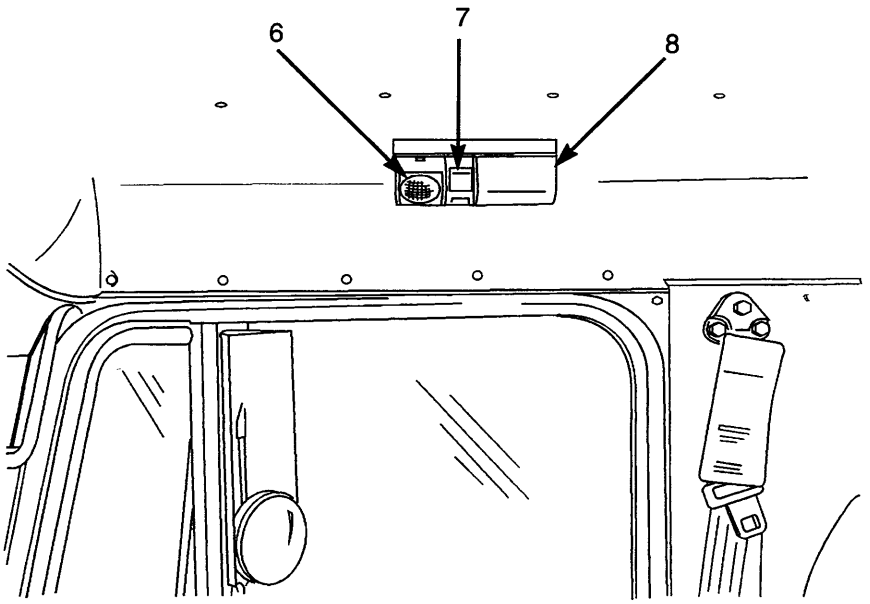




2-24. OPERATE LIGHTS (Con't).

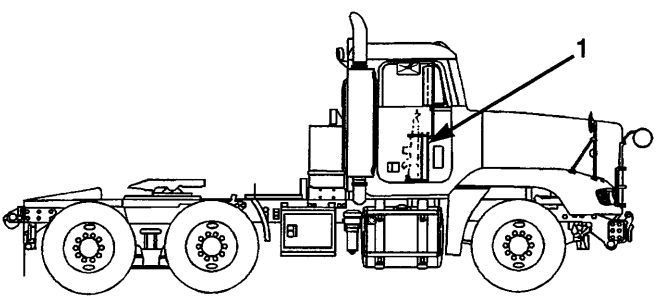
d. **Operate Interior Lights.**

(1) Place ignition key in ON position.
(2) Slide thumb switch (7) inboard to turn on domelight (8) only.
(3) Slide thumb switch (7) outboard to turn on domelight (8) and map light (6).
(4) Place ignition key in OFF position.



2-25. RIFLE MOUNTING KIT.

The rifle mounting kit (1) is located next to shift control.



2-26. OPERATE HEATER AND DEFROSTER.

NOTE

Heater and defroster obtain heat from engine as it runs. If engine is not running, heat will not be available for these functions.

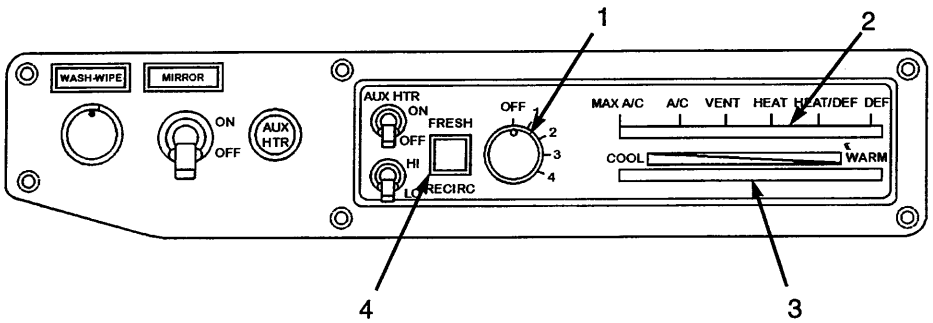
a. Start engine (paragraph 2-12) and bring truck to normal operating temperature.

b. Slide mode control lever (2) to desired position.

c. Slide temperature control lever (3) to desired temperature range.

d. Rotate fan switch (1) to adjust fan speed from slower to faster, as desired.

e. Press FRESH/RECIRC air button (4) to desired setting.



2-27. PREPARATION FOR TRANSPORT.

WARNING

- **Lifting cables, chains, hooks, and slings used for lifting truck must be in good condition and of suitable capacity. Failure to follow this warning may result in injury or death to personnel and damage to equipment.**

- **Improper use of lifting equipment and improper attachment of cables to vehicle can result in serious personnel injury and equipment damage. Observe all standard rules of safety.**

a. To lift vehicle, attach suitable lifting device to lifting shackles. Lift vehicle slowly and have observers watch for any signs of cable failure, unusual load shifts, and obstructions.

b. During transport, secure vehicle by attaching cables to tiedown points.

2-27. PREPARATION FOR TRANSPORT (Con't).

CAUTION

- **Front extendable bumper is for overhead sling use only. It is not intended to be used to tow or extract a mired vehicle. DO NOT extend the bumper more than one adjustment hole. ALWAYS have both pins engaging the bumper and bumper extension on each side. Failure to follow this caution could result in damage to equipment.**

- **To avoid damage to cab, always extend bumpers when using a four point sling lift.**

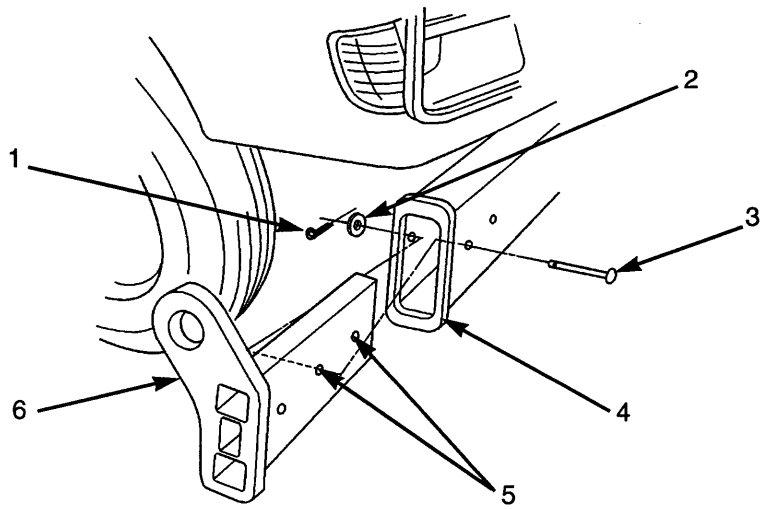
NOTE

Both left and right side bumper extensions are adjusted in the same manner. Right side is shown.

c. Remove two retaining pins (1), two flat washers (2), and two straight pins (3) from front bumper (4).

d. Position bumper extension (6) in front bumper (4) so straight pins (3) will engage two inside adjustment holes (5) on bumper extension.

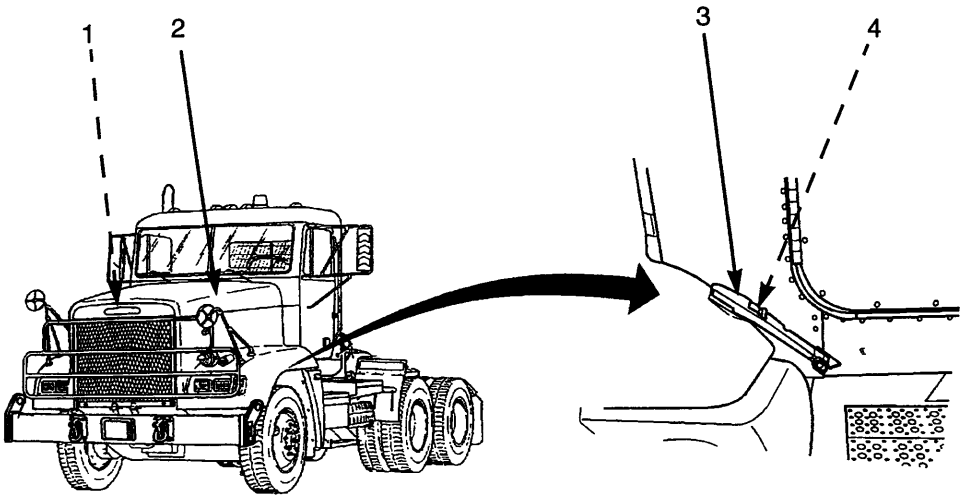
e. Install two straight pins (3), two flatwashers (2), and two retaining pins (1) in front bumper (4).



2-28. OPERATE TILTABLE HOOD.

a. **Open Tiltable Hood.**

(1) Unlock hood retaining strap (3) from hood locking bracket (4).
(2) Repeat step (1) for opposite side.
(3) Grasp hand slot (1) at top-front center of hood (2) and rotate hood to open position.

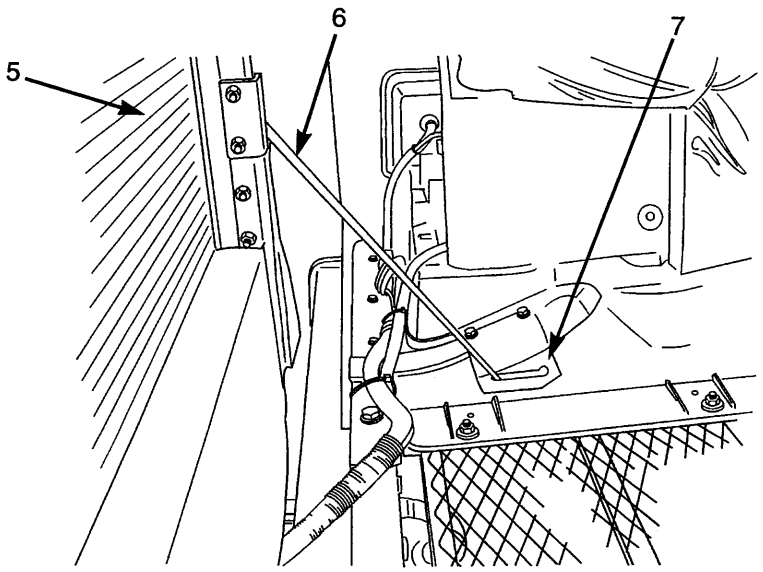


2-28. OPERATE TILTABLE HOOD (Con't).

WARNING

ALWAYS install hood props after opening hood. Failure to follow this warning could result in severe injury to personnel.

(4) On side of radiator (5), remove hood prop rod (6) from bracket.
(5) Rotate hood prop rod (6) froward and install rod end in slot provided on hood bracket (7).
(6) Repeat steps (4) and (5) for opposite side.

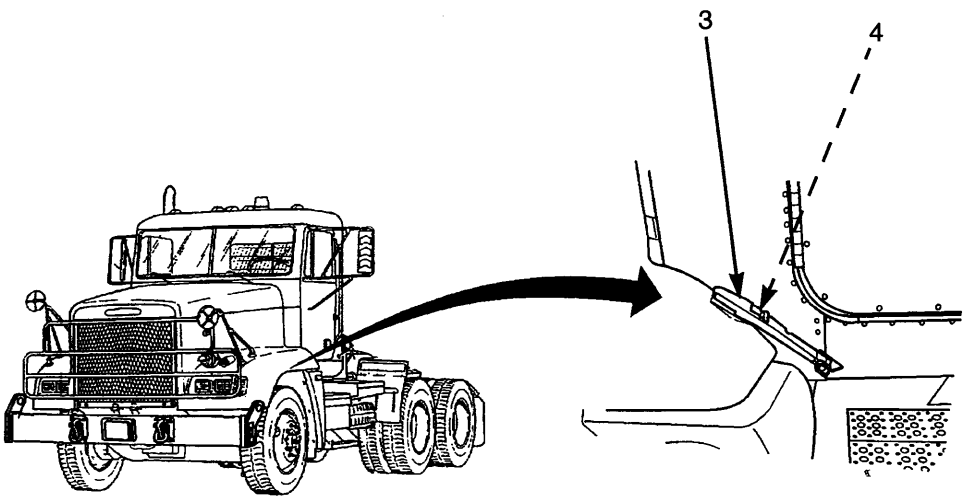


b. **Close Tiltable Hood.**

(1) Remove hood prop rod (6) end from hood bracket (7).
(2) Rotate hood prop rod (6) rearward and secure in bracket on side of radiator (5).
(3) Repeat steps (1) and (2) for opposite side.
(4) Grasp hand hold (1) at top front center of hood (2) and lower hood to closed position.

2-28. OPERATE TILTABLE HOOD (Con't).

(5) Lock retaining strap (3) on hood locking bracket (4).
(6) Repeat step (5) for opposite side.



Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-29. GENERAL.

WARNING

These vehicles have been designed to operate safely and efficiently within the limits specified in this TM. Operation beyond these limits is prohibited in accordance with AR 70-1 without written approval from: Commander U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-DSA-CS, Warren, MI 48397-5000.

a. This section contains instructions for safely operating the M915A4 under unusual conditions. In addition to normal preventive maintenance, special care must be taken to keep truck operational in extreme temperatures and other environmental conditions.

b. Refer to FM 21-300 and FM 21-305 for additional information.

2-30. SLAVE START TRUCK.

WARNING

- **When slave starting truck, use NATO slave cable that DOES NOT have loose or missing insulation.**
- **DO NOT proceed if suitable cable is not available.**
- **DO NOT use civilian-type jumper cables.**

CAUTION

- **If "dead" truck's engine does not start within 30 seconds, release engine start button. Wait three to five minutes before repeating procedure to prevent overheating the starter and damaging batteries of "live" vehicle. If engine does not start after several attempts, Unit Maintenance must perform additional maintenance.**
- **Under no circumstances can the truck be started by being towed or pushed. Failure to follow this caution will cause damage to transmission.**

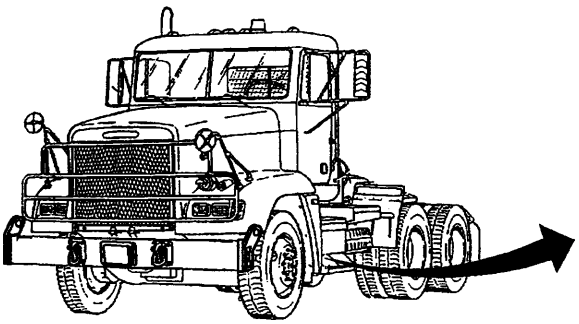
NOTE

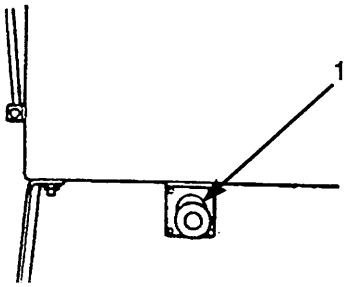
- **Before slave starting, ensure that checks have been made to determine whether problem is low or dead battery.**
- **If vehicle other than another M915A4 is used to slave start truck, refer to Operator's Manual for that vehicle for any special slave starting procedures.**

a. **Normal Slave Starting.**

(1) Connect NATO slave cable to receptacle (1) on "dead" vehicle.
(2) Connect other end of NATO slave cable to receptacle on "live" vehicle.
(3) Start engine of "live" vehicle and run at 1000 rpm for 15-20 minutes. Stop engine and remove NATO slave cable from receptacle.
(4) Start engine of "dead" vehicle (paragraph 2-12). If engine will not start, notify Unit Maintenance.

2-30. SLAVE START TRUCK (Con't).





b. **Emergency Slave Starting.**

(1) Connect NATO slave cable to receptacle (1) on "dead" vehicle.
(2) Connect other end of NATO slave cable to receptacle on "live" vehicle.
(3) Start engine of "live" vehicle and run at 700 rpm.
(4) Start engine of "dead" vehicle (paragraph 2-12) and allow both vehicles to idle for five to ten minutes. If engine will not start, notify Unit Maintenance.
(5) Remove NATO slave cable from receptacle on "live" vehicle.
(6) Remove NATO slave cable from receptacle (1) on "dead" vehicle.

2-31. TOW TRUCK.

a. **General.**

(1) Notify Unit Maintenance to send recovery vehicle and tools required to remove propeller shafts.
(2) Refer to FM 21-305 for general guidelines on vehicle recovery and use of warning kits and signals. Refer to FM 21-305 and FM 20-22 for additional information.

CAUTION

Propeller shafts must be disconnected and interaxle lockout control valve switch must be in UNLOCK position before towing tuck with all wheels on the ground. Failure to follow this caution may result in transmission damage.

(3) When towing truck with front axle and rear tandem on ground, ensure that interaxle lockout control valve lever is in UNLOCK position. Ensure that universal joint on rear of propeller shaft (at the input to the forward-rear axle) is disconnected and tied up to vehicle undercarriage.

2-31. TOW TRUCK (Con't).

(4) When front axle of truck being towed is lifted off the ground, disconnect universal joint on propeller lever (at the input to the forward-rear axle) and tie it up to vehicle undercarriage.

(5) When rear tandem axles of truck being towed are lifted off ground, ensure interaxle lockout control valve lever is in UNLOCKED position.

b. **Towing Procedures.**

WARNING

Brakes will be released when air is applied to a disabled vehicle. DO NOT connect air lines to a disabled vehicle without blocking wheels and connecting tow bar between vehicles. Failure to follow this warning could result in death or injury to personnel and damage to equipment.

NOTE

Towing vehicle speed should not exceed 15 mph on primary roads and 8 mph on secondary roads. For cross-country towing, all tires of disabled truck should be on ground.

(1) Install medium duty tow bar at towing vehicle pintle and disabled truck towing eyes. Ensure tow bar is long enough to allow complete turning radius.

(2) Connect air pressure hoses between disabled truck and towing vehicle.

(3) Release parking brakes and turn appropriate lights on.

2-32. CAGE AND UNCAGE BRAKES.

a. **Cage Brakes.** In the event of an air pressure loss, spring brakes on the tandem rear axles will apply the brakes. If the vehicle must be towed and there is not enough air system pressure to compress the power spring in the spring brake chambers to release the brakes, compress them manually. Each vehicle has four spring brakes.

WARNING

- **Brake chamber contains spring under great pressure. To prevent personnel injury, never work directly behind chamber. If caging bolt will not engage properly, spring may be broken.**
- **Do not remove clamp ring around spring brake chamber. It is under tension and can cause personnel injury if released.**
- **When spring brakes are applied, vehicle will stop quickly which could result in injury to personnel. Also, vehicle cannot be driven again until malfunction is repaired and enough air supply is present for operation of service brakes.**

2-32. CAGE AND UNCAGE BRAKES (Con't).

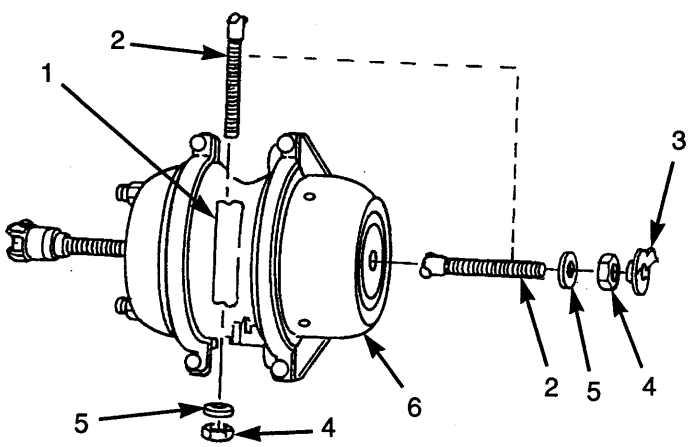
WARNING

When caging brakes, block wheels to keep truck from moving when brakes are released. Failure to follow this warning may result in death or injury to personnel or damage to equipment.

(1) Block wheels.
(2) Remove nut (4), washer (5), and release stud (2) from stowage pocket (1).
(3) Remove cap (3) from spring chamber (6).
(4) Insert cross-pin end of release stud (2) into opening where cap (3) was removed.
(5) To engage cross-pin, rotate release stud (2) until cross-pin end goes into slot inside of spring chamber (6). Turn release stud right 1/4 turn; cross-pin is now engaged.
(6) Install washer (5) and nut (4) on release stud (2).
(7) Tighten nut (4) until approximately 3 in. of release stud (2) shows above nut. Spring brake is fully released.

b. **Uncage Brakes.**

(1) Block wheels.
(2) Remove nut (4) and washer (5) from release stud (2).
(3) Turn release stud (2) to left 1/4 turn and remove release stud from spring chamber (6).
(4) Install cap (3) in spring chamber (6).
(5) Insert release stud (2) into stowage pocket (1) and install washer (5) and nut (4) on release stud.



2-33. OPERATE IN EXTREME COLD.

a. **General.**

(1) Extreme cold causes many problems:
(a) Lubricants thicken or congeal.
(b) Batteries may freeze or lose their electrical efficiency.
(c) Fuel may not readily atomize for combustion.
(d) Various materials will become hard, brittle, and easily damaged.
(e) The cooling system requires adequate protection from extreme cold.
(f) Fuels, lubricants, and antifreeze compounds require special storage, handling, and use.

(2) Refer to FM 9-207 for additional information.

(3) Arctic Heater Kit. All vehicles assigned to arctic regions are equipped with an auxiliary arctic heater kit which protects vehicle systems from freeze damage, enables easier starting by providing engine block preheating, and boosts cab heat output. Refer to subparagraph b for operation of arctic heater.

(4) Starting Out.

(a) Be careful when you first start your vehicle. Use cold weather starting procedure (paragraph 2-12) and allow engine time to reach operating temperature range of 120-140°F (48-59°C). Be alert that tires may be frozen to ground.

(b) Start driving very slowly for about 100 yards (91.4 m). Be alert for signs that tires may have flat spots or that one or more brake shoes may be frozen and require preheating. Notify Unit Maintenance as required.

(5) Parking.

(a) If vehicle will be parked for a short period, park in a sheltered area out of wind. If shelter is not available, park vehicle so it does not face into the wind.

(b) If vehicle will be parked for a long shutdown period, try to park on high ground and use planks or brush to make a raised and relatively dry surface. Keep tires out of snow, water, ice, and mud, if possible.

(c) Clean snow, ice, and mud from vehicle as soon as possible after shutdown.

(d) If vehicle will be parked for a long period of time, have Unit Maintenance remove and store batteries. Fill fuel tank to guard against condensation and drain any accumulated water from air reservoirs and fuel filters.

(e) Ensure tires are properly inflated.

2-33. OPERATE IN EXTREME COLD (Con't).

b. **Operate Arctic Heater (if equipped).**

NOTE

- **Arctic heater is used to provide engine preheating for engine startup in extreme cold. It is also used to provide personnel heat. When heater is required to preheat engine coolant and engine block before startup, it should be turned on 1/2-1 hour before engine is started.**

- **Auxiliary heater (AUX HTR) indicator light illuminates only when burner is lit. Indicator light turns on and off automatically.**

(1) Place mode control lever (3) to HEAT.

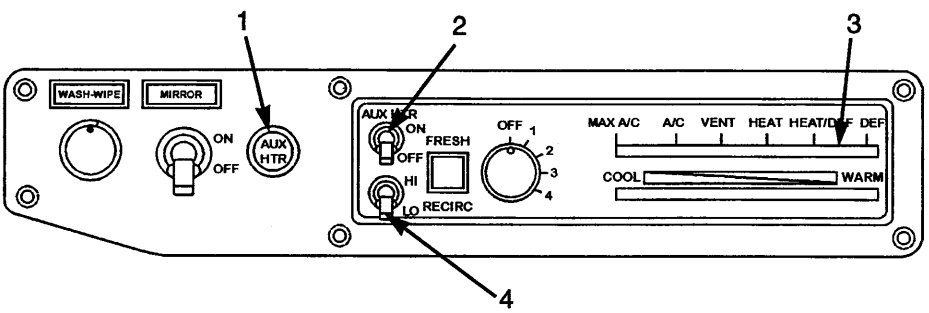
(2) Place AUX HTR switch (2) in ON position. Green light in switch will illuminate. AUX HTR light (1) will light when combustion starts after approximately 50 seconds.

NOTE

If HI-LO switch is set to HI position, heater will automatically switch to low heat when temperature of coolant at heater inlet reaches 176°F (80°C). LO position is suitable when heater operates over an extended period.

(3) Place HI-LO switch (4) to desired setting.

(4) To turn heater off, place AUX HTR switch (2) to OFF position. Heater burner will stop and AUX HTR light will go out within a few minutes. Blower will continue to run for approximately 90 seconds.



2-34. OPERATE IN EXTREME HEAT.

a. **General.** During very hot weather, driving procedures may require altering to prevent vehicle overheating. Avoid continuous high speeds, long, hard pulls, and continuous operation in soft terrain.

2-34. OPERATE IN EXTREME HEAT (Con't).

b. **Driving Vehicle.**

(1) Check water temperature gage and stop if temperature is unusually high. Allow vehicle to cool down.

(2) Check cooling system, air cleaner air cleaner restriction indicator, engine oil level, and radiator fins frequently. Perform necessary services and notify Unit Maintenance of any unusual gage readings or problems.

(3) Notify Unit Maintenance to shorten differential oil change interval.

c. **Parking Vehicle.**

(1) Park vehicle under cover if possible. If shelter is not available, cover vehicle with tarpaulins. If there aren't enough tarps to cover entire vehicle, arrange tarps around engine compartment and over radiator to keep sand and dust out. Cover window glass to protect against sand blasting.

(2) Ensure all tires are inflated to proper pressure.

(3) Check frequently for rust and fungus growth. Clean and lubricate vehicle to help prevent deterioration.

2-35. OPERATE IN MUD OR SOFT SURFACES.

NOTE

- **M915A4 is equipped with No Spin® automatic locking positive traction differential on the forward-rear axle. The No Spin® differential eliminates individual wheel spinout for better traction.**
- **When locking system is engaged, driving axles receive equal torque.**

a. Before entering mud or other soft surfaces, check conditions and select appropriate transmission gear range. Place interaxle lockout control valve lever in LOCK position. Enter soft area at a medium speed for gear range selected.

b. Maintain steady pressure on accelerator pedal to keep vehicle rolling until solid ground is reached. Do not accelerate to point where wheels spin and do not stop, if possible.

c. If vehicle gets stuck, try to pull out slowly in a low gear. Boards, brush, or similar materials may be placed under tires to provide traction.

d. When vehicle reaches hard surface, place interaxle lockout control valve lever in UNLOCK position.

e. Notify Unit Maintenance to clean and inspect propeller shafts for proper lubrication.

2-36. FORDING.

a. **General.**

(1) Maximum fording depth is 20 in. (50.8 cm).

(2) Ford to maximum depth for short periods and short distances only. Vehicles can ford to maximum depth for five minutes without requiring maintenance to continue operation.

b. **Before Fording.**

(1) Check bottom surface of water to ensure it is hard enough to be forded without exceeding maximum fording depth.

(2) Ensure that engine is operating properly.

(3) Lubricate unpainted surfaces to guard against rust and deterioration.

(4) Place interaxle lockout control valve lever in LOCK position.

c. **During Fording.**

(1) Place transmission in a low gear (paragraph 2-13) and enter water slowly.

(2) Ford at speeds of 3-4 mph (5-6 kph).

d. **After Fording.**

(1) When vehicle emerges from water, apply brakes a few times to dry brake linings. Ensure that brakes are working properly before driving at normal speeds.

(2) Place interaxle lockout control valve lever in UNLOCK position.

(3) Allow engine to run for awhile to drive out any accumulated water.

(4) Drain or dry any area where water has accumulated.

(5) Check all fluids for signs of contamination and for proper levels. (Appendix F).

(6) If vehicle has been operated in salt water, rinse undercarriage immediately. Allow exterior to dry and check for evidence of salt accumulation. Use a clean, damp cloth to immediately remove all salt accumulation.

(7) Notify Unit Maintenance that after-fording lubrication is required.

2-37. OPERATE IN SANDY OR DUSTY CONDITIONS.

NOTE

- **M915A4 is equipped with No Spin® automatic locking positive traction differential on the forward-rear axle. The No Spin® differential eliminates individual wheel spinout for better traction.**

- **When locking system is engaged, driving axles receive equal torque.**

a. Maintain steady, even movement with transmission in lower gears and interaxle lockout control valve lever in LOCK position. Try to keep vehicle rolling without straining engine and powertrain.

b. If vehicle gets stuck, reduce tire pressure to gain additional traction. Reduce pressure in front tires to 50 psi and pressure in rear tires to 45 psi (302 kPa). Inflate tires to normal pressures once vehicle is freed.

c. If vehicle bogs down, after tire pressure has been reduced, place boards, brush, canvas, or similar materials under and in front of tires after shoveling a clear path ahead of each tire. This should improve traction.

d. If these efforts fail and it becomes evident that vehicle will not free itself, have another vehicle tow stuck vehicle (paragraph 2-30).

e. Whenever operating in sandy or dusty areas, you should:

(1) Make sure each tire has a valve cap.
(2) Check engine and transmission temperature and engine oil pressure frequently.
(3) If vehicle overheats, stop and find out why. Service or notify Unit Maintenance, as necessary.
(4) Make sure engine oil filler tube and transmission fluid filler tube are cleaned before dipsticks are removed to check fluid levels. Clean accumulations of sand and dirt from around any fluid filler locations before checking or adding fluids.
(5) Clean spouts of fuel containers and areas around filler caps on fuel tanks before adding fuel. Under extremely sandy or dusty conditions, filter fuel when filling tanks.
(6) Cover window glass to protect against sand blasting.
(7) Notify Unit Maintenance to clean, inspect, and lubricate propeller shafts more frequently.

2-38. OPERATE IN WOODS OR ON ROCKY TERRAIN.

NOTE

- **M915A4 is equipped with No Spin® automatic locking positive traction differential on the forward-rear axle. The No Spin® differential eliminates individual wheel spinout for better traction.**
- **When locking system is engaged, driving axles receive equal torque.**

a. Ensure vehicle can clear any obstructions and try to avoid low hanging tree limbs which might cause damage.

b. Ensure spare wheel and tire assembly is available.

2-39. OPERATE ON SNOW OR ICE.

NOTE

- **M915A4 is equipped with No Spin® automatic locking positive traction differential on the forward-rear axle. The No Spin® differential eliminates individual wheel spinout for better traction.**
- **When locking system is engaged, driving axles receive equal torque.**

a. **General.**

(1) **Driving.**

(a) Accelerate slowly to avoid spinning tires.

(b) Drive at slower speeds.

(c) Give signals sooner.

(d) Apply brakes sooner to give early warning of intention to stop. This will also help to avoid skidding.

(e) Maintain double the normal distance from the vehicle ahead.

(f) Keep windshields, windows, mirrors, headlights, stoplights, and body lights clean and free of snow and ice. Use defroster to help keep glass free of snow and ice.

(g) Descend moderate grades in gear normally used for ascending same grade. On steep or very slippery grades, place interaxle lockout control valve lever in LOCK position and use at least one gear lower.

(h) After driving through slush or water, drive slowly and test brakes. Keep driving slowly, maintaining moderate pressure on service brake pedal to create a slight drag. When brakes are dry and operating properly, resume normal speed.

2-39. OPERATE ON SNOW OR ICE (Con't).

(i) If a difficult stretch of road approaches, stop and inspect it carefully before driving on it. Select transmission gear range that best suits road condition and place interaxle lockout control valve lever in LOCK position.

NOTE

Shifts from Neutral (N) to Drive (D) or to Reverse (R) cannot occur if engine speed is above idle. Reduce engine speed to idle and shift again.

(j) If vehicle becomes stuck or tires start spinning, it may be possible to rock vehicle out. Lock interaxle lockout and shift transmission to D (Drive). Apply light, steady throttle (never full throttle). When vehicle has moved as far as it will go, apply service brakes and allow engine to return to idle speed. Shift transmission to R (Reverse). Again, apply light, steady throttle and allow vehicle to move rearward as far as it will go. Apply service brakes and allow engine to return to idle speed. This procedure can be continued as long as each directional shift moves vehicle a greater distance. If not, vehicle should be towed from its position.

(2) **Stopping.**

(a) Ease up on accelerator, leaving vehicle in gear.

(b) Apply service brakes lightly and evenly DO NOT pump service brake pedal.

WARNING

Do not use engine brake if road surfaces are slippery. Using engine brake on wet, icy, or snow covered roads could result of loss of vehicle control. Failure to follow this warning could result in death or injury to personnel or damage to equipment

(c) Always avoid sudden braking and use of engine brake on slick roads.

CAUTION

Care must be exercised if tractor or trailer ABS light comes on while driving, possibly indicating an ABS malfunction. Although the regular/normal vehicle system is still fully operational, you should continue at a speed no greater than 40 mph (64 kph), until the mission is complete. When the mission is complete, report to Unit Maintenance to clear the ABS fault and restore full ABS capabilities.

(d) During emergency or reduced traction stops, press brake pedal fully until vehicle comes to a safe stop. DO NOT PUMP brake pedal. With brake pedal fully depressed, ABS will control all wheels to provide steering control and a reduced braking distance.

2-39. OPERATE ON SNOW OR ICE (Con't).

(3) **Parking.** If parking on icy, slushy wet, or muddy surfaces, place boards, brush, or other materials that will provide traction underneath tires. This will guard against tires freezing to the ground or becoming pocketed in ice, and will provide some traction when vehicle is started and moving again.

b. **Install Tire Chains.**

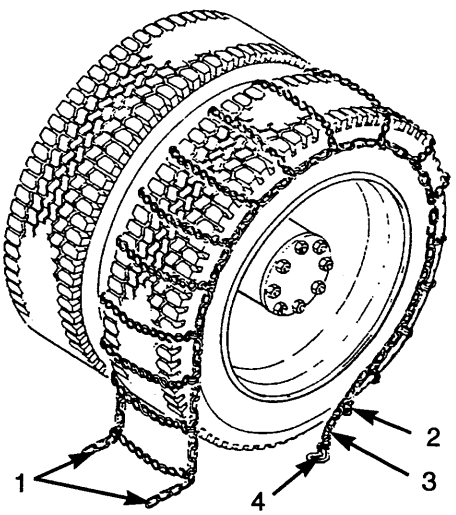
(1) Lay out chains flat on ground alongside tire to be mounted. Untangle any cross chains.

(2) Open all cams (4) (open meaning longest spacing).

(3) Pick up rear side chains (1) (no cams) and place over top of tire.

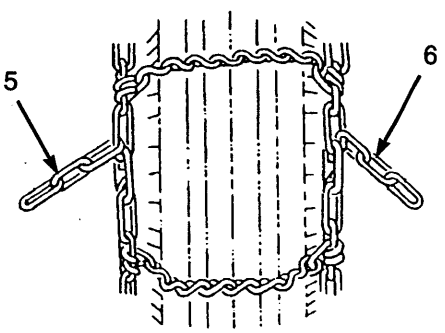
(4) Tuck last crossmember (2) against bottom of tire with loose side chain (3) sticking out away from tire.

(5) Roll vehicle in direction of last crossmember (2) (approximately 1/4 tire revolution).



(6) Pull inside side chain (5) snug and hook into appropriate link to hold snug.

(7) Pull outside side chain (6) snug and hook.



2-39. OPERATE ON SNOW OR ICE (Con't).

NOTE

Hooks must be even. Same number of loose links must appear on each side of chain. If not even, loosen outside hook and rehook both inside and outside hooks until they are even.

(8) Close cams (4) by inserting key (7) in slot and rotate 180 degrees clockwise. Start with cam closes to side chain hook.

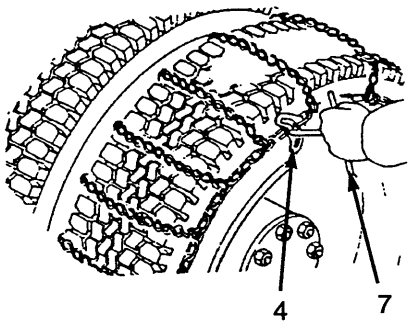
NOTE

All four cams should not have to be locked for chain to be tight.

(9) If additional tightening is required, tighten cam on opposite side of tire. Continue tightening cams as required.

(10) If all four cams are tight, loosen all four cams and resnug side chain at fastener hook until no more than three cams require adjustment.

(11) Drive approximately 1/2 mile and readjust chains as required.



CHAPTER 3
MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

3-1. GENERAL.

a. Lubrication instructions are in Appendix F of this manual.

b. All lubrication instructions are mandatory.

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Section II. TROUBLESHOOTING PROCEDURES

3-2. GENERAL.

a. This section provides information for identifying and correcting malfunctions which may develop while operating the M915A4.

b. The Troubleshooting Symptom Index in paragraph 3-4 lists common malfunctions which may occur and refers you to the proper page in Table 3-1 for a troubleshooting procedure.

c. If you are unsure of the location of an item mentioned in troubleshooting, refer to paragraph 1-10 or Chapter 2, Section I.

d. Before performing troubleshooting, read and follow all safety instructions found in the Warning Summary at the front of this manual.

e. This section cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed, or is not corrected by the listed corrective actions, notify your supervisor.

f. When troubleshooting a malfunction:

(1) Locate the symptom or symptoms in paragraph 3-4 that best describe the malfunction.

(2) Turn to the page in Table 3-1 where the troubleshooting procedures for the malfunction in question are described. Headings at the top of each page show how each troubleshooting procedure is organized: MALFUNCTION, TEST OR INSPECTION (in step number order), and CORRECTIVE ACTION.

(3) Perform each step in the order listed until the malfunction is corrected. DO NOT perform any maintenance task unless the troubleshooting procedure tells you to do so.

3-3. EXPLANATION OF COLUMNS.

The columns in Table 3-1 are defined as follows:

a. **MALFUNCTION.** A visual or operational indication that something is wrong with the equipment.

b. **TEST OR INSPECTION.** A procedure to isolate the problem in a system or component.

c. **CORRECTIVE ACTION.** A procedure to correct the problem.

3-4. TROUBLESHOOTING SYMPTOM INDEX.

3-4. TROUBLESHOOTING SYMPTOM INDEX (Con't).

Table 3-1. Troubleshooting.

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

AIR SYSTEM AND BRAKES

1. AIR RESERVOIR PRESSURE LOW (WARNING LIGHT AND BUZZER ARE ON).

Step 1. Check whether air reservoir draincocks are closed.

Close draincocks.

Step 2. If vehicle is not coupled to a semitrailer, check position of trailer air supply control knob.

Pull knob out (OFF).

Step 3. Start engine (paragraph 2-12) and check for air leaks at air reservoirs, hoses, fittings, and intervehicular air hose connections.

If air leaks are present, notify Unit Maintenance.

Step 4. Perform semitrailer troubleshooting.

2. AIR SYSTEM LOSES PRESSURE DURING VEHICLE OPERATION OR LOW AIR PRESSURE WARNING LIGHT AND BUZZER COME ON DURING VEHICLE OPERATION.

NOTE

Any change in pressure on brake pedal will cause a change in air pressure reading.

Step 1. Ensure trailer air supply control knob is pulled out (OFF). Operate engine until warning light and buzzer go off and release parking brake. Stop engine and note reservoir pressure. Fully press and hold service brake pedal for two minutes. Have crewmember check for leaks. Reservoir pressure loss during two minute period should not exceed 5 psi (34 kPa).

Close air reservoir draincocks. If leaks are present, notify Unit Maintenance.

NOTE

Any change in pressure on brake pedal will cause a change in air pressure reading.

Step 2. Push trailer air supply control knob in (ON) to charge semitrailer air reservoirs and repeat step 1. Have crewmember check semitrailer for leaks. Pressure loss should not exceed 5 psi (34 kPa) in two minutes.

Table 3-1. Troubleshooting (Con't).

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

If air leaks are present or reservoir pressure loss exceeds 5 psi (34 kPa) in two minutes, troubleshoot semitrailer.

3. TRAILER BRAKES WILL NOT APPLY WHEN PEDAL OR HAND CONTROL ON STEERING COLUMN IS USED.

Check intervehicular air hoses for proper connections to semitrailer.

Connect air hoses.

4. TRAILER BRAKES WILL NOT RELEASE.

Step 1. Check position of trailer brake hand control.

Move control to forward (OFF) position.

Step 2. Check position of trailer air supply control knob.

Push knob in (ON).

Step 3. Check intervehicular air hoses for proper connections.

Connect air hoses.

Step 4. Check vehicle air system for leaks.

If leaks are found, notify Unit Maintenance.

If leaks are not found and vehicle components are not damaged, troubleshoot semitrailer.

DRIVELINE LOCKING SYSTEM

5. DRIVELINE WILL NOT DISENGAGE WHEN INTERAXLE LOCKOUT CONTROL VALVE LEVER IS MOVED TO UNLOCK POSITION.

Step 1. Ensure system has had enough time to disengage.

Leave interaxle lockout control valve lever in UNLOCKED position and wait for light to go off.

Step 2. Excessive driveline windup may have occurred. Back truck up slowly. If driveline does not disengage, notify Unit Maintenance.

Table 3-1. Troubleshooting (Con't).

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

ELECTRICAL SYSTEM

6. ONE OR MORE LIGHTING SYSTEMS NOT WORKING.

Step 1. Check position of switch(es). If vehicle is coupled to semitrailer and problem is with semitrailer lighting system, check intervehicular cable connection.

Place switch(es) in ON position and blackout light switch to NORMAL position. Connect intervehicular cable.

Step 2. Perform semitrailer troubleshooting.

ENGINE

7. ENGINE COOLANT TEMPERATURE GAGE INDICATES ENGINE IS OVERHEATING.

WARNING

DO NOT remove radiator cap unless engine is cold. Remove radiator cap in two steps. First, place a thick cloth over cap and slowly turn cap left to first stop. Pause and allow pressure to escape. Turn cap further left until it can be removed. This is a pressurized cooling system and escaping steam, hot water, or coolant will cause serious burns.

Step 1. Check engine coolant level in radiator.

Add engine coolant as required (Appendix F).

Step 2. Check system for leaks.

If leaks are found, notify Unit Maintenance.

Step 3. Check f radiator cooling fins are free of mud, snow, ice, or debris.

Remove anything that blocks or impedes cooling fins.

Step 4. Check cooling fan drive belts for looseness.

If belts are loose, notify Unit Maintenance.

Step 5. Check engine oil level.

If engine oil is low, fill to correct level (Appendix F).

Table 3-1. Troubleshooting (Con't).

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Step 6. Check transmission fluid level.

If transmission fluid level is low, fill to correct level (Appendix F).

8. ENGINE CRANKS BUT FAILS TO START.

WARNING

Fuel tank cap may become hot during vehicle operation. Use hand protection when removing fuel cap.

Step 1. Check fuel gage with ignition switch in ON position.

If empty, add fuel (paragraph 3-6).

Step 2. Check air cleaner restriction indicator.

If indicator is not clear, notify Unit Maintenance.

Step 3. If operating in temperature below 32°F (0°C), check that cold weather starting procedure was used.

Perform cold weather starting procedure (paragraph 2-12).

9. ENGINE DOES NOT DEVELOP FULL POWER.

Check air cleaner restriction indicator.

If indicator is not clear, notify Unit Maintenance.

10. ENGINE DOES NOT IDLE PROPERLY.

Step 1. Check air cleaner restriction indicator.

If indicator is not clear, notify Unit Maintenance.

Step 2. If operating in temperature below 32°F (0°C), check that cold weather starting procedure was used.

Perform cold weather starting procedure (paragraph 2-12).

11. ENGINE FAILS TO CRANK WHEN STARTER BUTTON IS PRESSED.

Step 1. Check position of ignition switch.

Place ignition switch in ON position.

Step 2. Check selection of transmission shift selector pushbuttons.

Select transmission shift selector Neutral (N) pushbutton.

Table 3-1. Troubleshooting (Con't).

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Step 3. Check for dirty, loose, or broken battery cables.

Clean dirty cables. Tighten loose connections at batteries, ground, and starter.

If cable is broken, notify Unit Maintenance.

12. ENGINE STARTS BUT MISFIRES OR RUNS ROUGH AFTER PROPER WARMUP PERIOD.

Check air cleaner restriction indicator.

If indicator is not clear, notify Unit Maintenance.

13. EXCESSIVE ENGINE OIL CONSUMPTION.

Check for loose oil lines and oil leaks.

If oil lines are loose or leaks are found, notify Unit Maintenance.

14. EXCESSIVE EXHAUST SMOKE (AT NORMAL ENGINE OPERATING SPEED).

Step 1. Check air cleaner restriction indicator.

If indicator is not clear, notify Unit Maintenance.

Step 2. Check for water in fuel.

Drain fuel filters (Table 2-1).

15. LOW OR NO ENGINE OIL PRESSURE.

Check engine oil level.

If engine oil is low, fill to correct level (Appendix F).

STEERING

16. HARD STEERING, SHIMMY OR WANDERING.

NOTE

Check tire pressure when tires are cold.

Step 1. Check that tires are properly inflated.

Inflate tires to proper pressure (Table 2-1).

Step 2. Check for loose lug nuts.

Tighten loose lug nuts and notify Unit Maintenance to apply proper torque.

Table 3-1. Troubleshooting (Con't).

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Step 3. Check for worn, loose, or damaged parts on front axle or suspension. Check steering linkage, wheels, and vehicle frame for worn, loose, or damaged parts.

If worn, loose, or damaged parts are found, notify Unit Maintenance.

17. VEHICLE STEERING SLOW OR INTERMITTENT TO RESPOND.

Step 1. Check power steering fluid level.

If power steering fluid is low, fill to correct level (Appendix F).

Step 2. Check for proper operation of power steering.

With vehicle at halt, turn steering wheel in either direction until steer limit is reached. Hold steering wheel in position for five seconds. Turn steering wheel in other direction until steering limit is reached. Repeat cycling a number of times.

TRANSMISSION

18. SLOW OR ERRATIC TRANSMISSION ENGAGEMENT.

Check transmission fluid level.

If transmission fluid is low, fill to correct level (Appendix F).

19. TRANSMISSION FLUID TEMPERATURE GAGE INDICATES FLUID IS OVERHEATING DURING NORMAL OPERATION.

Step 1. Check transmission fluid level.

If transmission fluid is low, fill to correct level (Appendix F).

Step 2. Check transmission fluid dipstick for discoloration that would indicate water/coolant in fluid.

If dipstick is discolored, notify Unit Maintenance.

WHEELS AND TIRES

20. TIRES WORN UNEVENLY OR EXCESSIVELY.

Step 1. Check tires for proper pressure.

Inflate tires to proper pressure (Table 2-1).

Step 2. Check for bent wheel rims.

If rim is bent, replace wheel and tire assembly. Notify Unit Maintenance to apply proper torque.

Table 3-1. Troubleshooting (Con't).

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

Step 3. Check for loose lugs nuts and worn, loose, or damaged suspension components.

Tighten loose lug nuts and notify Unit Maintenance to apply proper torque.

If suspension components are worn, loose, or damaged, notify Unit Maintenance.

21. VEHICLE WANDERS OR PULLS TO ONE SIDE ON LEVEL PAVEMENT.

Step 1. Check tires for proper pressure.

Inflate tires to proper pressure (Table 2-1).

Step 2. Check that tires are proper size and type.

If one tire is mismatched and spare matches, replace mismatched tire with spare. If one or more tires are mismatched, notify Unit Maintenance.

Step 3. Check for loose or damaged steering gear/linkage.

If steering gear/linkage is loose or damaged, notify Unit Maintenance.

22. WHEEL WOBBLES.

Step 1. Check for loose or missing lug nuts.

Tighten loose lug nuts and notify Unit Maintenance to apply proper torque.

If lug nuts are missing, notify Unit Maintenance.

Step 2. Check for bent wheel rims.

If rim is bent, replace wheel and tire assembly. Notify Unit Maintenance to apply proper torque.

Step 3. Check for loose, worn, or damaged steering and suspension components.

If steering or suspension components are damaged, notify Unit Maintenance.

Section III. MAINTENANCE PROCEDURES

3-5. CLEANING VEHICLE.

WARNING

Compressed air used for cleaning or drying purposes, or for clearing restrictions, should never exceed 30 psi (207 kPa). Wear protective clothing (goggles/shield, gloves, etc.) and use caution to avoid injury to personnel.

CAUTION

DO NOT use high pressure water to clean inside of cab or engine compartment. Damage to electrical system may result.

a. **Exterior.**

(1) Never wipe dirt off when vehicle is dry.
(2) Never wash vehicle in direct sunlight or if vehicle exterior is hot to touch.
(3) Wash vehicle often using cold or lukewarm water (never use hot water or any strong detergent). Do not use abrasives to remove mud and dirt from your vehicle.
(4) While cleaning vehicle, look closely for evidence of rust or corrosion, bare metal, or other exterior damage. If any problems are found, notify Unit Maintenance to treat affected areas.

b. **Interior.**

(1) Remove loose dust and dirt from cab interior components.
(2) Clean upholstery and seat belts using a mild solution of warm water and soap (never use solvents or abrasives). Wipe all washed areas dry.

3-6. REFUELING.

WARNING

- **DO NOT smoke or permit any open flame in area of truck while you are servicing diesel fuel system. Be sure hose nozzle is grounded against filler tube during refueling to prevent static electricity. Failure to follow this warning may result in injury to personnel or equipment damage.**
- **Auxiliary arctic heater, if equipped, must be switched to OFF while refueling.**
- **Place portable fire extinguisher within reach prior to refueling.**
- **Fuel tank cap may become hot during vehicle operation. Use hand protection when removing fuel cap.**
- **DO NOT overfill fuel tank.**
- **If fuel starts foaming from fuel tank, stop immediately to avoid fuel spillage.**
- **Failure to follow these warnings could result in injury or death to personnel.**

a. Shut down engine (paragraph 2-16).

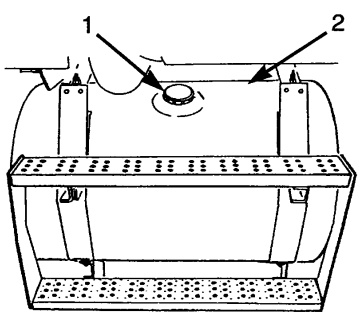
b. Ensure that auxiliary arctic heater, if equipped, is switched to OFF (paragraph 2-32).

c. Wipe off dirt on and around fuel filler cap (1).

d. Remove filler cap (1) by rotating cap counterclockwise.

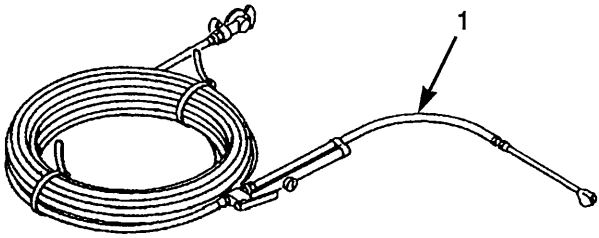
e. Fill tank (2) to holes [approximately 3 in. (7.6 cm)] in filler neck.

f. Install filler cap (1) by rotating cap clockwise as far as it will go.

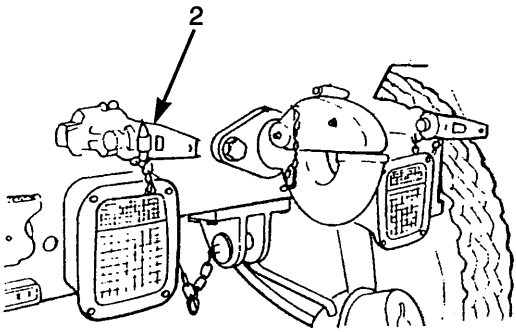


3-7. TIRE INFLATION.

a. Remove pneumatic hose (1) with gauge from BII storage box.



b. Connect pneumatic hose (1) to emergency gladhand (red) (2) on left rear of vehicle.



c. Start engine (paragraph 2-12). Push in (ON) trailer air supply control valve.

3-7. TIRE INFLATION (Con't).

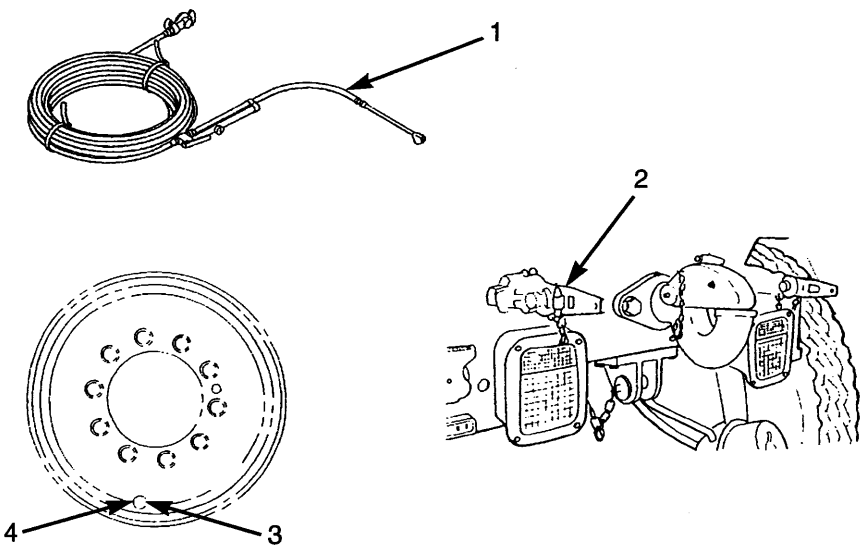
d. Remove valve stem cap (3) and connect pneumatic hose (1) to valve stem (4).

e. Add air until desired pressure is reached.

f. Remove pneumatic hose (1) from valve stem (4) and install valve stem cap (3).

g. Pull out (OFF) trailer air supply control valve. Shut down engine (paragraph 2-16).

h. Disconnect pneumatic hose (1) from emergency gladhand (2) and return to stowage in BII storage box.



3-8. OPERATION OF SPARE WHEEL AND TIRE ASSEMBLY CARRIER.

a. **Remove Spare Wheel and Tire Assembly from Carrier.**

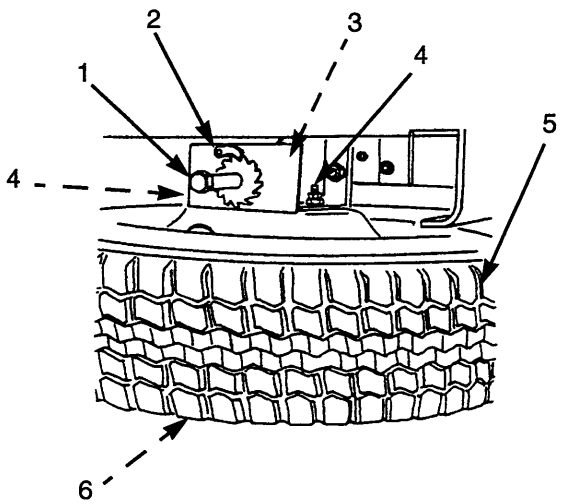
(1) Ensure pawl (2) engages gear shaft (1) and remove two nut (4).
(2) Turn gear shaft (1) clockwise slightly and disengage pawl (2) from gear shaft. Swing pawl out of way.

3-8. OPERATION OF SPARE WHEEL AND TIRE ASSEMBLY CARRIER (Con't).

WARNING

Use caution when lifting or handling wheel and tire assembly. It is heavy and could cause injury if improperly lifted or if it falls on you.

(3) Slowly rotate gear shaft (1) counterclockwise one notch.



(4) Support spare wheel and tire assembly (5) and remove wheel clamp plate (6).

(5) Repeat steps (2) and (3) until spare wheel and tire assembly (5) is lowered to ground.

b. **Install Stare Wheel and Tire Assembly on Carrier.**

(1) Secure hoist cable (3) by inserting wheel clamp plate (6) through wheel opening.

(2) Turn gear shaft (1) clockwise until spare wheel and tire assembly (5) is raised to stowed position.

(3) Engage pawl (2) on gear shaft (1).

(4) Install two nuts (4).

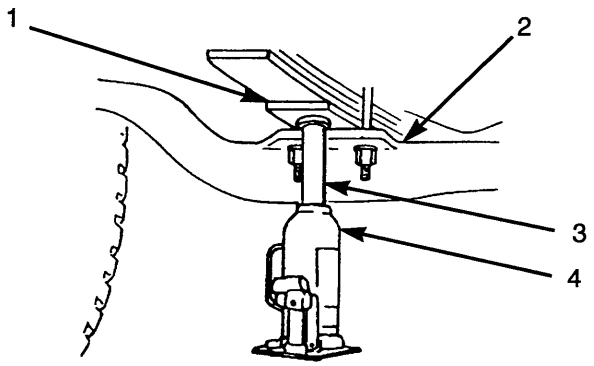
3-9. WHEEL AND TIRE ASSEMBLY REPLACEMENT.

NOTE

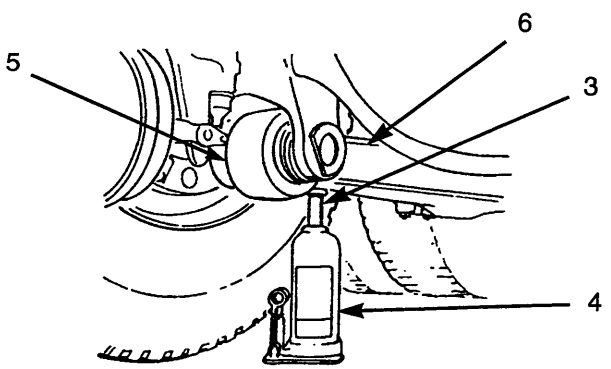
When changing tires, DO NOT substitute type or size tire unless all tires on the vehicle can be converted. Keep all tires the same size and type.

a. **Placement of Jack.**

(1) For front tire replacement, place jack (4) so jack ram (3) is under first small leaf spring (1) just forward of axle (2).



(2) For rear tire replacement, place jack (4) so jack ram (3) is under equalizing beam (6) inboard of equalizing beam end adapter (5).



b. **Remove Wheel and Tire Assembly.**

(1) Block wheels.
(2) Remove spare wheel and tire assembly from carrier (paragraph 3-8).

3-9. WHEEL AND TIRE ASSEMBLY REPLACEMENT (Con't).

NOTE

- **If replacing inner rear tire, loosen both outer and inner wheel nuts.**
- **Wheel nuts on left side of vehicle are left hand threads (turn right to loosen, turn left to tighten). Wheel nuts on right side of vehicle are right hand threads (turn left to loosen, turn right to tighten).**

(3) Loosen wheel nuts on wheel to be removed.
(4) Place jack in position (subparagraph a).

WARNING

Hydraulic jack is intended only for lifting truck, not for supporting vehicle to perform maintenance. Do not get under truck after it is raised unless it is properly supported with blocks or jackstands. Failure to observe this warning may result in death or injury to personnel.

(5) Raise jack until tire(s) clears ground.

WARNING

Use caution when lifting or handling wheel and tire assembly. It is heavy and could cause injury if improperly lifted or if it falls on you.

(6) For front or outer rear tire, remove wheel nuts and wheel and tire assembly
(7) If replacing inner rear tire, remove wheel nuts and wheel and tire assembly.

c. **Install Wheel and Tire Assembly.**

(1) Inflate spare tire to proper pressure (paragraph 3-7).

3-9. WHEEL AND TIRE ASSEMBLY REPLACEMENT (Con't).

WARNING

Use caution when lifting or handling wheel and tire assembly. It is heavy and could cause injury if improperly lifted or if it falls on you.

NOTE

- **Wheel nuts on left side of vehicle are left hand threads (turn right to loosen, turn left to tighten). Wheel nuts on right side of vehicle are right hand threads (turn left to loosen, turn right to tighten).**

- **Valve stems on inner and outer rear tires should be positioned 180° apart.**

(2) If replacing inner rear tire, position wheel and tire assembly on wheel hub and install and handtighten wheel nuts.

(3) For front or outer rear tire, position wheel and tire assembly on wheel hub and install and handtighten wheel nuts.

(4) Lower and remove jack.

WARNING

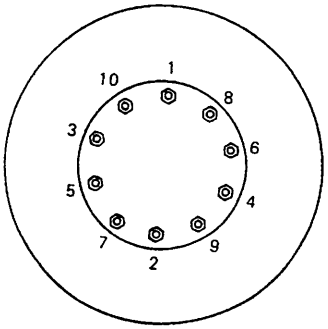
- **Whenever inner and/or outer wheel lug nuts require tightening or a wheel has been removed and replaced, lug nuts must be torqued to the required torque. Failure to follow this warning may result in serious injury to personnel and damage to equipment.**

- **Tighten wheel nuts with wheel wrench. After 25 miles (40 km), retighten wheel nuts. Within next 75 miles (121 km), have Unit Maintenance torque wheel nuts to proper torque.**

- **Tightening pattern is identical for all wheel assemblies.**

3-9. WHEEL AND TIRE ASSEMBLY REPLACEMENT (Con't).

(5) For front or outer rear tire, tighten wheel nuts according to tightening pattern.



WHEEL NUT TIGHTENING PATTERN

(6) If replacing inner rear tire, alternately tighten inner wheel nuts by removing outer wheel nut according to tightening pattern and tighten inner wheel nut. After tightening inner wheel nut, reinstall outer wheel nut and tighten according to tightening pattern.

(7) Notify Unit Maintenance as soon as possible to apply proper torque.

(8) Stow defective tire in spare wheel and tire carrier (paragraph 3-8) and have it replaced or repaired as soon as possible.

(9) Remove wheel blocks.

3-10. BATTERY BOX COVER REPLACEMENT.

WARNING

- **To avoid eye injury, eye protection is required when working around batteries. Do not smoke, use open flame, make sparks, or create other ignition sources around batteries. If a battery is giving off gases, it can explode and cause injury to personnel. Remove all jewelry such as rings, ID tags, watches, and bracelets. If jewelry or a tool contacts a battery terminal, a direct short will result in instant heating, damage to equipment, and injury to personnel.**

- **Sulfuric acid contained in batteries can cause serious burns. If battery corrosion or electrolyte makes contact with skin, eyes, or clothing, take immediate action to stop the corrosive burning effects. Failure to follow these procedures may result in death or serious injury to personnel.**

  a. **Eyes. Flush with cold water for no less than 15 minutes and seek medical attention immediately.**

  b. **Skin. Flush with large amounts of cold water until all acid is removed. Seek medical attention as required.**

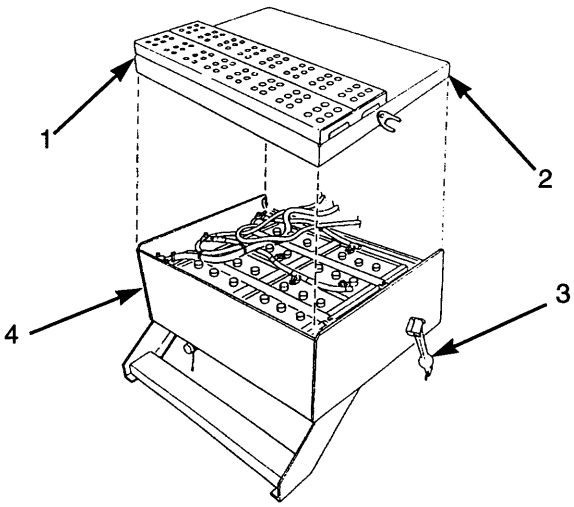
  c. **Internal. If corrosion or electrolyte is ingested, drink large amounts of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Seek medical attention immediately.**

  d. **Clothing/Equipment. Wash area with large amounts of cold water. Neutralize acid with baking soda or household ammonia.**

3-10. BATTERY BOX COVER REPLACEMENT (Con't).

a. Unfasten two latches (3) and slide battery box cover (2) outboard from battery box (4).

b. Slide battery box cover (2) on battery box (4) with step (1) outboard. Fasten two latches (3).



APPENDIX A
REFERENCES

A-1. SCOPE.

This appendix lists all forms, field manuals, technical manuals, and other publications referenced in this manual and which apply to the operation of the M915A4 truck tractor.

A-2. PUBLICATION INDEXES.

The following indexes should be consulted frequently for latest changes or revisions and for new publications relating to material covered in this technical manual.

Consolidated Index of Army Publications and Blank Forms.....DA Pam 25-30
Functional User's Manual for the Army Maintenance
Management System ..... DA Pam 738-750
U.S. Army Equipment Index of Modification Work Orders ..... DA Pam 750-10

A-3. FORMS.

Refer to DA Pam 738-750, *The Army Maintenance Management System (TAMMS),* for instructions on the use of maintenance forms.

Equipment Inspection and Maintenance Worksheet.....DA Form 2404
Product Quality Deficiency Report.....SF Form 368
Recommended Changes to Equipment Technical Publications ..... DA Form 2028-2
Recommended Changes to Publications and Blank Forms ..... DA Form 2028

A-4. FIELD MANUALS.

Basic Cold Weather Manual.....FM 31-70
Camouflage.....FM 5-20
Cold Weather Operations.....FM 9-207
Desert Operations.....FM 90-3
Driver Selection/Training..... FM 21-300
First Aid for Soldiers.....FM 21-11
Manual for the Wheeled Vehicle Driver..... FM 21-305
NBC Contamination Avoidance..... FM 3-3

A-4. FIELD MANUALS (Con't).

NBC Decontamination ..... FM 3-5
NBC Protection..... FM 3-4
Northern Operations.....FM 31-71
Vehicle Recovery Operations .....FM 20-22

A-5. TECHNICAL MANUALS.

Batteries .....TM 9-6140-200-14
Care, Maintenance, Repair, and Inspection of Pneumatic Tires and Inner Tubes.....TM 9-2620-200-14
Destruction of Army Materiel to Prevent Enemy Use.....TM 750-244-6
Operator's, Unit, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools List) for Semitrailer, Flatbed: Breakbulk/Container Transporter, 34 Ton M872/M872A1/M872A2/M872A3..... TM 9-2330-359-14&P
Operator's, Unit, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools List) for Semitrailer, Tactical, Dual Purpose Breakbulk/ Container Transporter 22 1/2 Ton M871/M871A1..... TM 9-2330-359-14&P
Operator's, Unit, Direct Support, and General Support Maintenance Manual (Including Repair Parts and Special Tools List) for Semitrailer, Tank, Fuel, 7500 Gallon, M1062..... TM 9-2330-384-14&P
Principles of Automotive Vehicles..... TM 9-8000

A-6. TECHNICAL BULLETINS.

Rust Proofing Procedures for Truck, Utility..... TB 43-0213
Warranty..... TB 9-2320-364-15

A-7. OTHER PUBLICATIONS.

Abbreviations for Use on Drawings and in Specifications, Standards, and Technical Documents..... MIL-STD-12D
Army Medical Department Expendable/Durable Items..... CTA 8-100
Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).....CTA 50-970
Prevention of Motor Vehicle Accidents..... AR 385-55

APPENDIX B
COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

Section I. INTRODUCTION

B-1. SCOPE.

This appendix lists Components of End Item and Basic Issue Items for the M915A4 truck tractor to help you inventory items required for safe and efficient operation.

B-2. GENERAL.

The Components of End Item (COEI) and Basic Issue Items (BII) Lists are divided into the following sections:

a. **Section II, Components of End Item.** This listing is for informational purposes only and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. **Section III, Basic Issue Items.** These are the minimum essential items required to place the truck in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the truck during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to-identify items. This manual is your authority to request/requisition replacement BII, based on TOE/ MTOE authorization of end item.

B-3. EXPLANATION OF COLUMNS.

Below is an explanation of columns found in the tabular listings:

a. **Column (1) - Illustration Number (Illus Number).** This column indicates the number of the illustration that shows the item.

b. **Column (2) - National Stock Number.** Indicates the National Stock Number (NSN) assigned to the item and will be used for requisitioning purposes.

B-3. EXPLANATION OF COLUMNS (Con't).

c. **Column (3) - Description and Usable On Code.** Indicates the Federal item name and, if required, a minimum description in parentheses to identify and locate the item. The entry for each item ends with the Commercial and Government Entity Code (CAGEC) in parentheses followed by the part number. Usable on Code indicates the vehicle to which the item is assigned. Usable on Code is not applicable for this manual.

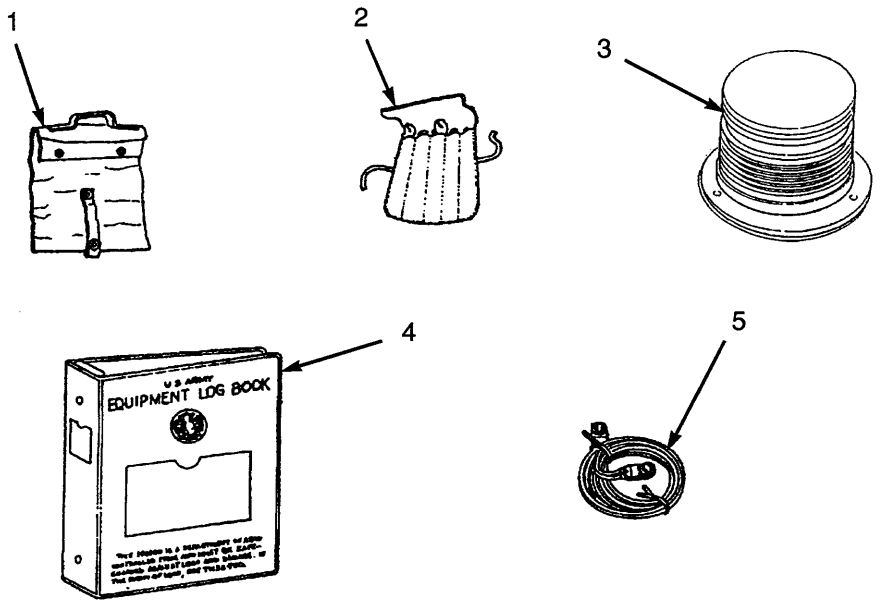
d. **Column (4) - Unit of Issue (U/I).** Indicates how the item is issued for the National Stock Number shown in Column (2).

e. **Column (5) - Quantify Required (Qty/Rqd).** Indicates the quantity of the item authorized to be used with the equipment.

Section II. COMPONENTS OF END ITEM

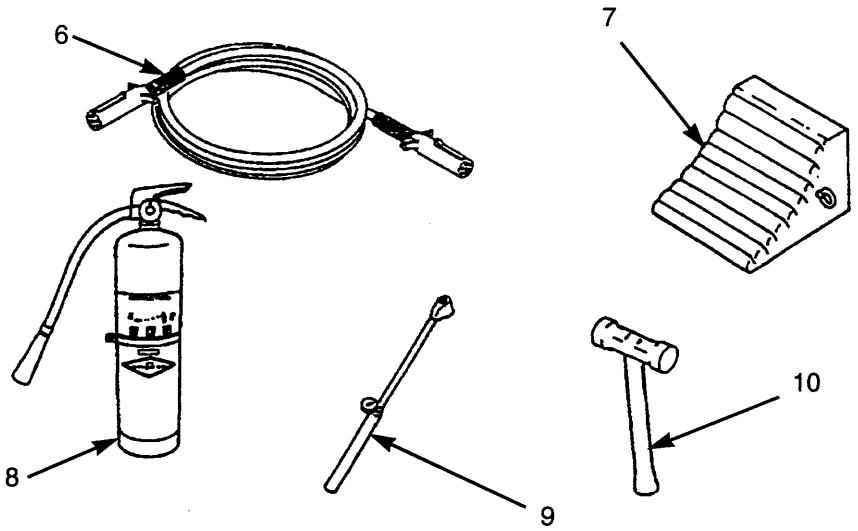
There are currently no COEI assigned.

Section III. BASIC ISSUE ITEMS



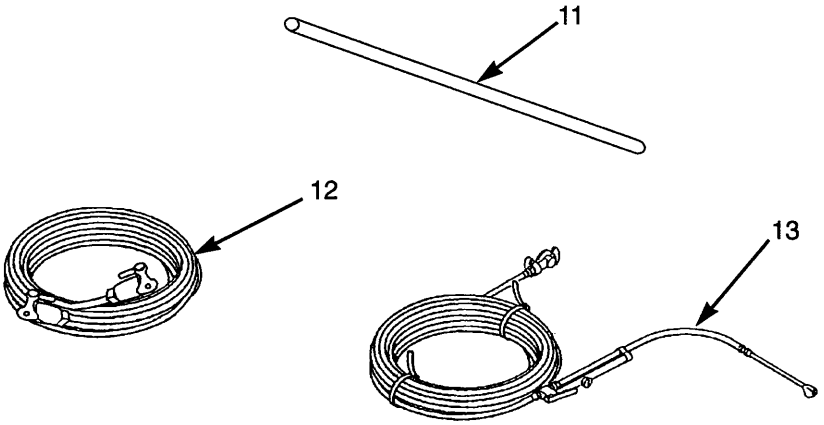
(1) Illus Number	(2) National Stock Number	(3) Description (CAGEC) Part Number	(4) Usable on Code	(5) U/I	(6) Qty Rqd
1	2540-00-670-2459	Bag, Pamphlet (In cab glove box) (19207) 11676920		EA	1
2	5140-00-356-8471	Bag, Tool (in BII storage box) (19204) 7541507		EA	1
3	6220-01-218-4968	Beacon, Warning Light Kit 12 volt (10402) 01-0683146LAPA		EA	1
4	7510-00-889-3494	Binder, Looseleaf (19207) 11677003		EA	1
5	6150-01-022-6004	Cable Assy, Power NATO (in BII storage box) (19207) 11682336-1		EA	1

Section III. BASIC ISSUE ITEMS (Con't)



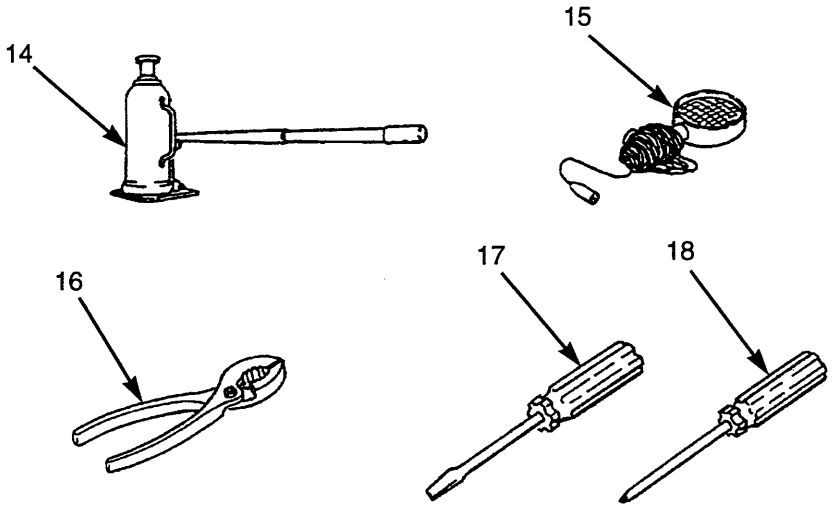
(1) Illus Number	(2) National Stock Number	(3) Description (CAGEC) Part Number	(4) Usable on Code	(5) U/I	(6) Qty Rqd
6		Cable Assy, 12 volt, Tractor-Tri, 12 ft. (in BII storage box) (64678) 06-26246-144		EA	1
7	2540-00-678-3469	Chock, Wheel (in BII storage box) (58536) A-A-52475-1		EA	2
8	4210-01-338-6064	Extinguisher, Fire (on cab floor) (54905) 447		EA	1
9	4910-01-003-9599	Gauge, Tire (in cab glove box) (19207) 7974576-1		EA	1
10	5120-00-902-0092	Hammer, 2 lb (in Bll storage box) (58536) A-A-1292		EA	1

Section III. BASIC ISSUE ITEMS (Con't)



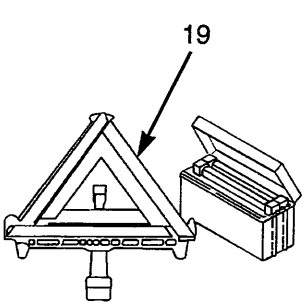
(1) Illus Number	(2) National Stock Number	(3) Description (CAGEC) Part Number	(4) Usable on Code	(5) U/I	(6) Qty Rqd
11		Handle, Wrench (in BII storage box) (34623) 44201		EA	1
12	6150-00-772-8814	Harness Assy, 12 ft., 24 volt (in BII storage box) (19207) 7728814		EA	1
13	4910-01-407-2953	Hose, Pneumatic, (Tire Inflation) with Gauge, 40 ft. (in BII storage box) (19207) 11677140-7		EA	1

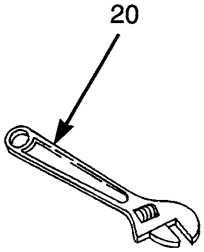
Section III. BASIC ISSUE ITEMS (Con't)

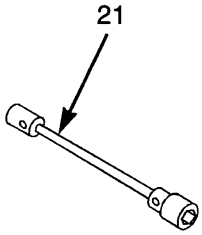


(1) Illus Number	(2) National Stock Number	(3) Description (CAGEC) Part Number	(4) Usable on Code	(5) U/I	(6) Qty Rqd
14	5120-01-146-8096	Jack Hydraulic, 12 Ton w/ Handle (in BII storage box) (08844) JH-12		EA	1
15	6220-01-327-3225	Lamp, Work, Portable 12 volt, 25 ft. Cord (in BII storage box) (78422) 1401152		EA	2
16	5120-01-398-7966	Pliers, Combination General Purpose (in BII storage box) (72368) J26		EA	1
17	5120-00-227-7356	Screwdriver Flat Tip (in BII storage box) (64067) 5120-00-227-7356		EA	1
18	5120-00-234-8913	Screwdriver, Crosstip (in Bll storage box) (75347) BD122		EA	1

Section III. BASIC ISSUE ITEMS (Con't)







(1) Illus Number	(2) National Stock Number	(3) Description (CAGEC) Part Number	(4) Usable on Code	(5) U/I	(6) Qty Rqd
19	9905-00-148-9546	Triangle, Folding-Reflective (in BII storage box) (19207) 11669000		EA	1
20	5120-00-240-5328	Wrench, Adjustable, 8 in. long (in BII storage box) (19207) 11655778-3		EA	1
21	5120-00-293-1289	Wrench, Lug (in BII storage box) (03683) 18806		EA	1

APPENDIX C
ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

C-1. SCOPE.

This appendix lists additional items that you are authorized for the support of the M915A4 truck tractor.

C-2. GENERAL.

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

C-3. EXPLANATION OF LISTING.

National Stock Numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. If the item required differs for different models of this equipment, see the "Usable on Code" column for the applicable model or models. Usable on Codes is applicable for this manual.

Section II. ADDITIONAL AUTHORIZATION LIST

(1) National Stock Number	(2) Description CAGEC & Part Number	Usable on Code	(3) U/M	(4) Qty Auth
6130-01-421-3768	Analyzer, Charger: Battery (0G1L1) S55A		ea	1
5110-00-293-2336	Axe, Single Bit, 4-16-HD wt, 35.5-36.5 in. long (19207) 6150925		ea	1
5510-00-491-0306	Block, Jack Support Wood, 4X8X9 in. (19207) CPR103023-1		ea	1
5510-00-491-0307	Block, Jack Support Wood, 7X8X9 in. (19207) CPR103023-2		ea	1
2540-01-453-0497	Chains, Tire (80535) 2245		pr	2
5340-00-545-2337	Clevis Part of Tow Bar 2540-00-378-2012 (19207) 8724449		ea	2
5120-00-288-6574	Handle, Mattock, 35.5-36.5 in. long (19207) 11677021		ea	1
5895-01-361-7606	Installation Kit, SINCGARS (80063) A3104086		ea	1
	Kit, Air Deflector (64678) 681 790 02 K0		ea	1
	Kit, Arctic Heater (62380) Thermo 90S		ea	1
6545-00-922-1200	Kit, First Aid (19207) 11677011		ea	1
4230-01-133-4124	Kit, M13 Apparatus (81361) E5-51-527		ea	1
5340-01-345-4676	Kit, M13 Decontamination Mounting (64678) 681 899 01 K0		ea	1
1005-01-345-8880	Kit, Rifle Mounting (64678) 681 816 00 K0		ea	1
5340-00-158-3805	Padlock (96906) MS35647-10		ea	7

Section II. ADDITIONAL AUTHORIZATION LIST (Con't)

(1) National Stock Number	(2) Description CAGEC & Part Number	Usable on Code	(3) U/M	(4) Qty Auth
5120-00-243-2395	Pick, Mattock, 5 lb without Handle (19207) 11677022		ea	1
5315-00-539-9174	Pin Part of Tow Bar 2540-00-378-2012 (19207) 10929861		ea	1
5315-00-350-4326	Pin, Locking Part of Tow Bar 2540-00-378-2012 (19207) 5213744		ea	1
5120-00-293-3336	Shovel, Hand, Rd-Pt, D-Hdl, Short Size 2 (19207) 11655784		ea	1
2540-01-267-2912	Tow Bar, Medium Duty (19207) 12322663		ea	1

APPENDIX D
EXPENDABLE AND DURABLE ITEMS LIST

Section I. INTRODUCTION

D-1. SCOPE.

This appendix list expendable and durable items you will need to operate and maintain the M915 Family of Vehicles. This listing is for informational purposes 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),* or CTA 8-100, *Army Medical Department Expendable/Durable Items.*

D-2. EXPLANATION OF COLUMNS.

a. **Column (1) - Item Number.** This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the item [e.g., Use dry cleaning solvent (Item 16, Appendix D)].

b. **Column (2) - Level.** This column identifies the lowest level of maintenance that requires the listed item.

C - Operator/Crew

c. **Column (3) - National Stock Number.** This is the National Stock Number assigned to the item which you can use to requisition it.

d. **Column (4) - Item Name, Description, Commercial and Government Entity Code (CAGEC), and Part Number.** This provides the other information you need to identify the item.

e. **Column (5) - Unit of Measure (U/M)/Unit of Issue (U/I).** This column shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Section II. EXPENDABLE AND DURABLE ITEMS LIST

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description (CAGEC) Part Number	(5) U/M U/I
1	C		ANTIFREEZE: Multi-Engine Type, Type I (58536) A-A-52624	
		6850-01-441-3218	1 Gallon Can	gl
		6850-01-441-3221	5 Gallon Container	gl
2	C	6850-00-926-2275	Cleaning Compound, Windshield (81348), O-C-1 901	pt
3	C		DETERGENT: General Purpose, Liquid (81348) 7930-00-282-9699	
		7930-00-282-9699	1 Gallon Can	gl
4	C		FUEL DIESEL: DF-2 Grade (81348) VVF800GRADEDF2RE	
		9140-00-286-5295	5 Gallon Can	gl
		9140-00-286-5296	55 Gallon Drum, 16 Gage	gl
		9140-00-286-5297	55 Gallon Drum, 18 Gage	gl
5	C		FUEL: Diesel, Winter (81348) VVF800GRADEDF1W1	
		9140-00-286-5286	Bulk	gl
		9140-00-286-5287	5 Gallon Can	gl
		9140-00-286-5288	55 Gallon Drum, 16 Gage	gl
		9140-00-286-5289	55 Gallon Drum, 18 Gage	gl
6	C		GREASE: Automotive and Artillery GAA (81349) MIL-G-10924	
		9150-01-197-7693	14 Ounce Cartridge	oz
		9150-01-197-7688	2 1/4 Ounce Tube	oz
		9150-01-197-7690	1 3/4 Pound Can	lb
		9150-01-197-7609	6 1/2 Pound Can	lb
		9150-01-197-7692	35 Pound Pail	lb
		9150-01-197-7691	120 Pound Drum	lb

Section II. EXPENDABLE AND DURABLE ITEMS LIST (Con't)

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description (CAGEC) Part Number	(5) U/M U/I
7	C		OIL: Lubricating GO 75 (81349) MIL-L-2105	
		9150-01-035-5390	1 Quart Can	qt
		9150-01-035-5391	5 Gallon Can	gl
8	C		OIL: Lubricating, Gear, Multipurpose, GO 80/90 (81348) MIL-L-2105	
		9150-01-035-5392	1 Quart Can	qt
		9150-01-035-5393	5 Gallon Can	gl
		9150-01-035-5394	55 Gallon Drum, 16 Gage	gl
9	C		OIL, Lubricating GO 85/140 (81349) MIL-L-2105	
		9150-01-035-5396	55 Gallon Drum	gl
10	C		OIL: Lubricating, Internal Combustion Engine, Arctic, OEA (81349) MIL-L-46167	
		9150-00-402-4478	1 Quart Can	qt
		9150-00-402-2372	5 Gallon Drum	gl
		9150-00-491-7197	55 Gallon Drum	gl
11	C		OIL, Lubricating, Internal Combustion Engine, OE/HDO 10 (81349) MIL-L-2104	
		9150-00-189-6727	1 Quart Can	qt
		9150-00-186-6668	5 Gallon Can	gl
		9150-00-191-2772	55 Gallon Drum	gl
12	C		OIL:, Lubricating, Engine, OE/HDO 15W/40 (81349) MIL-L-2104	
		9150-01-151-4117	1 Quart Can	qt
		9150-01-151-4118	5 Gallon Can	gl
		9150-01-151-4119	55 Gallon Drum	gl

Section II. EXPENDABLE AND DURABLE ITEMS LIST (Con't)

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description (CAGEC) Part Number	(5) U/M U/I
13	C		OIL: Lubricating, Internal Combustion Engine, OE/HDO 30 (81349) MIL-L-2104	
		9150-00-186-6681	1 Quart Can	qt
		9150-00-188-9858	5 Gallon Can	gl
		9150-00-189-6729	55 Gallon Drum	gl
14	C		OIL: Lubricating, Internal Combustion Engine, OE/HDO 40 (81349) MIL-L-2104	
		9150-00-189-6730	1 Quart Can	qt
		9150-00-188-9860	5 Gallon Can	gl
		9150-00-188-9862	55 Gallon Drum	gl
15	C		RAG: Wiping (64067) 7920-00-205-1711	
		7920-00-205-1711	50 Pound Bale	lb
16	C		SOLVENT: Dry Cleaning, Type II (81348) P-D-680	
		6650-00-110-4498	1 Pint Can	pt
		6650-00-664-5685	1 Quart Can	qt
		6650-00-281-1985	1 Gallon Can	gl
		6850-00-274-5421	5 Gallon Can	gl
		6850-00-285-8011	55 Gallon Drum	gl
17	C		TAPE: Reflective, 2 Inches Wide (81346) ASTM D4956	
		9390-00-174-2322	1800 Inch Roll	in

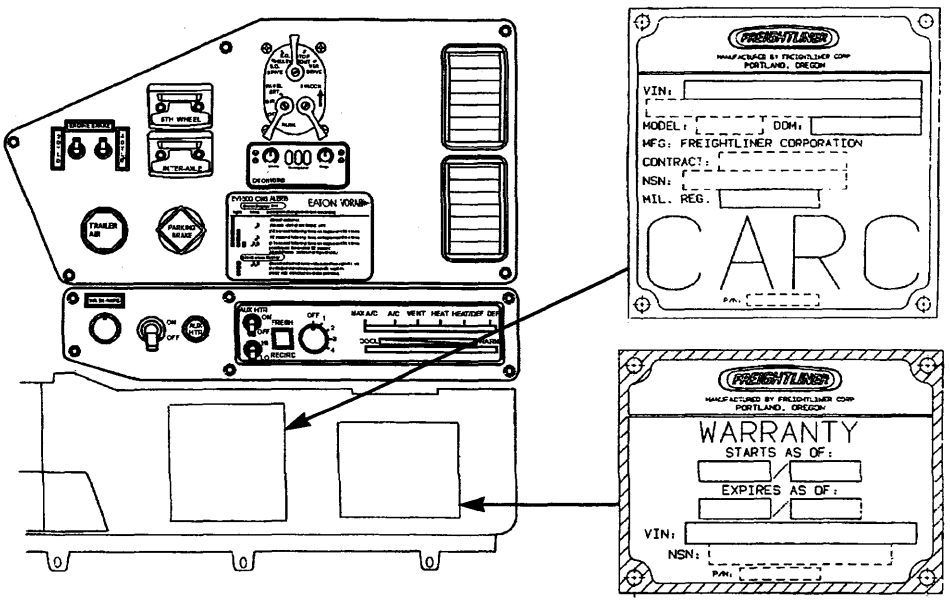
APPENDIX E
STOWAGE AND DECAL, DATA PLATE, AND STENCIL GUIDE

E-1. SCOPE.

a. This appendix shows the location for stowage of equipment and material required to be carried on the M915A4.

b. This appendix also includes illustrations showing the location of all decals, data plates, and stencils.

E-2. DECALS AND PLATES.



E-2. DECALS AND PLATES (Con't).

COMPONENT DATA - M915A4

MANUFACTURED BY: FREIGHTLINER CORP.
CONTRACT: DAAE07-98-D-S001
VEHICLE MODEL NUMBER: M915A4

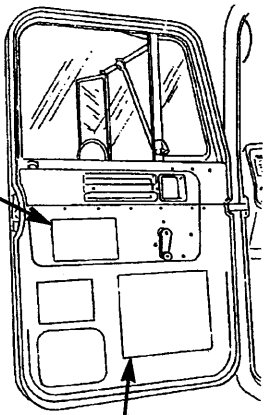
ENGINE MODEL: CUMMINS NTC-400 BIG CAM
TRANS MODEL MAIN: ALLISON AUTOMATIC HD-4560P
FRT AXLE MODEL: MERITOR FF943 12K
REAR AXLE MODEL: MERITOR SOHP
GVWR: 52,000 LBS.

NOTE: USE VEHICLE IDENTIFICATION NUMBER WHEN ORDERING PARTS.
WHEELBASE: 162.00 INCHES

ENGINE NO.: NSN2815010843447
TRANS NO.: S07-16495-021
FRT AXLE NO.: S10-12919-000
FWD-RR AXLE: NSN2520011623760
RR-RR AXLE: NSN2520011623761
RATIO: 4.44 TO 1

VEHICLE NOISE EMISSION CONTROL INFORMATION

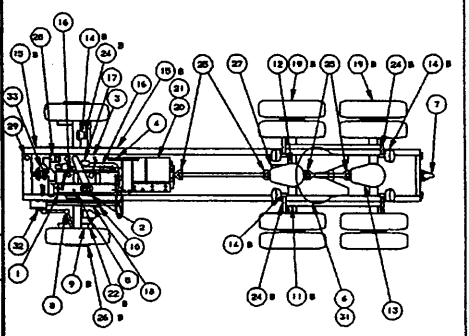
THIS VEHICLE IS EXEMPT FROM THE PROHIBITIONS OF SECTION 10(A)(1), (2), (3), AND (5) OF THE NOISE CONTROL ACT OF 1972.



LUBRICATION DATA - M915A4

INTERVAL (MILES)	ITEM	IDENTIFICATION	SERVICE	LUBE POINTS	LUBRICANT
DAILY	1	-PWR/STRG RSVR DIPSTICK	C/F		OE/HDO
DAILY	2	-FUEL FILTER PRIMARY	D*		
DAILY	3	-OIL LEVEL DIPSTICK	C/F		OE/HDO
DAILY	4	-TRANSMISSION DIPSTICK	C/F		OE/HDO
DAILY	26	-FRONT WHEEL BEARING	C/F		GO
DAILY	29	-RADIATOR COOLANT	C/F		
OC	16	-CRANKCASE	D/F		OE/HDO
0	32	-STRG GEAR SHAFT BUSHING	L	1	GAA
5,000/M	6	-FIFTH WHEEL	L	2	GAA
5,000/M	31	-FIFTH WHEEL SLIDE & PLUNGER	L		GAA
5,000/S	7	-PINTLE HOOK	L	4	GAA
5,000/S	8	-DRAG LINK	L	2	GAA
5,000/S	10	-STRG SHAFT U JOINT & SPLINE	L	3	GAA
5,000/S	11	-REAR AXLE SPRING	L	2	GAA
5,000/S	12	-FORWARD REAR AXLE DIFF.	C/F		GO
5,000/S	13	-REAR REAR AXLE DIFF.	C/F		GO
5,000/S	14	-CAMMASTER SLACK ADJUSTERS	L	6	GAA
5,000/S	15	-FRONT AXLE SPRING	L	6	GAA
10,000	2	-FUEL FILTER PRIMARY	CH		
10,000	18	-FUEL FILTER SECONDARY	CH		
10,000/S	9	-FRONT WHEEL KNUCKLE	L	4	GAA
20,000/A	17	-OIL FILTER FULL FLOW	CH		OE/HDO
20,000/A	28	-COOLANT FILTER	CH		
30,000/OC	30	-TRANSMISSION	D/F		OE/HDO
20,000/A	21	-TRANSMISSION FILTER	CH		
20,000/A	1	-PWR/STRG RESERVOIR	D/F		OE/HDO
20,000/A	1	-PWR/STRG FILTER	CH		
20,000/S	22	-TIE ROD	L	2	GAA
20,000/S	24	-BRAKE CAMSHAFT ROLLER JOURNALS AND BUSHINGS	L	6	GAA
30,000/S	25	-DRIVELINE UNIVERSAL JOINT, SLIP YOKES AND SPLINE	L	10	GAA
75,000/A	26	-FRONT WHEEL BEARINGS	I/A/L		GO
75,000/A	27	-FORWARD REAR AXLE OIL FILTER	CH		
75,000/A	12	-FORWARD REAR AXLE DIFF.	D/F		
75,000/A	13	-REAR REAR AXLE DIFF.	D/F		GO
75,000/A	23	-PULLEY FAN DRIVE	L	1	GAA
75,000/A	5	-TACH DRIVE	L	1	GAA
75,000/A	19	-REAR WHEEL BEARINGS	I/A/L		GAA

NOTE: TO VALIDATE WARRANTY, INITIAL SERVICE MUST BE PERFORMED AT 5,000 MILES. SERVICE INTERVALS SHOWN ABOVE BEGIN THEREAFTER. REFER TO INSTRUCTIONAL MANUAL FOR COMPLETE INFORMATION REGARDING LUBRICATION OF VEHICLE.



LUBRICATION KEY

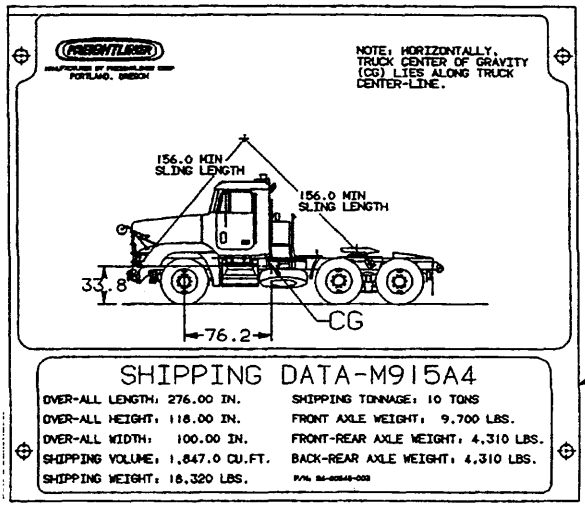
C = CHECK
F = FILL
D = DRAIN
L = LUBRICATE
CH = CHANGE
I = INSPECT
A = ADJUST

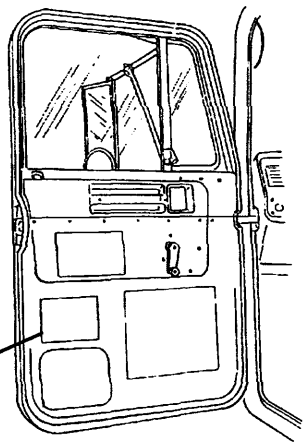
OE/HDO = LUBRICATING OIL, INTERNAL COMBUSTION TACTICAL SERVICE. (MIL-L-2104-G GA GRADE).
GAA = GREASE, AUTOMOTIVE AND ARTILLERY, (MIL-G-10924).
GO = LUBRICATING OIL, GEAR, MULTIPURPOSE, (MIL-L-2105).
B = ITEM APPEARS ON BOTH SIDES OF TRUCK
OC = ON CONDITION
* SEE OPERATORS MANUAL FOR DETAILS

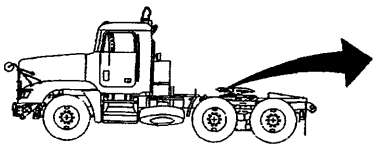
TIRE AND RIM DATA

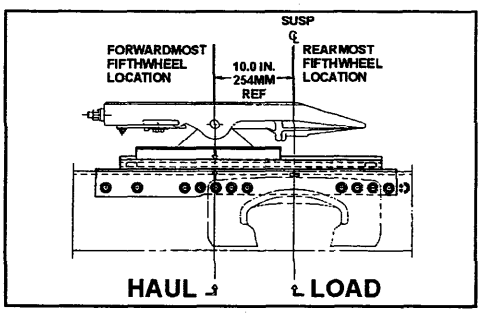
	GAWR	UOM	TIRES	RIMS	PSI COLD
FRONT AXLE SINGLE TIRES	12,000	LB	MCH 14P1225	22.5 X 8.25	105
REAR AXLE DUAL TIRES	20,000	LB	MCH 14P1225	22.5 X 8.25	100

E-2. DECALS AND PLATES (Con't).

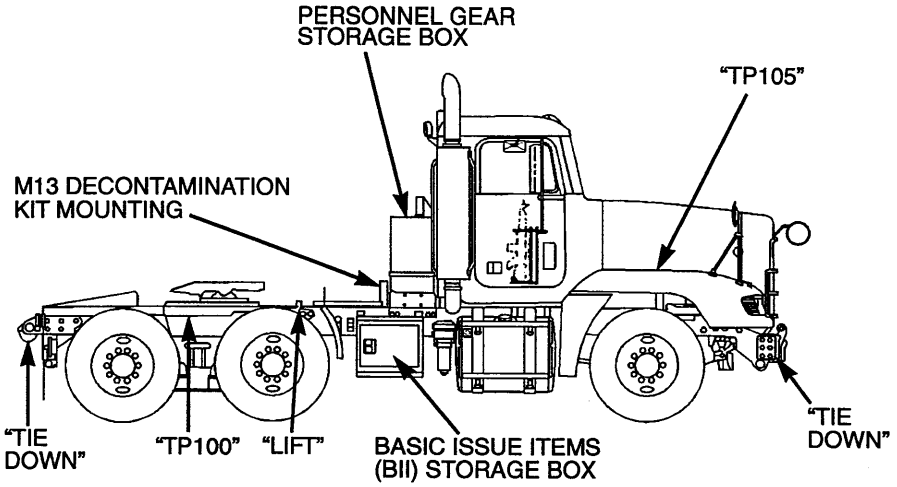


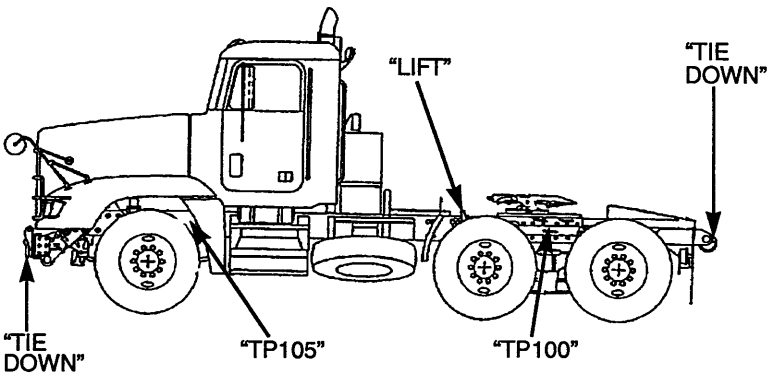




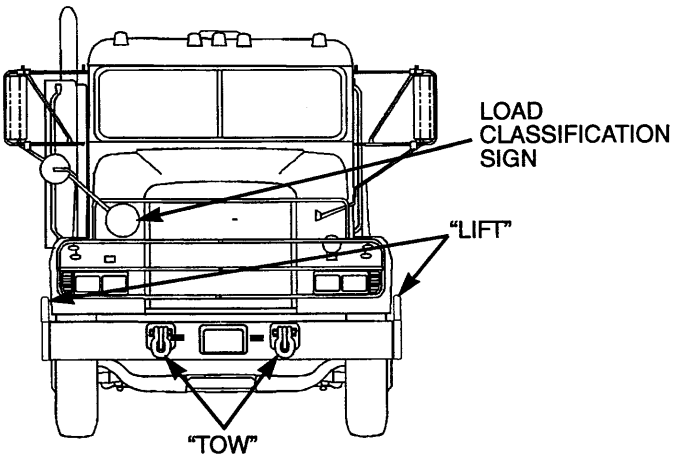


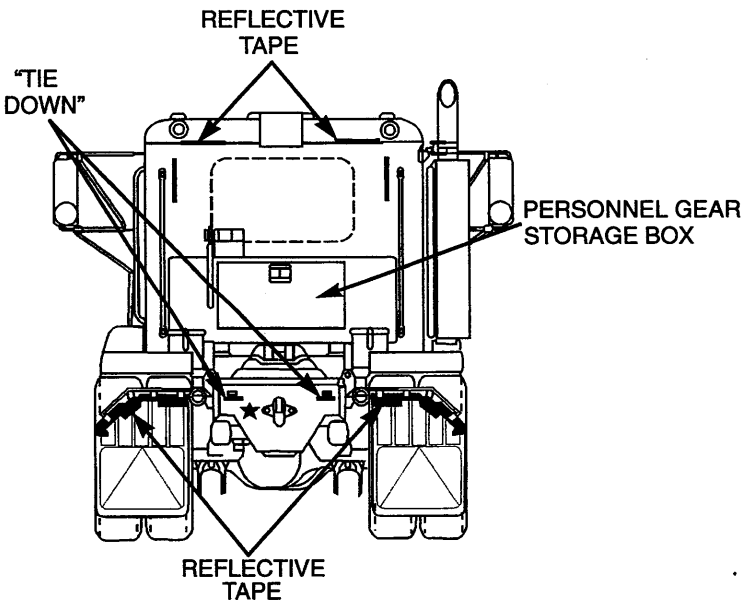
E-3. STOWAGE AND STENCILS.



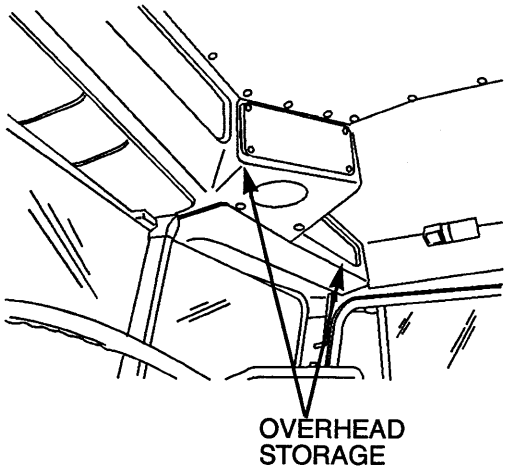


E-3. STOWAGE AND STENCILS (Con't).





E-3. STOWAGE AND STENCILS (Con't).



APPENDIX F
LUBRICATION INSTRUCTIONS

F-1. GENERAL.

NOTE

- **These instructions are mandatory.**
- **This equipment is enrolled in the Army Oil Analysis Program (AOAP). Engine oil and transmission oil must be sampled every 90 days as prescribed by DA Pam 738-750.**

a. The M915A4 must receive lubrication with approved lubricants at recommended intervals in order to be mission-ready at all times.

b. The Lubrication Chart shows lubrication points, items to be lubricated, the required lubricants, and recommended intervals for lubrication by the operator/crew. Any special lubrication Instructions required for specific components are contained in the NOTES section of the chart.

c. The KEY and CHARTs A through C provide information needed to select the proper lubricant for various temperature ranges and uses, and identify the interval.

d. Recommended intervals are based on normal conditions of operation, temperature, and humidity. When operating under extreme conditions, lubricants should always be changed more frequently. When in doubt, notify your supervisor.

F-2. SPECIFIC LUBRICATION INSTRUCTIONS.

a. Keep all lubricants in a closed container and store in a clean, dry place away from extreme heat. Keep container covers clean and do not allow dust, dirt, or other foreign material to mix with lubricants. Keep lubrication equipment clean and ready for use.

b. Maintain a record of lubrication performed and report any problems noted during lubrication. Refer to DA Pam 738-750 for maintenance forms and procedures to record and report any findings.

c. Keep all external parts of equipment not requiring lubrication free of lubricants. After lubrication, wipe off excess lubricant to prevent accumulation of foreign matter.

d. Refer to FM 9-207 for lubrication instructions in cold weather.

LUBRICATION CHART

TRUCK, TRACTOR, LINE HAUL:
52,000 GVWR, 6 X 4, M915A4
(NSN 2520-01-458-1207)

This Lubrication Chart is for the operator/crew (C). Lubrication intervals (on-condition or hard time) are based on normal operation. Lubricate more during constant use and less during inactive periods. Use correct grade of lubricant for seasonal temperature expected.

For equipment under manufacturer's warranty, hard time oil service intervals shall be followed. Intervals shall be shortened if lubricants are known to be contaminated or if operation is under adverse conditions (e.g., longer than usual operating hours, extended idling periods, extreme dust, etc.).

WARNING

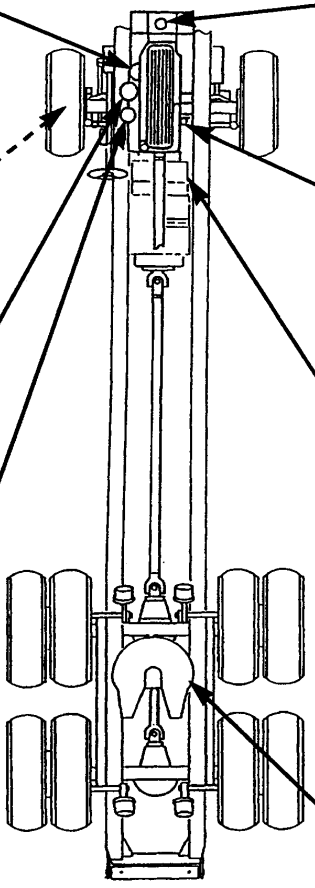
Dry cleaning solvent is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvents flash point is 100°F-138°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

Clean area around lubrication points with dry cleaning solvent (Item 16, Appendix D) or equivalent before lubricating equipment. After lubrication, wipe off excess lubricant to prevent accumulation of foreign matter.

Dashed leader line indicates lubrication on both sides of vehicle.

M915A4

LUBRICANT	•	INTERVAL	INTERVAL	•	LUBRICANT
Primary Fuel Filter Drain Moisture (C) (See View A)		D	D		Radiator Check & Fill (C) (See Note 3)
Wheel Bearings Check and Fill (C) (See View B & Note 1)		GO D	D	OE/ HDO	Engine Crank-case Check & Fill (C) (See View D & Note 4)
Power Steering Reser-voir Check & Fill (C) See View C & Note 2)		OE/ HDO D	D	OE/ HDO	Transmission Check & Fill (C) (See View E & Note 5)
Fuel Filter/Water Separator Drain Moisture (C) (See View A)		D	OC/ W	GAA	Fifth Wheel (Clean & Lube) (C) (See View F and Note 6)



- KEY -					
		Expected Temperatures*			
Lubricant/ Component	Refill Capacity	+6°F to +122°F (-14°C to +50°C)	-4F to +50°F (-20°C to +10°C)	-67°F to +32°F (-55°C to 0°C)	Intervals
OE/HDO (MIL-L-2104) Lubricating Oil, ICE, Tactical					**D - Daily W - Weekly OC - On Condition**
OEA (MIL-L-46167) Lubricating Oil, ICE, Arctic					
Engine Crankcase w/ Filters	46 Qt (43.5 L)	See Chart A			
Transmission	51 Qt (48 L)	See Chart B			
Power Steering Reservoir	2 Qt (1.9 L)	See Chart A			
Oil Can Points	As Reqd	See Chart A			
GO (MIL-L-2105) Lubricating Oil, Gear, Multipurpose					
Front Axle Wheel Bearings	As Reqd	See Chart C			
GAA (MIL-G-10924) Grease, Automotive and Artillery					
Fifth Wheel	As Reqd	All Temperatures			
ANTIFREEZE Multi-Engine Type, Type I					
Engine Radiator	17.25 Gal. (65.3 L)	All Temperatures			
***For Arctic Operation, refer to FM 207.**					

CHART A—ENGINE, POWER STEERING, AND OIL CAN POINTS

Lubricant	EXPECTED TEMPERATURES																		
°F	-70	-60	-50	-40	-30	-20	-10	0	+10	+20	+30	+40	+50	+60	+70	+80	+90	+100	+120
°C	-57	-51	-46	-40	-34	-29	-23	-18	-12	-7	-1	+4	+10	+16	+21	+27	+32	+38	+49
OE/HDO (MIL-L-2104)	Lubricating Oil, ICE, Tactical																		
OEA (MIL-L-46167)	Lubricating Oil, ICE, Arctic																		
OE/HDO-15/40 (0 - 1236)																			
OE/HDO-10 * (0 - 237)																			
OE/HDO-30 (0 - 238)																			
OE/HDO-40 (N/A)																			
OEA * (0 - 183)																			

*If OEA lubricant is required to meet the low expected-temperature range, OEA lubricant is to be used in lieu of OE/HDO-10 lubricant for all expected temperatures where OE/HDO-10 is specified.

CHART B—TRANSMISSION

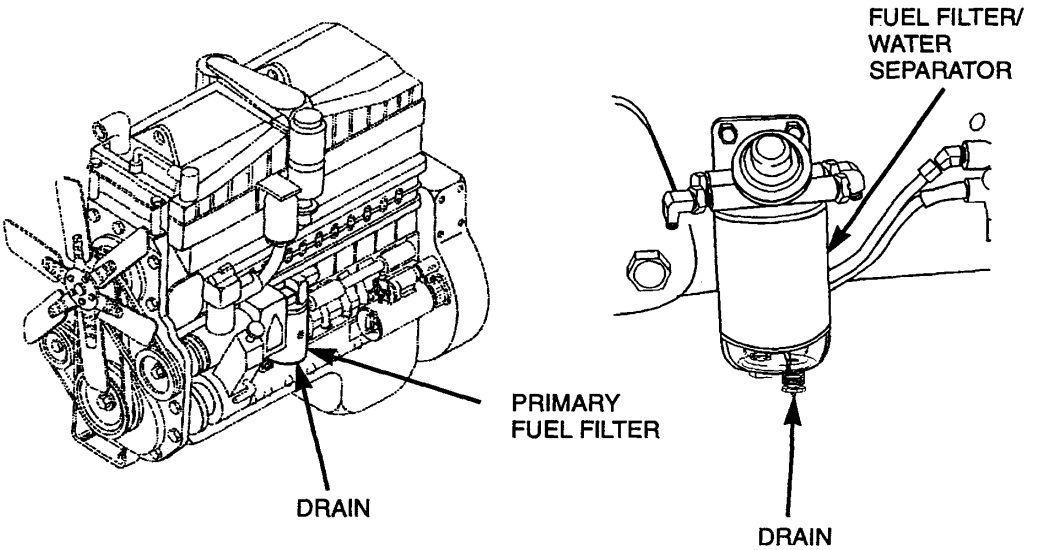
Lubricant	EXPECTED TEMPERATURES																		
°F	-70	-60	-50	-40	-30	-20	-10	0	+10	+20	+30	+40	+50	+60	+70	+80	+90	+100	+120
°C	-57	-51	-46	-40	-34	-29	-23	-18	-12	-7	-1	+4	+10	+16	+21	+27	+32	+38	+49
OE/HDO (MIL-L-2104)	Lubricating Oil, ICE, Tactical																		
OEA (MIL-L-46167)	Lubricating Oil, ICE, Arctic																		
OE/HDO-15/40 (0 - 1236)																			
OE/HDO-10 * (0 - 237)																			
OEA * (0 - 183)																			

*If OEA lubricant is required to meet the low expected-temperature range, OEA lubricant is to be used in lieu of OE/HDO-15/40 lubricant for all expected temperatures where OE/HDO-10 and OE/HDO-15/40 are specified.

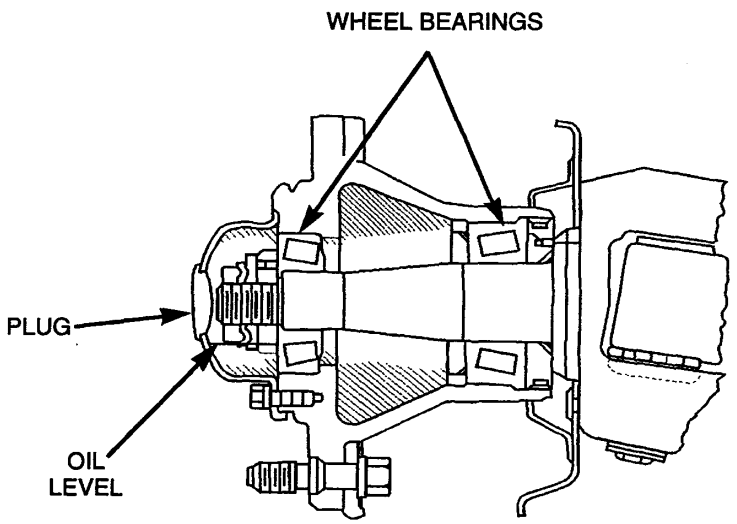
CHART C—FRONT AXLE WHEEL BEARINGS

Lubricant	EXPECTED TEMPERATURES																		
	°F	-70	-60	-50	-40	-30	-20	-10	0	+10	+20	+30	+40	+50	+60	+70	+80	+90	+100	+120
	°C	-57	-51	-46	-40	-34	-29	-23	-18	-12	-7	-1	+4	+10	+16	+21	+27	+32	+38	+49
GO (MIL-L-2105)	Lubricating Oil, Gear, Multipurpose																			
GO-75 (0 - 186)																				
GO-80/90 (0 - 226)																				
GO-85/140 (0 - 228)																				

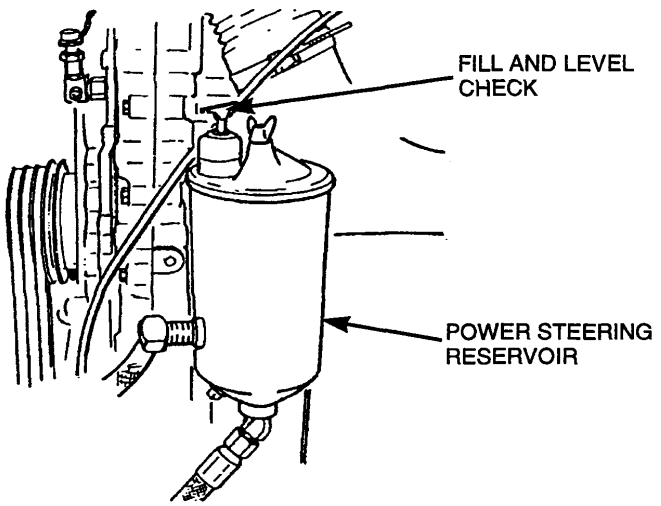
VIEW A—FUEL FILTER/WATER SEPARATOR



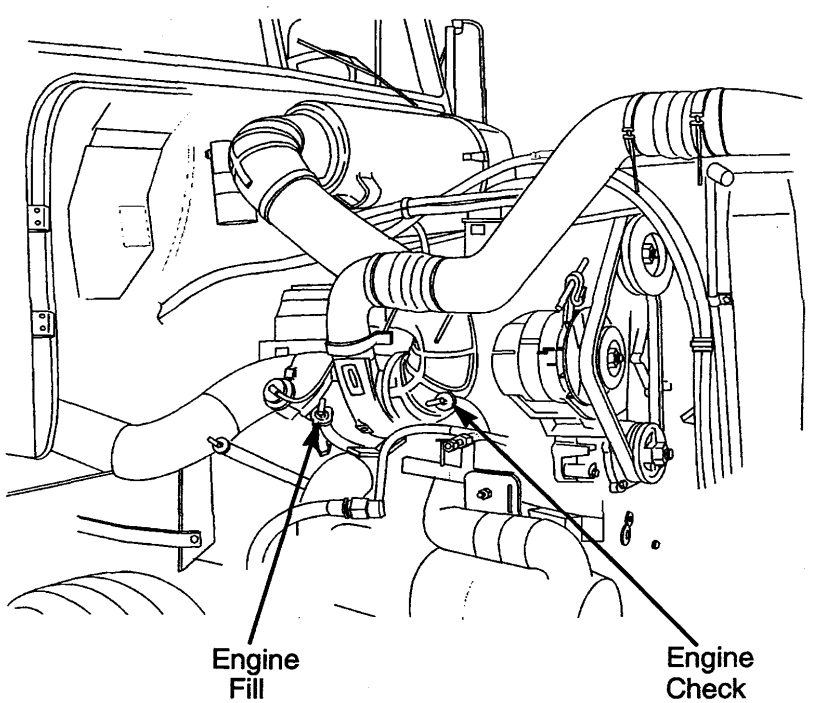
VIEW B—FRONT AXLE WHEEL BEARINGS



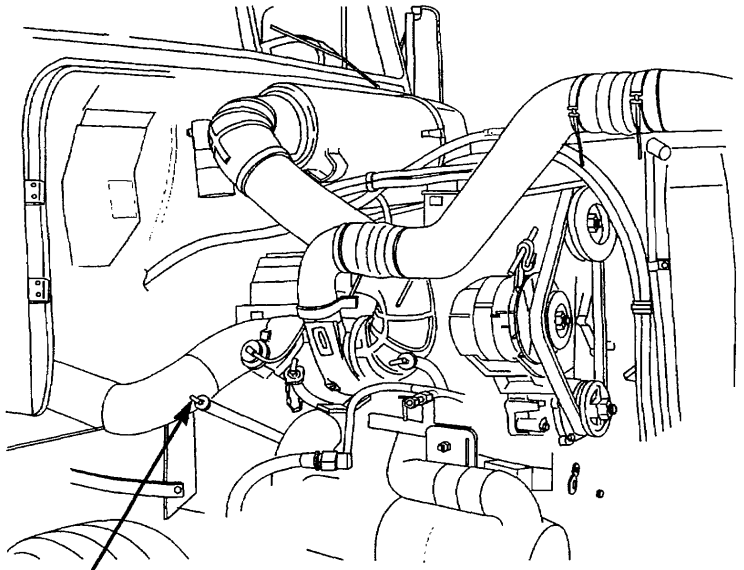
VIEW C—POWER STEERING RESERVOIR



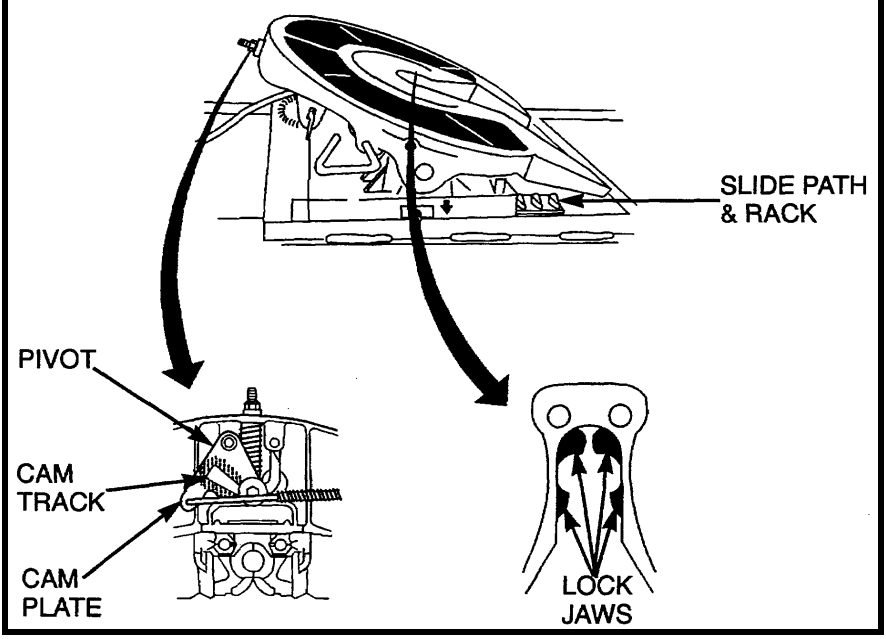
VIEW D—ENGINE CRANKCASE



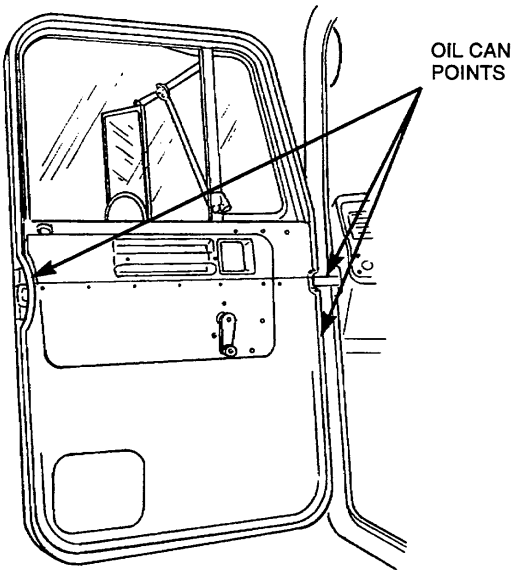
VIEW E—TRANSMISSION



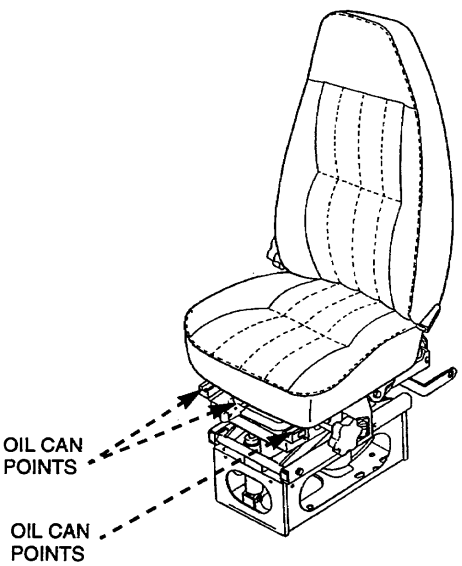
VIEW F—FIFTH WHEEL



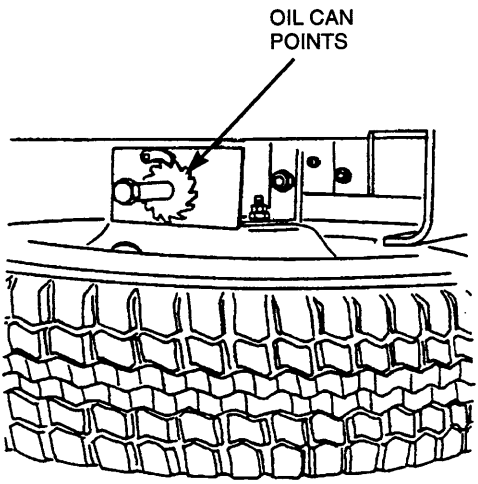
VIEW G—CAB DOOR



VIEW H—SEATS



VIEW I—SPARE WHEEL AND TIRE CARRIER



NOTES:

1. **FRONT AXLE WHEEL BEARINGS.** Daily, check that level of gear lubricating oil is visible in sight glass. If oil is not visible, remove rubber plug and add GO until level is even with plug opening. Install rubber plug.

2. **POWER STEERING RESERVOIR.** Daily, with engine running and fluid at operating temperature, remove dipstick from reservoir and check level of lubricating oil on dipstick. Add OE/HDO to bring level above the ADD mark on dipstick.

3. **RADIATOR.**

WARNING

Let radiator cool remove removing cap. Remove cap in two steps. First place thick cloth over cap and slowly turn cap left to its first stop; pause, and allow pressure to escape from cooling system. Then turn cap further left until you can remove it. Failure to follow this procedure can result in serious burns.

Daily, with engine cool, remove radiator cap. Check level of coolant in radiator. Coolant must be within 2 1/2 in. (6.4 cm) below filler neck. Add coolant to correct level. Install radiator cap.

4. **ENGINE CRANKCASE.** Daily, check level of lubricating oil. Wait 10 minutes after shutting down engine to allow oil to drain back into crankcase. To ensure an accurate reading, vehicle must be parked on level ground. Safe operating level is between ADD and FULL marks on dipstick. As required, add OE/HDO through filler opening. DO NOT overfill.

5. **TRANSMISSION.**

CAUTION

Transmission must not be operated for extended periods of time until a Hot Check has verified proper fluid level. Transmission damage can result from extended operation at improper fluid level conditions.

COLD OIL CHECK (COLD RUN BAND). Run engine for one minute at idle speed. Idle engine in Neutral (N) until transmission reaches 60°-120°F (16°-49°C). Shift transmission to Drive (D), then Reverse (R), then return to N. Remove dipstick from oil filler tube, wipe clean, and check oil level. Oil registering in the COLD RUN band indicates a sufficient quantity of oil to safely operate the transmission until temperature reaches 160°-200°F (71°-93°C). If fluid level is not within COLD RUN band, add or drain fluid, as required, to bring level within the band. When temperature reaches 160°-200°F (71°-93°C), a hot oil check MUST be performed.

HOT OIL CHECK (HOT RUN BAND). Be sure temperature has reached 160°-200°F (71°-93°C). With truck on level ground, engine idling, and transmission in Neutral (N), remove dipstick from oil filler tube, wipe clean, and check oil level. If oil registers in the HOT RUN band, quantity of oil in transmission is safe for operating the vehicle. If it registers on or below the bottom line of the HOT RUN band, add the required amount of oil to bring oil level to the middle of the HOT RUN band.

6. **FIFTH WHEEL.**

WARNING

Dry cleaning solvent is toxic and flammable. Always wear protective goggles and gloves, and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and DO NOT breathe vapors. DO NOT use near open flame or excessive heat. The solvent's flash point is 100°F-138°F (38°C-59°C). If you become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts eyes, immediately wash your eyes and get medical aid.

Weekly or on-condition, apply GAA to lock jaws and front of throat. Lubricate the cam track, pivot, rack, and slide path with light oil or diesel oil.

7. **OIL CAN POINTS.** On-condition or weekly, lubricate sparingly with OE/HDO; door hinges and latches (View G); driver and passenger seat adjusters and sliding tracks (View H); and spare wheel and tire carrier ratchet gear shaft (View I).

By Order of the Secretary of the Army:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0126109

DISTRIBUTION:

To be distributed in accordance with the initial distribution requirements for IDN: 381111, TM 9-2320-303-10.

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is ODISC4.	Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE 1 Jul 01
TO: (Forward to proponent of publication or form) (Include ZIP Code) AMSTA-LC-CI/TECH PUBS, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: (Activity and location) (Include ZIP Code) 125th Transportation Company ATTN: Motor SGT (SGT Wilson) Ft. Riley, KA 78665-4000	

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 9-2320-303-10	15 Oct 2001	Truck, Tractor, Line, Haul, for Operator's Manual

ITEM	PAGE	PARA-	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON
	0020 00-2					Part number for item 4, detergent, is incorrect

SAMPLE

* Reference to line numbers within the paragraph or subparagraph.

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
Johnny Wilson, E-5, MOTOR SGT	DSN 867-7967	

DA FORM 1 FEB 74 2028 REPLACES DA FORM 2028, 1 DEC 68, WHICH WILL BE USED. USAPPC V1.00

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is ODISC4.	Use Part II *(reverse)* for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE
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TM 9-2320-303-10	15 Oct 2001	Truck, Tractor, Line Haul, Operator's Manual

ITEM	PAGE	PARA-*	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON

** Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

DA FORM 1 FEB 74 2028 REPLACES DA FORM 2028, 1 DEC 68, WHICH WILL BE USED. USAPPC V1.00

THE METRIC SYSTEM AND EQUIVALENTS

Linear Measure

1 Centimeter = 10 Millimeter = 0.01 Meters = 03937 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 Pounds
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 = 33.83 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 = 0.0386 Sq Miles

Cubic Measure

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

Temperature

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

APPROXIMATE CONVERSION FACTORS

To Change	To	Multiply By
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Sq Inches	Sq Centimeters	6.451
Sq Feet	Sq Meters	0.093
Sq Yards	Sq Meters	0.836
Sq Miles	Sq Kilometers	2.590
Acres	Sq Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per 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 Centimeter	Sq Inches	0.155
Sq Meters	Sq Feet	10.764
Sq Meters	Sq Yards	1.196
Sq Kilometers	Sq 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
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621

PIN: 079294-000