TM 9-2320-283-10
(Supersedes TM 9-2320-283-10 dated June 1983.)

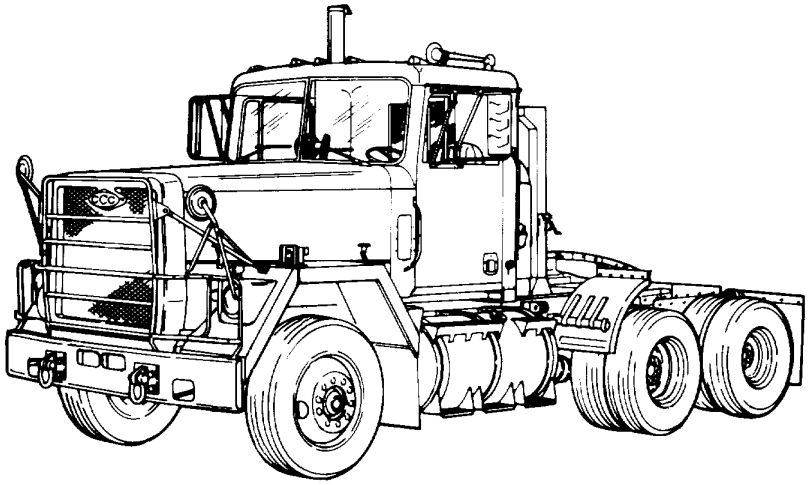
TECHNICAL MANUAL

OPERATOR'S MANUAL

FOR

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4

M915A1
NSN: 2320-01-125-2640



HEADQUARTERS, DEPARTMENT OF THE ARMY
MAY 2006

WARNING

EXHAUST GASES CAN KILL

Permanent brain damage or death may result from exhaust gas exposure. When the vehicle engine is operated, the following precautions must be taken to ensure crew safety:

1. Do not operate vehicle engine in an enclosed area.
2. Do not idle vehicle engine with vehicle windows closed.
3. Be alert at all times for exhaust odors.
4. Be alert for exhaust poisoning symptoms, they are:
   - Headache
   - Dizziness
   - Sleepiness
   - Loss of muscular control
5. If you see a person with exhaust poisoning symptoms:
   - Remove person from area.
   - Expose person to fresh air.
   - Maintain persons body temperature (i.e., keep them warm when the weather is cold and keep them cool when the weather is hot).
   - Make the person comfortable, keep them at rest.
   - Perform artificial respiration, if necessary.*
   - Notify a medic.

*For artificial respiration procedures, refer to FM 4-25.11.

6. BE AWARE, the field protective mask and ambulance Nuclear-Biological-Chemical (NBC) system does not protect personnel against exhaust gas poisoning.

THE BEST DEFENSE AGAINST EXHAUST GAS POISONING IS ADEQUATE VENTILATION.

WARNING SUMMARY

- This tractor has been designated to operate safely and efficiently within the limits specified in the TM in accordance with (IAW) AR 70-1. Operation beyond these limits without written approval from the Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/PQDR MS 267, 5601 E 11 Mile Road, Warren, MI 48397-5000, is prohibited. Failure to comply may result in damage to equipment and possible injury or death to personnel.
- Observe all warnings, cautions, and notes while performing Preventive Maintenance Checks and Services (PMCS). Failure to comply may result in injury to personnel or damage to equipment.
- When positioning chocks, assistant will remain visible to operator and stay clear of front and rear of tractor and or trailer. Place chocks from side of the vehicle, then step away. Failure to comply may result in injury or death to personnel or damage to equipment.
- Ensure parking brake is set and wheels are chocked immediately after parking tractor. Failure to comply may result in unexpected movement and possible injury or death to personnel or damage to equipment.
- Let radiator cool before removing cap. Remove radiator cap in two steps. First, place a thick cloth over cap and slowly rotate cap counterclockwise to its first stop; pause, and let pressure escape from cooling system. Then rotate cap counterclockwise until it can be removed. Failure to comply may result in severe burns to personnel.
- Improper use of lifting equipment and attachment of cables to tractor may result in injury or death to personnel or damage to equipment.
- During normal operation the exhaust pipe and muffler will become very hot. Exercise caution not to make body contact or touch hot exhaust components with bare hands. Failure to comply may result in severe burns to personnel.
- All personnel must stand clear of tractor and semi-trailer during coupling operations. Failure to comply may result in injury or death to personnel.
- When working in engine compartment with engine running, keep clear of cooling fan. The fan can engage automatically at any time and serious injury to personnel may result.
- Exercise caution when raising or lowering spare wheel and tire assembly. All personnel must stand clear during lifting operations. Should wheel and tire assembly fall over or drop from lift, serious injury to personnel may result.
- When raising or lowering spare wheel and tire assembly the winch brake disc will get hot enough to burn personnel if touched. Do not touch hot clutch disc or injury to personnel may result.

WARNING SUMMARY (Contd)

- Ensure winch cable drum has a minimum of four full turns of cable prior to lifting spare wheel and tire assembly. Failure to comply may result in cable pulling off cable drum and injury to personnel or damage to equipment may result.
- Ensure wheel and tire assembly does not suddenly drop from truck by guiding it down between fuel tank and fender. Failure to comply could cause the winch cable to snap and injury to personnel or damage to equipment may result.
- After raising engine compartment hood, ensure S-shaped safety hook is properly inserted through two matching holes in prop channels to prevent hood from falling accidentally. Failure to comply may result in injury to personnel.
- The tractor's hydraulic jack is intended only for lifting and is not a safe support for performing maintenance. Do not get under tractor unless it is properly supported by jack stands or wood blocks. Failure to comply may result in injury or death to personnel.
- Ensure parking brake is released and chocks are placed behind tires at opposite end of tractor to be raised prior to jacking operations. Do not place chocks in front of tires at opposite end of tractor to be raised; if tractor is not free to roll during jacking operations it may topple jack. Move chocks tight against tires after jacking and set parking brake. Failure to comply may result in injury to personnel or damage to equipment.
- To prevent fifth wheel movement during transit, ensure cab mounted sliding fifth wheel control is in LOCK position before moving tractor. Follow procedure to verify fifth wheel is locked in position when tractor is coupled to semi-trailer, and never move control to UNLOCKED position when in transit. Failure to comply may result in loss of control and injury or death to personnel or damage to equipment.
- Compressed air used for cleaning must not exceed 30 psi (207 kPa). Wear goggles/face shield and gloves when cleaning with compressed air. Failure to comply may result in injury to personnel.
- Do not use engine retarder on slippery road surfaces. Using engine retarder on wet, icy, or snow covered roads may result in loss of vehicle control. Failure to comply may result in damage to equipment and injury or death to personnel.
- Do not operate vehicle with low tire pressure on wet smooth roads at high speed. Doing so may result in loss of vehicle control and injury or death to personnel.
- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves when performing battery maintenance. Failure to comply may result in severe injury to personnel if acid contacts eyes or skin.

WARNING SUMMARY (Contd)

- Do not smoke, have open flame, or make sparks when performing battery maintenance. Batteries may explode causing severe injury to personnel.
- Remove all jewelry such as rings, bracelets, and identification tags. If jewelry or tools come in contact with battery terminals, a direct short can occur resulting in instant heating of jewelry or tools and damage to electrical system. Failure to comply may result in damage to equipment and injury to personnel.
- Skysol 100 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use.

  Contact with Skysol 100 may cause skin irritation. Use chemical-resistant gloves. In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Eye contact may cause irritation, tearing, or blurring of vision. Use face shield or goggles when eye contact may occur. In case of eye contact flush eyes with large amounts of water for at least 15 minutes or until irritation subsides. Inhalation may cause irritation to upper respiratory passages. DO NOT have food or drink in the vicinity. Failure to comply may result in injury to personnel.
- If Nuclear, Biological, or Chemical (NBC) exposure is suspected, all air filter media must be handled by personnel wearing protective equipment. Consult your unit NBC officer or NBC noncommissioned officer for appropriate handling and disposal instructions.
- When fueling tractor, ensure pump fuel nozzle contacts filling tube on tractor fuel tank to carry off static electricity. Do not smoke or have open flame in fueling area. Failure to comply may result in injury or death to personnel or damage to equipment.
- Operators will know the location and understand the proper use of all controls and indicators before operating the tractor. Failure to comply may result in damage to equipment and possible injury or death to personnel.
- If low pressure warning lamp illuminates and buzzer sounds while driving tractor, stop immediately and investigate the cause. Failure to comply may result in damage to equipment and possible injury or death to personnel.
- Operating tractor with air pressure below the normal operating range indicates a loss in air supply and will limit the number of times the brakes can be applied before the forward-rear axle emergency park/spring brakes are automatically activated. Failure to stop tractor and allow air pressure to build up may result in damage to equipment and possible injury or death to personnel.

WARNING SUMMARY (Contd)

- Do not attempt to check and reset circuit breakers while driving the tractor. Always pull safely to side of road first. If tractor cannot be safely operated due to a circuit breaker that cannot be reset, do not attempt to operate tractor. Failure to comply may result in damage to equipment or possible injury or death to personnel.
- Do not start engine with parking brake control pushed in (released), the tractor could roll in either direction once air pressure in rear brake system reaches operating pressure and releases spring brakes. Always pull out parking brake control before starting engine or damage to equipment and possible injury or death to personnel may result.
- Never let tractor coast in (N) neutral position. Engine braking action is not available when transmission is out of gear, and damage to equipment and possible injury or death to personnel may result.
- The engine brake looses its effectiveness to control speed of tractor when tractor is pushed by additional weight of trailer on downhill grades. Failure to down-shift transmission to lower gear range and use service brakes to keep tractor and engine speeds under control may result in damage to equipment and possible injury or death to personnel.
- Never down-shift to a gear range lower than the tractor road speed on slippery pavement; a sudden increase in engine rpm may cause drive wheels to lose traction with pavement and result in loss of control of tractor or jackknifing of trailer. Failure to comply may result in damage to equipment and injury or death to personnel.
- Hearing protection is required for personnel when engine is running for an extended period of time and personnel are close to tractor. Noise levels produced by M915A1 series vehicles exceed 85 dB. Long-term exposure to this noises may cause hearing loss.
- Hot coolant is under pressure. Be careful when removing coolant filler cap or inspecting cooling system. Engine cooling system is under pressure and may cause severe injury to personnel.
- Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army POL (WP 0001) for information concerning storage, use, and disposal of these liquids. Failure to do so may result in damage to environment and health of personnel.
- Do not get oil or grease on the fiber brake disc face of winch. Failure to comply may result in winch slippage and injury to personnel or damage to equipment.
- Stay clear of wheel when checking tire air pressure and inflating tire. Injury or death to personnel may result from exploding wheel components.

WARNING SUMMARY (Contd)

- Never use the parking brake in place of the service brake for stopping the tractor. Sudden lockup of spring brakes may result in loss of control of tractor and possible damage to equipment and injury or death to personnel.
- Operators must know how to use the controls and indicators before starting and driving the tractor, and must be able to use the features of the tractor in the safest and most efficient way to accomplish their mission. Failure to comply may result in damage to equipment and possible injury or death to personnel.
- Operator and passenger must wear seatbelts during operation. Failure to wear a seatbelt when operating tractor may result in injury or death to personnel.
- Never park tractor on a steep grade. It is never a good practice to park a heavy truck on a steep slope even though the parking brake holding capability exceeds federal safety standards. Failure to comply may result in tractor moving unexpectedly, damage to equipment, and injury or death to personnel.
- To avoid unintentional fifth wheel movement during tractor operation, always ensure fifth wheel control is in the LOCK position before placing tractor in normal operation. Failure to comply may result in damage to equipment, and serious injury or death to personnel.
- Never move fifth wheel control to the UNLOCK position during normal tractor operation. Failure to comply may result in loss of control, damage to equipment, and serious injury or death to personnel.
- Ensure no one is standing behind tractor or trailer during the coupling procedure. Failure to comply may result in serious injury or death to personnel.
- Ensure the kingpin couples with the fifth wheel. Failure to comply may result in damage to equipment and possible injury or death to personnel.
- Chock wheels to keep the tractor from moving before brakes are released. Failure to comply may result in serious injury or death to personnel.
- Engine must be off to check the fan clutch and actuator. Failure to comply may result in severe injury or death to personnel.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: This manual supercedes TM 9-2320-283-10, 27 June 1983. Zero in the "Change No." column indicates an original page or work package.

Date of issue for revision is:

Original 15 May 2006

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 32 AND TOTAL NUMBER OF WORK PACKAGES IS 36, CONSISTING OF THE FOLLOWING:

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 15 May 2006

TECHNICAL MANUAL

OPERATOR'S MANUAL
FOR
TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1
NSN 2320-01-125-2640

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 https://aeps.ria.army.mil. The DA Form 2028 is located under the Public Applications section in the AEPS Public Home Page. 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 or DA Form 2028 direct to: AMSTA-LC-LPIT/TECH PUBS, TACOM-RI, 1 Rock Island Arsenal, Rock Island, IL 61299-7630. The email address is TACOM-TECH-PUBS@ria.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726.

*TM 9-2320-283-10 dated 15 May 2006 supersedes TM 9-2320-283-10 dated 27 June 1983, including all changes.

TABLE OF CONTENTS

TABLE OF CONTENTS (Contd)

HOW TO USE THIS MANUAL

ABOUT THIS MANUAL

Equipment operators shall familiarize themselves with the format and use of this TM prior to operating equipment or performing routine maintenance. Learning how to use this manual will enable personnel to quickly locate information, gain proper knowledge of the equipment, and shorten the time necessary to complete the required procedure

Features of this TM are:

a. Work Package Format—This TM is organized in Work Package (WP) format. Each WP is an individual, stand-alone unit of information identified by a four-digit sequence number. WPs are positioned within the TM in sequential order (i.e., 0001, 0002, 0003, etc.), and each WP is page numbered consecutively after the sequence number at the bottom of each page (i.e., 0001-1, 0001-2, 0001-3, etc.). A WP may contain as many as thirty pages.

b. Text Design—A Table of Contents (TOC) is located in the front matter section of the TM. WP titles and sequence numbers are listed in the TOC in sequential order. WPs are organized into chapters based on subject, and chapters are listed in the TOC. Chapter title pages are positioned sequentially within the manual, and each chapter title page contains an index of the WPs in that chapter only. In addition to the TOC and chapter title pages, a separate subject index is located in the rear matter section of the TM. The subject index is organized in alphabetical order with WP sequence and page numbers provided.

c. Use of Text and Illustrations—Task steps and illustrations are located side-by-side on facing two-page modules. Part nomenclature is identified by text callout numbers that correspond to illustration callout numbers. Illustrations are presented with exploded views, cut-away views, and individual callouts numbered sequentially, starting at the 11 o'clock position, and continuing clockwise around each illustration. Tables and figures are numbered sequentially within each WP. Abbreviations and acronyms are spelled out within the text the first time they appear in the manual only. A list of all abbreviations and acronyms used in this TM is provided in General Information, WP 0001.

HOW TO USE THIS MANUAL (Contd)

HOW TO USE THIS MANUAL

The format of this manual is designed to make accessing information quick and easy. The following example is intended as a guide and should be reviewed and put to memory before attempting to use this manual. If you have any questions after reviewing the following example, don't hesitate to ask your supervisor.

PROBLEM: You observe while leaving the motor pool that the semi-trailer brakes will not apply when the tractor service brake is used or trailer brake hand control on steering column is used.

SOLUTION: You must find information on the tractor brake system in the operator's manual, review the operating procedures, and if necessary, perform the appropriate troubleshooting tasks to solve the problem.

1. Refer to the TOC to determine what chapter and WP contains information on brake system operation. If there is not an obvious WP title that indicates the specific information on brakes, you may locate the information more quickly by using the subject index. After reviewing the TOC and/or subject index, you determine that Chapter 2, Operation under Usual Conditions, WP 0005, and Chapter 3, Troubleshooting Procedures, WP 0022, contain the information you desire.
2. Go to WP 0005 and review the operating procedures pertaining to coupling and stopping semi-trailer. Then go to WP 0021 and look through the list of malfunctions in the Troubleshooting Symptom Index until you identify the malfunction that most accurately fits the problem.
3. Go to WP 0022, table 3, malfunction 3, Trailer Brakes Will Not Apply When Brake Pedal Is Used or Hand Control on Steering Column is Used, and follow the steps listed. As you perform the procedure you discover that one of the inter-vehicular air hoses is leaking due to a damaged pressure coupling. Now you must notify field maintenance as instructed.
4. When maintenance is allocated at the operator's level, you must perform and complete all instructions as outlined.

CHAPTER 1

GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND DATA, AND THEORY OF OPERATION

FOR

M915A1 TRACTOR

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

GENERAL INFORMATION

INITIAL SETUP: Not Applicable

SCOPE

This technical manual (TM) contains operator level instructions for the operation and servicing of the M915A1 Tractor. Operating instructions include safety requirements, description of equipment, use of controls, and operation under usual and unusual conditions. Servicing instructions include operator level Preventive Maintenance Checks and Services (PMCS), lubrication, maintenance procedures, and troubleshooting as allocated by the Maintenance Allocation Chart (MAC). Replacement and repair of M915A1 components are allocated for field level or higher maintenance, and are subsequently not authorized at the operator's level nor included in this manual.

- Type of Manual – Operator/crew
- Model Number and Equipment Name – M915A1; Truck Tractor, Line Haul, 15-Ton, 6X4
- Purpose of Equipment – This tractor is designed to pull trailers for over the road use.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 750-8, The Army Maintenance Management System (TAMMS) users manual.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your M915A1 tractor 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. The preferred method for submitting a Quality Deficiency Report (QDR) is through the Army Electronic Product Support (AEPS) website under the Electronic Deficiency Reporting System (EDRS). The website address is: https://aeps.ria.army.mil. This is a secure site, requiring a password which can be applied for on the front page of the website. If the above method is not available to you, put it on an SF 368, Product Quality Deficiency Report (PQDR), and mail it to us at: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/PQDR MS 267, 6501 E. 11 Mile Road, Warren, MI 48397-5000. We'll send you a reply.

GENERAL INFORMATION (Contd)

HAND RECEIPT

There is not a separate Hand Receipt for the M915A1 tractor. For a complete list of end-item-related equipment (i.e., COEI, BII, and AAL) that must be accounted for, refer to WP 0033 and WP 0034.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problem is reported so corrections and/or improvements can be made to future items.

Corrosion specifically occurs with metals. It is an electrochemical process that causes the degradation of metals. It is commonly caused by exposure to moisture, acids, bases, or salts. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking.

Plastics, composites, and rubbers can also degrade. Degradation is caused by thermal (heat), oxidation (oxygen), solvation (solvents), or photolytic (light, typically UV) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking.

If a corrosion problem is identified, it should be reported using Standard Form 368, PQDR, and submitted to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) users manual. Use of key words such as corrosion, rust, deterioration, or cracking will ensure that the information is identified as a CPC problem.

OZONE DEPLETING SUBSTANCES (ODS)

The use of ODS for new acquisitions has been curtailed by Executive Order 12856, 3 August 1993, other public laws, and DoD and Army Policy.

ARMY PETROLEUM, OIL, AND LUBRICANTS (POL)

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

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

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

GENERAL INFORMATION (Contd)

ARMY PETROLEUM, OIL, AND LUBRICANTS (POL) (Contd)

The disposal of Army Petroleum, Oils, and Lubricants (POL) products are affected by some of these regulations. State regulations also may apply to POL.

If you are unsure of which legislation affects you, contact state or local agencies for regulations regarding proper disposal of Army POL.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Procedures for destruction of army materiel to prevent enemy use can be found in TM 750-244-6, Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use.

PREPARATION FOR STORAGE OF EQUIPMENT

Storage and shipment instructions are located in TM 9-2320-283-24P, Shipment and Limited Storage, and TM 746-10, Marking, Packaging and Shipment of Supplies and Equipment: General Packaging Instructions for Field Use.

WARRANTY INFORMATION

The M915A1 Tractor is warranted by AM General Corporation in accordance with TB 9-2300-295-15/20 for a period of 15 months from date of acceptance, as shown on the Material Inspection and Receiving Report (DD Form 250), or 12,000 miles road travel, whichever occurs first. Report all defects in material or workmanship to your supervisor, who will take appropriate action through your Organizational Maintenance Shop.

NOMENCLATURE CROSS REFERENCE LIST

The following is a list of official nomenclature used in this manual and the corresponding unofficial nomenclature (common names or jargon terms) used in the field.

OFFICIAL TM NOMENCLATURE	UNOFFICIAL NOMENCLATURE
Antifreeze, ethylene glycol mixture	Engine coolant
Ether quick-start system	Cold start system
Engine retarder	Engine brake, Jake brake, Jacobs brake
Wire rope	Cable
Quick disconnect coupling	Glad hand
Air hose tender	Pogo stick

GENERAL INFORMATION (Contd)

LIST OF ABBREVIATIONS/ACRONYMS

Abbreviations and acronyms appearing in this manual are defined in the paragraph from where they first appear, after which only the abbreviation or acronym is used. The following is a quick-reference list of all abbreviations and acronyms and their corresponding word or compound term used in this manual.

AAL – Additional Authorized List

AEPS – Army Electronic Product Support

ATTN – Attention

BII – Basic Issue Items

CAGE – Commercial and Government Entity Code

CDI – Cubic Inch Displacement

Cm – centimeter

COEI – Component of End Item

CPC – Corrosion Prevention and Control

EA – Each

EDRS – Electronic Deficiency Reporting System

EIR – Equipment Improvement Recommendation

F – Fahrenheit

FM – Field Manual

ft – foot

FWD – Forward

GAL. – Gallon

GCWR – Gross Combination Weight Rating

GVW – Gross Vehicle Weight

GVWR – Gross Vehicle Weight Rating

hp – horsepower

IAW – in accordance with

in. – inch

kg – kilogram

kPa – Kilopascals

lb – pound

MAC – Maintenance Allocation Chart

MLC – Military Load Classification

mm – millimeter

mph – miles per hour

mpg – miles per gallon

NATO – North Atlantic Treaty Organization

N/A – Not Applicable

NSN – National Stock Number

ODS – Ozone Depleting Substances

OZ – Ounces

PMCS – Preventive Maintenance Checks and Services

PQDR – Product Quality Deficiency Report

pt – pint

PSI – Pounds Per Square Inch

QDR – Quality Deficiency Report

qt – quart

rpm – revolutions per minute

TAMMS – The Army Maintenance Management System

TM – Technical Manual

Vdc – Volts Direct Current

WP – Work Package

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

WARNING

This tractor has been designed to operate safely and efficiently within the limits specified in the TM in accordance with (IAW) AR 70-1. Operation beyond these limits without written approval from the Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/PQDR MS 267, 5601 E 11 Mile Road, Warren, MI 48397-5000, is prohibited. Failure to comply may result in serious injury or death to personnel.

The M915A1 is an on-road line haul tractor used to pull trailers, such as the M872, M872A1, M872A2, M872A3, M872A4, M871, M871A1, M967/969, and M1062, by use of a fifth wheel. The M915A1 is built on a Type I chassis designed for highway use on Class I roads.

Capabilities of the M915A1 tractor are:

a. The M915A1 is capable of carrying a maximum load of 30,000 lb (13,608 kg) on its fifth wheel, and has a towing capacity from its rear pintle of 50,000 lb (22,680 kg). The M915A1 has a maximum Gross Vehicle Weight Rating (GVWR) of 50,000 lb (22,680 kg) and a Gross Combination Weight Rating (GCWR) of 105,000 lb (47,627 kg).

b. While operating on Class I roads, the M915A1 can maintain a speed of 55 mph on level roads and 25 mph while ascending a 3% grade at GCWR. It is capable of climbing a 17% grade at GCWR in both forward and reverse directions, and can operate on side slopes up to 10% where adequate traction is available. In addition, the M915A1 can ford hard-bottom water crossings up to 20 in. (5.1 cm) in depth for 5 minutes without damage or requiring maintenance before further operation.

c. Average cruising ranges at GCWR with a full tank of fuel (118 gal. (447 L)) will vary based on driving habits, climate, and road conditions. For example, during highway operation under full power at 2,100 rpm, the fuel rate will be 20.5–21.4 gal. (77.6–81.0 L) per hour. Traveling at an average of 40 mph at GCWR will result in a 300-mile operating range on a full tank.

d. The M915A1 is capable of operating in temperatures from -25 to 125° F (-32 to 52° C) and can operate to -50° F (-46° C) with arctic engine and personnel heater kits installed.

EQUIPMENT DESCRIPTION AND DATA (Contd)

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES (Contd)

The M915A1 features a type I chassis with interchangeable frame components. In addition, it uses commercial-type operating components and replacement parts that require no special maintenance procedures and a minimum of special tools.

Other features of the M915A1 tractor are:

a. Six-cylinder, in-line, four-stroke, four-cycle turbocharged diesel engine.
b. Automatic Allison HT 754CRD, centrifugal-clutch transmission with 5 forward and 1 reverse speeds.
c. Rear tandem axles; no-spin differential on forward-rear axle.
d. Front shock absorbers.
e. Radial, on-road tires (tubeless).
f. Available Artic Winterization Kit.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

(A) **FRONT SPOTTER MIRRORS —** There is an adjustable convex mirror mounted on each front fender; the left-hand mirror is intended to provide a view of the area directly in front of the tractor, and the right-hand mirror is intended to provide a view of the lower right side of the tractor.

(B) **BRUSH GUARD —** There is a steel brush guard mounted on the front of the tractor designed to protect the grille/headlight area.

(C) **CLEARANCE MARKER LIGHTS —** There are five amber lights mounted on the cab top used to mark the tractor cab. The lights are controlled by the headlamp switch.

(D) **AIR HORN —** A single horn is mounted on the cab top on the driver's side and is air operated.

(E) **SIDE VIEW MIRRORS —** There is an adjustable side view mirror mounted on each cab door used to view the area to the left and right of the tractor and the trailer when coupled.

(F) **WORK LAMP RECEPTACLE —** There is a small receptacle with a removable rubber dust cap on each side of the cab at the bottom outside corner adjacent to the door handle. The receptacle is provided as a power supply for the 12V work lamp.

(G) **DRIVING AXLES —** The forward-rear and rear-rear axles are mounted to the rear suspension assembly and function as the driving axles of the tractor.

(H) **SPRING AND SERVICE BRAKE CHAMBERS —** An air chamber, located at each wheel end on the rear tandem axles, mechanically operates the rear brakes by releasing them when air pressure is raised and applying them when air pressure is released.

(I) **FUEL TANK —** The fuel tank is located on the left frame rail below the cab driver door. The fuel tank supports the driver's steps for entering the cab, which are welded to the side of the tank.

EQUIPMENT DESCRIPTION AND DATA (Contd)

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Contd)

(J) **FRESH AIR VENTS —** There is a cab air vent on each side of the cab cowl. The vent is opened and closed from inside the cab by a hand-operated lever.

(K) **FRONT AXLE —** The front axle, mounted to the front suspension, is a non-driving front axle.

(L) **TURN SIGNAL LIGHTS —** There is a turn signal light mounted on the top of each front fender. The turn signal light has an amber lens facing the front of the tractor and a red lens facing the rear. This light also functions as a marker light.

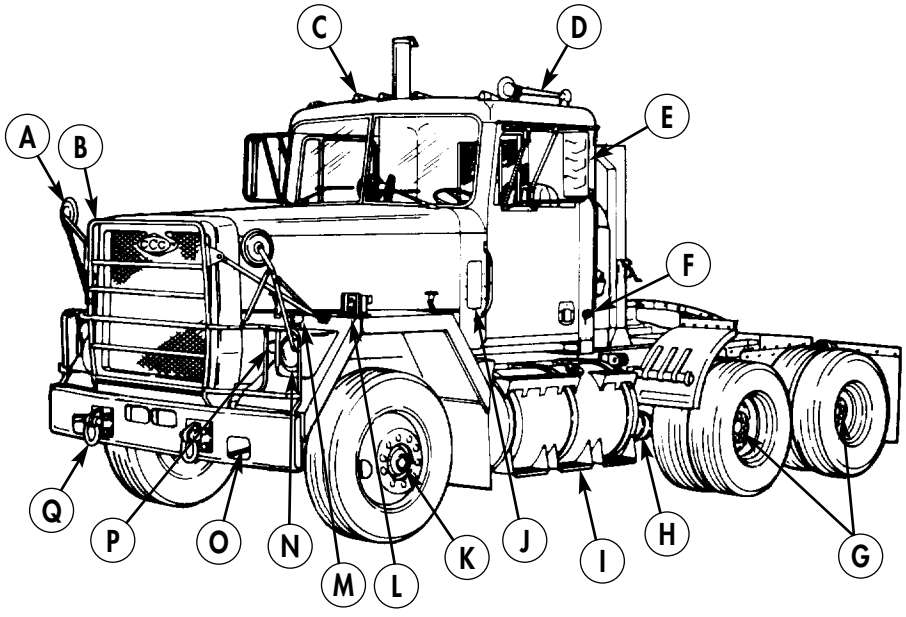
(M) **BLACKOUT LIGHT —** There is a light mounted above the service headlight on each front fender for blackout lighting only.

(N) **SERVICE HEADLIGHTS —** There is a combination high/low sealed beam headlight mounted on each front fender for service lighting as required.

(O) **FRONT AIR LINE COUPLINGS —** There are two air line quick-disconnect couplings located at the front of the tractor. They are accessible through an opening on each side of the front bumper.

(P) **BLACKOUT DRIVE LIGHT —** A single light is mounted adjacent to the headlight on the left front fender for blackout lighting only.

(Q) **TOWING EYES AND SHACKLES —** There are two towing eyes with removable shackles mounted on the front bumper and frame front support brackets.



EQUIPMENT DESCRIPTION AND DATA (Contd)

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Contd)

(R) **TRAILER RAMPS —** There are two steel ramps mounted on the frame rails adjacent to the fifth wheel. The trailer ramps help with alignment during coupling, and prevent the trailer from contacting the tractor frame or fifth wheel too low during coupling.

(S) **CAB CONTROLLED FIFTH WHEEL —** A fifth wheel is mounted on the tractor frame over the tandem rear axles. Its king pin lock is air-actuated by a control lever in the cab.

(T) **SPARE TIRE HOIST AND RACK ASSEMBLY —** The spare tire rack is mounted to the left frame rail next to the spare tire carrier. The rack assembly supports the hoist for lifting the spare tire on and off the carrier.

(U) **CAB SLIDING REAR WINDOW AND STONE SHIELD —** There is a sliding window protected by a steel grid located on the back panel of the tractor cab.

(V) **EXHAUST STACK AND MUFFLER —** The exhaust system stack and muffler, located and supported by the right rear corner of the cab, routes engine exhaust above the cab.

(W) **FRONT WHEEL MUD FLAP —** There is a mud flap mounted on each front fender.

(X) **BATTERY BOX AND NATO SLAVE RECEPTACLE —** The battery box is located on the right frame rail below the cab passenger door. The battery box contains four batteries, a NATO slave receptacle, and two steps for entering the cab.

(Y) **SPARE TIRE CARRIER —** The spare tire carrier, located directly behind the cab on the tractor frame, is a steel frame structure that holds the spare tire and wheel assembly.

(Z) **AIR HOSE TENDER —** The air hose tender is located in front of the spare tire carrier and supports a coiled air hose for connecting to the trailer.

(AA) **REAR WHEEL MUD FLAPS —** There is a mud flap mounted behind each wheel on the rear-rear axle.

(AB) **BLACKOUT TAIL AND STOPLAMPS —** There is a tail lamp located below the rear towing eye on the left and right frame rail that contains the bulbs for blackout tail and stop lamps.

(AC) **SERVICE TAIL AND STOPLAMPS —** There is a tail lamp mounted below the frame rear crossmember at each side of the towing pintle. The service tail lamp provides tail, turn signal, and stop lighting. A separate single-filament bulb functions as the backup lamp.

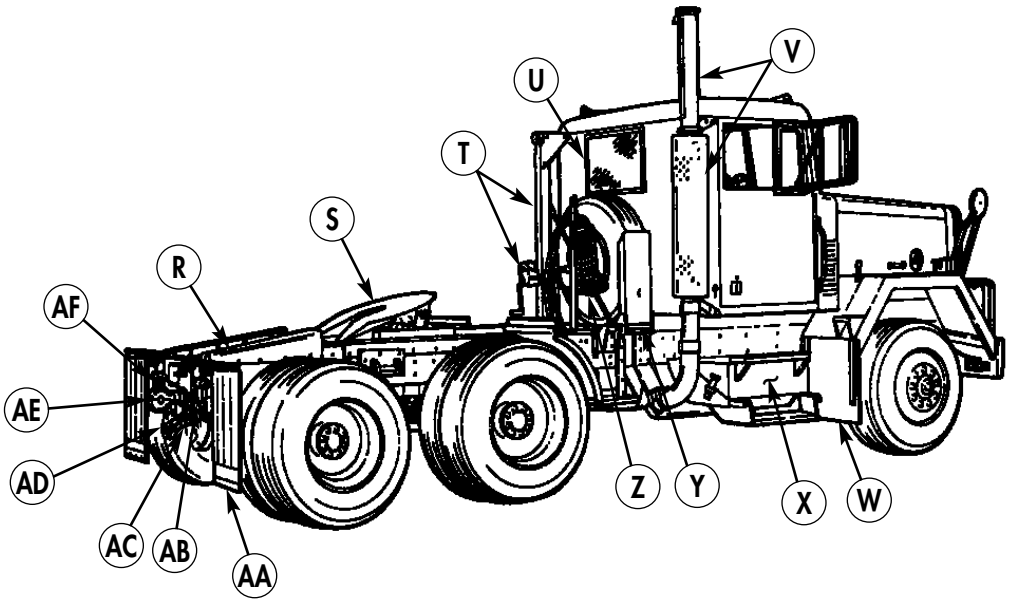
(AD) **REAR AIR LINE COUPLINGS —** There are two air line quick-disconnect couplings located at the rear of the tractor below the towing pintle.

(AE) **TOWING PINTLE —** The towing pintle, located at the center of the frame rear crossmember, is provided for interface with trailers requiring a pintle.

EQUIPMENT DESCRIPTION AND DATA (Contd)

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Contd)

(AF) **REAR TOWING EYES AND SHACKLES —** There is a towing eye mounted on the side of each frame rail adjacent to the towing pintle.



EQUIPMENT DATA

NOTE

Refer to the following tables and figure for specific equipment data.

Table 1. Weights.

Curb weight	19,720 lb (8,945 kg)
Gross Vehicle Weight Rating (GVWR)	50,000 lb (22,680 kg)*
Gross Combination Weight Rating (GCWR)	105,000 lb (47,627 kg)
Front axle (empty)	9,730 lb (4,414 kg)
Front axle (loaded)	11,580 lb (5,253 kg)
Front axle (loaded capacity)	13,000 lb (5,897 kg)
Rear axles (combined, empty)	9,100 lb (4,128 kg)
Rear axles (combined, loaded)	36,540 lb (16,574 kg)
Rear axles (combined rated capacity)	40,000 lb (18,144 kg)

* Tire load limit to 50,000 lb (22,680 kg) GVW

EQUIPMENT DESCRIPTION AND DATA (Contd)

EQUIPMENT DATA (Contd)

Table 2. Dimensions.

Length (overall chassis)	21.8 ft (6.7 m)
(overall M872 Trailer)	54.9 ft (16.7 m)
Width (overall, including mirrors)	10.3 ft (3.1 m)
(overall, mirrors folded)	8 ft (2.4 m)
Height (over exhaust stack, empty)	11.8 ft (3.6 m)
(over horn, empty)	9.6 ft (2.9 m)
Wheelbase	167 in. (424.2 cm)
Minimum ground clearance (under beam bracket)	10 in. (254 mm)
Shipping cube, minimum	1,674 cu ft (47.4 cu m)

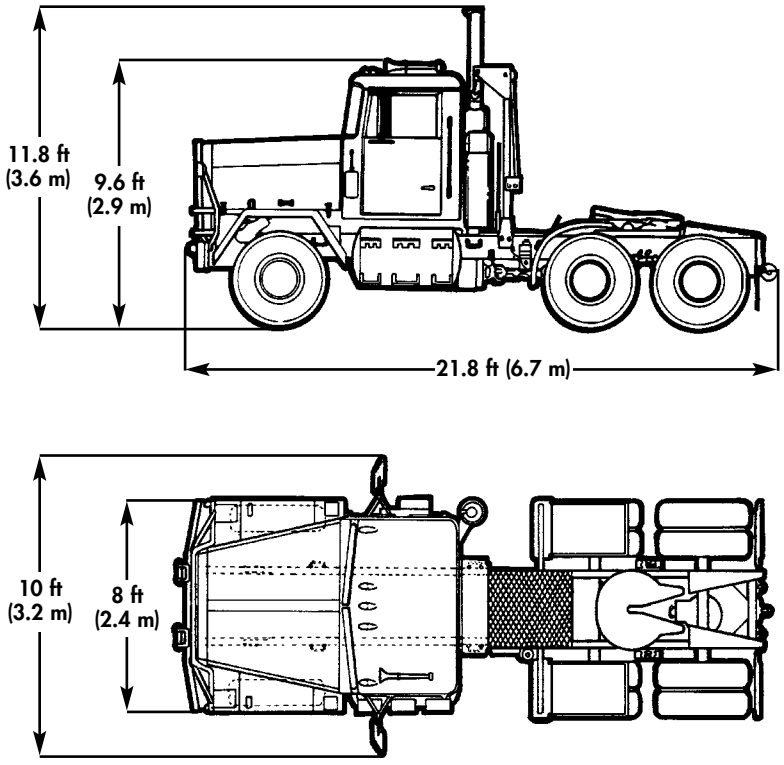


Figure 1. Tractor Dimensions.

EQUIPMENT DESCRIPTION AND DATA (Contd)

EQUIPMENT DATA (Contd)

Table 3. Capacities.

Engine oil (including filters)	44 qt (41.6 L)
Engine filters	4.8 qt (4.5 L)
Cooling system	17.3 gal. (65.5 L)
Fuel tank (maximum)	118 gal. (446.6 L)
(usable capacity)	112 gal. (423.9 L)
Power steering reservoir	2 qt (1.9 L)
Transmission oil	8 gal. (30.3 L)
Rear axles (forward-rear)	40/36 pt (18.9/17 L)

Table 4. Performance.

Operating mode and drive	On-road, 6x4
Operating temperature range	
(w/o additional kits)	-25 to 125° F (-32 to 52° C)
(w/arctic kit)	-50 to 125° F (-46 to 52° C)
Drawbar pull (maximum at 0.7 coefficient)	20,541 lb (9,317 kg)
Maximum towed load (w/M872 trailer 28,400 lb (12,882.2 kg) king pin	54,000 lb (24,494 kg)
Maximum forward speed (@ 2,100 rpm in 5th gear)	58 mph (93.3 kph)
Maximum sustained speed (@ 800/1200 rpm)	1.5/2 mph (2.4/3.2 kph)
Speed on grade (3.90% grade)	25 mph (40.2 kph)
Maximum grade at GCWR	19%
Angle of approach (loaded)	38°
Maximum side slope (w/adequate tractive surface)	10%
Maximum fording depth	20 in. (50.8 cm)

Table 5. Drivetrain, Chassis, and Cab.

ENGINE	
Make and model	Cummins, NTC-400 Big Cam III
Type	4-stroke, turbocharged, in-line diesel
Cylinders	6
Displacement	855 CID (14 L)
Compression ratio	14.0:1
Torque (gross @ 1,300)	1,250 lb-ft (1695 N•m)
Maximum horsepower (@ 1,300 rpm)	400
Maximum governed speed (load)	2,100 rpm
(no load)	2,460 rpm
Oil filter (quantity and type)	2, engine mounted, on-replacement elements
Engine retarder (internal w/engine)	Jacobs, Model 30

EQUIPMENT DESCRIPTION AND DATA (Contd)

EQUIPMENT DATA (Contd)

Table 5. Drivetrain, Chassis, and Cab (Contd).

FUEL SYSTEM	
Type	Diesel injection
Fuel tank (quantity and type)	1, 26-in. (66-cm) dia. cylinder, aluminum
Air cleaner (quantity and type)	1, dry element
COOLING SYSTEM	
Type	Radiator, pressurized
Working pressure	9 psi (0.6 bar)
TRANSMISSION AND TORQUE CONVERTER	
Make	Detroit Diesel Allison
Model (transmission)	HT 754CRD
(torque converter)	TC 498, lock-up type
Type	5-speed, fully automatic
Shifter	Remote control cables
ELECTRICAL SYSTEM	
Type	Basic 12V, 24V cranking
Alternator	12/24V, 85/15 amps
Circuit breakers	re-settable, recycling for headlamps
Batteries (quantity and type)	4, maintenance-free
(volts)	12 ea
(connection)	Series/parallel
(capacity)	950 cold cranking amps @ 0° F (-18° C) @ 24V
AXLES	
Make (front, forward-rear, and rear-rear)	Eaton
Type and model (front)	I-beam, EFA 13F3
(forward-rear)	Tandem, DS-401P
(rear-rear)	Tandem, RS-401
Capacity at ground (front)	13,000 lb (5,897 kg)
(forward-rear and rear-rear)	40,000 lb (18,144 kg)
Steering angle (front)	40°
Gear ratio (forward-rear and rear-rear)	4.33:1
Differential lockup (forward-rear and rear-rear)	Air controlled
Lubrication (forward-rear and rear-rear)	Pressure
STEERING	
Make (gear and type)	Ross, integral power
(power steering pump and type)	Eaton B165R, gear driven
Actuation	Hydraulic power booster
Steering gear ratio	20.4:1
Turning radius	53.5 ft (16.3 m)

EQUIPMENT DESCRIPTION AND DATA (Contd)

EQUIPMENT DATA (Contd)

Table 5. Drivetrain, Chassis, and Cab (Contd).

WHEELS	
Make and model	Firestone, 27404
Quantity	11
Size (dia. x width)	22.5 x 8.25 in. (57.2 x 21 cm)
Studs and diameter of bolt circle	10 per wheel, 11.25-in. (285.8-mm) dia .
Stud size	1.125 in. (28.6 mm)
Rated capacity (on-road)	7,000 lb (3,175.2 kg)
TIRES*	
Type	Radial ply, tubeless, on-road
Size	11R22.5, 11 x 22.5 in. (27.9 x 57.2 cm)
Weight (w/wheel)	208 lb (94.3 kg)
Rated capacity (on-road, single)	6,040 lb (2,739.7 kg)
(on-road, dual)	5,300 lb (2,404.1 kg)
Load range/ply rating	G/14
Air pressure (maximum cold, front)	105 psi (724 kPa)
(maximum cold, rear)	95 psi (655 kPa)
BRAKE SYSTEM	
Actuation	Air-mechanical (S-Cam)
Fail-Safe (spring brakes)	Forward-rear (2)
Pressure range	65–150 psi (448.2–1,034.2 kPa)
FIFTH WHEEL	
Type and travel	Cab controlled, air lock, sliding, 12 in. (305 mm)
Rated capacity (vertical)	40,000 lb (18,144 kg)
(drawbar)	150,000 lb (68,039 kg)
Plate diameter/oscillation	36 in. (91.4 cm) dia.
Kingpin size	2 in. (50.8 mm)
Pitch (front/rear)	15/10°
PINTLE	
Make and model	Holland, No. 760
Rated capacity	25 tons (22.7 metric tons)
TOWING AND LIFTING EYES	
Quantity	12
Maximum load up to 45° angle from long axis (each)	60,000 lb (27,216 kg)
CAB	
Make	AM General
Type	2-passenger, all-steel, w/butterfly hood

* Tactical tires, if used, should replace on-road tires at all drive wheels.

EQUIPMENT DESCRIPTION AND DATA (Contd)

EQUIPMENT DATA (Contd)

Table 6. Accessories.

Arctic Heater Kit (engine) (fuel fired, optional)*	
Arctic Heater Kit (personnel) (fuel fired, optional)*	
Tool box	1 under passenger seat and center of cab
Air horn	1 on cab top
Heater/defroster	Fresh air type, standard

* Refer to TB 9-2320-283-14

Table 7. Military Load Classification (MLC).

Vehicle w/o Trailer	8
Vehicle w/Trailer	Unloaded/loaded
M871	14/35
M872	14/46
M1062	11/34
M967	13/29
M969	14/30

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

THEORY OF OPERATION

INITIAL SETUP: Not Applicable

GENERAL

This work package (WP) describes how components of the M915A1 tractor work, and is provided to give the operator a basic knowledge of the tractor prior to its use. A description of each functional system is provided below.

POWER TRAIN FUNCTION

The power train is the mechanism by which power is transmitted from the engine to the drive wheels. The power train is mounted to a channel type frame, and together they make up the chassis. The M915A1 power train consists of a diesel engine and automatic transmission connected to two rear tandem axles. The engine and transmission transmit power to the forward-rear axle through a primary propeller shaft. An inter-axle propeller shaft connects the forward-rear axle to the rear-rear axle. The front axle of the M915A1 is a non-driving axle as indicated by its 6 x 4 drive designation. Front and tandem rear axles are connected to the chassis by separate suspension systems. The front suspension consists of two leaf spring assemblies and shock absorbers connected to the front axle beam and the tractor frame. The tandem rear axle suspension features two equalizer beams connecting the forward-rear and rear-rear axles together so that both are sprung by a single leaf spring assembly at each side of the tractor frame. In addition, a torque rod assembly is connected to the tandem rear axles and frame rear suspension crossmember to limit the amount of axle housing rotation when power is transmitted to the ground.

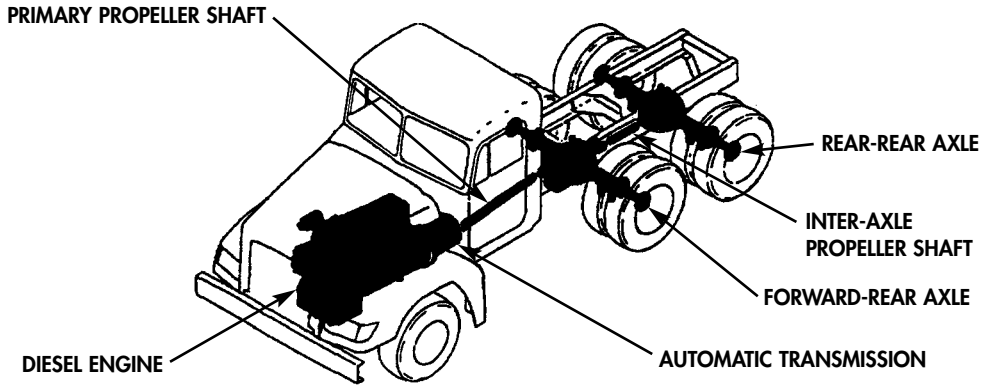


Figure 1. Power Train.

THEORY OF OPERATION (Contd)

POWER TRAIN FUNCTION (Contd)

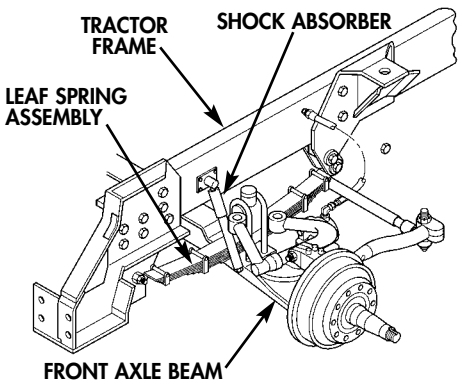


Figure 2. Front Suspension.

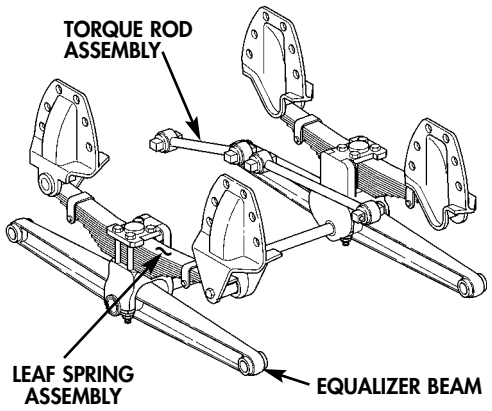


Figure 3. Rear Suspension.

ENGINE AND TRANSMISSION FUNCTION

The M915A1 is equipped with a Cummins NTC400 engine. It is an in-line, six-cylinder, four-stroke, four-cycle, turbocharged diesel. The engine powers the drive wheels, as well as the following accessories:

- Exhaust-driven turbocharger
- Belt-driven water pump
- Belt-driven cooling fan
- Belt-driven alternator
- Gear-driven air compressor
- Gear-driven fuel injector pump
- Gear-driven power steering pump
- Gear-driven engine oil pump

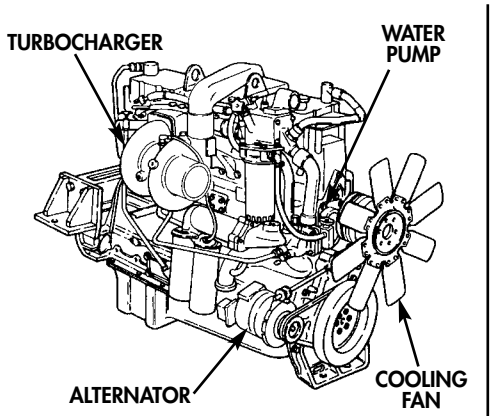


Figure 4. Engine and Accessories.

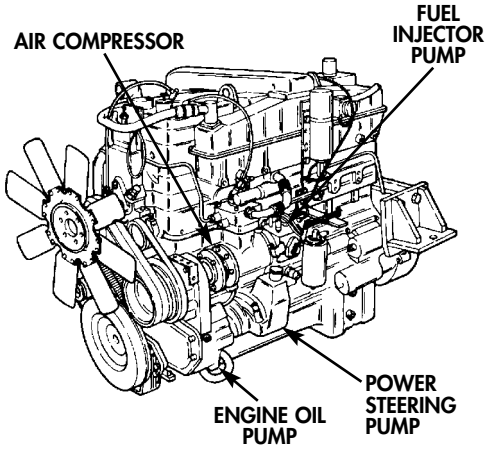


Figure 5. Engine and Accessories.

THEORY OF OPERATION (Contd)

ENGINE AND TRANSMISSION FUNCTION (Contd)

The Detroit Diesel Allison HT 754CRD transmission is a fully automatic, 5-speed type. Gear selection is accomplished through a remote control cable connecting a range selector lever on the side of the transmission to a manual control lever mounted on a control tower in the cab. During normal driving operation, shifting is controlled automatically by the transmission modulator control, which determines the transmission gear range setting from the position of the engine fuel control lever on the fuel injector pump. The transmission also drives the speedometer through a gear and cable.

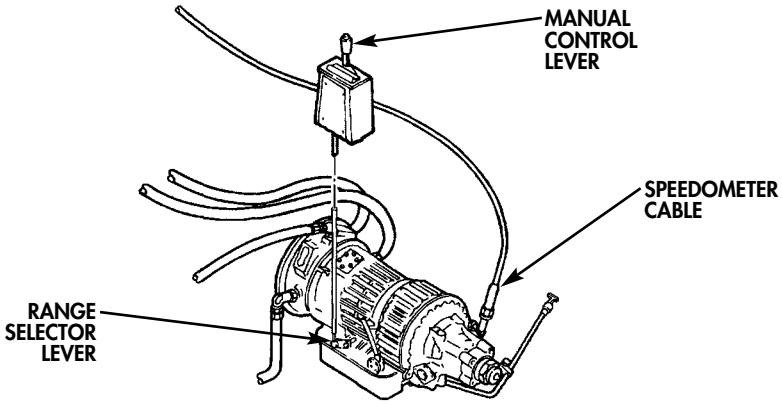


Figure 6. Transmission and Controls.

FUEL SYSTEM FUNCTION

The M915A1 fuel system consists of a fuel injection pump driven off the air compressor which is driven by the engine accessory drive. The fuel injection pump has a built-in governor that meters fuel through a screen filter, solenoid shutoff valve, and into the injectors.

END OF WORK PACKAGE

CHAPTER 2

OPERATOR INSTRUCTIONS

FOR

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS

INITIAL SETUP: Not Applicable

WARNING

Operators will know the location and understand the proper use of all controls and indicators before operating the tractor. Failure to comply may result in damage to equipment and possible injury or death to personnel.

Prior to operating the tractor, you should become familiar with the location, function, and use of all controls and indicators. This work package (WP) describes each control or indicator by name, location, and how it is used. Illustrations are provided to aid in identifying each control and indicator. Controls and indicators are grouped by location as follows:

a. Instrument panel controls and indicators
b. Cab floor-mounted foot controls
c. Transmission range selector controls and sliding fifth wheel control
d. Steering wheel and steering column-mounted controls
e. Seat adjustment controls
f. Additional cab controls

INSTRUMENT PANEL CONTROLS AND INDICATORS

(A) **Instrument Panel** – The Instrument Panel is located below the cowl and windshield, and supports the instrument cluster, tachograph, control panel, heater control panel, circuit breaker and relay access panel, and glove box.

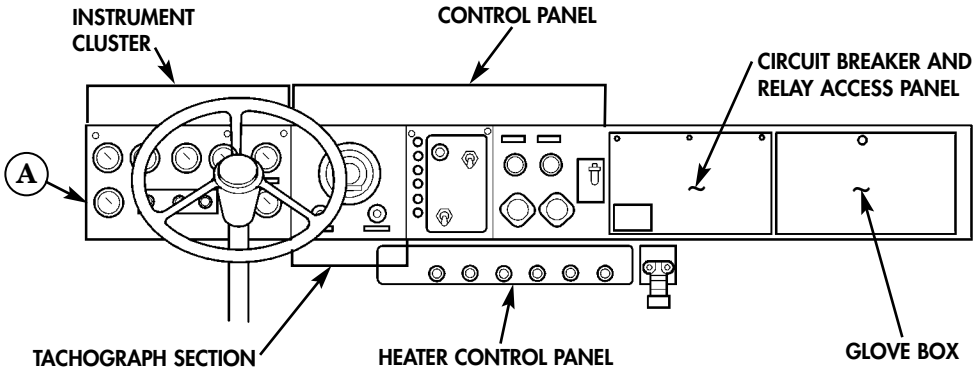


Figure 1. Instrument Panel Controls and Indicators.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

INSTRUMENT CLUSTER

(B) **FUEL Gauge** – This gauge indicates the amount of fuel in the fuel tank when the ENGINE RUN switch is in the ON position.

(C) **VOLTS Meter** – The VOLTS meter indicates battery voltage from 8–18V. The green shaded area, 12–15 V, on the face of the gauge is the normal operating range.

(D) **TRANS OIL TEMP Gauge** – This gauge indicates temperature of transmission oil in degrees Fahrenheit and Centigrade. There are three temperature zones, shaded green, yellow, and red, on the face of the gauge. The green shaded area 100–250° F (38–121° C) is the normal operating range.

CAUTION

If transmission oil temperature rises to the red zone, 300° F (149° C), stop tractor in a safe place, shift to NEUTRAL position, and operate engine at 1,500 rpm until gauge indicator is in yellow or green zones. If temperature cannot be lowered to normal operating zone, below 300° F (149° C), after operating in neutral for 3 minutes, shut down engine and notify field maintenance. Continued operation in the red zone will cause damage to transmission.

(E) **TRANSMISSION TEMPERATURE GAUGE Decal** – This decal, located on the instrument cluster directly above the TRANS OIL TEMP gauge, is a quick reference for the three color-coded operating ranges on the transmission oil temperature gauge.

CAUTION

The minimum engine oil pressure at 1,700–2,100 rpm is 30 psi (207 kPa) for safe engine operation. At idle, the minimum safe engine oil pressure is 10 psi (69 kPa). If engine oil pressure is below minimum levels, shut down engine immediately and investigate cause. Failure to comply may result in damage to equipment.

(F) **OIL PRESS Gauge** – This gauge indicates engine oil pressure with engine running. At 2,100 rpm rated engine speed, the normal oil pressure range is 35–50 psi (241–345 kPa). At idle, minimum oil pressure limit is 10 psi (69 kPa).

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

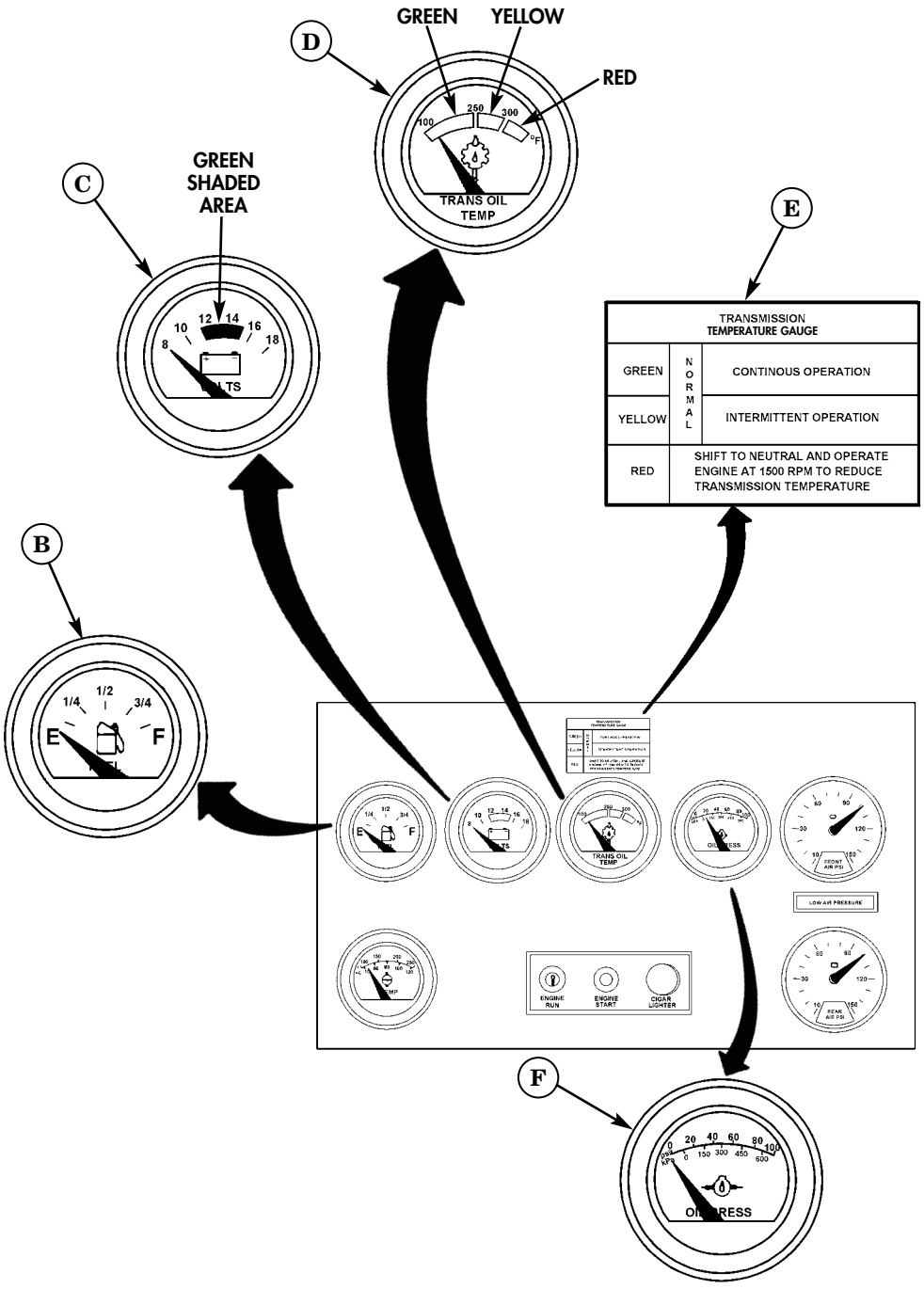


Figure 2. Instrument Cluster and Gauges.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

INSTRUMENT CLUSTER (Contd)

WARNING

Operating tractor with air pressure below the normal operating range indicates a loss in air supply and will limit the number of times the brakes can be applied before losing front wheel brakes. Failure to stop tractor and allow air pressure to build up may result in damage to equipment and possible injury or death to personnel.

(G) **FRONT AIR PSI Gauge** – This gauge registers the amount of air pressure in the front brake system. Normal operating range is 105–140 psi (724–965 kPa).

WARNING

If low pressure warning lamp illuminates and buzzer sounds while driving tractor, stop immediately and investigate the cause. Failure to comply may result in damage to equipment and possible injury or death to personnel.

(H) **LOW AIR PRESSURE Indicator** – This indicator illuminates red when either the front or rear air system pressure is between 64–76 psi (441–524 kPa) and below. The low air pressure buzzer will sound at the same time the LOW AIR PRESSURE indicator comes on.

WARNING

Operating tractor with air pressure below the normal operating range indicates a loss in air supply and will limit the number of times the brakes can be applied before the forward-rear axle emergency park/spring brakes are automatically activated. Failure to stop tractor and allow air pressure to build up may result in damage to equipment and possible injury or death to personnel.

(I) **REAR AIR PSI Gauge** – This gauge registers the amount of air pressure in the rear brake system. Normal operating range is 105–140 psi (724–965 kPa).

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

INSTRUMENT CLUSTER (Contd)

CAUTION

Do not operate tractor if coolant temperature rises above 220° F (104° C) or engine overheating will occur. Shut down engine and do not start until coolant temperature is in normal range. If problem persists, notify field maintenance. Failure to comply may result in damage to equipment.

(J) **TEMP Gauge** – The TEMP gauge indicates engine coolant temperature in degrees Fahrenheit and Centigrade. The normal operating range is 180–200° F (82–93° C).

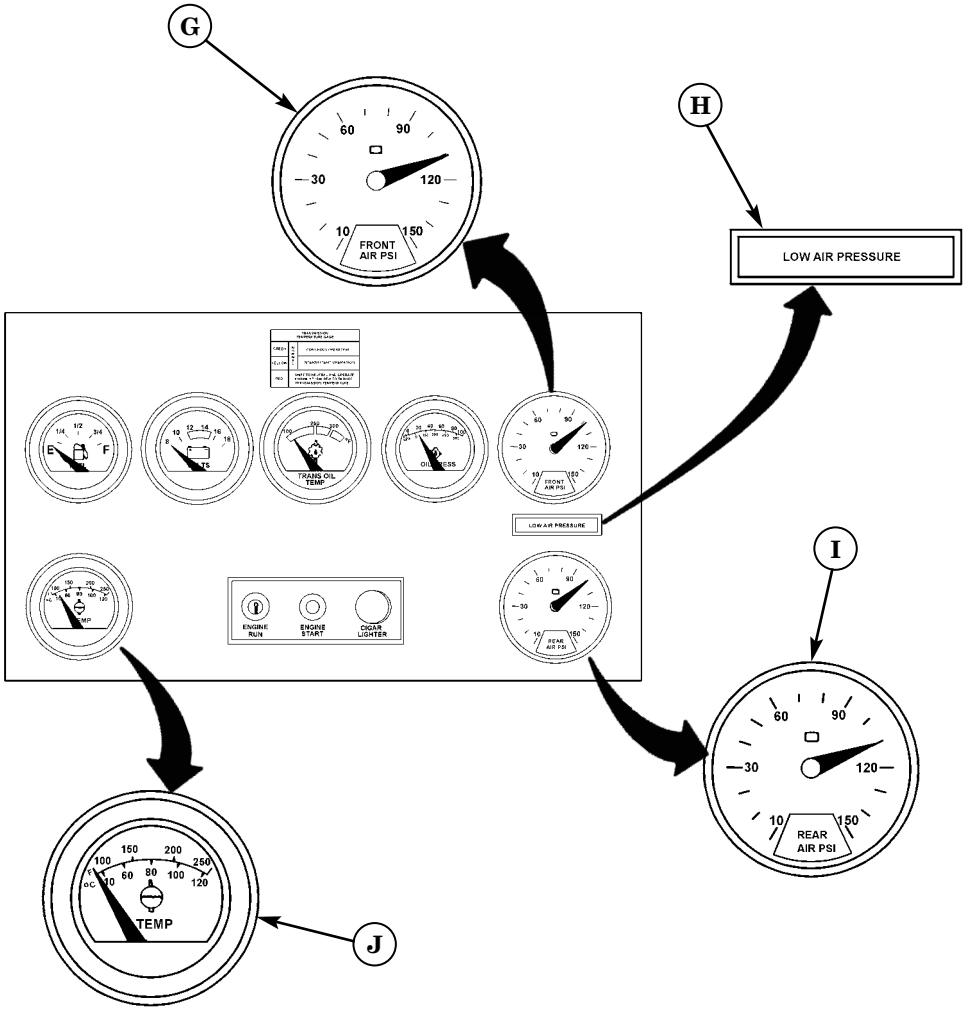


Figure 3. Instrument Cluster, Gauges, and Indicator.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

INSTRUMENT CLUSTER (Contd)

(K) **ENGINE RUN Switch** – The ENGINE RUN switch is a three-position, key-operated switch. To operate switch, insert key and turn switch to ON position. In the ON position, power to the ignition and accessories is connected; the low oil pressure and parking brake warning lamps will illuminate, and if air system pressures are below 60 psi (414 kPa), the low air pressure lamp and warning buzzer will come on. After starting engine and with all systems operational, the low oil pressure lamp, low air pressure lamp, and warning buzzer will go off. The parking brake warning lamp will remain on until the brake is released. The engine run switch is used to shut down the engine, and disconnect power to all accessories by turning switch to OFF position.

CAUTION

Do not depress and hold engine start button for more than 15 seconds at a time. Allow two minute intervals between cranking engine for starter motor to cool. Once engine is running, do not depress start button. Failure to comply may result in damage to equipment.

(L) **ENGINE START Button** – The ENGINE START button is operated by depressing and holding the button down until the engine starts. Release button once engine starts.

(M) **CIGAR LIGHTER/UTILITY PLUG** – The utility plug, located on the instrument cluster adjacent to the ENGINE START button, is used as a 12V power source for accessories.

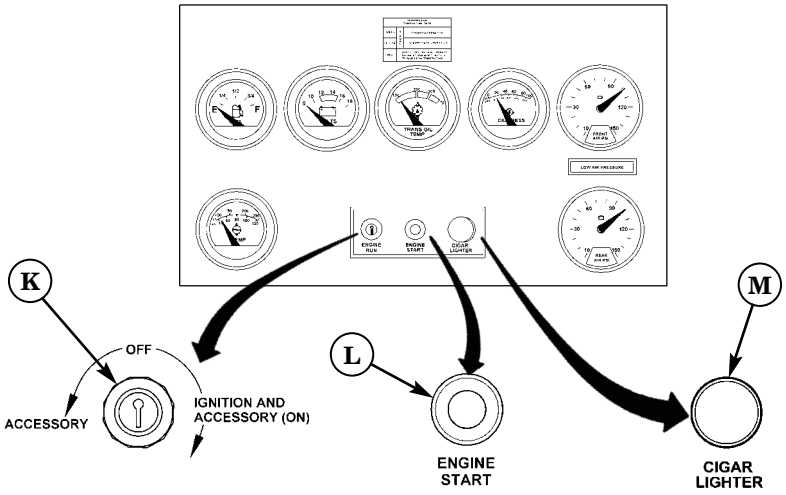


Figure 4. Engine Run Switch, Start Button, and Cigar Lighter/Utility Plug.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

TACHOGRAPH SECTION OF INSTRUMENT PANEL

(N) **Tachograph** – The Tachograph, located on the instrument panel to the right of the instrument cluster, indicates and records the following data on a 7-day graph chart:

a. Ground speed is indicated by the miles per hour (mph) hand
b. Engine speed is indicated by the revolutions per minute (rpm) hand
c. Distance traveled is indicated in miles on the odometer
d. Hours and minutes are indicated by analog clock hands.

CAUTION

Do not operate tractor without tachograph chart installed or damage to tachograph will result.

The chart is replaced by opening the front of the tachograph. First insert key in bezel lock and turn key to the left until the tachograph can be opened. Swing tachograph down to its horizontal position and remove and replace the chart. Ensure the new chart is seated prior to closing.

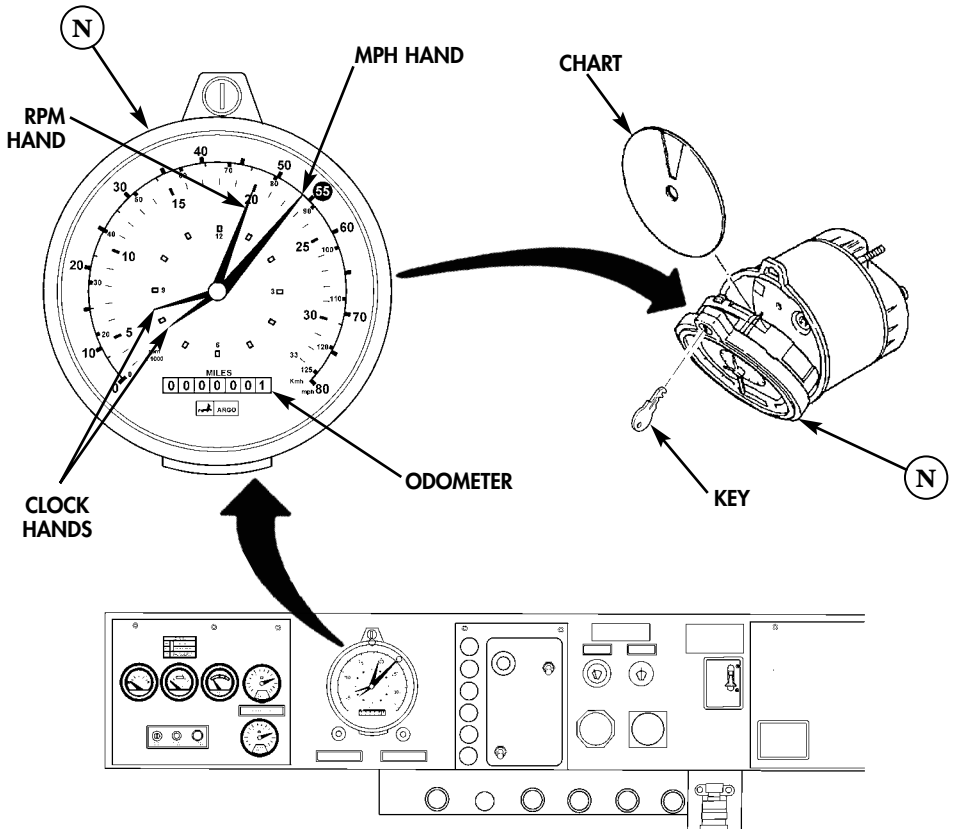


Figure 5. Tachograph.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

TACHOGRAPH SECTION OF INSTRUMENT (Contd)

(O) **Ether Quick-Start Button** – This button is depressed to inject ether in the engine intake manifold for cold weather starting. Depress and release switch button to operate.

(P) **Clearance Lamps Button** – This button is depressed to flash the tractor and trailer clearance and marker lamps on and off.

(Q) **CL LPS (Clearance Lamps) Indicator** – This indicator is designed to aid the operator in locating the clearance lamps button. This indicator will illuminate when the LIGHTS switch is pulled out to the first and second positions, and its brightness can be adjusted by rotating the LIGHTS switch knob.

(R) **ETHER Indicator** – The ETHER indicator is designed to aid the operator in locating the ether quick-start pushbutton. This indicator will illuminate when the LIGHTS switch is pulled out to the first and second positions, and its brightness can be adjusted by rotating the LIGHTS switch knob.

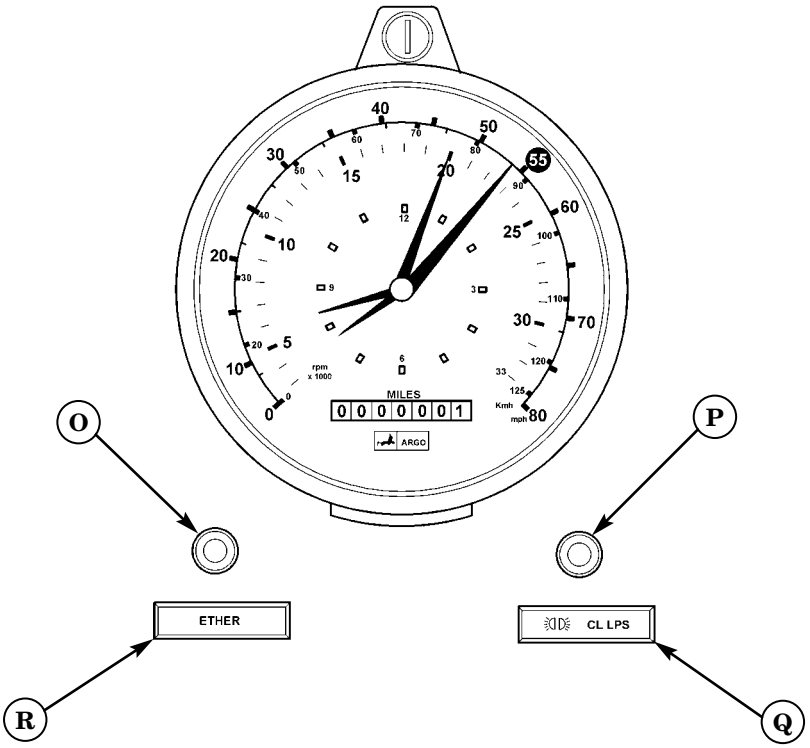


Figure 6. Ether Quick Start and Clearance Lamps Buttons and Indicators.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

CONTROL PANEL

(S) **ENG OIL Indicator** – This indicator illuminates red when engine oil pressure is below 10 psi (69 kPa), the minimum operating limit.

(T) **ENG TEMP Indicator** – This indicator illuminates red when engine coolant temperature exceeds 220° F (104° C), the maximum operating limit.

(U) **DIFF LOCK OUT Indicator** – This indicator illuminates red when the INTER-AXLE DIFFERENTIAL control is placed in the LOCK position and inter-axle differentials are engaged.

(V) **PTO Indicator** – Not used on M915A1 tractors.

(W) **PARK BRAKE Indicator** – This indicator illuminates red when SYSTEM PARK control knob is pulled out.

(X) **HIGH BEAM Indicator** – The HIGH BEAM indicator illuminates blue when the cab floor-mounted headlamp dimmer switch is depressed for high beam operation.

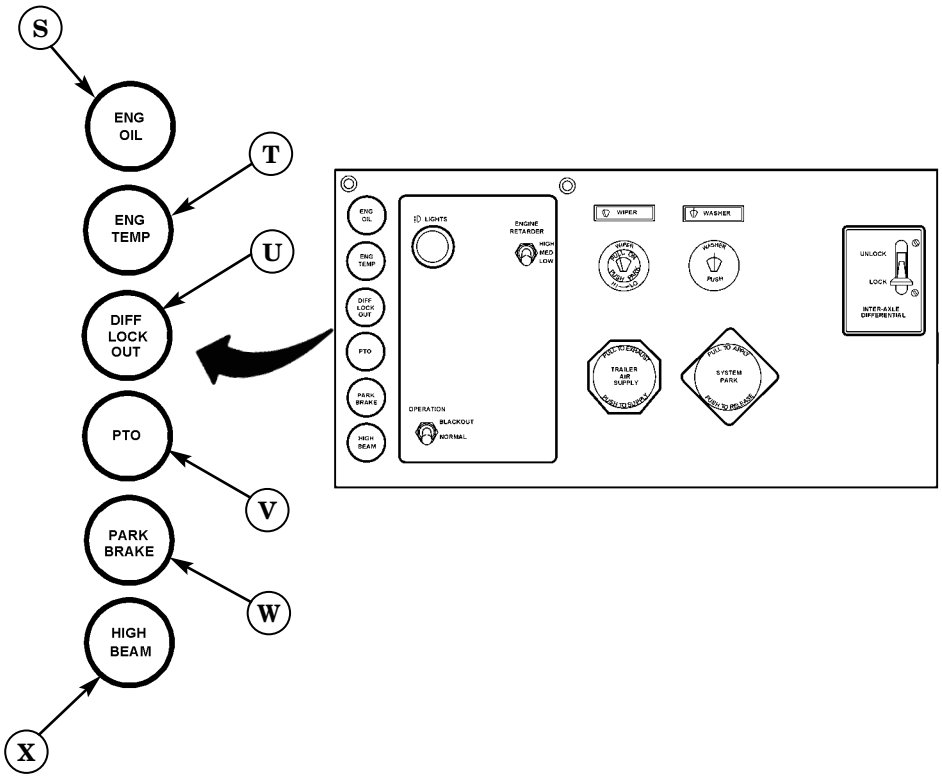


Figure 7. Control Panel Indicators.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

CONTROL PANEL (Contd)

CAUTION

Do not operate service lamps for extended periods of time with engine off. Failure to comply may prevent engine from starting due to run down batteries.

(Y) **LIGHTS Switch** – The LIGHTS switch is a combination switch and rheostat that controls all tractor service lamps. Pulling the LIGHTS switch knob out to the first position turns on the marker/turn signal lamps, service tail and stop lamps, clearance lamps, and instrument panel lamps. Pulling the LIGHT switch knob out to the second position turns on the service headlamps in addition to the same lamps operated in the first position. Turning the LIGHTS switch knob when in the first or second position will dim or brighten the instrument panel lights.

(Z) **ENGINE RETARDER Switch** – This switch is located on the control panel to the right of the LIGHTS switch, and controls the number of engine cylinders activated when the engine retarder foot switch is depressed. The HIGH position designates all 6 cylinders for maximum engine braking, MED position designates 4 cylinders, and LOW position provides 2 cylinders for minimum engine braking.

CAUTION

Do not operate blackout lamps for extended periods of time with engine off. Failure to comply may prevent engine from starting due to run down batteries.

(AA) **OPERATION Switch** – This switch is a two-position switch used to select either the blackout or service lamps, but does not turn them on. The LIGHTS switch is used to turn all lamps on and off. To operate this switch, pull the toggle out and move it to either position. This feature prevents accidental engagement or disengagement of the service lamps. In the NORMAL position, all blackout lamps are inoperable and all service lamps are operable. In the BLACKOUT position all service lamps, backup lamps, and horn are automatically locked out, and the blackout marker, tail, and stop lamps will operate instread when the LIGHTS switch is pulled to its first position. Pulling the LIGHTS switch to its second position turns on the blackout drive lamps in addition to the same blackout lamps operated in the first position. The blackout stop lamps (brake lights) will operate with the LIGHTS switch in either position.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

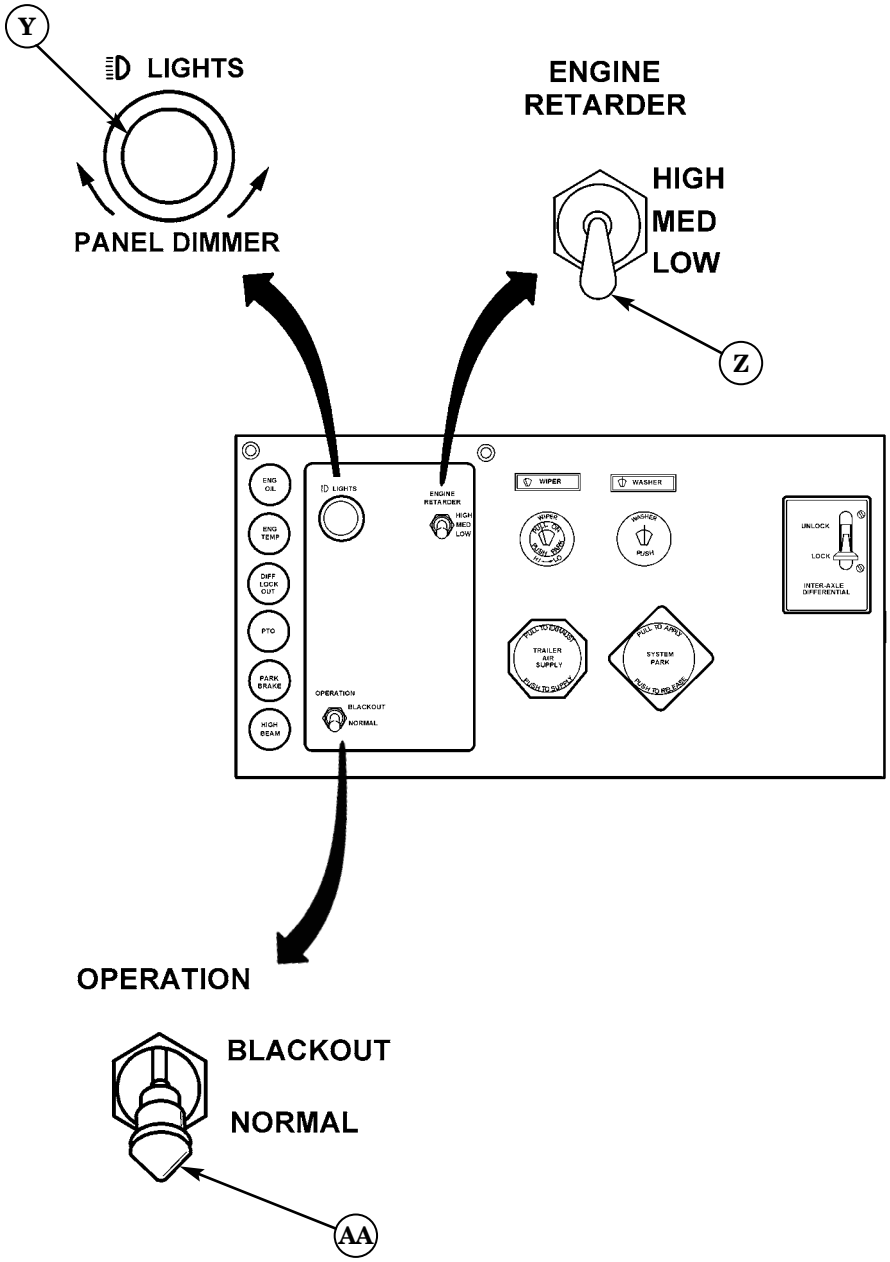


Figure 8. Lights and Engine Retarder Switch.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

CONTROL PANEL (Contd)

(AB) **WIPER Control** – The WIPER control is a valve for operating the windshield wiper motor. Pull out the WIPER control knob to operate the pneumatic wiper motor, and rotate the switch knob for variable HI and LOW speed adjustment. Push in the knob to turn the wipers off.

(AC) **WIPER Indicator** – This indicator is designed to aid the operator in locating the WIPER switch. This indicator will illuminate when the LIGHTS switch is pulled out to the first and second positions, and its brightness can be adjusted by rotating the LIGHTS switch knob.

(AD) **WASHER Indicator** – This indicator, located on the control panel to the right of the WIPER indicator, is designed to aid the operator in locating the WASHER switch. This indicator will illuminate when the LIGHTS switch is pulled out to the first and second positions, and its brightness can be adjusted by rotating the LIGHTS switch knob.

(AE) **WASHER Control** – The WASHER Control, located on the control panel below the WASHER indicator, is a valve for operating the windshield washer pump. Depress and hold the WASHER Control knob to spray cleaning compound on the windshield. Release knob to stop spray.

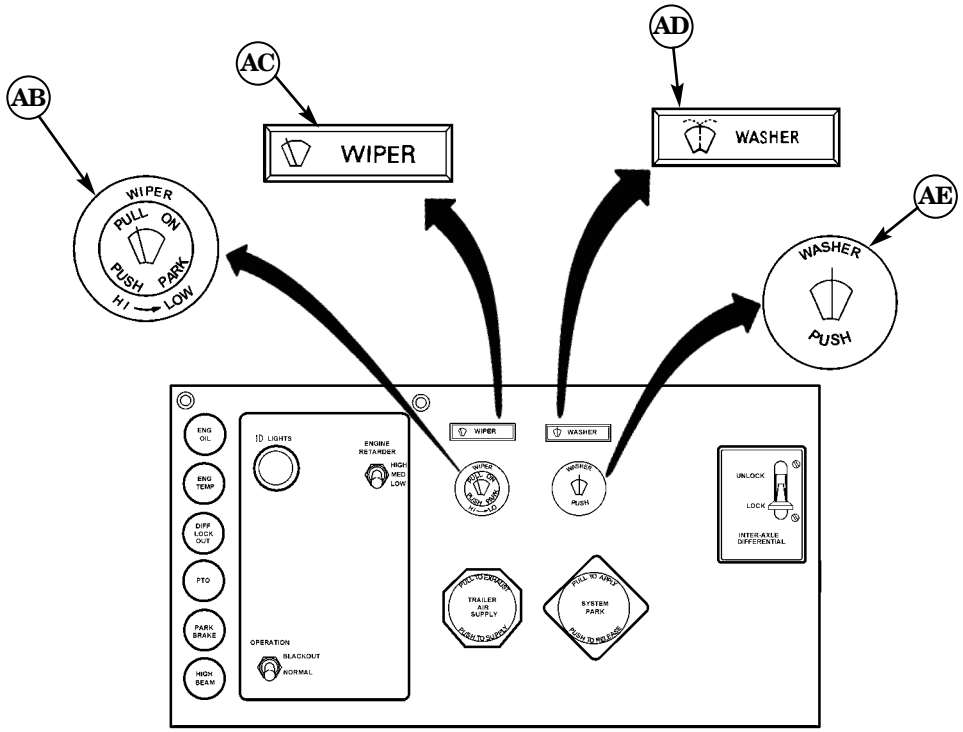


Figure 9. Wiper and Washer Controls and Indicators.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

CONTROL PANEL (Contd)

CAUTION

Never move the inter-axle differential control to the LOCK position while tractor is moving or any wheel is spinning or damage to equipment will result.

(AF) **INTER-AXLE DIFFERENTIAL Control** – This control is a valve for operating the air actuated inter-axle differential lockup. To engage the differential lock, bring tractor to a complete stop and move control lever to LOCK position. The DIFF LOCK OUT indicator will illuminate red when control lever is in LOCK position. To disengage the differential lock, move the control lever to UNLOCK position while the tractor is moving.

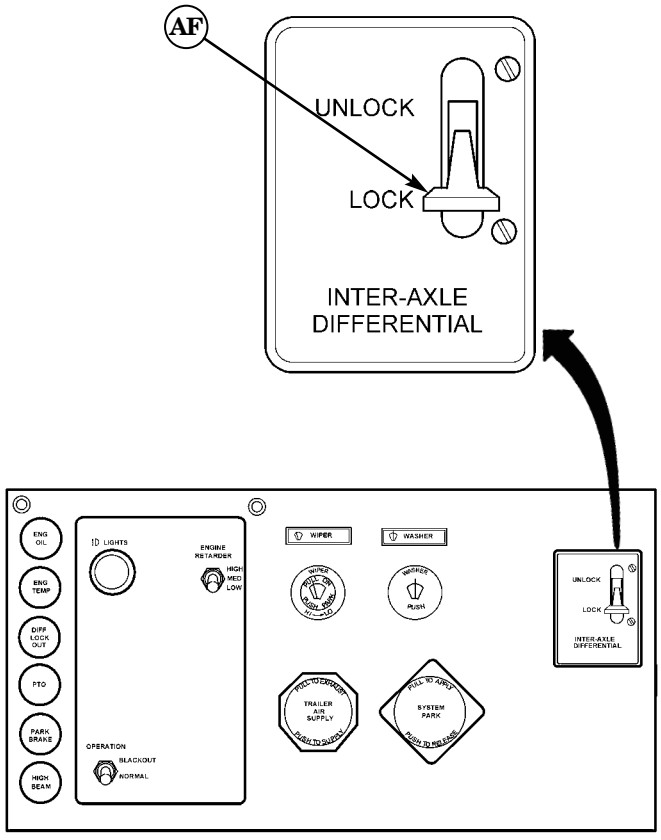


Figure 10. Inter-Axle Differential Control.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

CONTROL PANEL (Contd)

WARNING

Never use the parking brake in place of the service brake for stopping the tractor. Sudden lockup of spring brakes may result in loss of control of tractor and possible damage to equipment and injury or death to personnel.

(AG) **SYSTEM PARK Control** – The SYSTEM PARK control is a valve used to apply or release the parking brakes. To apply the parking brakes, bring tractor to a complete stop, then pull the SYSTEM PARK control knob out. The PARK BRAKE indicator will illuminate red when the SYSTEM PARK Control is in the out position. Push the knob in to release the parking brakes. If tractor is connected to a trailer, push in the TRAILER AIR SUPPLY control knob after releasing the tractor parking brakes.

CAUTION

If air system pressure drops to 60 psi (414 kPa) as a result of a release of system pressure or an air leak, the trailer air supply protection valve will automatically trip and apply the trailer spring brakes to prevent the tractor spring brakes from locking up. Failure to stop tractor and allow air system pressure to build up will result in damage to equipment.

(AH) **TRAILER AIR SUPPLY Control** – This control is a valve used to supply compressed air to the trailer air reservoirs and brakes. Whenever the SYSTEM PARK control is pulled out to apply the tractor parking brakes, the TRAILER AIR SUPPLY control knob will automatically pop out to apply the trailer brakes. To release the trailer brakes, push in the TRAILER AIR SUPPLY control knob after releasing the tractor parking brakes.

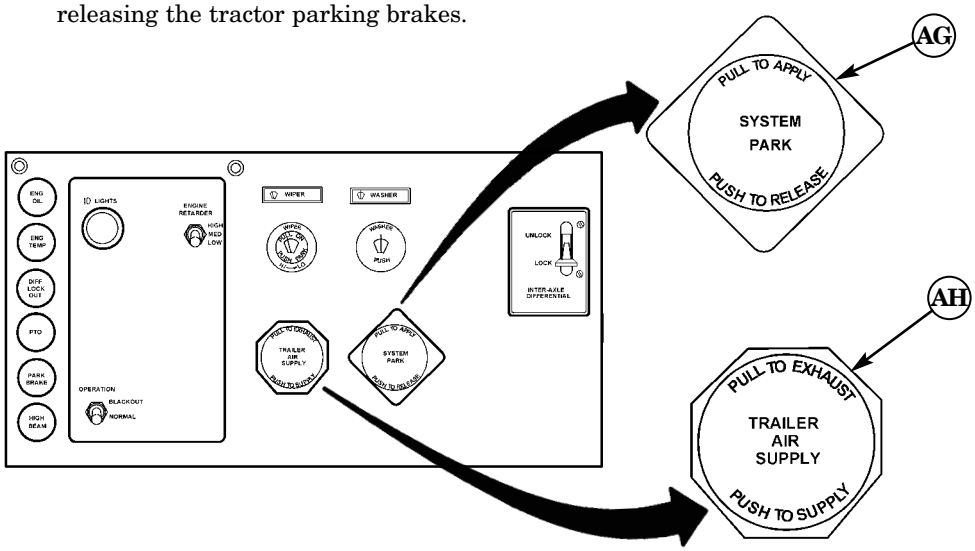


Figure 11. Tractor and Trailer Parking Brake Controls.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

HEATER CONTROL PANEL

(AI) **HEAT Control** – This knob opens and closes a valve that controls the amount of engine coolant flowing through the heater core. To increase the heater temperature, pull the HEAT control knob out, and to decrease the temperature, push knob in.

(AJ) **FAN Switch** – The heater fan has three speeds controlled by a 4-position rotary switch. Turn the FAN switch knob to the right to LOW, MED, or HIGH positions to operate the fan. Turn knob to the left to OFF position to stop fan motor.

(AK) **DRIVER Control** – This knob operates the air vents for the driver side of cab. Pull DRIVER control knob out to divert air to the driver side; push in knob to close air vents.

(AL) **PASSENGER Control** – This knob operates the heater air vents for the passenger side of cab. Pull PASSENGER control knob out to divert air to passenger side; push in knob to close air vents.

(AM) **FRESH VENT Control** – This knob controls the fresh air vent. Pull FRESH VENT control knob out to send fresh air to passenger side; push in knob to close fresh air vent.

(AN) **RECIR VENT Control** – This knob controls the recirculation vent . Pull RECIR VENT control knob out to recirculate cab air through the heater; push in knob to close vent.

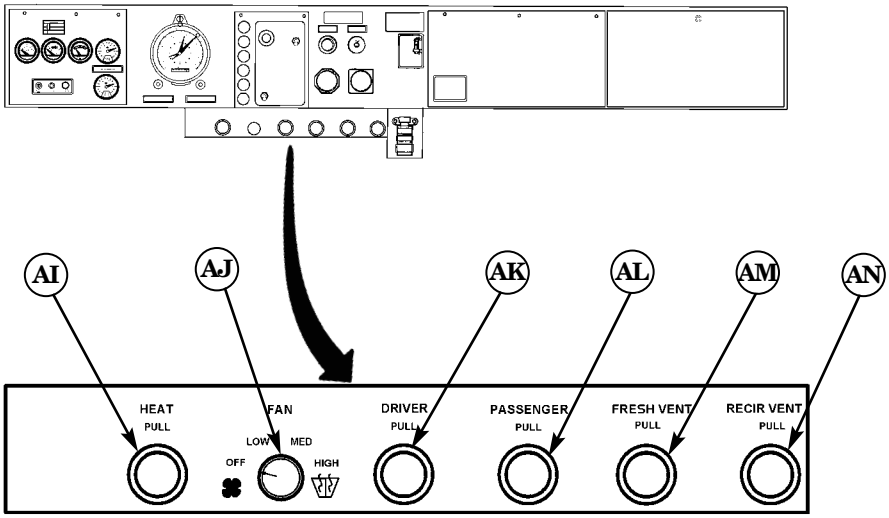


Figure 12. Heater Control Panel.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

HEATER CONTROL PANEL (Contd)

NOTE

Air cleaner maintenance is required when red band is visible on air filter restriction indicator. Notify filed maintence to service air filter.

(AO) **Air Filter Restriction Indicator** – This indicator, mounted on the instrument panel adjacent to the heater control panel, is designed to indicate when the engine air cleaner requires cleaning. A green band visible through the window indicates there is adequate air flow through the air cleaner; a red band indicates the air cleaner is restricted and must be cleaned. Resetting is accomplished by depressing a reset button on top of indicator.

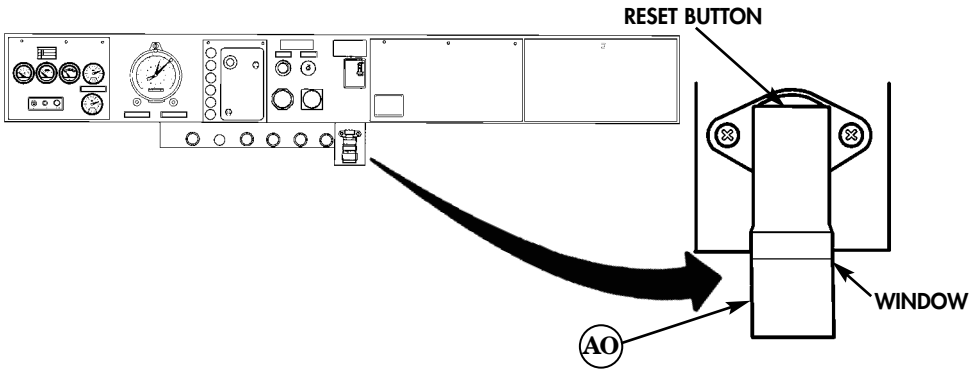


Figure 13. Air Filter Restriction Indicator.

CIRCUIT BREAKER AND RELAY ACCESS PANEL

(AP) **Panel Cover** – There is a panel cover that must be unlocked and opened to gain access to the circuit breaker and relay access panel. To open this panel, turn three slotted head screws one quarter turn to the left, and swing the cover down. To close cover, raise cover and turn three screws one quarter turn to the right.

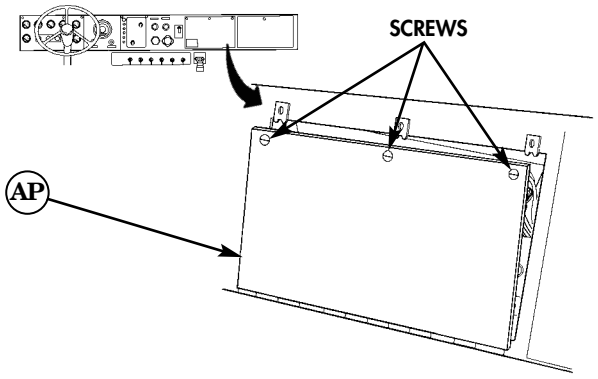


Figure 14. Circuit Breaker and Relay Access Panel.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

CIRCUIT BREAKER AND RELAY ACCESS PANEL (Contd)

(AQ) **Service, Blackout, and Trailer Lamp Relays** – There are nine relays on this panel that function when the tractor and trailer lamp switches are switched on and off. There is nothing the operator can do to these relays if a problem is experienced in one of the lamp systems; notify field maintenance.

(AR) **Starter Relay** – This relay energizes and closes the starter solenoid circuit. There is nothing the operator can do to this relay if the starter becomes inoperable; notify field maintenance.

(AS) **Relay Identification Decals** – Below each relay is an identification decal that identifies the component or components controlled by that relay. Field maintenance will use the decals to identify relays when troubleshooting a problem.

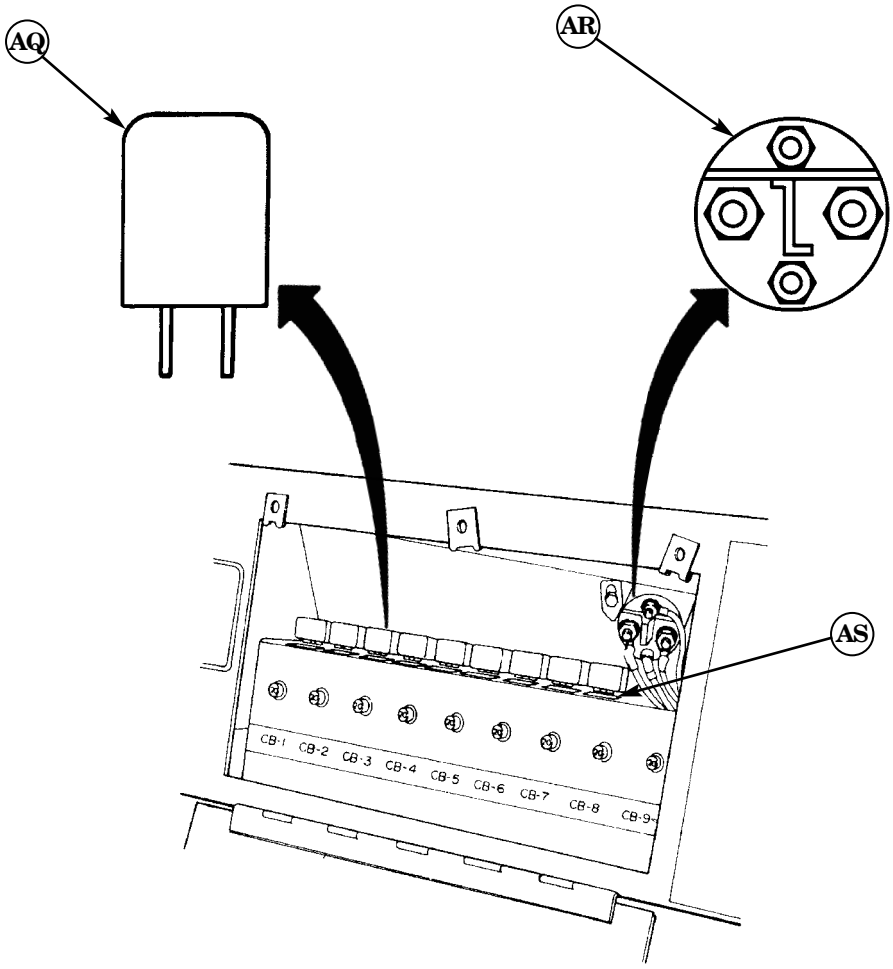


Figure 15. Circuit Breaker and Relays.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

CIRCUIT BREAKER AND RELAY ACCESS PANEL (Contd)

WARNING

Do not attempt to check and reset circuit breakers while driving the tractor. Always pull safely to side of road first. If tractor cannot be safely operated due to a circuit breaker that cannot be reset, do not attempt to operate tractor. Failure to comply may result in damage to equipment or possible injury or death to personnel.

(AT) **Circuit Breaker Buttons** – There are nine 20 amp circuit breakers on the access panel. If an electrical component will not function or ceases to function (for example, the heater fan stops with FAN switch in HIGH position), the circuit breaker may have tripped and should be checked and reset. To reset any circuit breaker, open panel cover, identify circuit breaker by its number or if button is out, and depress the button. If button remains in after depressing it, and component becomes operational, close panel cover. If circuit breaker trips again, an overload or short in the circuit has taken place. If tractor can be safely operated without the affected electrical item, complete mision and then notify field maintenance. If tractor cannot be safely operated, secure tractor and notify field maintenance.

(AU) **Circuit Breaker Identification Decals** – Each circuit breaker is identified by a number (e.g., CB5) directly below its reset button. Each number corresponds to an electrical circuit protected by that circuit breaker. Field maintenance will use the numbers to identify circuit breakers when troubleshooting a problem.

(AV) **Glove Compartment Door** – The glove compartment door is opened by turning the fastener knob a quarter turn and swinging the door down. To close, swing door up and latch by turning knob.

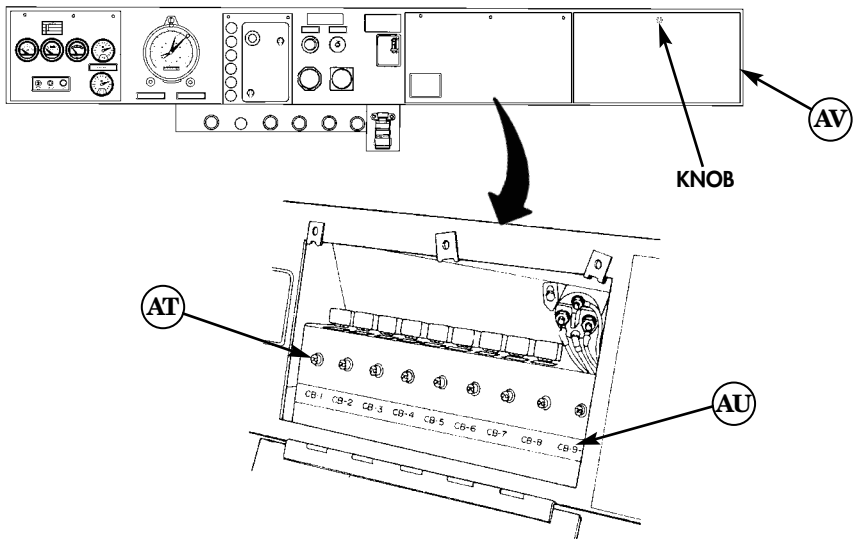


Figure 16. Circuit Breakers and Glove Compartment Door.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

CAB FLOOR-MOUNTED CONTROLS

(AW) **Headlamp Dimmer Switch** – To operate the service lamp high beams, pull the LIGHTS switch out to the second position and depress and release the floor-mounted foot switch. The HIGH BEAM indicator on the control panel will illuminate blue when the high beams are on. To dim headlamps, depress and release foot switch again.

NOTE

The accelerator pedal must be released to the full up position before the engine retarder foot switch will operate engine retarder.

(AX) **Engine Retarder Foot Switch** – To activate the engine retarder, identify driving conditions first, and set the ENGINE RETARDER switch, located on the control panel, for the amount of engine braking desired. Release accelerator pedal and then depress floor-mounted foot pedal to engage engine retarder. Release foot pedal to disengage engine retarder.

NOTE

If tractor is coupled to trailer, the trailer service brakes will also be applied when using the tractor service brake pedal.

(AY) **Service Brake Pedal** – To apply service brakes, place right foot on service brake pedal and push down in proportion to the amount of braking force required to stop or hold tractor from moving.

(AZ) **Accelerator Pedal** – To increase engine speed, place right foot on floor-mounted accelerator pedal and press down gradually. To reduce engine speed, let up on pedal.

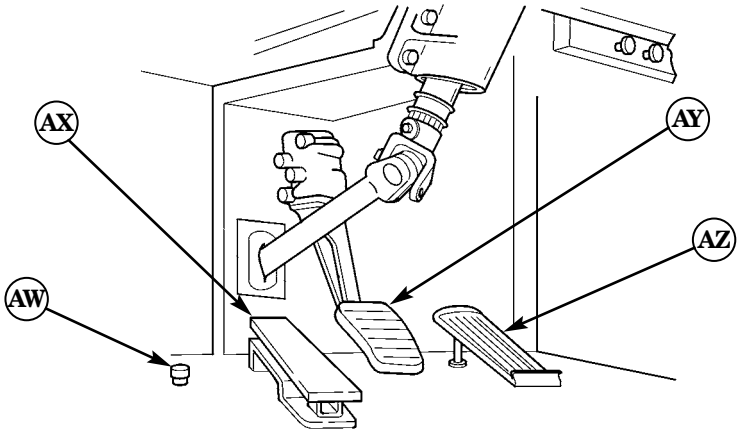


Figure 17. Cab Floor Mounted Controls.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

CAB MOUNTED CONTROLS

CAUTION

Do not allow tractor to coast in neutral (N) position. Failure to comply can result in severe damage to transmission and loss of engine braking.

NOTE

- The selector lever push button must always be depressed to move the selector lever except when manually up-shifting from 1-2 to 1-3, 1-3 to 1-4, and 1-4 to 1-5.
- The tractor engine will not crank or start unless transmission selector lever is in neutral (N) position.
- The gear range dial and indicator will illuminate when the LIGHTS switch is in the 1st and 2nd positions.

(BA) **Transmission Range Selector Control** – To operate the selector lever, apply service brakes, release parking brakes, depress push button, and move selector lever until gear range indicator is aligned with the desired gear position on the gear range dial.

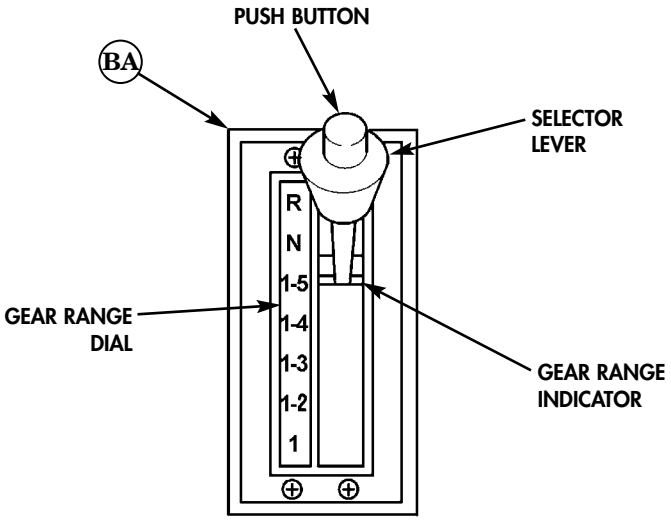


Figure 18. Range Selector Control.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

CAB MOUNTED CONTROLS (Contd)

In all forward gear ranges, the vehicle will start in first gear and automatically upshift to the highest gear shown in the gear range selected. For example, in gear range 1-5, the vehicle will start in first gear and upshift automatically through second gear, third gear, fourth gear, and fifth gear. If gear range 1-3 is selected, the transmission will automatically upshift from first gear through second gear, and into third gear. It will not upshift beyond third gear until the selector lever is manually moved to a higher gear range.

Automatic upshift and downshift points are influenced by the pressure of your foot on the accelerator pedal. For example, when the accelerator pedal is fully depressed, the transmission will automatically upshift near the governed speed of the engine (2,100 rpm). A partially depressed accelerator pedal will cause upshifts to occur at a lower engine speed.

Manual downshifts, performed by depressing the push button and moving the selector lever, should be avoided when the vehicle is above the maximum speed obtainable in the next lower gear. If a downshift or shift to REVERSE (R) is made at too high a speed, the transmission hydraulic system automatically prevents the shift from taking place until a safe lower speed is reached.

Normally, service brakes and the engine retarder should be used, as needed, to slow the vehicle to an acceptable speed where the transmission may be downshifted.

(BB) **Fifth Wheel Control** – Moving the fifth wheel control lever inside the cab to the UNLOCK position operates an air cylinder under the fifth wheel which allows it to travel on the slide track a total of 12 inches (30.5 cm) forward or backward. This feature allows for adjustment of amount of cargo load carried by the rear tandem axles, within rated capacity.

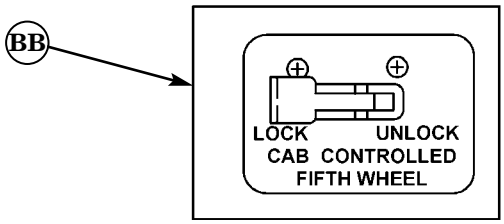


Figure 19. Fifth Wheel Control Lever.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

STEERING WHEEL AND COLUMN MOUNTED CONTROLS

(BC) **Hazard Switch** – To turn on hazard/emergency flashers, pull out on hazard/emergency flasher switch.

(BD) **Turn Signal Lever** – To turn on right turn signal, push turn signal lever up. To turn on left turn signal, push turn signal lever down.

(BE) **Horn Button** – To sound electric horn, push horn button.

CAUTION

Always return trailer hand brake control to OFF/UP position. Failure to comply may result in trailer brakes burning up.

(BF) **Trailer Brake Hand Control** – To apply trailer brakes, pull down trailer brake hand control. The trailer brake hand control can be used on grades, when at a standstill, to prevent tractor from rolling backward when moving right foot from the brake pedal over to the accelerator pedal.

CAUTION

Do not hold the steering wheel in full steer position for more than 10 seconds. Failure to comply may result in overheating of power steering fluid and may cause damage to equipment.

(BG) **Steering Wheel** – Rotate steering wheel right to turn front wheels right, and left to rotate front wheels left.

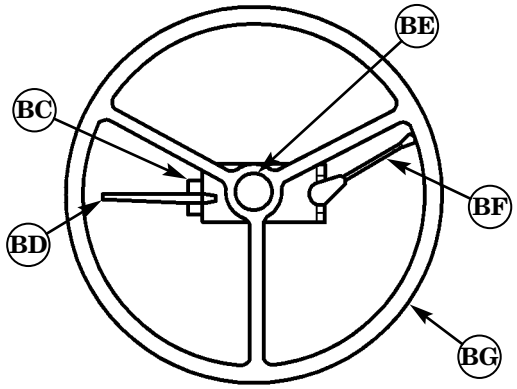


Figure 20. Steering Wheel and Column Mounted Controls.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

ADDITIONAL CAB CONTROLS

(BH) **Air Horn Chain** – To sound air horn, pull downward on chain. Release chain to silence air horn.

(BI) **Cab Door Window Regulator Handle** – To lower left window glass rotate left window regulator handle clockwise. To raise left window glass, rotate left window regulator handle counterclockwise. To lower right window glass rotate left window regulator handle counterclockwise. To raise left window glass, rotate left window regulator handle clockwise.

(BJ) **Ash Tray** – To open ash tray, flip top up.

(BK) **Driver's Fresh Air Vent** – To bring fresh air into cab, push handle forward. To exhaust inside air from cab, Pull fresh air vent back. To close fresh air vent put handle in center position.

(BL) **Cab Door Inside Handle** – To open cab door from inside cab, pull cab door handle. Lock knob will unlock automatically when door handle inside is pulled.

(BM) **Cab Vent Window Handle** – Raise lever to unlock window. Push outward on vent window handle to open vent window. Pull inward on vent window handle to close vent window.

(BN) **Door Lock Knobs** – Push down lock knob to lock doors. Pull up lock knob to unlock doors. Door lock knob will unlock automatically when inside door handle is pulled, or the door is unlocked with a key from the outside.

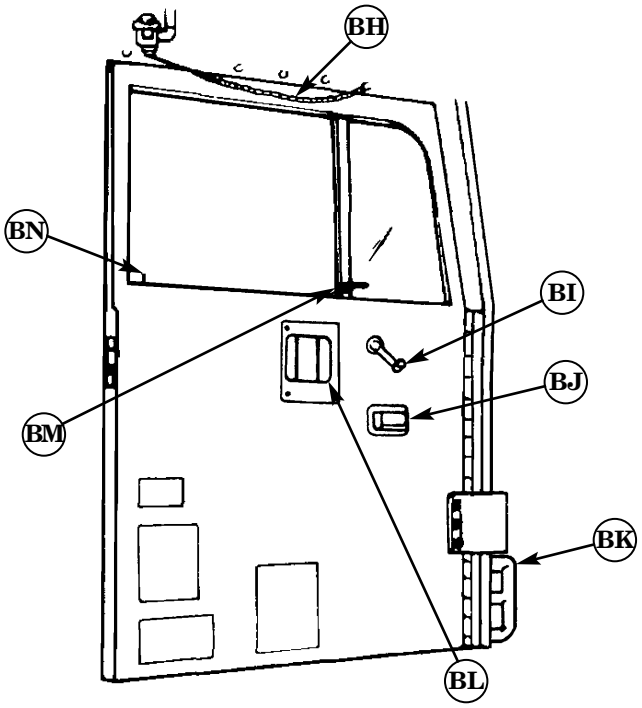


Figure 21. Additional Cab Controls.

DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS (Contd)

ADDITIONAL CAB CONTROLS (Contd)

(BO) **Defroster Fans** – To operate fan at high speed, turn knob at base of fan to the right (clockwise). To operate fan at slower speeds, turn knob further to the right. To turn fan OFF, turn knob all the way to the left (counterclockwise). Fan may be swiveled on its base to direct air flow as required by conditions.

(BP) **Map Lamps** – To turn ON map lamps, push rocker switch on lamp base. To turn OFF map lamps, push other side of rocker switch. Map lamp sockets may be swiveled to direct light as needed.

(BQ) **Dome Lamps** – Dome lamps provides general illumination of the cab interior. To turn dome lamp on push button in on lamp base. To turn dome lamp off, push button in on lamp base again.

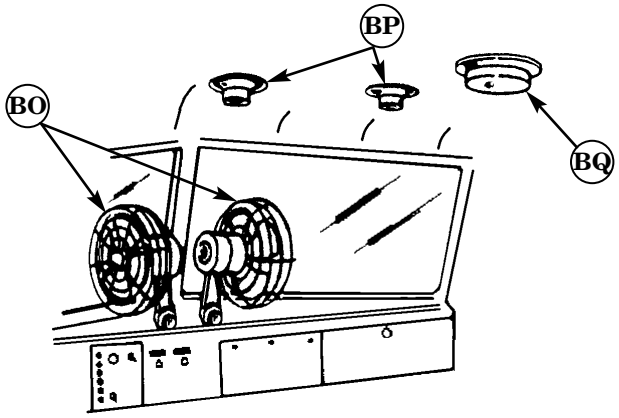


Figure 22. Defroster Fans, Dome, and Map Lamps.

(BR) **Rear Sliding Window with Stone Shield** – To open rear sliding window, squeeze at center of latch and slide window toward passenger side of cab. To close rear sliding window, squeeze at center of latch and slide window toward driver's side of cab.

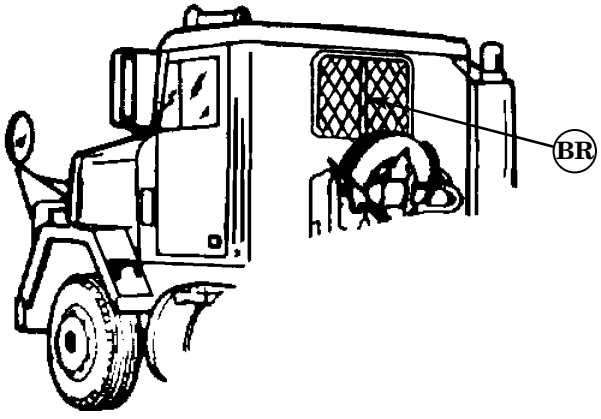


Figure 23. Rear Sliding Window.

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

OPERATION UNDER USUAL CONDITIONS

INITIAL SETUP: Not Applicable

GENERAL

Work packages (WP) 0006 through 0013 provide instructions for operation of the M915A1 under normal operating conditions. Specific instructions include starting the engine, driving, stopping, parking, shutting down the engine, and operating tractor components such as driver's seat and seatbelts, fifth wheel, and auxiliary equipment. First, you must become familiar with the location, function, and use of all controls and indicators as described in WP 0004 prior to operating the tractor. Learn and adhere to the operating procedures described in work packages 0006 through 0013. In this way, operators will be better prepared and able to respond to the many situations they will encounter when operating the tractor. For operation under unusual conditions, refer to WP 0014.

OPERATION UNDER USUAL CONDITIONS (Contd)

PREPARATION FOR USE

WARNING

- This vehicle has been designed to operate safely and sufficiently within the limits specified in this TM. Operation beyond these limits is prohibited IAW AR 70-1 without written approval from the Commander, U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-CM-S, Warren, MI 48397-5000. Failure to comply may result in damage to equipment and possible injury or death to personnel.
- Operators must know how to use the controls and indicators before starting and driving the tractor, and must be able to use the features of the tractor in the safest and most efficient way to accomplish their mission. Failure to comply may result in damage to equipment and possible injury or death to personnel.

Prior to operating the M915A1 tractor, operators must perform the following:

- Ensure field maintenance has performed the required maintenance interval service to the tractor; refer to DA Form 2404/5988-E, Equipment Inspection and Maintenance Worksheet.
- Perform all operator/crew Before Operation PMCS as listed in WP 0023 and WP 0024.
- Review operating instructions prior to performing mission. Refer to operating procedures listed under Operation Under Usual Conditions and Operation Under Unusual Condition in this TM.
- If used, ensure chocks are removed from tractor and trailer wheels prior to operation.
- If trailer is connected to fifth wheel, ensure fifth wheel primary and secondary locks are engaged (WP 0011). If trailer is connected to towing pintle, ensure pintle latch is closed and secured with cotter pin (WP 0012).

WARNING

- Operator and passenger must wear seatbelts during operation. Failure to wear a seatbelt when operating tractor may result in injury or death to personnel.
- Fasten seatbelt and adjust for proper fit. Ensure companion seatbelt is used if carrying passenger.

NOTE

- All seat adjustments are performed while seated in normal driving position with feet flat on cab floor and hands on steering wheel.
- Adjust driver's seat as necessary. It is important to ensure the driver's seat is adjusted for comfort and to ensure all controls are within easy reach prior to operating the tractor. Refer to WP 0006 for driver's and passenger seat adjustments.

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

SEAT AND SEATBELT OPERATION

INITIAL SETUP: Not Applicable

GENERAL

The M915A1 truck tractor is equipped with an adjustable driver's seat and either a two-point lap seatbelt or three point lap and shoulder harness seatbelt. The companion seat is also adjustable and has a two-point lap seatbelt.

WARNING

Operators and passengers must wear seatbelts during operation. Failure to wear a seatbelt when operating tractor may result in injury or death to personnel.

NOTE

All seat adjustments are performed while seated in normal driving position with feet flat on cab floor and hands on steering wheel.

The driver's seat can be adjusted in three ways: ride level, backrest angle, and forward and backward. It is important to ensure the driver's seat is adjusted for comfort and to ensure all controls are within easy reach prior to operating the tractor.

SEAT AND SEATBELT OPERATION (Contd)

DRIVER'S SEAT RIDE LEVEL ADJUSTMENT

The seat will adjust to weights from 130–275 lbs (59–125 kg). When properly adjusted, the preload indicator tip will be even with the seat side frame.

1. To increase preload, pull ratchet trip lever up and operate ratchet handle up and down.
2. To decrease preload, push ratchet trip lever down and operate ratchet handle up and down.

END OF TASK

BACKREST ANGLE ADJUSTMENT

The backrest angle may be adjusted to three different positions.

1. Lift up on backrest adjustment lever and tilt forward or backward.
2. Lower backrest adjustment lever so that it locks in one of three notched positions.

END OF TASK

FORWARD AND BACKWARD SEAT ADJUSTMENT

Seat may be moved forward or back 6 in. (15 cm).

1. Pull out on lever (towards door) and move seat forward or backward to adjust for individual leg length.
2. Release lever to lock seat in position.

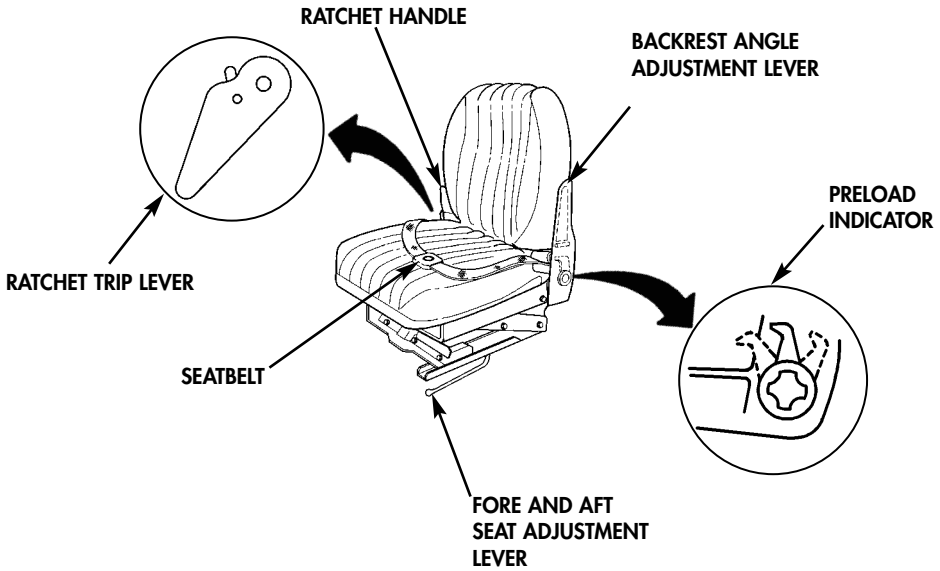


Figure 1. Operator Seat.

END OF TASK

SEAT AND SEATBELT OPERATION (Contd)

COMPANION SEAT CUSHION TILT ADJUSTMENT

The forward edge of the seat cushion may be tilted to three different positions

1. Push lever down to raise forward edge of seat.
2. Pull lever up to lower seat cushion.

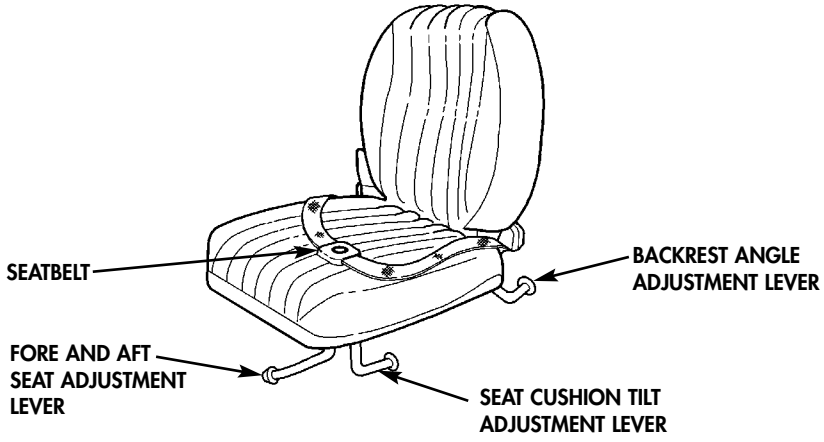


Figure 2. Companion Seat.

END OF TASK

SEATBELT

Seatbelt should be adjusted for a proper fit.

1. Fasten seatbelt buckle.
2. Remove slack by slipping belt through buckle until it fits snugly.
3. To release, press center of buckle on driver's seatbelt, or pull up on belt buckle on companion seatbelt.

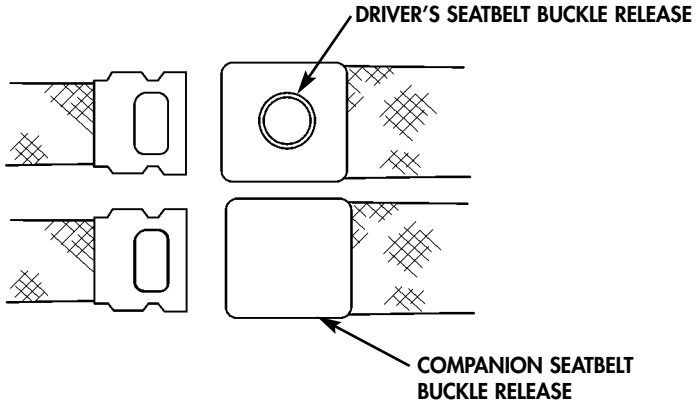


Figure 3. Seatbelts.

END OF TASK

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

STARTING ENGINE ABOVE 32° F (0° C)

INITIAL SETUP: Not Applicable

WARNING

Do not start engine with parking brake control pushed in (released), the tractor could roll in either direction once air pressure in rear brake system reaches operating pressure and releases spring brakes. Always pull out parking brake control before starting engine or damage to equipment and possible injury or death to personnel may result.

NOTE

Ensure scheduled PMCS are performed prior to starting tractor (WP 0024).

1. Pull out parking brake control (1) (WP 0004).
2. Place transmission manual control lever (3) in neutral (N) position (2) (WP 0004).

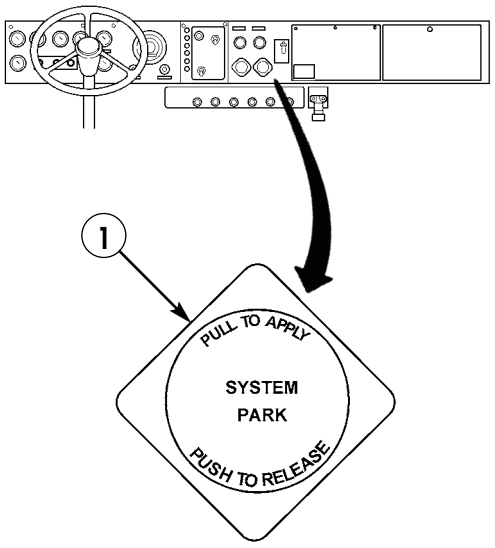


Figure 1. Parking Brake Control.

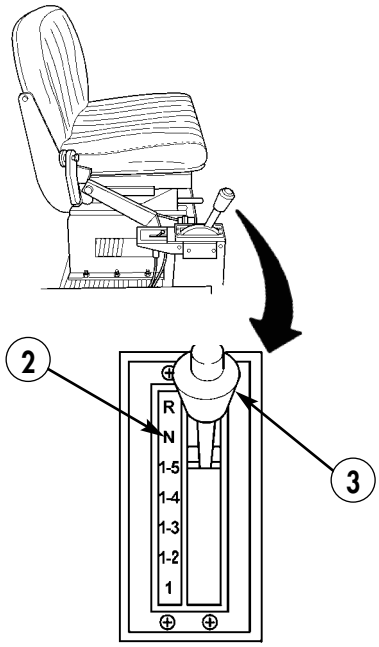


Figure 2. Transmission Control Lever.

STARTING ENGINE ABOVE 32° F (0° C) (Contd)

3. Insert key and turn engine run switch (1) to IGNITION AND ACCESSORY (ON) position (WP 0004). Once power is on, low air pressure buzzer will sound and the following warning lamps should illuminate: LOW AIR PRESSURE (5), ENG OIL (low oil pressure) (2), and PARK BRAKE (4).
4. Ensure cab controlled fifth wheel control lever (6) is in LOCK position, and differential LOCK/UNLOCK control (10) is in UNLOCK position (WP 0004). DIFF LOCK OUT lamp (3) will illuminate if control is left in LOCK position.
5. Turn off all accessories that may be on. Ensure foot is off engine retarder foot switch (7) to prevent engagement during engine starting.

CAUTION

Do not depress and hold ENGINE START button for more that 15 seconds at a time. Allow two minute intervals between cranking engine for starter motor to cool. If engine fails to start after four attempts, troubleshoot starting problem. Once engine is running, do not depress start button. Failure to comply may result in damage to equipment.

NOTE

- ENG TEMP lamp will illuminate while ENGINE START button is depressed.
- The engine cannot be started by pushing or towing the tractor in gear.

6. Depress and hold ENGINE START button (9) while slightly depressing accelerator pedal (8), and crank engine until engine starts, then release button (9). If engine fails to start after four attempts, refer to troubleshooting procedures (WP 0021 and WP 0022).

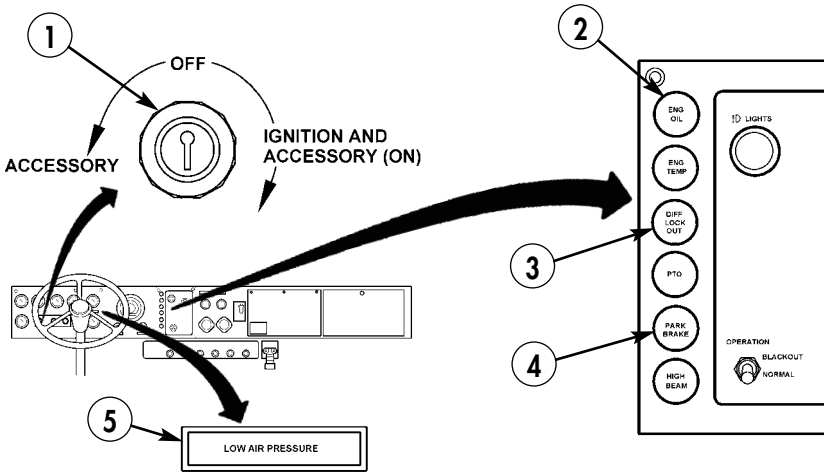


Figure 3. Instrument Panel Controls and Indicators.

STARTING ENGINE ABOVE 32° F (0° C) (Contd)

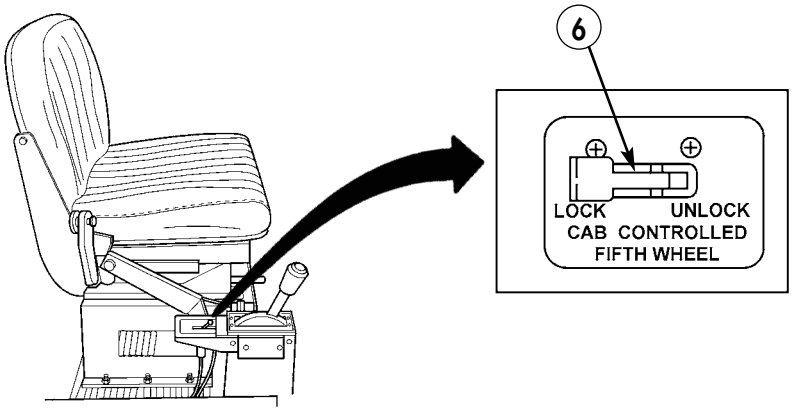


Figure 4. Fifth Wheel Control Lever.

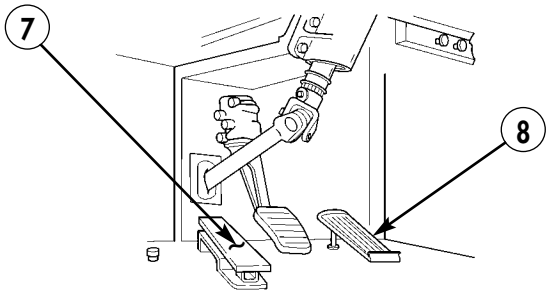


Figure 5. Engine Retarder and Accelerator Pedals.

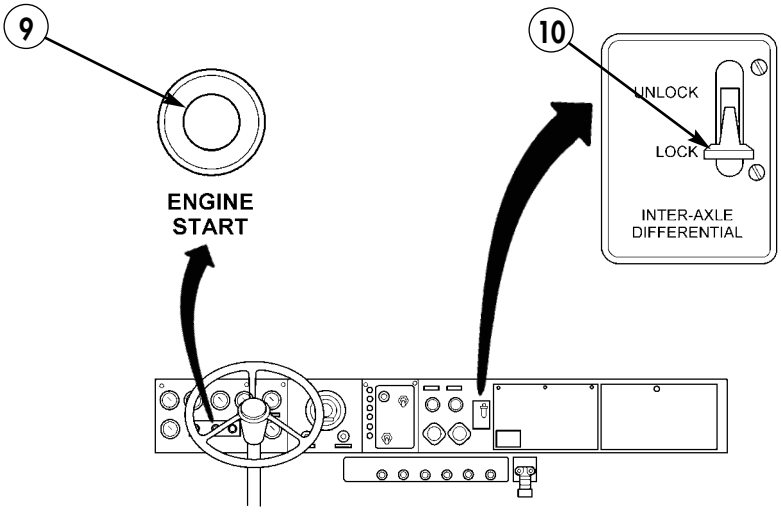


Figure 6. Instrument Panel Controls.

STARTING ENGINE ABOVE 32° F (0° C) (Contd)

CAUTION

Failure to shut down engine if no oil pressure is evident may result in severe damage to engine. Do not attempt to restart engine until problem has been corrected.

7. At start-up, check engine oil pressure gauge (1) for a minimum of 10 psi (69 kPa). If no oil pressure registers on gauge (1) after 10 seconds, shut engine down immediately by turning ENGINE RUN switch (3) to OFF position. Refer to troubleshooting procedures (WP 0021 and WP 0022).

CAUTION

Do not rev or run engine above 1,000 rpm during warm-up. Damage to engine may occur if tractor is operated without allowing sufficient time for oil circulation to reach turbocharger and for engine parts to warm up gradually. Once normal operating temperature is reached, if oil pressure drops below 10 psi (69 kPa), shut down engine and troubleshoot problem. Failure to comply may result in severe engine damage.

8. Warm up engine by idling at 580–650 rpm. Engine oil pressure gauge (1) should indicate at least 10 psi (69 kPa) at normal operating temperature, 180–200° F (82–93° C); a cold engine will read higher.
9. During warm-up period, observe instrument panel gauges and indicators for proper operation. Ensure ENG OIL (low oil pressure) warning lamp (4) goes off.
10. Ensure LOW AIR PRESSURE warning lamp (2) and buzzer go off before releasing parking brake. PARK BRAKE warning lamp (5) should remain illuminated until parking brake is released prior to driving tractor.

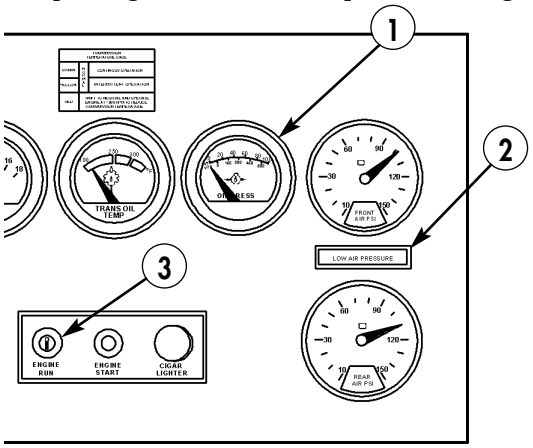


Figure 7. Instrument Panel Gauges and Indicators.

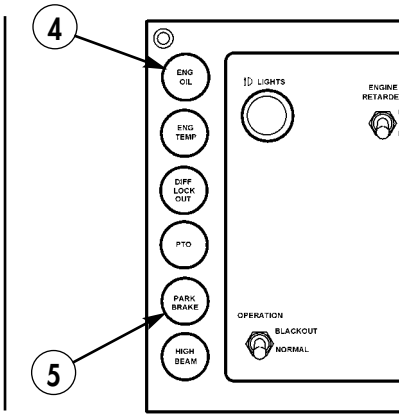


Figure 8. Instrument Panel Indicators.

END OF TASK

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

COLD WEATHER STARTING BELOW 32° F (0° C)

INITIAL SETUP: Not Applicable

NOTE

Ensure scheduled PMCS are performed prior to starting tractor.

1. Install winter front cover on radiator grille (WP 0015).

WARNING

Do not start engine with parking brake control pushed in (released), the tractor could roll in either direction once air pressure in rear brake system reaches operating pressure and releases spring brakes. Always pull out parking brake control before starting engine or damage to equipment and possible injury or death to personnel may result.

2. Pull out parking brake control (1) (WP 0004).
3. Place transmission manual control lever (3) in neutral (N) position (2) (WP 0004).

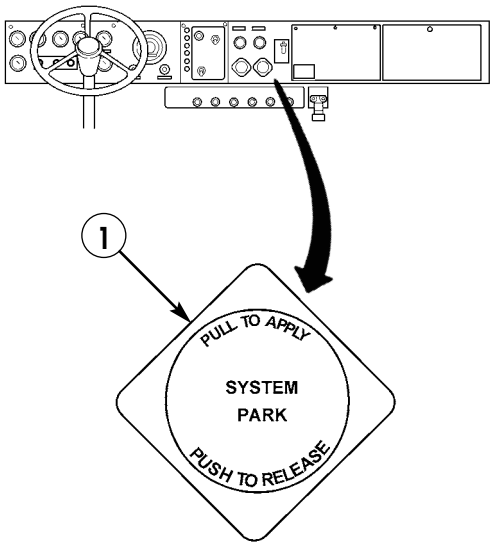


Figure 1. Parking Brake Control.

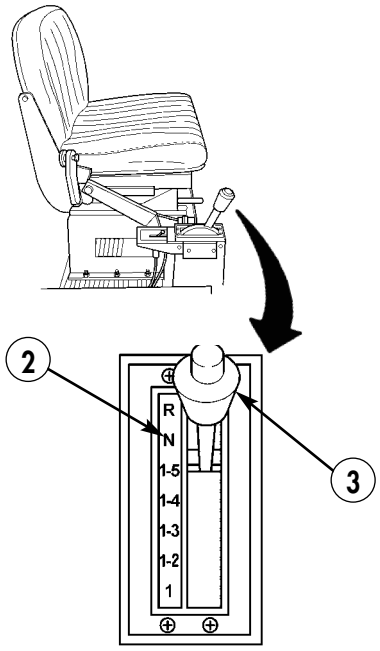


Figure 2. Transmission Control Lever.

COLD WEATHER STARTING BELOW 32° F (0° C) (Contd)

4. Insert key and turn engine run switch (1) to IGNITION AND ACCESSORY (ON) position (WP 0004). Once power is on, low air pressure buzzer will sound and the following warning lamps should illuminate: LOW AIR PRESSURE (5), ENG OIL (low oil pressure) (2), and PARK BRAKE (4).
5. Ensure cab controlled fifth wheel control lever (6) is in LOCK position, and differential LOCK/UNLOCK control (11) is in UNLOCK position (WP 0004). DIFF LOCK OUT lamp (3) will illuminate if control (11) is left in LOCK position.
6. Turn off all accessories that may be on. Ensure foot is off engine retarder foot switch (7) to prevent engagement during engine starting.

CAUTION

- Do not depress and hold ENGINE START button for more than 15 seconds at a time. Allow two minute intervals between cranking engine for starter motor to cool. If engine fails to start after four attempts, troubleshoot starting problem. Once engine is running, do not depress start button. Failure to comply may result in damage to equipment.
- Never depress ether quick-start button before cranking engine. A build up of ether can result in combustion in the intake manifold, and damage to equipment may result.

NOTE

- ENG TEMP lamp will illuminate while ENGINE START button is depressed.
- The engine cannot be started by pushing or towing the tractor in gear.

7. Depress and hold ENGINE START button (9), while slightly depressing accelerator pedal (8), and depress and hold ETHER quick-start button (10) for 4 or 5 seconds to inject a set amount of ether into intake manifold while cranking engine. Release button (10), and once engine starts, release button (9). If engine fails to start after four attempts, refer to troubleshooting procedures (WP 0021 and WP 0022).

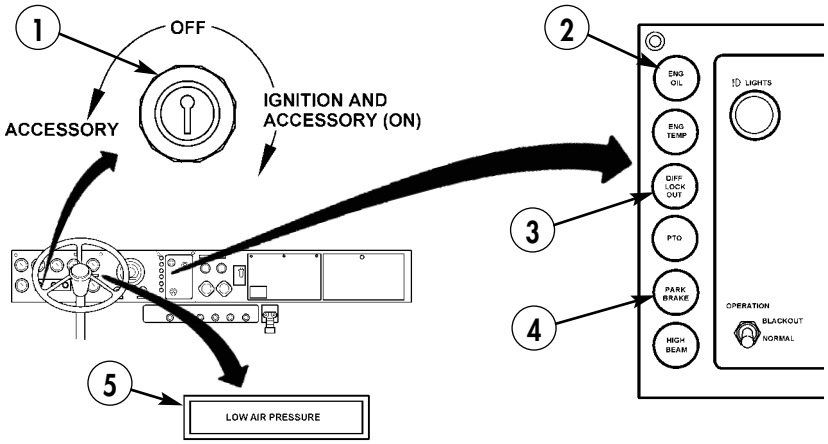


Figure 3. Instrument Panel Controls and Indicators.

COLD WEATHER STARTING BELOW 32° F (0° C) (Contd)

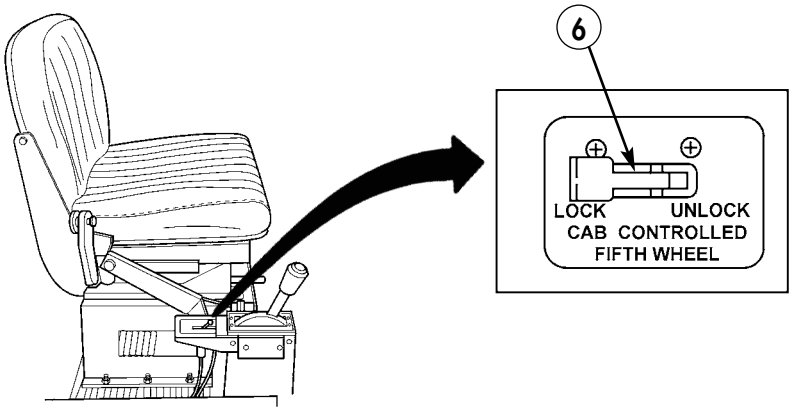


Figure 4. Fifth Wheel Control Lever.

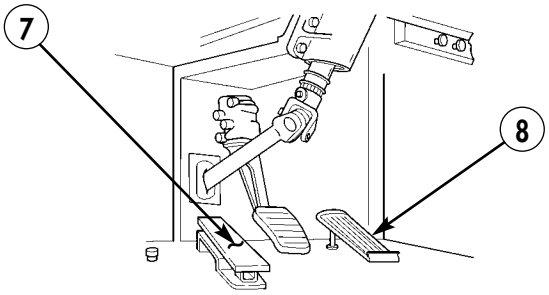


Figure 5. Engine Retarder and Accelerator Pedals.

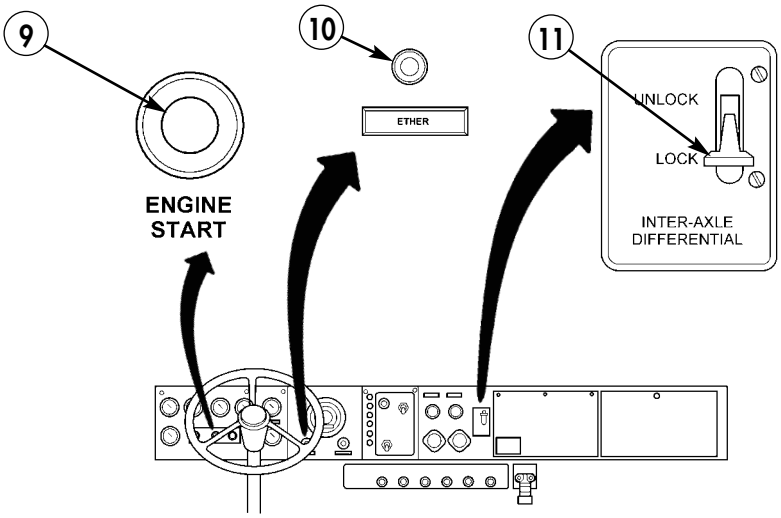


Figure 6. Instrument Panel Controls.

COLD WEATHER STARTING BELOW 32° F (0° C) (Contd)

CAUTION

Failure to shut down engine if no oil pressure is evident may result in severe damage to engine. Do not attempt to restart engine until problem has been corrected.

8. At start-up, check engine oil pressure gauge (1) for a minimum of 10 psi (69 kPa). If no oil pressure registers on gauge (1) after 10 seconds, shut engine down immediately by turning ENGINE RUN switch (3) to OFF position. Refer to troubleshooting procedures (WP 0021 and WP 0022).

CAUTION

Do not rev or run engine above 1,000 rpm during warm-up. Damage to engine may occur if tractor is operated without allowing sufficient time for oil circulation to reach turbocharger and for engine parts to warm up gradually. Once normal operating temperature is reached, if oil pressure drops below 10 psi (69 kPa), shut down engine and troubleshoot problem. Failure to comply may result in severe engine damage.

9. Warm up engine by idling at 580–650 rpm. Engine oil pressure gauge (1) should indicate at least 10 psi (69 kPa) at normal operating temperature, 180–200° F (82–93° C); a cold engine will read higher.
10. During warm-up period, observe instrument panel gauges and indicators for proper operation. Ensure ENG OIL (low oil pressure) warning lamp (4) goes off.
11. Ensure LOW AIR PRESSURE warning lamp (2) and buzzer go off before releasing parking brake. PARK BRAKE warning lamp (5) should remain illuminated until parking brake is released prior to driving tractor.

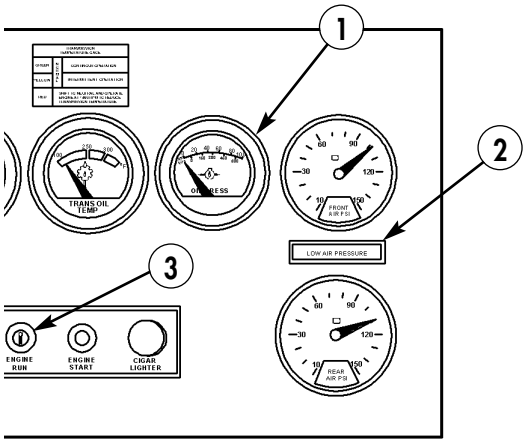


Figure 7. Instrument Panel Gauges and Indicators.

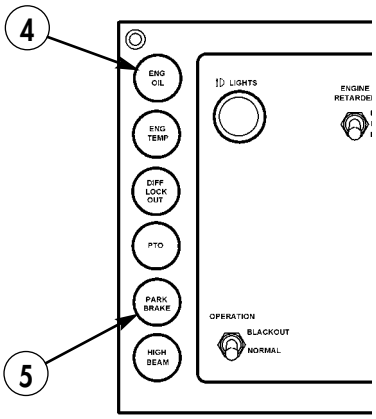


Figure 8. Instrument Panel Indicators.

END OF TASK

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

PLACING THE VEHICLE IN MOTION

INITIAL SETUP: Not Applicable

WARNING

- To prevent fifth wheel movement during transit, ensure cab mounted sliding fifth wheel control is in LOCK position before moving tractor. Follow procedure to verify fifth wheel is locked in position when tractor is coupled to semi-trailer, and never move control to UNLOCKED position when in transit. Failure to comply may result in loss of control and injury or death to personnel or damage to equipment.
- Do not operate vehicle with low tire pressure on wet smooth roads at high speed. Doing so may result in loss of vehicle control and injury or death to personnel.

PLACING TRACTOR IN MOTION

1. Ensure BII and auxiliary equipment are stowed and locked for travel (WP 0036).
2. If tractor is coupled to trailer, ensure fifth wheel primary and secondary kingpin lock releases are properly engaged, tractor-to-trailer air and electrical connections are checked, and sliding fifth wheel cab control is in LOCK position (WP 0011). If using towing pintle, ensure pintle is properly locked (WP 0012).

NOTE

If available, assistant will adjust mirrors with driver seated in cab.

3. Adjust rearview mirrors and driver's seat as necessary. Put seatbelt(s) on and adjust tension (WP 0006).

NOTE

Ensure scheduled PMCS are performed prior to operating tractor.

4. Start engine (WP 0007 or WP 0008).
5. Check engine oil pressure gauge (2) for at least 10 psi (69 kPa) at idle; a cold engine will read higher.
6. Check engine water temperature gauge (1) for approximately 160° F (71° C); 180° F (82° C) if pulling a load.

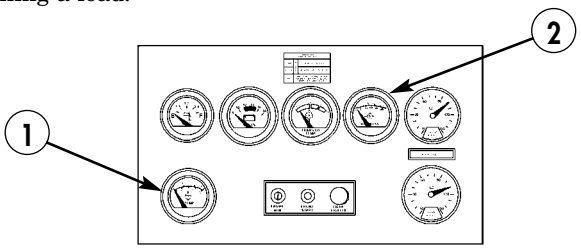


Figure 1. Instrument Panel Gauges.

PLACING THE VEHICLE IN MOTION (Contd)

PLACING TRACTOR IN MOTION (Contd)

7. Check air pressure gauges (3) and (5) for 105–140 psi (724–965 kPa); at air pressures below 60 psi (414 kPa), brakes will not release. LOW AIR PRESSURE warning lamp (4) and buzzer should go off when both front and rear air system pressures reach approximately 64–76 psi (441–524 kPa).
8. Voltmeter (2) should indicate 12–15V (green shaded area).
9. Fuel gauge (1) should indicate there is sufficient fuel for intended mission.
10. If operating in conditions requiring use of service or blackout lamps, operate headlamp switch (6) or blackout operation switch (9) as appropriate (WP 0004).

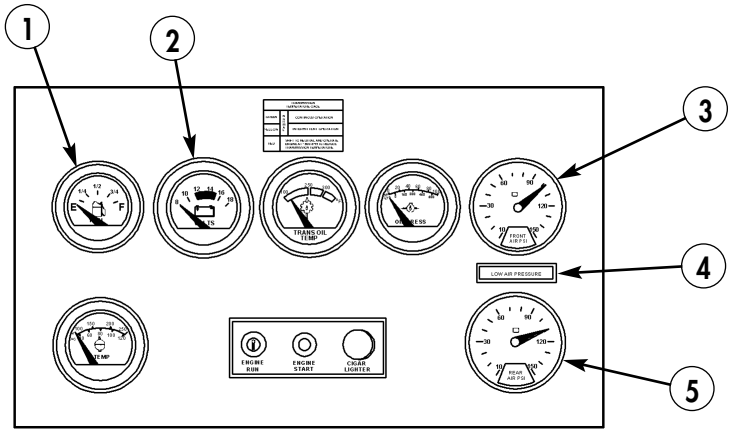


Figure 2. Instrument Panel Gauges and Indicators.

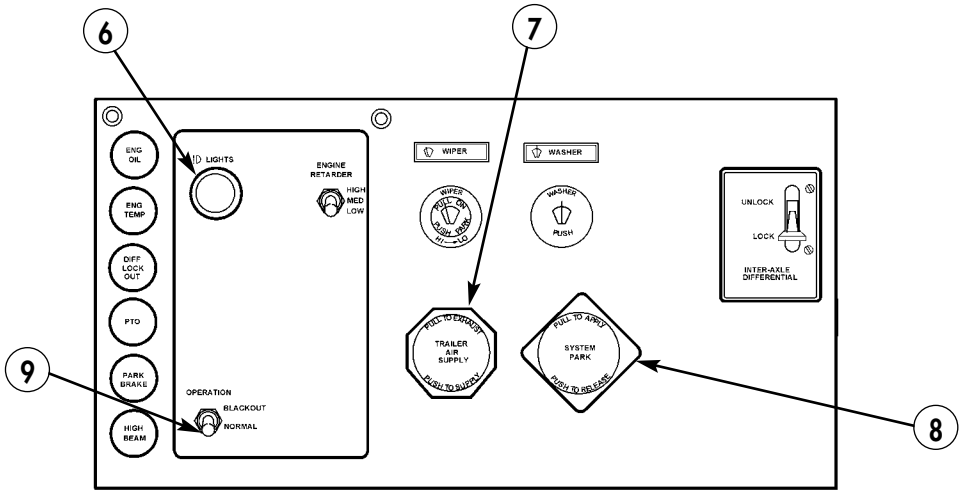


Figure 3. Instrument Panel Indicators and Controls.

PLACING THE VEHICLE IN MOTION (Contd)

PLACING TRACTOR IN MOTION (Contd)

NOTE

Use the 1-5 gear range position for all normal driving conditions. For information on all gear ranges, refer to Use of Transmission Gear Ranges in this work package.

11. Place transmission control lever (10) in desired gear range (WP 0004).
12. Apply service brake pedal (12) and release parking brake control (8) (WP 0004).
13. If coupled to trailer, release trailer air supply control (7) (WP 0004).
14. Put tractor in motion by releasing service brake pedal (12) and gradually depressing accelerator pedal (11).

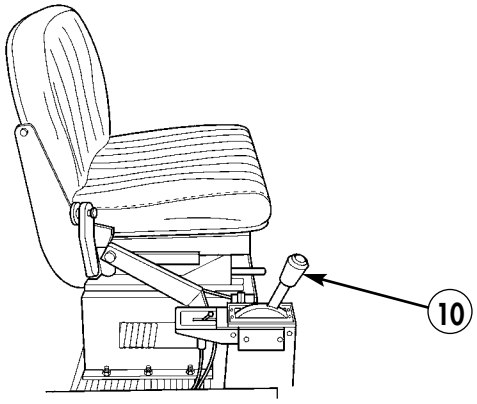


Figure 4. Transmission Control Lever.

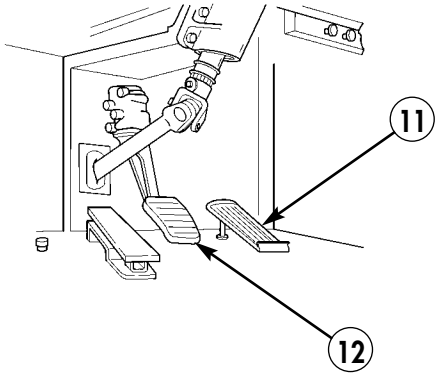


Figure 5. Brake and Accelerator Pedals.

END OF TASK

PLACING THE VEHICLE IN MOTION (Contd)

USE OF TRANSMISSION GEAR RANGES

NOTE

In low gear ranges 1, 1-2, 1-3, and 1-4, the transmission will not up-shift above the highest gear selected unless engine governed speed is excessive.

1. Use (R) reverse position (1) to back up tractor. Completely stop tractor before shifting from forward to reverse or from reverse to forward gear. Reverse has only one gear and provides the greatest traction advantage.

WARNING

- Never let tractor coast in (N) neutral position. Engine braking action is not available when transmission is out of gear, and damage to equipment and possible injury or death to personnel may result.
- Do not start engine with parking brake control pushed in (released), the tractor could roll in either direction once air pressure in rear brake system reaches operating pressure and releases spring brakes. Always pull out parking brake control before starting engine or damage to equipment and possible injury or death to personnel may result.

2. Use N neutral position (7) when starting engine and when tractor will be left unattended with engine running and parking brake applied. The neutral safety switch will prevent engine from starting in all gear range positions other than neutral.
3. Use 1-5 position (6) for all normal driving conditions. When driving in position (6), the transmission will start out in 1st gear, and as the accelerator is depressed, the transmission will up-shift to 2nd, 3rd, 4th, and 5th gears automatically. As the tractor is slowed down the transmission will down-shift to the correct gear automatically.
4. Use 1-4 position (2), 1-3 position (3), or 1-2 position (4) to limit the automatic shifting to a lower range when road, load, or traffic conditions make it necessary or desirable to do so.
5. Use (1) position (5) when pulling through mud and snow or driving on steep grades. This is low gear, and the maximum engine braking is accomplished in this position.

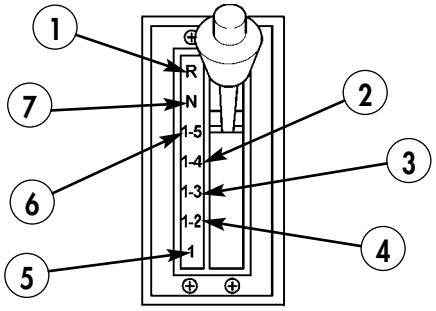


Figure 6. Transmission Control Lever and Range Indicator.

END OF TASK

PLACING THE VEHICLE IN MOTION (Contd)

BASIC DRIVING GUIDELINES

NOTE

During long idling periods, engine coolant temperature will fall below normal range. The incomplete combination of fuel in a cold engine will cause dilution of crankcase oil, formation of carbon on valves, pistons, and rings, and sludge build-up in engine. If prolonged engine idling is necessary, maintain at least 800 rpm.

1. Avoid unnecessary engine idling.

NOTE

If gauges or indicators show any abnormal conditions, bring tractor to a safe stop, shut down engine, and investigate cause of problem.

2. Frequently check oil pressure gauge (8). During normal driving conditions with engine running 1,800–2,100 rpm, engine oil pressure gauge (8) should register 35–50 psi (241–345 kPa).

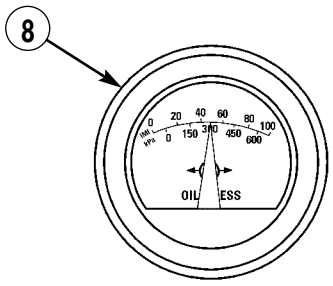


Figure 7. Oil Pressure Gauge.

3. Frequently check engine water temperature gauge (9). Normal water temperature should range from 180–200° F (82–93° C). Water temperature should be above 160° F (71° C) at low end, and up to 212° F (100° C) at high end. If temperature reaches 220° F (104° C), shut down engine and check cooling system.

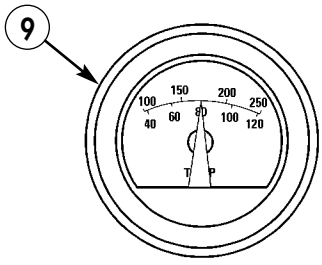


Figure 8. Water Temperature Gauge.

PLACING THE VEHICLE IN MOTION (Contd)

BASIC DRIVING GUIDELINES (Contd)

4. Check front air pressure gauge (1) and rear air pressure gauge (2). The normal operating range is 105–140 psi (724–965 kPa). Air pressure should be at least 90 psi (621 kPa). The low pressure warning lamp (3) and buzzer will come on at approximately 64–76 psi (441–524 kPa).

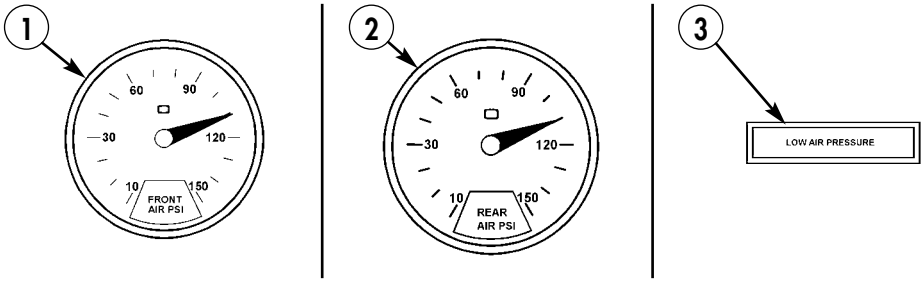


Figure 9. Air Pressure Gauges and Low Air Pressure Indicator.

5. Frequently check transmission oil temperature gauge (4). Normal operating temperature range is 100–250° F (38–121° C).

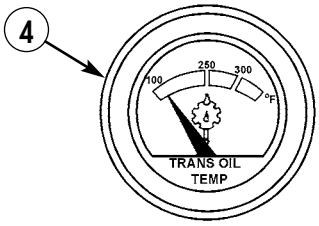


Figure 10. Transmission Oil Temperature Gauge.

6. Frequently check voltmeter (5). Normal battery voltage should be 12–15V.

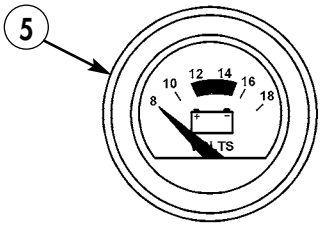


Figure 11. Voltmeter.

7. Check fuel gauge (6) for adequate fuel supply.

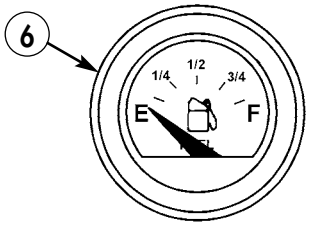


Figure 12. Fuel Gauge.

PLACING THE VEHICLE IN MOTION (Contd)

BASIC DRIVING GUIDELINES (Contd)

8. Monitor engine rpm on tachograph for appropriate ranges. Refer to Optimum Use of Tachograph in this work package.
9. After prolonged engine operation above 1,500 rpm, run engine at idle for a minimum of 3 minutes to allow sufficient cooldown of turbocharger.
10. The recommended and most efficient cruising speed for highway use is the posted legal speed limit at an engine speed between 1,800 and 1,900 rpm. Refer to Efficient and Economic Driving Techniques in this work package.
11. To conserve fuel and reduce high rpm engine noise when operating in city traffic or other reduced speed zones, match engine speed to road speed by selecting a gear range that permits operating engine near, but not lower than, 1,500 rpm.
12. When climbing uphill grades, accelerate at full throttle in gear range 1-5 and allow transmission to up-shift automatically, or manually up-shift transmission once engine speed reaches 2,000 rpm, one gear at a time. Refer to Efficient and Economic Driving Techniques in this work package.

CAUTION

Never allow the engine to be pushed above the governed rpm when rolling down a grade. Failure to comply may result in damage to equipment.

NOTE

If a manual down-shift or reverse shift is made at too high a road speed, the transmission hydraulic system will prevent the shift from occurring until the maximum lower speed is reached.

13. When manually descending downhill grades, avoid overspeeding engine by manually down-shifting to next lower gear range before reaching maximum rpm.

CAUTION

Holding steering wheel at full lock position for more than 10 seconds will cause oil to overheat, loss of oil from power steering reservoir, and damage to power steering pump.

14. When maneuvering tractor in limited space, avoid holding steering wheel at full lock position.

END OF TASK

PLACING THE VEHICLE IN MOTION (Contd)

OPTIMUM USE OF TACHOGRAPH

CAUTION

The maximum governed engine speed is 2,100 rpm under load. Never allow the engine to exceed this rpm or damage to engine may result.

1. Use tachometer hand (3) of tachograph (4) to monitor engine rpm in all gear ranges. When manually downshifting transmission while tractor is moving, monitor tachometer hand (3) to ensure maximum 2,100 rpm engine speed is not exceeded.
2. Control engine rpm through proper use of accelerator and gear selection for load requirements and road speed desired. For normal driving situations, use gear range 1-5, and allow automatic transmission to control gear selection and engine speed.
3. Use speedometer hand (2) of tachograph (4) to monitor tractor ground speed in miles per hour (mph). Ground speed and engine speed can be compared to help determine gear selection for any given condition (WP 0004).
4. Use odometer (5) on tachograph (4) to record distance traveled. Fuel consumption in miles per gallon (mpg) can be calculated by dividing the number of miles traveled by the number of gallons consumed.
5. Use clock hands (1) on tachograph (4) to estimate destination time based on miles per hour (mph). For example, if traveling at a ground speed of 60 mph, it would take one minute to travel one mile.

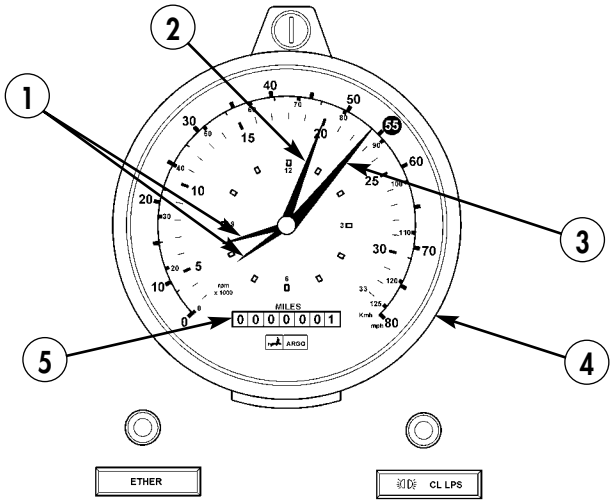


Figure 13. Tachograph.

END OF TASK

PLACING THE VEHICLE IN MOTION (Contd)

EFFICIENT AND ECONOMICAL DRIVING TECHNIQUES

To get the most out of the M915A1, you should understand and practice good driving techniques for optimum performance and economy. The following driving techniques should be learned to achieve efficiency, economy, and safe operation.

1. Driving at highway speeds:

NOTE

The transmission lockup clutch will automatically engage after load is rolling and torque demand is low, and automatically disengage at lower tractor speeds. When engaged, increased fuel economy is achieved at highway cruising speeds.

a. Learn to identify transmission lockup clutch engagement/disengagement. Lockup engagement is felt similar to transmission gear range shifts. In addition, a slight change in engine sound can be heard when lockup occurs due to a drop in rpm. With a little experience it is possible to tell the difference between gear range changes and lockup engagement/disengagement.

b. When driving conditions permit, maintain legal highway speed in gear range 1-5 (6). Gear range 1-5 (6) permits running the engine below its governed speed (preferably 10–20 percent below governed speed), and affords better fuel economy than at higher engine speeds. The recommended normal highway cruising range is 1,800–1,900 rpm.

NOTE

Running in a low gear at a high rpm when restricted to 25–30 mph wastes fuel and creates a higher noise level than necessary.

c. When driving conditions do not permit operating in economy range, it may become necessary to run engine at higher engine speeds (full throttle) or manually shift to a lower gear. When operating in hilly terrain, high winds, or at maximum GCWR, additional power to meet these conditions may require operating in gear range 1-4 (7) or lower.

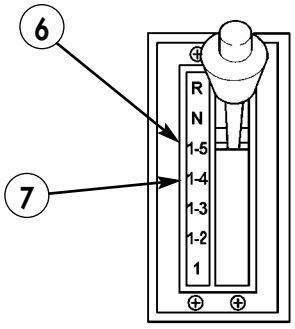


Figure 14. Transmission Control Lever Range Indicator.

PLACING THE VEHICLE IN MOTION (Contd)

EFFICIENT AND ECONOMICAL DRIVING TECHNIQUES (Contd)

2. Driving in city stop-and-go traffic:

CAUTION

Operating tractor below 1,500 rpm in gear range 1-5 will lug the engine, and is not recommend for city driving. Failure to comply may result in damage to engine.

a. Operate the tractor in gear range 1-5 (1) or 1-4 (2) for normal stop-and-go city driving. Operating in gear range 1-5 (1) or 1-4 (2), when conditions permit, will lower engine speed and increase fuel economy. However, the tractor should not be operated in high gear ranges at engine speeds below 1,500 rpm for city driving.

NOTE

The automatic transmission can be manually up-shifted through all gear ranges while accelerating at full throttle. Manually down-shifting is limited to the maximum allowable engine speed for the next lower gear range. However, if a manual down-shift or reverse shift is made at too high a road speed, the transmission hydraulic system will prevent the shift from occurring until the maximum lower speed is reached.

b. If traffic, road, or load conditions warrant, it may be desirable to limit the automatic up-shift by selecting gear range 1-3 (3). This will prevent the engine from running below 1,500 rpm in gear range 1-4 (2) or 1-5 (1) at slower road speeds. When conditions allow for faster road speeds, manually up-shift to gear range 1-4 (2) followed by 1-5 (1). This practice will lower engine speed and provide increased fuel economy.

3. Hauling on uphill grades:

CAUTION

Use service brakes to hold tractor while stopped on a grade. Never use the transmission to hold tractor on grade or severe overheating and damage to transmission will result.

a. When starting from a stop on maximum uphill grades pulling maximum load, use gear range 1 (4), accelerate at full throttle, and manually up-shift once engine speed reaches 2,000 rpm one gear range at a time. If uphill grade prevents engine speed from reaching 1,700 rpm, down-shift to next lower gear range to maintain at least 1,700 rpm.

b. When starting from a stop on uphill grades pulling normal loads, use gear range 1-5 (1) and accelerate at full throttle and allow transmission to up-shift automatically until desired road speed it attained. If there is sufficient power to maintain the desired road speed, remain in gear range 1-5 (1). Manually down-shift transmission to gear range 1-4 (2) or lower if the desired road speed cannot be attained.

PLACING THE VEHICLE IN MOTION (Contd)

EFFICIENT AND ECONOMICAL DRIVING TECHNIQUES (Contd)

c. When operating at desired road speed and an uphill grade causes a steady decrease in road speed, manually down-shift to the next lower gear range once engine speed reaches 1,700 rpm. Continue to down-shift in this manner to match the power demands of the grade. Once at top of hill, return to gear range 1-5 (1).

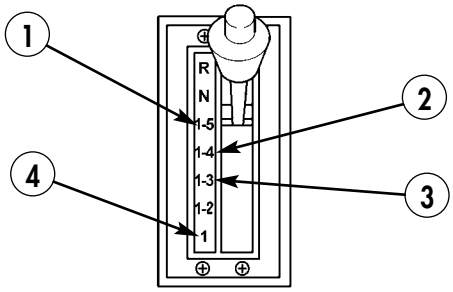


Figure 15. Transmission Control Lever Range Indicator.

4. Using engine for braking:

WARNING

- The engine brake looses its effectiveness to control speed of tractor when tractor is pushed by additional weight of trailer on downhill grades. Failure to down-shift transmission to lower gear range and use service brakes to keep tractor and engine speeds under control may result in damage to equipment and possible injury or death to personnel.
- Do not use engine retarder on slippery road surfaces. Using engine retarder on wet, icy, or snow covered roads may result in loss of vehicle control. Failure to comply may result in damage to equipment and injury or death to personnel.

a. To operate the engine retarder, switch ENGINE RETARDER switch (5) to the number of cylinders desired for braking action (WP 0004). To slow tractor, move foot completely off accelerator pedal (6) and depress engine retarder control pedal (7).

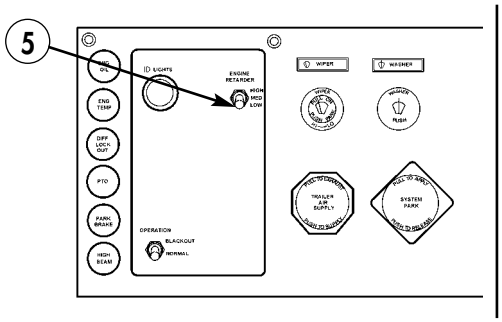


Figure 16. Engine Retarder Switch.

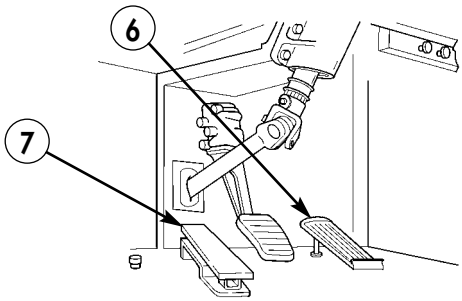


Figure 17. Engine Retarder and Accelerator Pedal.

PLACING THE VEHICLE IN MOTION (Contd)

EFFICIENT AND ECONOMICAL DRIVING TECHNIQUES (Contd)

4. Using engine for braking (Contd):

   b. To maximize the braking effect of the engine retarder, keep transmission in a gear range that matches road speed and rated engine rpm. Engine braking is increased by either down-shifting to the next lower gear range and/or placing the ENGINE RETARDER switch (1) to MED position (3) or HIGH position (2).

   c. When using the engine retarder on a downhill grade, select the same gear range necessary for climbing the same grade. To increase braking effect of engine retarder, either down-shift transmission to the next lower gear range and/or switch the ENGINE RETARDER switch (1) to MED position (3) or HIGH position (2). To decrease braking effect of engine retarder, either up-shift transmission to higher gear range and/or switch ENGINE RETARDER switch (1) to MED position (3) or LOW position (4).

WARNING

- Never down-shift to a gear range lower than the tractor road speed on slippery pavement; a sudden increase in engine rpm may cause drive wheels to lose traction with pavement and result in loss of control of tractor or jackknifing of trailer. Failure to comply may result in damage to equipment and injury or death to personnel.
- Do not use engine retarder on slippery road surfaces. Using engine retarder on wet, icy, or snow covered roads may result in loss of vehicle control. Failure to comply may result in damage to equipment and injury or death to personnel.

NOTE

Engagement of differential lockup may be helpful on slippery pavement (WP 0004).

   d. The engine retarder should never be used on slippery surfaces such as wet, icy, or snow covered pavement; the initial braking force when applying the engine retarder may cause tractor drive wheels to lose traction with road surface. Use service brake pedal and/or trailer brake control when slowing or stopping tractor on slippery surfaces (WP 0010 and WP 0017).

PLACING THE VEHICLE IN MOTION (Contd)

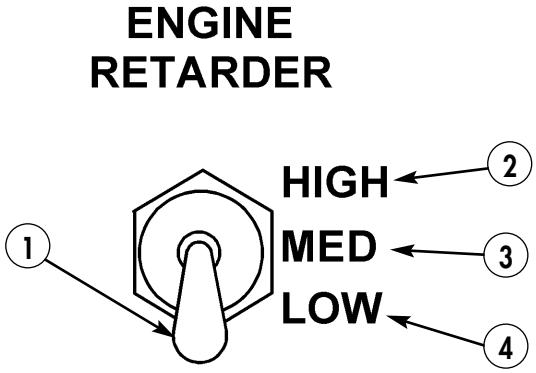


Figure 18. Engine Retarder Switch.

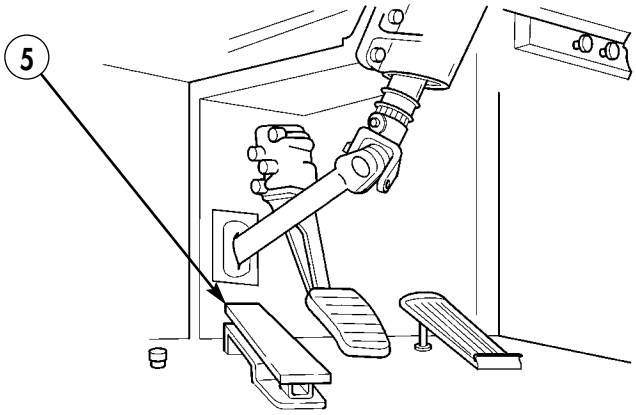


Figure 19. Engine Retarder Pedal.

END OF TASK

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

STOPPING, SHUTTING DOWN THE ENGINE, AND PARKING THE VEHICLE

INITIAL SETUP: Not Applicable

STOPPING THE TRACTOR AND STOPPING THE ENGINE

CAUTION

Before shutting down the engine, idle (550–650 rpm) it with no load for at least 3 minutes to allow turbocharger to cool down. Cooling down time will depend on how hard the engine has been worked. Failure to comply may result in damage to equipment.

To stop vehicle, perform the following:

1. Release accelerator pedal.
2. Allow reduction in engine RPM and automatic downshifting of transmission to help slow tractor.
3. Apply service brakes to bring tractor to complete stop.
4. Continue to depress and hold service brake pedal and shift transmission control lever to Neutral (N) position and apply parking brakes.
5. Idle engine for at least 3 minutes to allow turbocharger to cool down.
6. Turn OFF engine run switch.

END OF TASK

PARKING

WARNING

Never park tractor on a steep grade. It is never a good practice to park a heavy truck on a steep slope even though the parking brake holding capability exceeds federal safety standards. Failure to comply may result in tractor moving unexpectedly, damage to equipment, and injury or death to personnel.

NOTE

Parking brakes will provide sufficient holding force if parked on a normal, level surface.

1. Stop truck.
2. Pull parking brake control knob (WP 0004).

END OF TASK

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

FIFTH WHEEL OPERATION

INITIAL SETUP: Not Applicable

WARNING

- To avoid unintentional fifth wheel movement during tractor operation, always ensure fifth wheel control is in the LOCK position before placing tractor in normal operation. Failure to comply may result in damage to equipment, and serious injury or death to personnel.
- Never move fifth wheel control to the UNLOCK position during normal tractor operation. Failure to comply may result in loss of control, damage to equipment, and serious injury or death to personnel.
- All personnel must stand clear of tractor and semi-trailer during coupling operations. Failure to comply may result in injury or death to personnel.

GENERAL

The M915A1 truck tractor is equipped with a cab controlled sliding fifth wheel for use with trailers having a 2 in. (5 cm) diameter kingpin. The fifth wheel is 36 in. (91.4 cm) in diameter and can oscillate, or pitch, 15 degrees fore and aft. Rated vertical load capacity is 40,000 lbs (18,144 kg). Drawbar pull capacity is 150,000 lbs (68,039 kg). There are two kingpin lock releases on the left side of the fifth wheel, as shown in figure 1. To uncouple the trailer kingpin from the fifth wheel, first pull the primary lock release handle, then pull the secondary lock release handle.

FIFTH WHEEL OPERATION (Contd)

GENERAL (Contd)

Moving the fifth wheel control lever inside the cab to the UNLOCK position operates an air cylinder under the fifth wheel which allows it to travel on the slide track a total of 12 in. (30.5 cm) forward or backward. This feature allows for adjustment of the amount of cargo load carried by the rear tandem axles, within rated capacity.

With a trailer coupled to the fifth wheel and the control in the UNLOCK position, adjustment is made by driving forward or backward slowly with the trailer brake hand control applied. After sliding adjustment is made, move the fifth wheel control lever to the LOCK position and release the trailer brake hand control.

Use of the sliding fifth wheel for axle weight distribution requires scales to determine the weight being placed on each axle of the tractor and trailer. The normal position of the sliding fifth wheel is mid-way between the two rear tandem axles of the tractor with an unloaded or loaded trailer. From this starting position, weight on the front axle of the tractor can be increased by moving the sliding fifth wheel forward, and decreased by moving the sliding fifth wheel backward. See normal location decals on both sides of the fifth wheel assembly for correct positioning when towing the M872 trailer.

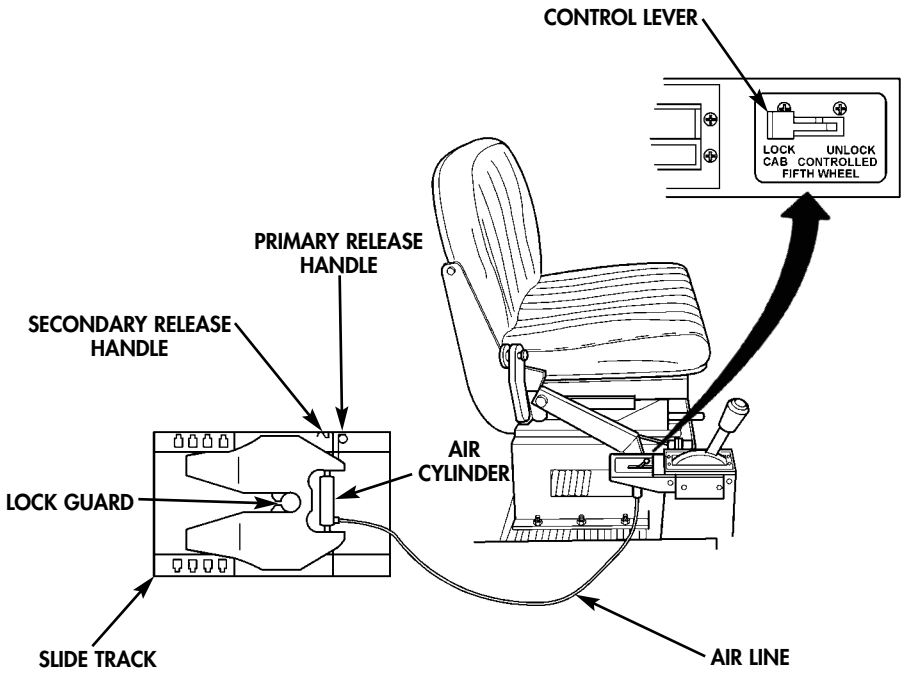


Figure 1. Fifth Wheel Control.

FIFTH WHEEL OPERATION (Contd)

CHOCKING TRAILER WHEELS BEFORE COUPLING

CAUTION

Use chock blocks on trailers equipped with chock blocks. Failure to comply may result in damage to equipment.

Remove chock blocks from their brackets and place as specified below.

Uphill Grade

Place chock blocks behind wheels on both sides of the axle.

Downhill Grade

Place chock blocks on front of wheels on both sides of the axle.

Level Ground

Chock front wheels of one axle and the rear side on the opposite side of the axle.

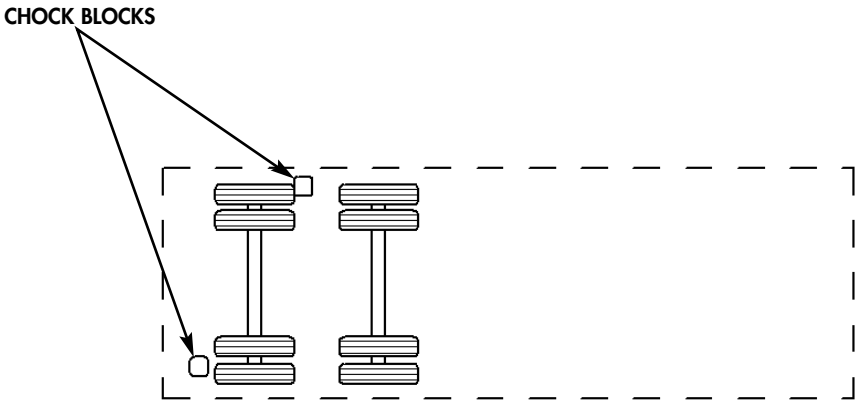


Figure 2. Chock Block Placement (Level Ground).

END OF TASK

FIFTH WHEEL OPERATION (Contd)

EQUIPMENT CHECKS

Check tractor and trailer as follows before backing tractor under trailer.

1. Visually check fifth wheel for cracked, damaged, or missing parts.
2. Check mountings for good condition and mounting bolts for tightness.
3. Ensure all moving parts and top of fifth wheel are properly lubricated.
4. Check lock guard for proper operation. Notify your supervisor to have lock guard replaced if damaged or missing.
5. Ensure both primary and secondary lock release handles are pulled out and lock guard is open to accept trailer kingpin.
6. Ensure fifth wheel ramps are down level with, or slightly below, angle of trailer pickup ramps.
7. Adjust trailer height so that fifth wheel picks up trailer on fifth wheel ramps.
8. Ensure fifth wheel control lever is in LOCK position.

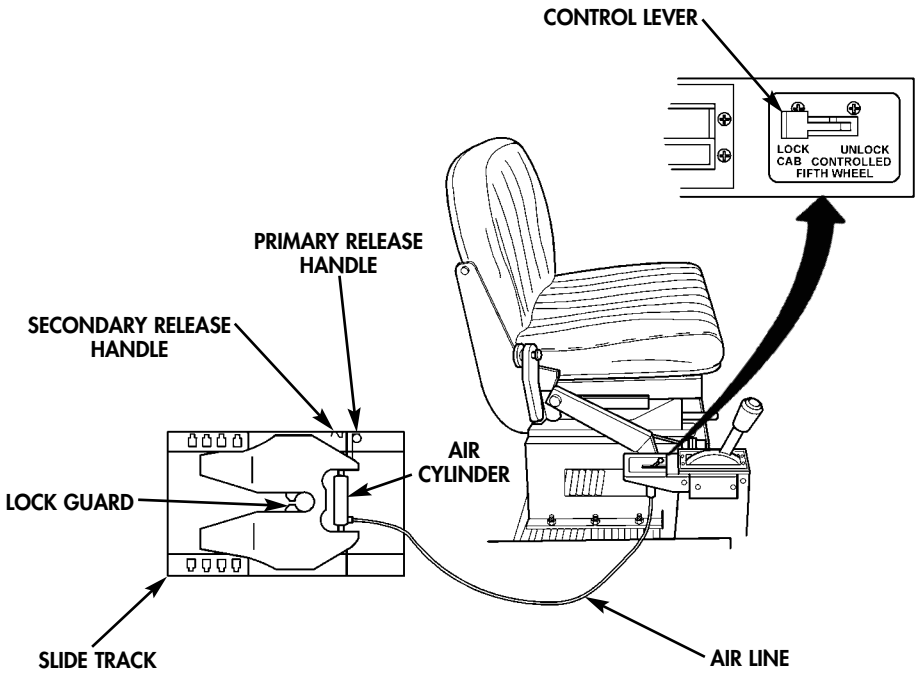


Figure 3. Fifth Wheel Control.

END OF TASK

FIFTH WHEEL OPERATION (Contd)

COUPLING AND CONNECTING TRACTOR TO TRAILER

WARNING

- Ensure no one is standing behind tractor or trailer during the coupling procedure. Failure to comply may result in serious injury or death to personnel.
- Ensure the kingpin couples with the fifth wheel. Failure to comply may result in damage to equipment, and possible injury or death to personnel.

CAUTION

- Ensure the kingpin does not run up the fifth wheel ramps. Failure to comply may result in damage to equipment.
- M967/M969 fuel tankers must be hauled with fifth wheel placed two notches rearward from HAUL position. Failure to comply may result in damage to equipment.

1. Ensure tractor is centered in front of trailer.
2. Back tractor under trailer gooseneck until fifth wheel ramps meet trailer kingpin in throat of fifth wheel.
3. Stop, shift to Neutral (N), and apply parking brake.
4. Verify correct alignment as shown.
5. Ensure contact between trailer and fifth wheel ramps. If kingpin is positioned too high, it will not engage fifth wheel correctly.

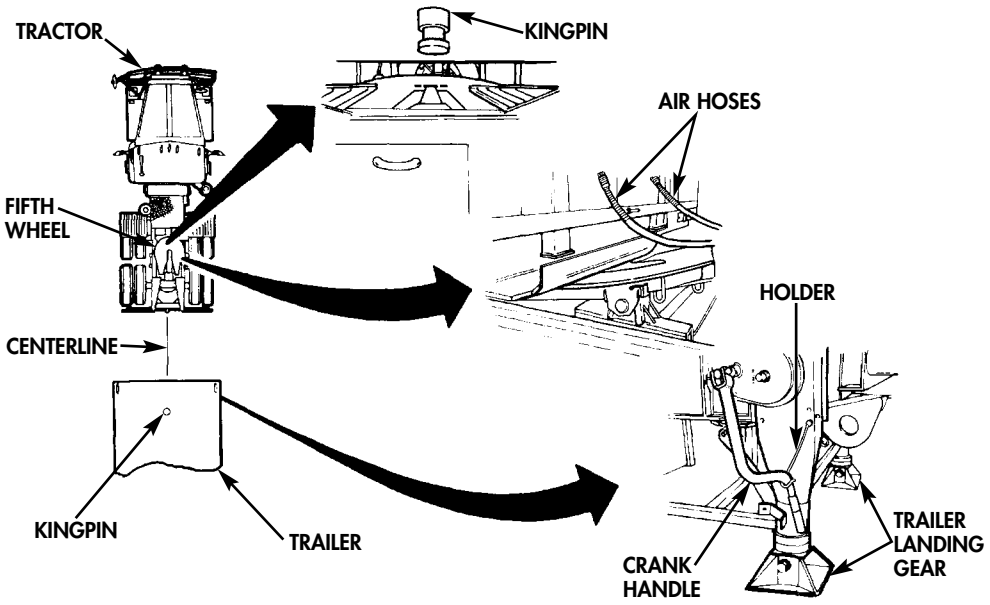


Figure 4. Tractor and Trailer Coupling.

FIFTH WHEEL OPERATION (Contd)

COUPLING AND CONNECTING TRACTOR TO TRAILER (Contd)

6. Connect trailer service and emergency air hoses on tractor pressure couplings.
7. Enter cab and push in trailer air supply control knob and set trailer brake hand control.
8. Release parking brake control.
9. Shift transmission control lever to Reverse (R) and back up until fifth wheel locks firmly on kingpin.
10. Shift transmission control lever to First Gear (1) and pull against load with trailer brake hand control set. This will apply pressure against kingpin and provide a test to ensure a secure coupling.
11. Set parking and service brakes.
12. Release trailer brake hand control and shift transmission control lever to Neutral (N).
13. Leave cab and verify primary and secondary release controls on fifth wheel are in and fifth wheel has not moved from position selected.
14. Kingpin must be in fifth wheel locks. You should not be able to see daylight between upper fifth wheel plate of trailer and fifth wheel.
15. Ensure kingpin is not hooked over front of fifth wheel.
16. Lift and secure trailer landing gear and stow crank handle in holder.

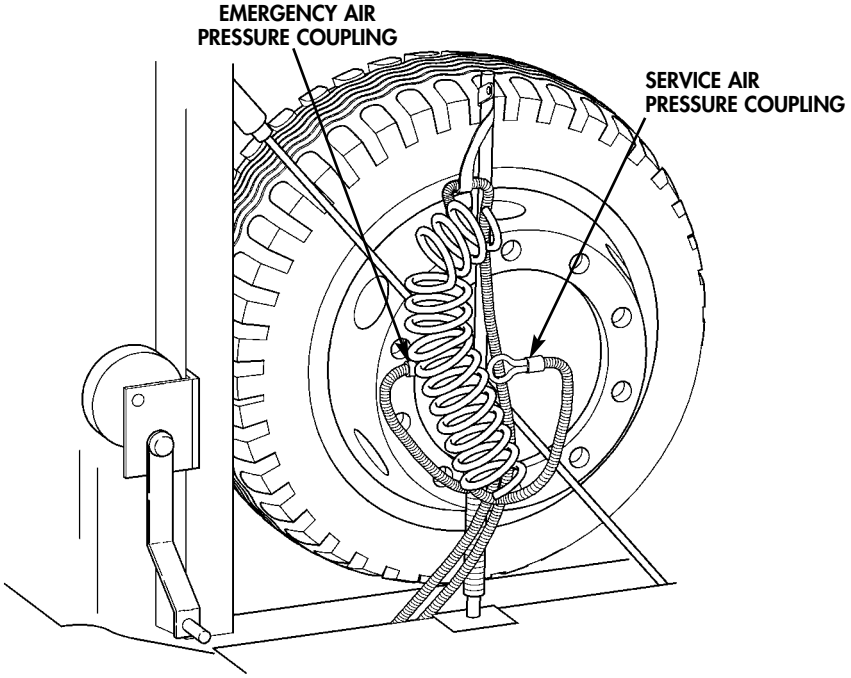


Figure 5. Air Hose Connections.

FIFTH WHEEL OPERATION (Contd)

COUPLING AND CONNECTING TRACTOR TO TRAILER (Contd)

NOTE

Two lamp cables, one 12V and one 24V, are stored in the tool box under the passenger seat. The cover at either end of the 24V cable should be locked in the open position, by sliding the metal tab back, before connecting the lamp cable.

17. Connect necessary lamp cables, 12V for normal lamps and/or 24V for blackout lamp operation.
18. Check operation of trailer lights.
19. Using hand control in cab, check operation of trailer brakes.
20. Check all tires.
21. Make sure air supply is adequate before you start out.

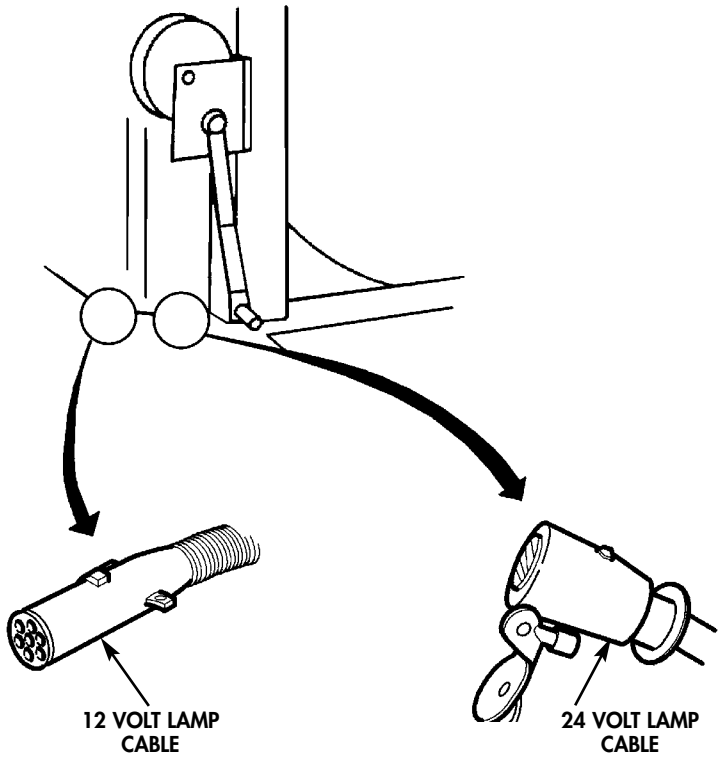


Figure 6. Lamp Cable Connections.

END OF TASK

FIFTH WHEEL OPERATION (Contd)

CHOCKING TRAILER WHEELS BEFORE UNCOUPLING

CAUTION

Use chock blocks on trailers equipped with chock blocks. Failure to comply may result in damage to equipment.

Remove chock blocks from their brackets and place as specified below.

Uphill Grade

Place chock blocks behind wheels on both sides of the axle.

Downhill Grade

Place chock blocks on front of wheels on both sides of the axle.

Level Ground

Chock front wheels of one axle and the rear side on the opposite side of the axle.

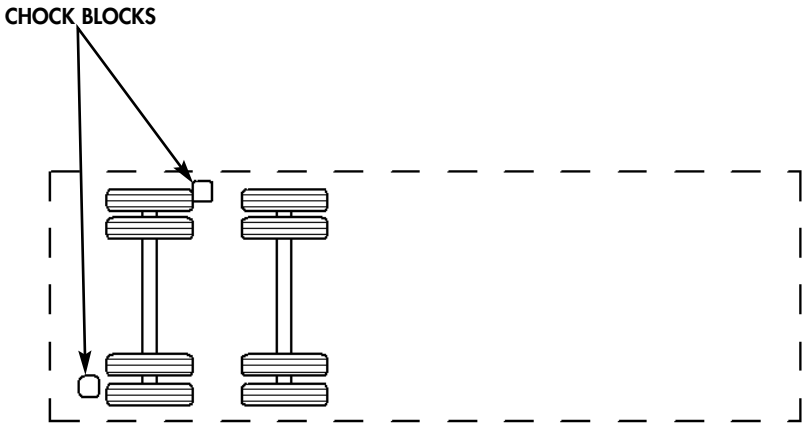


Figure 7. Chock Block Placement (Level Ground).

END OF TASK

FIFTH WHEEL OPERATION (Contd)

UNCOUPLING AND DISCONNECTING TRACTOR FROM TRAILER

CAUTION

M967/M969 fuel tankers must be hauled with fifth wheel placed two notches rearward from HAUL position. Failure to comply may result in damage to equipment.

1. Shift transmission control lever to Neutral (N) and apply parking brake. Verify that parking brake indicator lamp comes on. This will keep tractor from running out from under trailer when you unlock fifth wheel.
2. Pull out trailer air supply valve.
3. Leave cab and block trailer wheels with chocks.
4. Lower trailer landing gear until bases or wheels touch ground. Turn crank two more revolutions so when trailer is uncoupled, it will not drop down sharply and will be nearly level.
5. Disconnect and secure trailer service and emergency air hoses and lamp cable(s).
6. Unlock fifth wheel by first pulling primary lock release handle and then secondary lock release handle.

CAUTION

Do not pull all the way out from under the trailer until you have verified the landing gear will support the trailer. If it collapses, the rear frame area of the tractor will be able to catch the front of the trailer before equipment damage occurs.

7. Enter cab and slowly pull tractor forward until trailer kingpin is free from lock guard and landing gear is supporting trailer weight. Stop the tractor.
8. Have crew member observe trailer kingpin to ensure it clears properly during separation. Make sure kingpin clears tractor rear frame crossmember when pulling tractor out from under trailer.
9. Pull tractor slowly forward, allowing the trailer gooseneck and kingpin to totally clear the rear frame area of tractor.

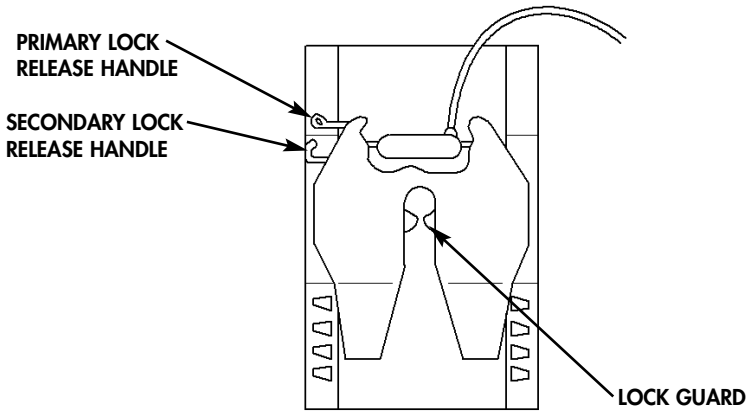


Figure 8. Fifth Wheel Kingpin Lock Release Handles.

END OF TASK

FIFTH WHEEL OPERATION (Contd)

PINTLE TOWING

1. Attach trailer or tow bar to pintle hook.
2. Connect trailer or vehicle electric cable to electric receptacle at rear of tractor.
3. Connect trailer air hoses to quick disconnect couplings at rear of tractor.

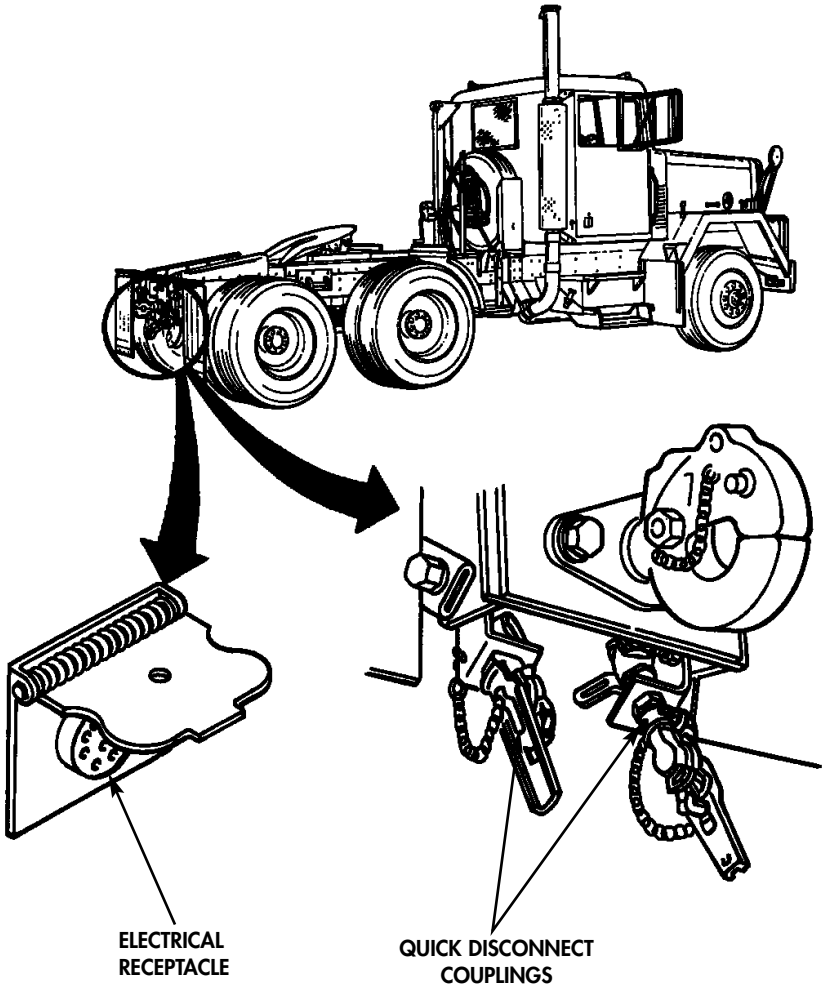


Figure 9. Pintle Towing Trailer Connections.

END OF TASK

FIFTH WHEEL OPERATION (Contd)

MUD FLAP STOWAGE

NOTE

When towing an M-127 trailer, the rear mud flaps must be removed from their normal position and stowed on stowage brackets.

1. Remove lock pin from each mud flap.

NOTE

You may have to tap upward on the mud flap spring with a hammer or similar tool.

2. Remove mud flaps by pulling up on spring.
3. Insert mud flaps in stowage brackets on right-hand frame rail.
4. Insert lock pins in springs.
5. When towing operations are complete, reinstall mud flaps and lock pins in their normal position.

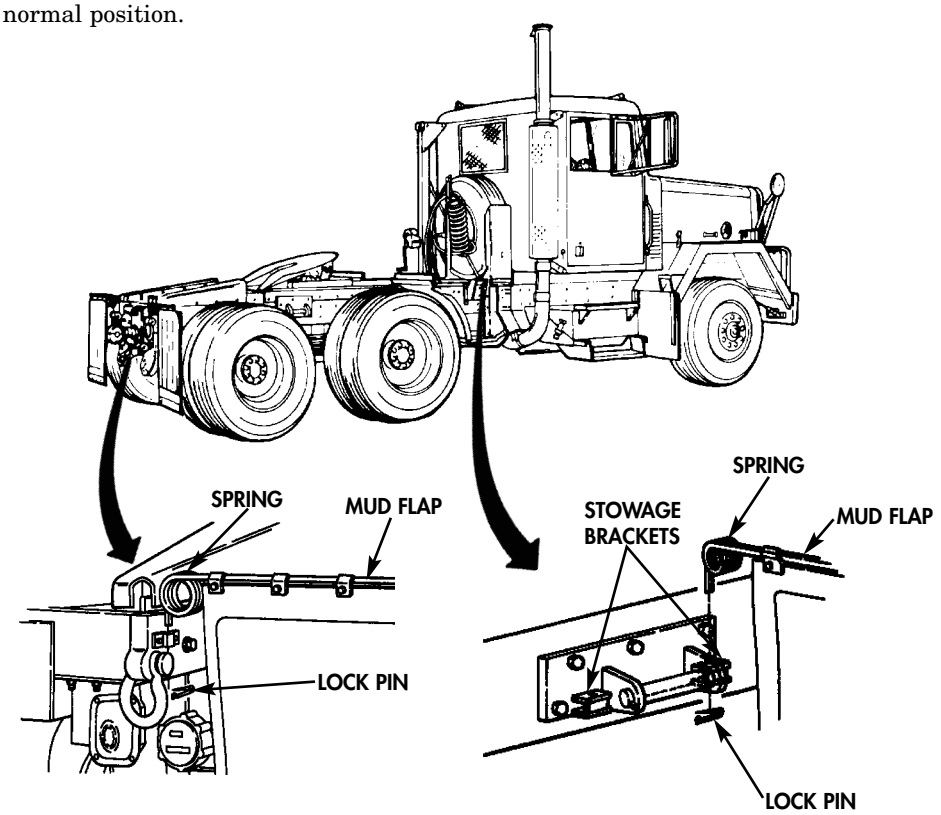


Figure 10. Mud Flap Stowage.

END OF TASK

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

AUXILIARY EQUIPMENT OPERATION

INITIAL SETUP: Not Applicable

TOWING PINTLE

To open pintle:

1. Remove cotter pin.
2. Engage latch and lock in open position.

To close and secure pintle:

1. Push lock down. Latch will engage in closed position.
2. Insert cotter pin to secure lock.

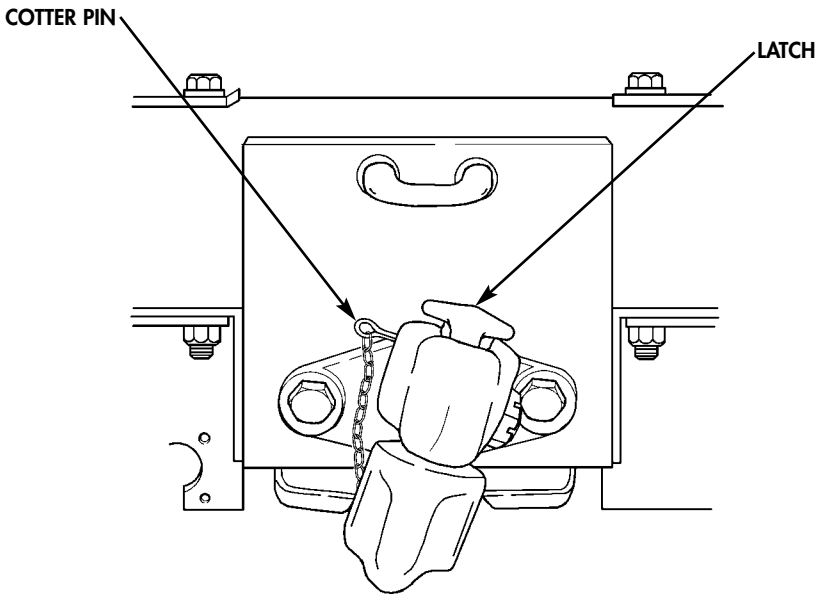


Figure 1. Towing Pintle.

END OF TASK

AUXILIARY EQUIPMENT OPERATION (Contd)

TIE DOWNS AND LIFTING SHACKLES

WARNING

Improper use of lifting equipment and attachment of cables to tractor may result in injury or death to personnel or damage to equipment.

1. To lift truck, attach lifting sling of suitable strength to designated lifting shackles.
2. Lift truck slowly and have observers watch for any signs of cable failure, unusual load shifts and obstructions.
3. During air or sea transport, secure truck by attaching cables to designated tie down points.

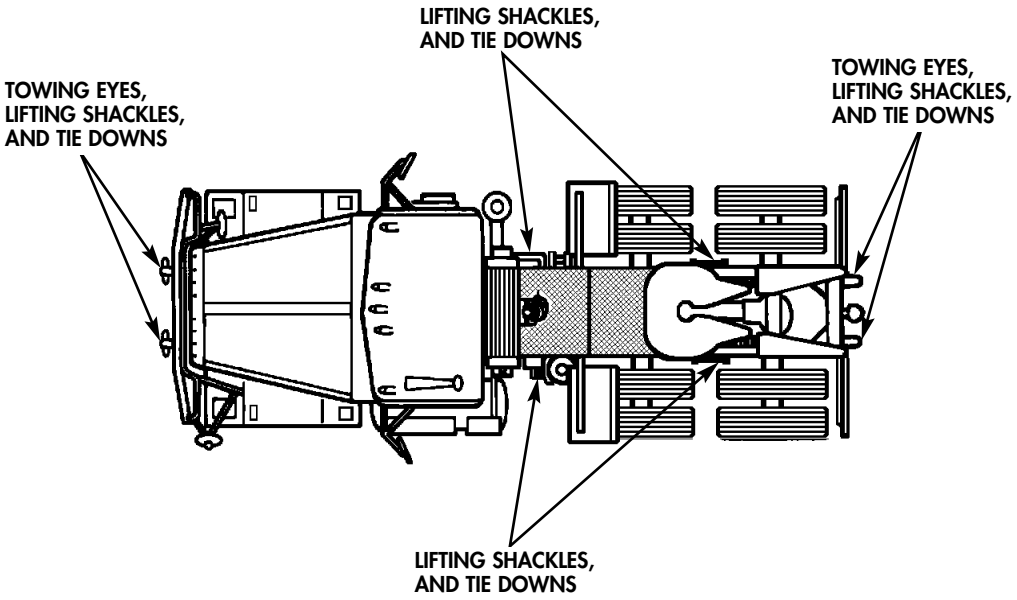


Figure 2. Towing Eyes, Lifting Shackles, and Tie Downs.

END OF TASK

AUXILIARY EQUIPMENT OPERATION (Contd)

PORTABLE FIRE EXTINGUISHER

To operate:

1. Remove extinguisher from bracket located at rear of tool box to left of passenger seat.
2. Hold extinguisher upright. Point nozzle toward base of fire and pull safety pin.
3. Press top lever, discharging chemical at base of fire. Use side-to-side motion.
4. After using fire extinguisher, notify Organizational Maintenance that you need a replacement for used extinguisher.

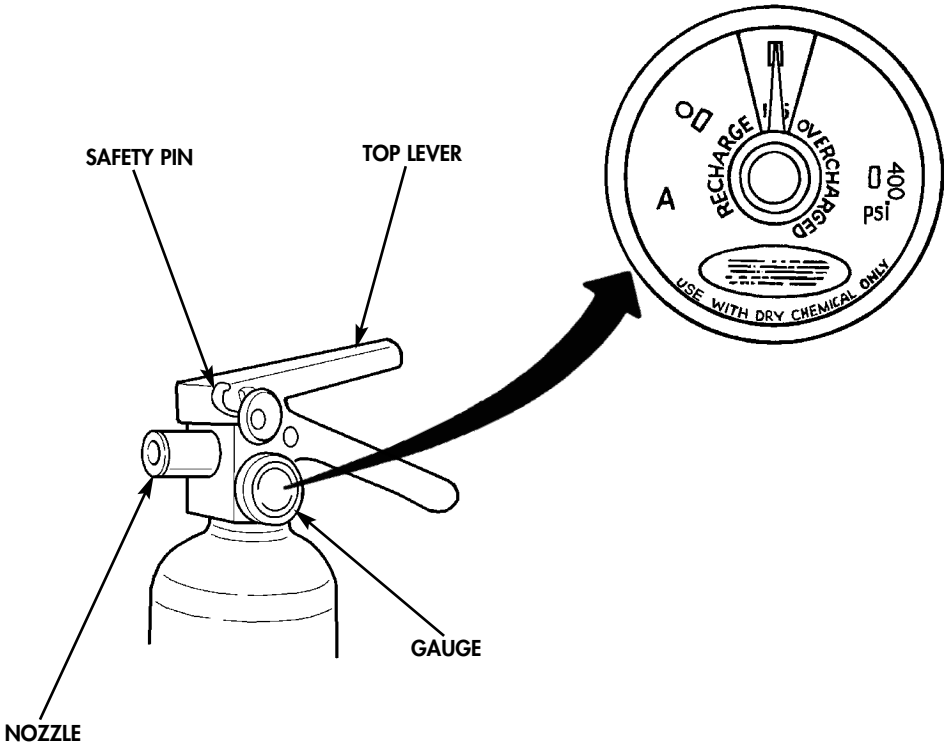


Figure 3. Fire Extinguisher.

END OF TASK

AUXILIARY EQUIPMENT OPERATION (Contd)

NATO SLAVE RECEPTACLE

The NATO slave receptacle is mounted on the side of the battery box toward the front of the truck. This receptacle is used primarily as a cable connection for jump starting your truck or another truck.

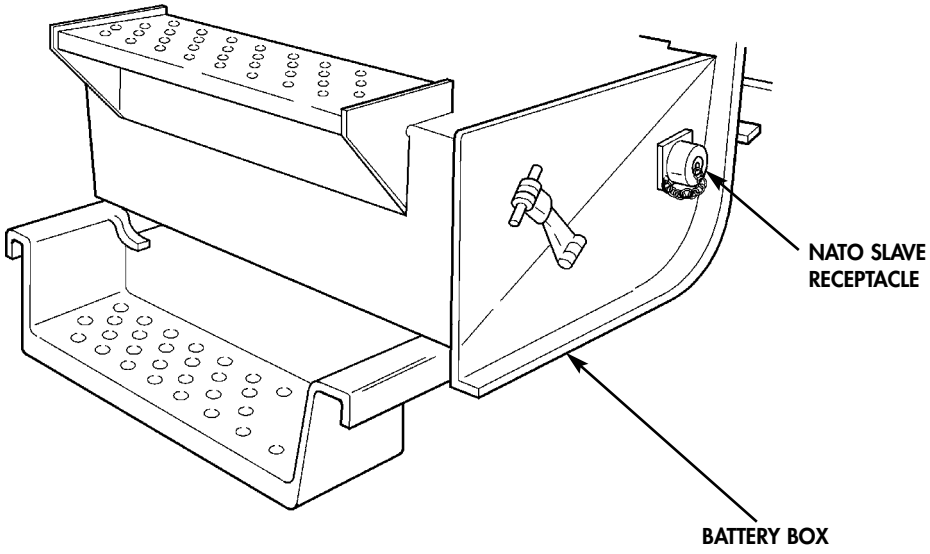


Figure 4. NATO Slave Receptacle.

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

DECALS, DATA PLATES, AND INSTRUCTION PLATES

INITIAL SETUP: Not Applicable

GENERAL

Locations and descriptions of data plates and decals found on the M915A1 Truck Tractor are provided under this heading. If any data plate or decal is worn, broken, unreadable, painted over, or missing, it must be replaced, notify your supervisor.

DECALS, DATA PLATES, AND INSTRUCTION PLATES (Contd)

CAB INTERIOR

(A) **ENGINE RETARDER INSTRUCTION DECAL —** This decal, located on the driver's sun visor, describes engine retarder operation.

(B) **TRANSMISSION INSTRUCTIONS DECAL —** This decal, located on the driver's sun visor, describes transmission operation.

(C) **NOISE EMISSION CONTROL INFORMATION DECAL —** This decal, located on the passengers sun visor, describes noise and emission control information.

(D) **TRANSMISSION OIL TEMEPERATURE GAUGE INTERPRETATION DECAL —** This decal, located on the instrument panel, describes the transmission oil temperature gauge reading.

(E) **ETHER QUICK START INSTRUCTION DECAL —** This decal, located on the instrument panel, describes the ether quick start system operation.

(F) **DIFFERENTIAL LOCKUP INSTRUCTION DECAL —** This decal, located on the instrument panel, describes the inter-axle differential control operation.

(G) **VEHICLE WARRANTY DECAL —** This decal located on the instrument panel describes the vehicle warranty.

(H) **RUST PROOFING DATA —** This decal located on the inside of the driver's door, describes the vehicles rust proofing data.

(I) **CERTIFICATION FMVSR DATA —** This decal located on the inside of the driver's door, identifies the vehicle certification FMVSR data.

(J) **VEHICLE IDENTIFICATION DATA —** This decal located on the inside of the driver's door, identifies the vehicle identification data.

(K) **TOWING INSTRUCTION DECAL —** This decal located on the inside of the driver's door, describes the towing instructions.

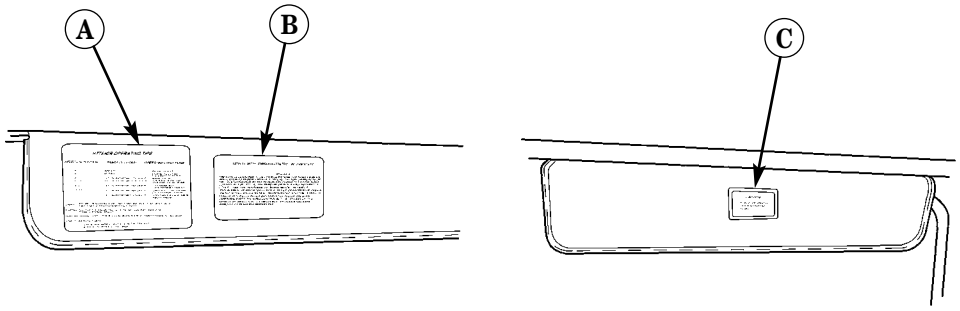


Figure 1. Sunvisor Instruction/Information Decals.

DECALS, DATA PLATES, AND INSTRUCTION PLATES (Contd)

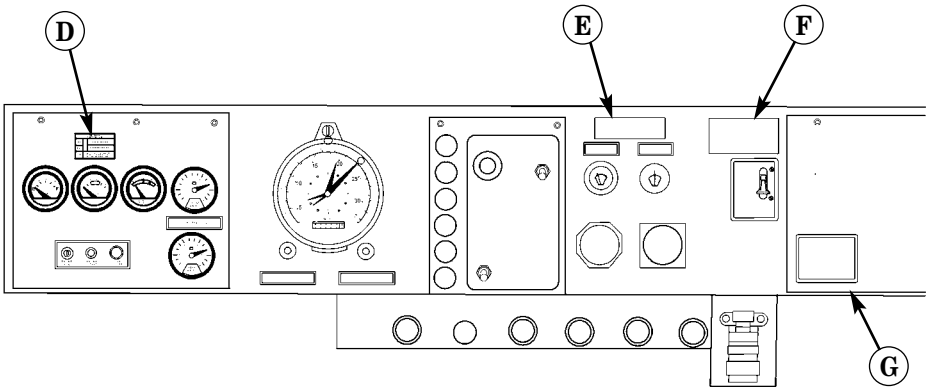


Figure 2. Instrument Panel Instruction/Information Decals.

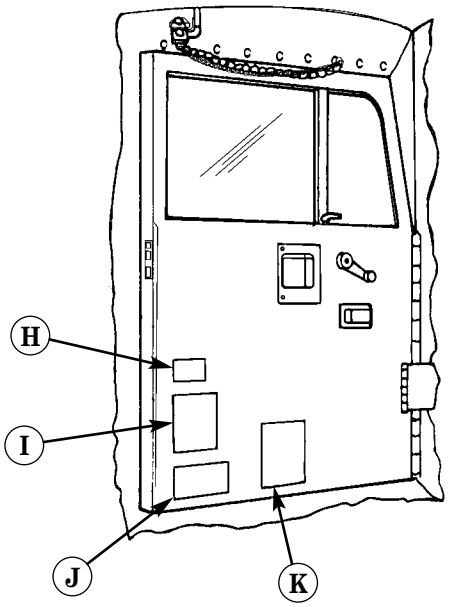


Figure 3. Driver's Door Data Plates and Instruction/Information Decals.

DECALS, DATA PLATES, AND INSTRUCTION PLATES (Contd)

CAB INTERIOR (Contd)

(L) **RELAY IDENTIFICATION DECAL —** The decal located below each relay, identify the function controlled by the relay. Maintenance will use these decals to identify electrical circuits so that repairs can be made.

(M) **CIRCUIT BREAKER IDENTIFICATION DECAL —** The decal located under each circuit breakers identifies them by number. Maintenance will use this decal to identify electrical circuits so that repairs can be made.

(N) **CAB CONTROLLED FIFTH WHEEL INSTRUCTION DATA —** This data plate located on the fifth wheel control, identifies when the fifth wheel control is in the Locked or Unlocked position.

(O) **SEAT ADJUSTMENT INSTRUCTION DECALS —** These decals, located on the side of the driver's seat, describe how to operate the seat adjustment controls.

DECALS, DATA PLATES, AND INSTRUCTION PLATES (Contd)

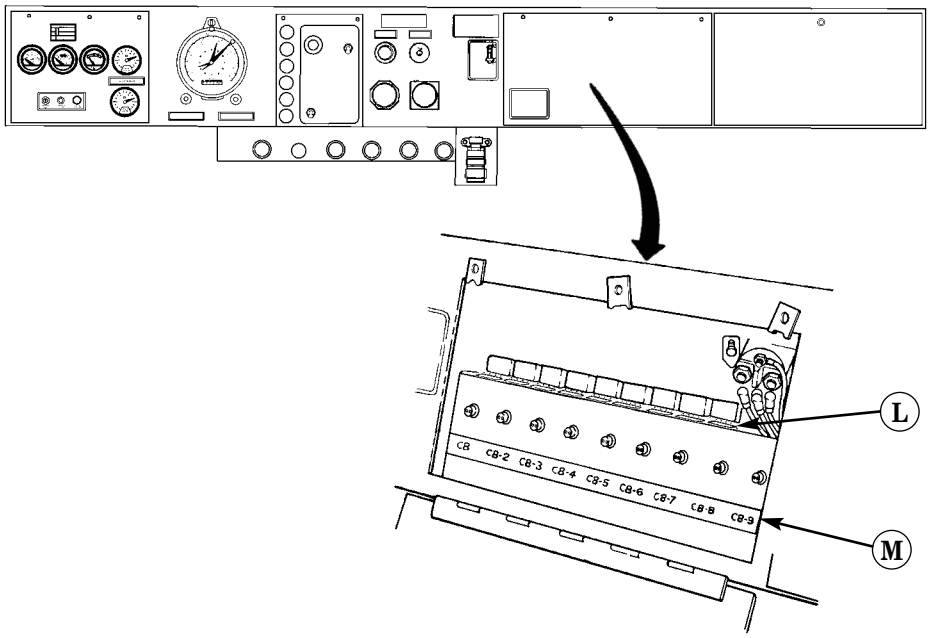


Figure 4. Circuit Breaker and Relay Identification Decals.

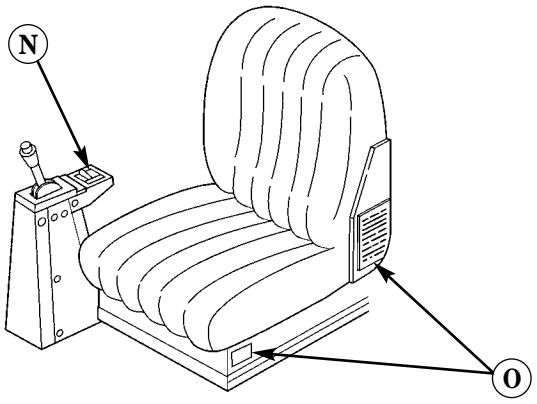


Figure 5. Driver's Seat Adjustment Instruction Decals.

DECALS, DATA PLATES, AND INSTRUCTION PLATES (Contd)

ENGINE COMPARTMENT

(P) **NBC (NUCLEAR, BIOLOGICAL, AND CHEMICAL) AIR FILTER WARNING DECAL —** This decal, located on the air cleaner, warns if NBC exposure is suspected, all air filter media should be handled by personnel wearing protective equipment. Consult your unit NBC officer or noncommissioned officer for appropriate handling or disposal instructions.

(Q) **HOOD LATCHING SAFETY PRECAUTIONS DECAL —** This decal, located under the hood, describes the proper instructions for raising and supporting the hood safely.

(R) **FAN CLUTCH ACTUATOR SAFETY PRECAUTUIONS DECAL —** This decal, located on the fan shroud, alerts personnel to fan clutch actuator safety precautions.

FIFTH WHEEL ASSEMBLY

(S) **M-872 TRAILER FIFTH WHEEL ALIGNMENT ARROW DECALS —** These decals, located on both sides of the fifth wheel, identify the proper position of the fifth wheel for towing the M-872 trailer.

(T) **FIFTH WHEEL POSITIONING INSTRUCTIONS —** This decal, located on both sides of the fifth wheel, describes the sliding fifth operation.

DECALS, DATA PLATES, AND INSTRUCTION PLATES (Contd)

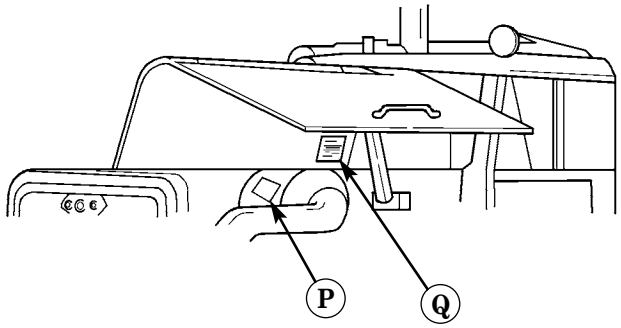


Figure 6. Engine Compartment Decals.

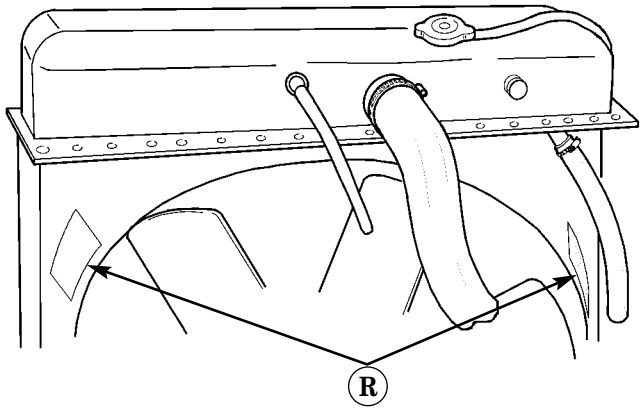


Figure 7. Fan Shroud Decals.

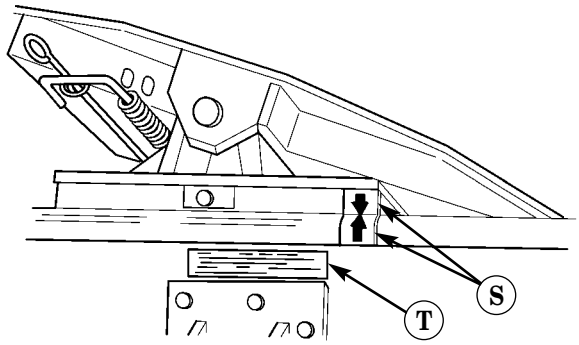


Figure 8. Fifth Wheel Decals.

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

OPERATION UNDER UNUSUAL CONDITIONS

INITIAL SETUP:

References

FM 55-30
FM 21-305

GENERAL

WARNING

This vehicle has been designed to operate safely and efficiently within the limits specified in this TM. Operation beyond these limits is prohibited IAW AR 70-1 without written approval from the Commander, U.S. Army Tank-automotive Command, ATTN: AMSTA-CM-S, Warren, MI 48397-5000. Failure to comply may result in damage to equipment and possible injury or death to personnel.

NOTE

For maintenance under unusual conditions, refer to WP 0031.

This Work Package (WP) provides an index for operating the M915A1 truck tractor under unusual conditions, which include extreme temperatures, humidity, difficult terrain fording, spring brake operation, and towing the vehicle. When operating under unusual conditions, it is especially important to keep the vehicle clean and adequately lubricated. You should become familiar with these WPs and with the referenced publications. FM 55-30 contains important information on driver selection and training. FM 21-305 provides basic instruction for operators of wheeled vehicles. You should use the material in these manuals along with the guidelines in the following WPs to help you operate the M915A1 properly under unusual conditions.

OPERATION UNDER UNUSUAL CONDITIONS INDEX

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

EXTREME COLD CONDITIONS

INITIAL SETUP:

References

TB 9-2320-283-14

OPERATION IN EXTREME COLD CONDITIONS

The M915A1 truck tractor needs special attention and care during periods of extreme cold weather. Remember that in extreme cold:

- Lubricants thicken.
- Batteries may lose power or freeze.
- Electrical insulation can crack causing short circuits.
- Fuel may not combine properly with air to form the necessary mixture for starting the engine.
- Metals and other materials may become hard or brittle.
- The cooling system requires adequate protection from extreme cold.
- Fuels, lubricants, and antifreeze compounds require special storage, handling, and use.

You should read and become familiar with the material in the referenced publications. They cover information you will need to know for operating a vehicle in extreme cold.

When you operate the tractor in extreme cold, keep in mind the problems characteristic of operation in cold weather, and make sure your tractor is adequately prepared and protected for the existing weather conditions. Follow these guidelines when you operate the M915A1 truck tractor in conditions of extreme cold.

EXTREME COLD CONDITIONS (Contd)

ARCTIC WINTERIZATION KIT

- See TB 9-2320-283-14 for complete information.

STARTING OUT

- Be careful when you first start your tractor. use your cold weather starting procedure (WP 0008), and give the engine time to reach an operating temperature range of at least 140°–160° F (60°–71° C).
- Adjust the amount of winter front coverage over the radiator grille to maintain a normal coolant operating range of 180°–200° F (82°–93° C).
- Start driving very slowly. Be alert to the possibility that tires may be frozen to the ground, frozen in the shape of flat spots, or that one or more brake shoes may be frozen and require preheating (notify organizational maintenance, if necessary).
- Drive very slowly for approximately 100 yards, being careful not to let the engine stall. By starting out slowly and carefully you can more easily detect any initial problems caused by the cold weather, and your tractor's fluids and components will have sufficient warmup time.

PROTECTING TRACTOR WHEN PARKED

- If you shut down your tractor for a short period, park in a sheltered area out of the wind. If there is no shelter available, park so that tractor does not face into the wind. Install the winter front.
- If you park your tractor for a long shutdown period, try to park on high ground, and use planks or brush to make a raised and relatively dry surface for the tractor's tires in case weather conditions worsen. Keep the tires out of snow, water, ice, and mud, if possible.
- Clean snow, ice, and mud from your tractor as soon as possible after shutdown.
- If your tractor will be parked for a long period of time during cold weather, have organizational maintenance personnel remove batteries and store them in a warm place. Fill fuel tank to guard against condensation. Drain any accumulated water from air reservoirs and fuel filter. Install the winter front.

Make sure tires are properly inflated (WP 0029).

Notify your supervisor to have maintenance personnel check and service the cooling system to ensure your tractor is adequately protected against extreme cold. Make sure transmission is in Neutral (N) and that the tractor's tires are blocked before you leave the area.

POWER STEERING

The power steering system incorporates a cooler designed to reduce power steering fluid temperatures during normal or unusually warm conditions. In extremely cold weather, the cooler becomes restrictive and must be bypassed to prevent over pressure and possible rupture of the cooler. Notify your supervisor to have maintenance perform this task when 0° F (-18° C) temperature or below is expected.

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

EXTREME HOT CONDITIONS

INITIAL SETUP: Not Applicable

GENERAL

During very hot weather you must watch for and guard against your tractor overheating. You may have to alter your driving procedures, remembering that the following types of operation can cause the tractor to overheat:

- Continuous high speeds.
- Long, hard pulls.
- Continuous use of low gear ranges on steep grades or in soft terrain.

OPERATING IN EXTREME HOT CONDITIONS

- Check water and transmission temperature gauges and stop your tractor if you note any unusually high temperature reading. Let the tractor cool down.
- Check the cooling system, air cleaner, engine oil level, and radiator fins frequently. Perform necessary services and notify organizational maintenance of any unusual gauge readings or other problems.
- Shorten differential oil change interval (WP 0025).

PROTECTING TRACTOR WHEN PARKED

- Park your tractor under cover, if possible. This will help protect it against the effects of sun, sand, and dust. If no shelter is available, cover tractor with tarpaulins. If you don't have enough tarps to cover the entire tractor, arrange tarps around engine compartment and over radiator to keep out sand and dust. Cover window glass to protect against sandblasting.
- Check tires for damage and ensure all tires are inflated to proper pressures (WP 0029).
- Check frequently for rust and fungus growth, both of which are common problems in hot, humid weather. Clean and lubricate your tractor to help prevent deterioration.

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

UNUSUAL TERRAIN OPERATION

INITIAL SETUP:

References
FM 21-305

GENERAL

Become familiar with the procedures in FM 21-305 for driving on unusual terrain. The M915A1 is not designed or intended for off-road use. If, however, you should find the adverse conditions described in this paragraph unavoidable, the recommended procedures given should be applied.

- In areas where the ground surface provides poor traction, move the differential LOCK/UNLOCK lever to the LOCK position (WP 0008). When you engage the locking system, driving axles receive equal torque.
- Use the differential LOCK/UNLOCK control as needed for better traction. Disengage differential lockup when conditions are back to normal. For instructions on operating the inter-axle differential lockup system, refer to WP 0008.

WOODS AND ROCKY TERRAIN

- Make sure your truck can clear any ground obstructions like stumps or rocks before you drive over them. Such objects can damage components underneath the truck. Try to avoid hanging limbs which might cause damage.
- If you must drive over very rocky terrain, be sure you have a spare wheel and tire, since there will be a greater chance of tire punctures.

MUD OR OTHER SOFT SURFACES

- Before you enter mud or other soft surfaces, check the conditions, and select the transmission gear range that you judge appropriate to get your truck through the area. Enter the soft area at a medium speed for the gear range you have selected.
- Maintain a steady pressure on accelerator pedal to keep your truck rolling until you reach solid ground again. Do not accelerate to the point of spinning the wheels.
- If your truck gets stuck, try to pull out slowly in a low gear range. You may have to place boards, brush, or similar material under tires to provide traction.

UNUSUAL TERRAIN OPERATION (Contd)

SAND

If you operate the M915A1 truck tractor in sand, follow the guidelines below.

- Maintain steady, even movement with the transmission in lower gear ranges. Try to keep your truck rolling without straining the engine and power train.
- If you get stuck, adjust tire pressure to gain additional traction. Reduce pressure in the front tires to 50 psi (345 kPa) and reduce pressure in the rear tires to 45 psi (310 kPa). After you have the truck out, inflate all tires to normal pressure.
- If the truck bogs down even though you have reduced tire pressure, place boards, brush, canvas, or similar materials under and in front of tires after shoveling a clear path ahead of each tire. This should provide better traction.
- If these efforts fail and it becomes evident that you cannot free the truck under its own power, have another vehicle tow your truck out. Whenever you operate the M915A1 truck tractor 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 gauges frequently.
  3. If your truck overheats, stop the vehicle, assess the problem, or notify your supervisor to have maintenance assess the problem.
  4. Clear engine oil level tube and transmission fluid level/filler tube before you remove the dipsticks to check fluids. Clean accumulations of sand and dirt from around any fluid filler locations before you check or add fluids.
  5. Clean spouts of fuel containers and areas around filler cap on fuel tank before you add fuel. Under extreme sandy or dusty conditions, filter fuel when you fill tank.
  6. When you park the truck overnight or for any extended period in cold temperature, park so that rear of truck faces toward the wind, if possible, or cover the radiator and all window glass with canvas.

UNUSUAL TERRAIN OPERATION (Contd)

SNOW AND ICE

If you have to operate the M915A1 truck tractor in snow or on icy surfaces, follow the guidelines below:

Driving

- Accelerate slowly to avoid spinning the tires.
- Drive at slower speeds.
- Give signals sooner.
- Lightly apply brakes once or twice to give early warning of intention to stop. This will also help to avoid skidding.
- Maintain at least double the normal distance from the vehicle ahead.
- Keep windshields, windows, mirrors, headlamps, stoplamps, and body lamps clean and free of snow and ice. Use defrosters and fans to help keep glass free of snow and ice.
- Descend moderate grades in the gear range you would normally use to ascend the same grade.
- After driving through slush or water, drive slowly and test the brakes. Keep driving slowly, maintaining moderate pressure on the service brake pedal to create a slight drag. When you are sure that your brakes are dried out and operating properly, resume normal speed.
- If you come to a difficult stretch of road, stop and inspect it carefully before driving on it. Select the transmission gear range that you feel is most likely to get you over that stretch of road and lock differential.
- If tires start spinning, stop, back up, and try again. If necessary, try rocking out by locking the differential, shifting to gear range 1-5, and accelerating lightly. Shift into reverse when your truck's forward motion stops. Repeat this alternate shifting and acceleration until your truck can use the momentum created by the rocking motion to rock out of the slippery area. Make every effort not to spin tires and do not exceed 800–900 engine rpm.

Stopping

WARNING

Do not use engine retarder on slippery road surfaces. Using engine retarder on wet, icy, or snow-covered roads may result in loss of vehicle control. Failure to comply may result in damage to equipment and injury to death to personnel.

- Ease up on accelerator, leaving truck in gear range already selected.
- Apply brakes evenly to slow vehicle, and gradually pump brakes to avoid skidding.
- Always avoid sudden braking on slick roads; this can cause your truck to skid and trailer to jackknife.

UNUSUAL TERRAIN OPERATION (Contd)

PARKING

- If you have to park the truck on an icy, slushy, wet, or muddy surface, place boards, brush, or other material 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 your truck is started and moving again.
- Instead of setting parking brake, block tires and leave transmission control lever in Neutral (N).

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

FORDING OPERATION

INITIAL SETUP: Not Applicable

BEFORE FORDING

Before you attempt fording with the M915A1 truck tractor, check the bottom surface condition of the water body. Make sure the bottom surface is hard enough that you can ford without exceeding the maximum fording depth of 20 inches (51 cm). If the bottom surface is too soft, do not attempt fording. Ford to the maximum depth for short periods or short distances only.

- Make sure engine is operating properly before entering water.
- Lubricate unpainted surfaces to guard against rust and deterioration.
- Engage driveline locking system. Move differential LOCK/UNLOCK control to the LOCK position.

FORDING OPERATION (Contd)

DURING FORDING

- Put transmission in a low gear range.
- Enter water slowly.
- Ford at speeds of no more than 3–4 mph (5–6 kmh).
- When tractor emerges from water, apply brakes repeatedly to dry out brake linings. Ensure brakes are working properly before driving truck at normal speeds.

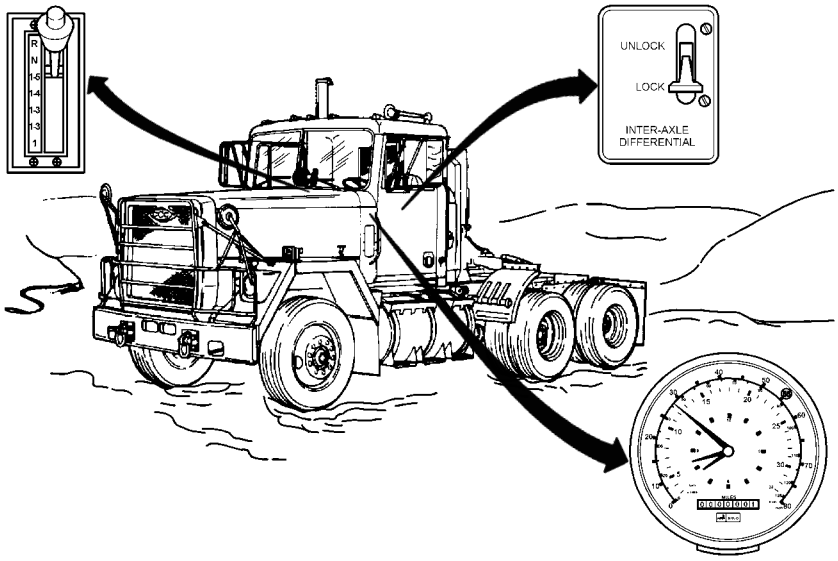


Figure 1. Fording.

AFTER FORDING

During fording, water may enter your truck or its components. This water may have contaminated the fluid systems. You must ensure any accumulated water is removed from your truck before it causes damage to any systems, surfaces, or equipment. As soon as possible after fording, check your truck using the following guidelines:

- Let the engine run for sufficient time to drive out any accumulated water.
- Drain or dry any areas on your truck where water has accumulated.
- Check each fluid system in your truck for evidence of water contamination. If you find water in one or more fluid systems, notify organizational maintenance to drain, flush, and refill the contaminated system.
- Notify organizational maintenance that an after-fording lubrication is needed (WP 0025).
- If necessary, notify your supervisor of any necessary service or repairs before you return your truck to normal use (refer to after-fording maintenance procedures, WP 0031).

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

SPRING BRAKE POWER SPRINGS OPERATION

INITIAL SETUP:

Tools and Special Tools
Adjustable wrench, 12 in.
(item 20, WP 0033)

Equipment Condition
Wheels chocked

WARNING

Chock wheels to keep the tractor from moving before brakes are released. Failure to comply may result in serious injury or death to personnel.

SPRING BRAKE POWER SPRINGS OPERATION (Contd)

MANUALLY COMPRESSING THE SPRING BRAKE POWER SPRINGS

In the event of an air system pressure loss, spring brake units on the forward-rear axle will apply the forward-rear axle brakes. If the truck must be moved and there is not enough air system pressure to compress the power spring in the spring brake chambers and release the brakes, you will have to do this manually. The truck has two spring brakes.

1. Remove nut (3), washer (2), and release stud (1) from stowage pocket (7) of failed spring chamber (6).
2. Remove dust cover (4) from spring chamber (6).
3. Insert the cross-pin end of release stud (1) into opening under dust cover (4) on spring chamber (6).
4. After release stud (1) has been inserted far enough to engage pressure plate (5), turn release stud (1) ¼ turn to lock cross-pin end of release stud (1) into pressure plate (5).
5. Install washer (2) and nut (3) on release stud (1).

NOTE

Observe that the push rod retracts while tightening nut. This indicates that the pressure plate has been properly engaged.

6. Tighten nut (2) until 2.5–2.75 in. (6.3–7 cm) of release stud (1) remains visible above nut (2). Spring brake is then fully engaged.

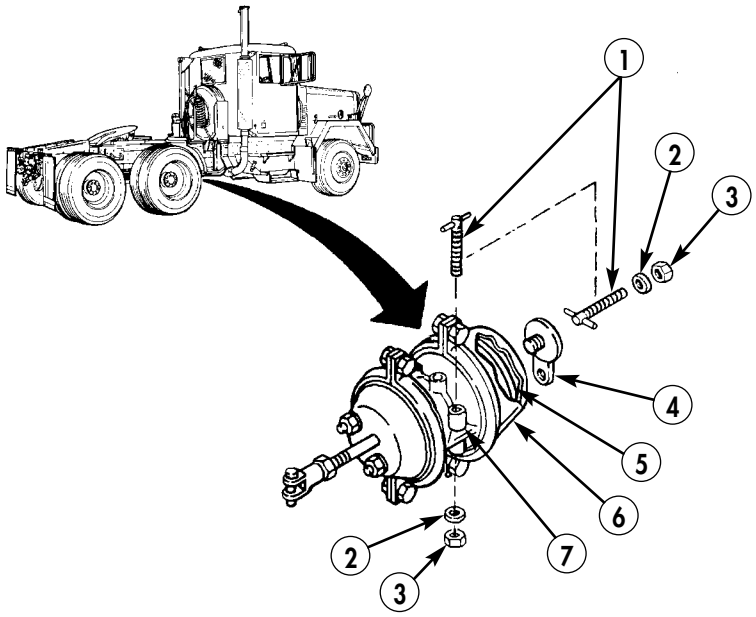


Figure 1. Spring Brake Power Spring.

END OF TASK

SPRING BRAKE POWER SPRINGS OPERATION (Contd)

MANUALLY RELEASING THE SPRING BRAKE POWER SPRINGS

If the power springs in the spring brake chambers have been compressed, reset them before the truck is returned to service.

1. Remove nut (3) and washer (2) from release stud (1).
2. Disengage cross-pin end of release stud (1) from pressure plate (5) and remove release stud (1) from spring chamber (6).
3. Install dust cover (4) on spring chamber (6).
4. Install release stud (1) in stowage pocket (7) with washer (2) and nut (3).

END OF TASK

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

TOWING THE VEHICLE

INITIAL SETUP:

Tools and Special Tools	References
Medium duty tow bar (NSN 2540-01-267-2912, WP 0034)	FM 21-305 FM 20-22

GENERAL

CAUTION

If the vehicle must be towed with the rear wheels on the ground, the transmission-to-rear axle prop shaft must be removed. Failure to comply may result in serious damage to automatic transmission and rear tandem axle differentials.

NOTE

For cross-country towing all tires should be on the ground.

Refer to FM 21-305 for general guidelines on vehicle recovery and use of warning kits and signals. FM 21-305, FM 20-22, and the following procedures provide instructions for towing.

PREPARATION FOR TOWING

If possible, tow with the rear wheels suspended. This will eliminate the need for removal of prop shaft or axle shafts.

If the vehicle must be towed with the rear wheels on the ground, set the inter-axle differential control to the UNLOCK position (WP 0004) and notify your supervisor to remove the transmission and forward-rear axle prop shaft at the universal joints. After removal of the prop shaft, secure the prop shaft to the truck undercarriage.

If for some reason the prop shaft cannot be removed, notify your supervisor to remove all four axle shafts from the two rear axle assemblies. Secure the axle shafts to the vehicle to prevent damage.

TOWING THE VEHICLE (Contd)

USE OF TOW BAR

NOTE

- The M915A1 truck tractor may be towed short distances (one-half mile to a maximum of 10 miles), at very low speeds without removing the prop shaft or axle shaft.
- Ensure towing device is long enough to allow for complete turning radius.
- Towing vehicle speed with prop or axle shafts removed should be restricted to a maximum of 15 mph (24 kmh) on primary roads and 8 mph (13 kmh) on secondary roads.

1. Install medium duty tow bar (NSN 2540-01-267-2912) at pintle of towing vehicle and at towing eyes of tractor.

NOTE

Quick disconnect couplings are provided in the bumper for air brake operation.

2. Connect air pressure hoses between tractor and towing vehicle for air brake operation.
3. Place transmission control lever in Neutral (N).
4. Release parking brakes.
5. Turn on appropriate lights.

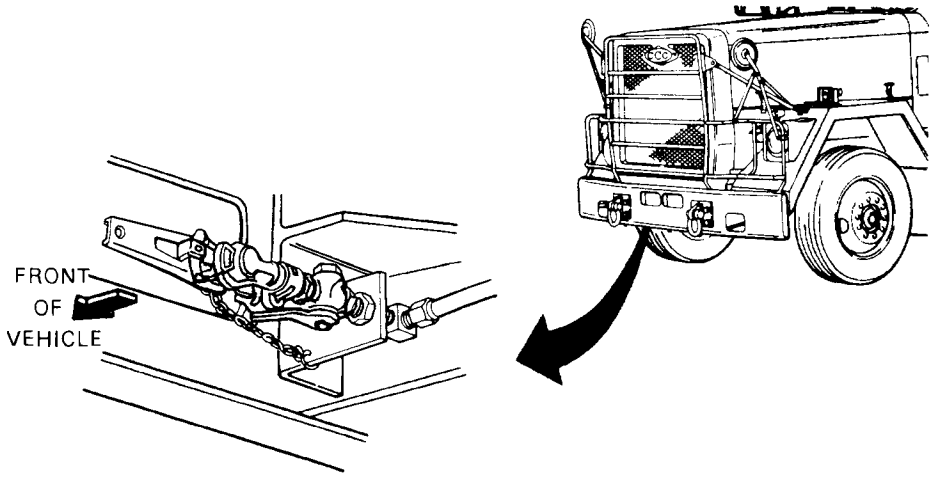


Figure 1. Air Pressure Hose Connections.

END OF TASK

END OF WORK PACKAGE

CHAPTER 3

TROUBLESHOOTING PROCEDURES

FOR

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

TROUBLESHOOTING PROCEDURES

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

TROUBLESHOOTING INDEX

TROUBLESHOOTING INDEX (Contd)

END OF WORK PACKAGE

TROUBLESHOOTING PROCEDURES

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

TROUBLESHOOTING PROCEDURES

INITIAL SETUP: Not Applicable

WARNING

Hearing protection is required for personnel when engine is running for an extended period of time and personnel are close to tractor. Noise levels produced by M915A1 series vehicles exceed 85 dB. Long-term exposure to this noise may cause hearing loss.

NOTE

If corrective action does not correct malfunction, notify supervisor.

Table 1. Engine.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. ENGINE DOES NOT CRANK WHEN STARTER SWITCH IS ACTIVATED.	1. Ensure engine run switch is in ON position.	Move engine run switch to ON position.
	2. Ensure transmission range selector lever is in NEUTRAL (N) position.	Move transmission range selector lever to N.
	3. Check battery cables and terminals.	Tighten loose connections and clean dirty cables. If cables are broken, notify your supervisor.
	4. Ensure battery indicators are green.	If battery indicators are dark or yellow, notify your supervisor.
2. ENGINE CRANKS BUT DOES NOT START.	**NOTE** • Visually check for fuel system leaks before completely filling fuel tank. • When fuel tank is completely drained and then refilled, the fuel system must be bled. Notify your supervisor if fuel system needs to be bled.	
	Check fuel gauge (WP 0004).	Fill fuel tank, as required.
	Check air filter restriction gauge.	If gauge indicates restriction (red instead of green), notify your supervisor.

TROUBLESHOOTING PROCEDURES (Contd)

Table 1. Engine (Contd).

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
3. ENGINE CRANKS BUT DOES NOT START BELOW 32° F (0° C).	Check ether starting aid (quick start) is being used correctly.	Follow proper cold weather starting procedures using ether starting aid. Refer to WP 0008.
4. ENGINE STARTS BUT MISFIRES OR RUNS ROUGH AFTER PROPER WARM-UP PERIOD.	Check air filter restriction gauge.	If gauge indicates restriction (red instead of green), notify your supervisor.
5. ENGINE DOES NOT IDLE PROPERLY.	1. Check air filter restriction gauge. 2. Ensure ether starting aid (quick start) is being used correctly.	If gauge indicates restriction (red instead of green), notify your supervisor. Follow proper cold weather starting procedures using ether starting aid. Refer to WP 0008.
6. ENGINE TEMPERATURE EXCEEDS 210° F (99° C).	**WARNING** Hot coolant is under pressure. Be careful when removing coolant filler cap or inspecting cooling system. Engine cooling system is under pressure and may cause severe injury to personnel. 1. Check coolant level in radiator sight glass. It should be full. 2. Check for leaks in cooling system. 3. Ensure radiator fins are free of mud, ice, snow, or debris. 4. Check cooling fan drive belts for looseness. 5. Ensure engine oil is at proper level on dipstick. 6. Ensure transmission fluid is at proper level on dipstick.	Add coolant to fill radiator to proper level. Refer to WP 0028. If any coolant leaks are found, notify your supervisor. Remove any material clogging radiator fins. Shine flashlight through engine side and note light at radiator. Ensure cooling fins are not clogged. If belts are loose, notify your supervisor. Add engine oil, if necessary (WP 0025). Add transmission fluid, if necessary (WP 0025).

TROUBLESHOOTING PROCEDURES (Contd)

Table 1. Engine (Contd).

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
7. ENGINE LACKS POWER.	Check air filter restriction gauge.	If gauge indicates restriction (red instead of green), notify your supervisor.
8. LOW OR NO ENGINE OIL PRESSURE.	Ensure engine oil is at proper level on dipstick.	Add engine oil, if necessary (WP 0025). If no or low oil pressure is still present, notify your supervisor.
9. EXCESSIVE ENGINE OIL CONSUMPTION.	Inspect engine for loose oil lines or leaks.	If any leaks are found, notify your supervisor.
10. EXCESSIVE EXHAUST SMOKE AFTER ENGINE REACHES NORMAL OPERATING TEMPERATURE 180–200° F (82–93° C).	1. Check air filter restriction gauge. 2. Open fuel tank filler cap and check for obvious fuel contamination.	If gauge indicates restriction (red instead of green), notify your supervisor. If fuel is contaminated, notify your supervisor. If you can smell unburned fuel in or around engine cab area, notify your supervisor.
11. ENGINE RETARDER DOES NOT REDUCE TRACTOR SPEED.	Ensure engine retarder is engaged.	Press down on engine retarder foot pedal and take your foot completely off of accelerator pedal. If you are operating retarder control correctly, but retarder system is not slowing vehicle, notify your supervisor.
12. EXCESSIVE EXHAUST NOISE OR FUMES IN OR NEAR CAB.	1. Check exhaust manifold, pipes, flex tubes, muffler and stack for leaks and rusted-through areas with engine running. 2. Check exhaust system clamps for leakage with engine running.	If any leaks are found, notify your supervisor that rusted leaking parts require replacement. If any leaks are found, notify your supervisor that clamps require tightening or replacement.

END OF TASK

TROUBLESHOOTING PROCEDURES (Contd)

Table 2. Transmission.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. FOAMY FLUID ON TRANSMISSION DIPSTICK.	Check level on dipstick with engine at idle and tractor on level ground.	If transmission is 100–250° F (38–121° C) and fluid level is above HOT RUN band, or if temperature is below 100° F (38° C) and fluid level is below COLD RUN band, notify your supervisor.
2. SLOW OR ERRATIC TRANSMISSION ENGAGEMENT.	Check level on dipstick with engine at idle and tractor on level ground.	If additional fluid is required, notify your supervisor.
3. TRANSMISSION FLUID TEMPERATURE GAUGE INDICATES OVERHEATING.	1. Check level on dipstick with engine at idle and tractor on level ground. Check dipstick for evidence of foamy fluid.	If transmission is 100–250° F (38–121° C) and fluid level is above HOT RUN band, or if temperature is below 100° F (38° C) and fluid level is below COLD RUN band, notify your supervisor.
	2. Check dipstick for evidence of discoloration that could indicate water/antifreeze in fluid.	If there is discoloration of fluid, notify your supervisor.
4. FLUID LEAKING FROM TRANSMISSION BREATHER.	Check for evidence of foamy fluid on transmission dipstick.	If transmission is 100–250° F (38–121° C) and fluid level is above HOT RUN band, or if temperature is below 100° F (38° C) and fluid level is below COLD RUN band, notify your supervisor.

END OF TASK

Table 3. Air System and Brakes.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. LOW PRESSURE IN AIR SYSTEM (LOW AIR PRESSURE WARNING LAMP AND BUZZER ARE ON).	1. Ensure all reservoir drains are closed.	Close any open reservoir drains.
	2. If tractor is not coupled to trailer, ensure trailer air supply control is pulled out (OFF).	Pull air supply control out (OFF).
	3. Check for possible air leaks at air reservoirs, hoses, fittings, and at intervehicular air hose connections.	If any leaks are found, notify your supervisor.
	4. If tractor is coupled to trailer, and your test and inspections of tractor do not reveal any trouble with tractor, troubleshoot trailer.	If tests, inspections, and corrective actions for both tractor and trailer do not resolve low air pressure problem, notify your supervisor.

TROUBLESHOOTING PROCEDURES (Contd)

Table 3. Air System and Brakes (Contd).

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
2. AIR SYSTEM LOSES PRESSURE DURING TRACTOR OPERATION OR LOW AIR PRESSURE WARNING LAMP AND BUZZER COME ON DURING TRACTOR OPERATION.	Test 1. Check tractor for pressure loss. 1. Ensure trailer air supply control is pulled out. 2. Operate engine until warning lamp and buzzer go off, and release parking brake. 3. Stop engine and note reservoir pressure. 4. Fully depress and hold service brakes for 2 minutes. 5. Check for leaks. Reservoir pressure loss should not exceed 5 psi in 2 minutes.	Close any open reservoir drains. Ensure trailer air supply control is pulled out. If any other leaks are found, notify your supervisor. If pressure loss in Test 1 does not exceed 5 psi in 2 minutes, proceed to Test 2.
	Test 2. Check trailer for pressure loss. 1. Push trailer supply control to charge trailer air reservoirs 2. Operate engine until warning lamp and buzzer go off, then release parking brake. 3. Stop engine and note reservoir pressure. 4. Fully depress and hold service brakes for 2 minutes. 5. Check for leaks. Reservoir pressure loss should not exceed 5 psi in 2 minutes.	Note any trailer air leaks. If reservoir pressure loss exceeds 5 psi in 2 minutes, troubleshoot trailer.

TROUBLESHOOTING PROCEDURES (Contd)

Table 3. Air System and Brakes (Contd).

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
3. TRAILER BRAKES WILL NOT APPLY WHEN BRAKE PEDAL IS USED OR HAND CONTROL ON STEERING COLUMN IS USED.	Ensure both intervehicular air hoses are connected securely between tractor and trailer (WP 0011).	Connect air hoses securely to trailer. Charge trailer air system by pushing in trailer air supply control. If trouble continues, notify your supervisor.
4. TRAILER BRAKES WILL NOT RELEASE.	1. Check trailer brake control is in OFF position. 2. Check trailer air supply control is pushed in (charging position). 3. Check both intervehicular air hoses are connected securely between tractor and trailer (WP 0011). 4. Check for obvious leaks in tractor air system.	Move control to OFF position (WP 0004). Push in air supply control (WP 0004). Connect hoses securely (WP 0011). If any leaks are found, notify your supervisor. If no leaks are found, troubleshoot trailer.

END OF TASK

Table 4. Driveline Air Control System.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
DRIVELINE WILL NOT DISENGAGE (INDICATOR LAMP STAYS ON) WHEN DIFFERENTIAL LOCK/UNLOCK IS MOVED TO UNLOCK POSITION.	1. Ensure system has been unlocked long enough for system to disengage. 2. If LOCK indicator lamp stays on, excessive driveline wind up may have occurred. Back up slowly, and check if LOCK indicator lamp goes off.	Put LOCK/UNLOCK control in UNLOCK position and wait for lamp to go off (WP 0004). If indicator lamp stays on, notify your supervisor.

END OF TASK

TROUBLESHOOTING PROCEDURES (Contd)

Table 5. Sliding Fifth Wheel Air Control System.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
1. FIFTH WHEEL CANNOT BE LOCKED IN DESIRED POSITION WHEN LOCK/UNLOCK CONTROL IS MOVED TO LOCK POSITION (TRACTOR COUPLED TO TRAILER).	1. Check for obstructions, between fifth wheel plate and slide track rack.	Clean or remove objects from area as necessary and check again.
	2. Ensure air cylinder has sufficient time to react.	Leave LOCK/UNLOCK control in LOCK position, wait for 10 seconds, and check again (WP 0004).
	3. If fifth wheel will not lock after air cylinders have had sufficient time to react/lock, fifth wheel may be hung up between segments of slide track rack.	Move LOCK/UNLOCK control to UNLOCK position, apply trailer brake hand control, and place gear range selector in (1) or (R). Move tractor slowly forward or backward an inch or two, stop and shift range selector to NEUTRAL (N). Ensure fifth wheel is now locked. Release trailer brake hand control.
	4. If fifth wheel will not lock in position after steps 1, 2, and 3, check air line connections at cab mounted control and at air cylinder under fifth wheel plate. Check for sound of escaping air and loose fitting connections.	If you find any leaks in air system connections at control or air cylinder, notify your supervisor.

TROUBLESHOOTING PROCEDURES (Contd)

Table 5. Sliding Fifth Wheel Air Control System (Contd).

2. FIFTH WHEEL CANNOT BE UNLOCKED FROM PREVIOUS POSITION WHEN CONTROL IS MOVED TO UNLOCK POSITION.	1. Check for obstructions (dirt/grease buildup or debris) between fifth wheel plate and slide track rack.	Clean or remove objects from area as necessary and check whether fifth wheel position can be adjusted.
	2. Ensure air cylinder has sufficient time to react.	Leave LOCK/UNLOCK control in LOCK position, wait for 10 seconds, and check again (WP 0004).
	3. If fifth wheel will not lock in position after steps 1 and 2, fifth wheel may be hung up between segments of slide track rack.	Move LOCK/UNLOCK control to UNLOCK position, apply trailer brake hand control, and shift range selector to (1) or (R). Tap accelerator pedal to jog fifth wheel-to-slide track rack connection. Shift to NEUTRAL (N) and ensure fifth wheel is now unlocked. Release trailer brake hand control.
	4. If fifth wheel position still cannot be adjusted after you have completed previous steps, check air line connections at cab mounted control and at air cylinder under fifth wheel plate. Check for sound of escaping air and loose fittings.	If you find any leaks in air system connection fittings at control or air cylinder, notify your supervisor.

END OF TASK

Table 6. Electrical System.

ONE OR MORE ELECTRICAL SYSTEMS NOT WORKING.	1. Check appropriate switch(es) are in ON position and, if a lamp system, that blackout switch is in NORMAL position. If tractor is coupled to trailer and problem is with trailer lamp system, ensure intervehicular cable is connected securely between tractor and trailer.	Put appropriate switch(es) in ON position. If necessary, securely connect intervehicular cable.
	2. Ensure resettable circuit breakers have not popped out, indicating a momentary overload or short circuit.	Open access panel and push in to reset any circuit breakers which have popped out.
	3. Recheck failing electrical system.	If resetting fails to correct problem or breaker button pops out again, notify your supervisor.

END OF TASK

TROUBLESHOOTING PROCEDURES (Contd)

Table 7. Steering.

1. HARD STEERING, SHIMMY, OR WANDERING.	**NOTE** Check tire pressure when tires are cold.	
	1. Check air pressure in all tires (WP 0029).	Front: 105 psi Rear: 95 psi
	2. Check front axle and suspension for worn, loose, or damaged parts. Check steering linkage, wheels, and front tractor frame.	If any parts are loose or damaged, notify your supervisor.
	3. Check for loose lug nuts.	Tighten lug nuts and notify your supervisor to have lug nuts torqued.
	4. Check for loose or damaged shock absorbers.	If shocks are loose or damaged, notify your supervisor.
	5. Check power steering fluid reservoir for proper fluid level.	Add fluid, if necessary (WP 0025).
2. TRACTOR STEERING SLOW TO RESPOND OR INTERMITTENT.	1. Check power steering fluid reservoir for proper fluid level.	Add fluid, if necessary (WP 0025).
	2. Check for proper power steering operation.	With tractor standing still, turn wheels from stop to stop and hold against stop for 5 seconds. Repeat several times. If steering problem continues, notify your supervisor.
	3. Check for loose lug nuts and loose or damaged suspension components.	Tighten lug nuts and notify your supervisor to have lug nuts torqued. If any parts are loose or damaged, notify your supervisor

END OF TASK

TROUBLESHOOTING PROCEDURES (Contd)

Table 8. Wheels and Tires.

1. WHEEL VIBRATES OR WOBBLES.	1. Check wheels for loose or missing lug nuts.	Tighten loose nuts. Notify your supervisor to torque nuts properly. If any lug nut or stud is broken or missing, notify your supervisor.
	2. Ensure wheel is not bent.	If wheel is bent, change wheel and tire assembly. Notify your supervisor that a replacement wheel is needed.
	3. Check suspension for loose, worn, or damaged components.	If any components are damaged, notify your supervisor
2. TRACTOR WANDERS OR PULLS TO ONE SIDE ON LEVEL PAVEMENT.	**NOTE** Check tire pressure when tires are cold.	
	1. Check air pressure in all tires (WP 0029).	Front: 105 psi Rear: 95 psi
	2. Check that all tires are proper size and type.	If tires are not properly matched, and if more than one tire is involved, notify your supervisor.
	3. Check for loose or damaged steering gear/linkage.	If only one tire is improper and spare tire is of correct size and type, replace improper wheel and tire assembly with spare and notify your supervisor that a replacement is needed. If any parts are loose or damaged, notify your supervisor.
3. EXCESSIVE OR UNEVEN TIRE WEAR.	1. Check cold tire pressure.	Inflate or deflate tires to proper pressure.
	2. Ensure wheel is not bent.	Inflate or deflate tires to correct air pressure, as required (WP 0029 00).
	3. Check for loose wheel and worn, loose, or damaged suspension components.	Tighten loose nuts. Notify your supervisor to torque nuts properly. If any parts are loose or damaged, notify your supervisor.

END OF TASK

END OF WORK PACKAGE

CHAPTER 4

MAINTENANCE INSTRUCTIONS

FOR

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

MAINTENANCE PROCEDURES

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION

INITIAL SETUP:

References
DA PAM 750-8
TM 9-247
DA Form 2404

GENERAL

A permanent record of vehicle service, repair, and modification is required. Refer to DA PAM 750-8 for information about the forms and records that are used to record vehicle maintenance.

CLEANING INSTRUCTIONS AND PRECAUTIONS

Cleaning is an after-operation service performed by operators to maintain vehicle readiness. Vehicles must be kept as clean as possible, depending on the available cleaning equipment and materials and tactical situation.

General Cleaning Precautions

- Perform all cleaning procedures in well-ventilated areas.
- Wear protective gloves, clothing, and respiratory equipment when using caustic, toxic, or flammable cleaning materials.
- Never use diesel fuel or gasoline for cleaning.
- A fire extinguisher must be readily available during all cleaning operations using flammable cleaning materials.

Special Precautions

- Do not allow cleaning materials to come in contact with rubber, leather, vinyl, or canvas.
- Do not allow corrosion-removing cleaning materials to contact painted surfaces.
- Do not use steam or high-pressure air to clean cab or van body interiors.
- Do not steam clean rustproofed surfaces.
- Remove mildew from canvas with a bristle brush before cleaning canvas.
- Use low-pressure air or water to clear debris from radiator core. Force debris out front of radiator by applying low-pressure air or water to rear of radiator first.

Cleaning Materials

Refer to TM 9-247 for a detailed description of cleaning compounds, cleaning solvents, and corrosion-removing compounds.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION (Contd)

GENERAL GUIDELINES

Table 1 provides general guidelines for the use of cleaning materials and equipment for removing contaminants from vehicle surfaces.

Table 1. Cleaning Instructions.

SURFACE	CONTAMINANT		
	OIL/GREASE	DIRT/MUD/DUST/ SALT	SURFACE RUST/ CORROSION
	CLEANING MATERIAL/EQUIPMENT/METHOD		
Body	Grease-cleaning compound, running water, and damp and dry rags	High-pressure water, warm soapy water, soft brush, and damp and dry rags	Corrosion-removing compound, bristle brush, dry rags, and lubricating oil*
Cab Interior (Metal)	Grease-cleaning compound, running water, and damp and dry rags	Damp and dry rags	Corrosion-removing compound, bristle brush, dry rags, and lubricating oil*
Cab Interior/ Cab Top (Fabric)	Saddle soap, warm water, soft brush, and dry rags	Soft brush, warm soapy water, and damp or dry rags	—
Frame	Grease-cleaning compound, running water, and damp and dry rags	High-pressure water, warm soapy water, wire brush, and damp and dry rags	Corrosion-removing compound, wire brush, dry rags, and lubricating oil*
Engine/ Transmission	Skysol 100 and damp and dry rags	High-pressure water, warm soapy water, soft wire brush, and damp or dry rags	Bristle brush, warm soapy water, and dry rags
Glass	Glass cleaning solution and clean dry rags	Glass cleaning solution and clean dry rags	—
Radiator	—	Low-pressure water or air, warm soapy water, and damp and dry rags	—
Rubber Insulation	Damp and dry rags	Damp and dry rags	—
Tires	Warm soapy water and bristle brush	High-pressure water and bristle brush	—
Wire Rope	Cleaning compound and wire brush	Wire brush	Wire brush and lubricating oil*
Wood	Detergent, warm water, and damp and dry rags	Low-pressure water, warm soapy water, and damp and dry rags	—

* After cleaning, apply a light grade of lubricating oil to all unprotected surfaces to prevent further rusting and corrosion.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION (Contd)

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

The Preventive Maintenance Checks and Services Work Package (WP 0024) includes inspection and service procedures that must be performed to maintain the vehicle and other equipment in good operating condition.

Trouble Spots

WARNING

Skysol 100 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use.

Contact with Skysol 100 may cause skin irritation. Use chemical-resistant gloves. In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Eye contact may cause irritation, tearing, or blurring of vision. Use face shield or goggles when eye contact may occur. In case of eye contact, flush eyes with large amounts of water for at least 15 minutes or until irritation subsides. Inhalation may cause irritation to upper respiratory passages. DO NOT have food or drink in the vicinity. Failure to comply may result in injury to personnel.

NOTE

Dirt, grease, oil, and debris may cover up a serious problem. Check as you clean. Follow precautions printed on container. Use Skysol 100 solvent to clean metal surfaces. Use soap and water to clean rubber and plastic.

Check bolts, nuts, and screws. If loose, tighten. If bent, broken, or missing, notify your supervisor.

Check painted surfaces. If paint is loose or chipped, or rust is observed on bare metal surfaces, notify your supervisor.

Check welds. If cracked or broken, notify your supervisor.

Check electrical wiring. If connection is loose, tighten. If insulation is cracked or broken, wires are bare, or connections are broken, notify your supervisor.

Check hoses and fluid lines. Ensure clamps and fittings are tight. If hoses or lines are worn, damaged, or leaking, notify your supervisor. Refer to Class Leakage Definitions for information about leaks.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION (Contd)

CLASS LEAKAGE DEFINITIONS

Wetness around seals, gaskets, fittings, or connections indicates leakage. A stain also indicates leakage. If a fitting or connector is loose, tighten it. If a fitting or connector is broken or defective, notify your supervisor.

Use the following leak definitions as a guide:

Class I —Leakage indicated by wetness or discoloration not great enough to form drops.

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

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

PMCS TABLE

NOTE

The following items correspond to the table headings in table 1 in Preventive Maintenance Checks and Services, WP 0024.

Item No.

These index numbers correspond to the equipment listed in the Items to be Inspected/Procedure column. These index numbers are entered in the DA Form 2404, Equipment Inspection and Maintenance Worksheet TM ITEM NO. column, or DA Form 5988-E Equipment Maintenance and Inspection Worksheet (Automated) ITEM NUM column.

Interval

Specifies when a particular procedure is performed.

NOTE

Designated weekly (W) and monthly (M) intervals are recommended intervals under usual operating conditions. These intervals may need to be decreased when operating under unusual conditions.

Before — procedure is performed before the equipment leaves its containment area (i.e., motorpool or other control or dispatch point) or before being operated in the performance of its intended mission.

During — procedure is performed when the equipment is being operated for the purpose of its intended mission.

After — procedure is performed when the equipment is taken out of its mission mode or returned to its containment area (i.e., motorpool or other control or dispatch point).

Weekly — procedure is performed once a week.

Monthly — procedure is performed once a month.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION (Contd)

PMCS TABLE (Contd)

Item To Check/Service

This column specifies the equipment to be checked, inspected, or serviced.

NOTE

Some procedures must be performed by maintenance personnel.

Procedure

This column includes the check, inspection, and service procedures. Also included are all applicable warnings, cautions, and notes.

References:

WP 0021, Troubleshooting

DA Form 2404, Equipment Inspection and Maintenance Worksheet — Used to report non-reparable item(s) to maintenance personnel.

NOTE

The terms “ready/available” and “mission capable” have the same definition (i.e., the equipment is on hand and able to perform its combat mission). Refer to DA PAM 750-8.

Equipment Not Ready/Available If:

If a vehicle is not able to perform its prescribed mission, it must be reported as not ready/available. Refer to DA PAM 750-8.

END OF WORK PACKAGE

MAINTENANCE INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INITIAL SETUP: Not Applicable

References
AR 385-55

WARNING

Observe all warnings, cautions, and notes while performing Preventive Maintenance Checks and Services (PMCS). Failure to comply may result in injury to personnel or damage to equipment.

CAUTION

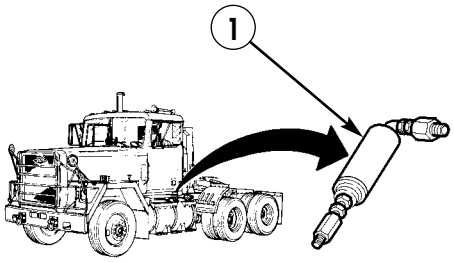
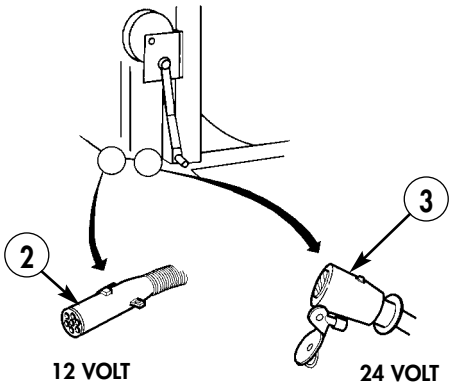
Vehicle operation with a class I or II leak is permitted; however, system fluid capacities must be considered and fluid levels must be checked more frequently. All leaks must be reported to your supervisor. Failure to comply may result in further damage to equipment.

Table 1. Preventive Maintenance Checks and Services.

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			NOTE Perform Weekly and Before PMCS if: • You are the assigned operator but have not operated the vehicle since the last weekly inspection. • You are operating the vehicle for the first time.	
			WALK-AROUND CHECKS **EXTERIOR**	
1	Before	Exterior left front	Visually check for under-inflated and unserviceable tires (including spare). Check tires for leaks, cuts, gouges, cracks, or bulges. Remove all penetrating objects.	Tires have leaks, cuts, gouges, cracks, or bulges which could result in tire failure during operation. Two or more tires, including the spare, missing or unserviceable.

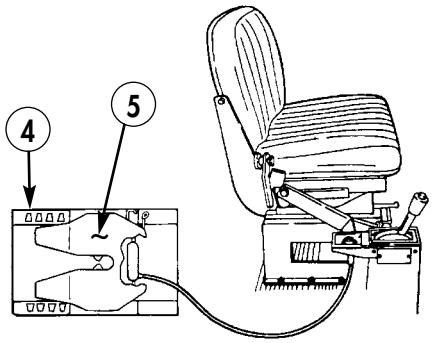
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			NOTE Fuel heater is located below driver-side door and above fuel tank.	
2	Before	Fuel heater	Check fuel heater (1) for leaks or damage. 	Any Class III leak is evident.
3	Before	Trailer coupling air hoses and connectors	Inspect tractor-to-trailer coupling air hoses for cracking or damaged connectors. Inspect trailer cable and electrical connectors (2) and (3). 	Air hose(s) or couplers missing, leaking, coupler(s) unserviceable, trailer electrical connectors damaged or cable missing.

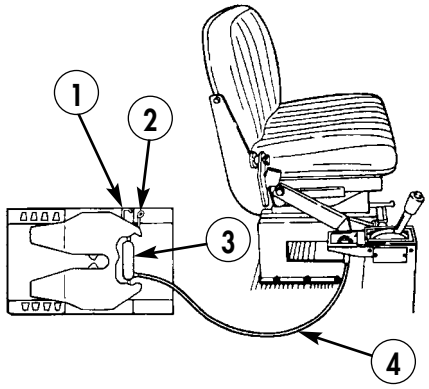
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
4	Before	Fifth wheel and ramps	a. Check that lockjaw pins do not protrude more than 1/16 in. (1-1/2 mm) above surface of top plate, or have any lateral or vertical movement.	a. Lockjaw pin extends more than 1/16 in. (1-1/2 mm) or has lateral or vertical movement.
			b. Check for bent, worn, broken or missing parts.	b. Bent, worn broken or missing parts.
			c. Check slide track (4) for damage and free movement of fifth wheel assembly (5).	
				

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
4 (Contd)	Before	Fifth wheel and ramps (Contd)	d. Check primary (2) and secondary (1) release handles for operation and damage.	d. Primary or secondary release handles are damaged or do not function.
			NOTE Air lines and cylinders are located under fifth wheel top plate.	
			e. Check air lines (4) and air cylinder (3) for damage.	e. Any air leak is evident.
				

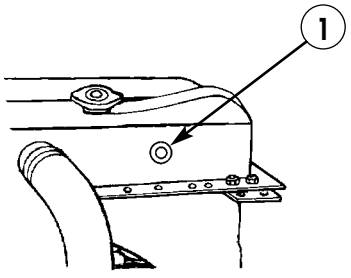
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			NOTE If leakage is detected, further investigation is required to determine location and cause of leak.	
5	Before	Left side and rear of vehicle under vehicle	a. Look under vehicle for evidence of fluid (fuel, oil, or coolant) leak.	a. Any Class III leak is evident.
			b. Visually check for under-inflated and unserviceable tires (including spare). Check tires for leaks, cuts, gouges, cracks, or bulges. Remove all penetrating objects.	b. Tires have leaks, cuts, gouges, cracks, or bulges which could result in tire failure during operation. Two or more tires, including the spare, missing or unserviceable.
			c. Check that mud flaps are in place and intact.	
6	Before	Right side and front tires	Visually check for under-inflated and unserviceable tires (including spare). Check tires for leaks, cuts, gouges, cracks, or bulges. Remove all penetrating objects.	Tires have leaks, cuts, gouges, cracks, or bulges which could result in tire failure during operation. Two or more tires, including the spare, missing or unserviceable.
7	Before	Front of vehicle	Look under vehicle for evidence of fuel, oil, or coolant leak.	Any Class III leak is evident.

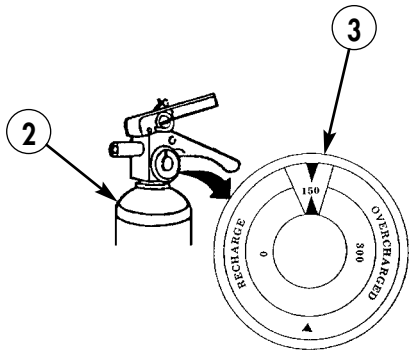
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			NOTE Cracked or broken windshield may violate AR 385-55.	
8	Before	Windshield wipers and blades	Check windshield for any cracks that would impair vision. Check wiper arms and blades for presence and damage.	Windshield cracked, shattered, or missing.
			ENGINE COMPARTMENT	
9	Before	Cooling system	**WARNING** • After raising engine compartment hood, ensure S-shaped safety hook is properly inserted through two matching holes in prop channel to prevent hood from failing accidentally. Failure to comply may result in injury to personnel. • Let radiator cool before removing cap. Remove radiator cap in two steps. First, place a thick cloth over the cap and slowly rotate cap counterclockwise to its first stop; pause and let pressure escape from cooling system. Then rotate cap counterclockwise until it can be removed. Failure to comply may result in serious burns to personnel.	
			NOTE If leakage is detected, further investigation is required to determine location and cause of leak.	
			Check coolant level in radiator sight glass (1). If level is low, add coolant (WP 0028).  	Any Class III leak is evident.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			INTERIOR	
10	Before	Cab fire extinguisher	a. Check for missing or damaged fire extinguisher (2) under dashboard on driver's side.	a. Fire extinguisher missing or damaged.
			b. Check gauge (3) for proper pressure of approximately 150 psi (1034 kPa). Ensure mounting bracket is secure.	b. Pressure gauge needle in RECHARGE area.
			c. Check for damaged or missing seal.	c. Seal damaged or missing.
				

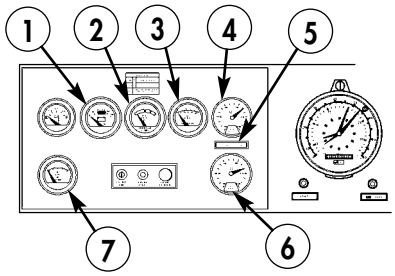
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			NOTE Missing, torn or inoperative seatbelt may be in violation of AR 385-55.	
11	Before	Interior of vehicle	Check seat and seatbelt for proper adjustment and ability to lock, security of pins and bolts, and tears.	
12	Before	Controls and instruments	**WARNING** If Nuclear, Biological, or Chemical (NBC) exposure is suspected, all air filter media must be handled by personnel wearing protective equipment. Consult your unit NBC officer or NBC noncommissioned officer for appropriate handling and disposal instructions.	
			CAUTION A sudden rise in temperature during engine warm up indicates defective cooling system.	
			NOTE The engine must be running to perform the following checks.	
			a. Start engine and run at idle speed.	a. Engine does not operate.
			b. Check air cleaner indicator. If in red, clean filter and reset.	b. Air cleaner indicator stays in red.
			c. Check voltmeter (1) needle. Should be in green area. Normal operating range is 12–15V.	c. Voltmeter reads above or below the green area.
			d. Check transmission oil temperature gauge (2). Normal operating range is 120–250° F (49–121° C).	d. Oil temperature gauge exceeds 250° F (121° C).
			e. Check air pressure gauges front (4) and rear (6). Normal operating range is 95–125 psi (655–862 kPa). Ensure warning light (5) and buzzer are operational.	e. Reads less than 60 psi (414 kPa). Warning light and/or buzzer stays on or not operational.

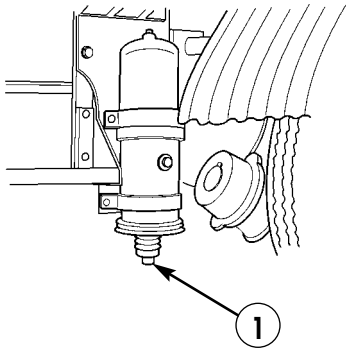
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
12 (Contd)	Before	Controls and instruments (Contd)	f. Check engine temperature gauge (7). Normal operating range is 160–220° F (71–104° C) with engine warmed up.	f. Temperature gauge reads less than 160° F (71° C) or exceeds 220° F (104° C) after engine warms up.
			g. Check engine oil pressure gauge (3). Normal operating range is 35–50 psi (241–345 kPa) at high idle. 	g. Reads less than 10 psi (69 kPa) at idle.
			h. Check transmission and ratio selector. Shift in all ranges checking for unusual stiffness, abnormal operation, or binding.	Transmission or ratio selector inoperative or binding.
			i. Check engine retarder for braking ability.	Engine retarder is inoperable.
			j. Check steering response.	Steering binds or is unresponsive.
			k. Listen for leakage in exhaust system.	Pipe, clamp, or hardware damaged or missing.
			l. Check tachograph rpm needle for proper response to throttle. Check idle speed 580–650 rpm.	Tachograph indicates less than 580 rpm or more than 650 rpm at idle.
			m. Check parking brake; pull out to apply, push in to release. With parking brake applied, place transmission in gear. Vehicle should not move.	Parking brake is inoperative.
			n. Check service brakes for pulling, grabbing, or other abnormal operation by moving vehicle approximately 10 ft.	Brakes do not stop vehicle.

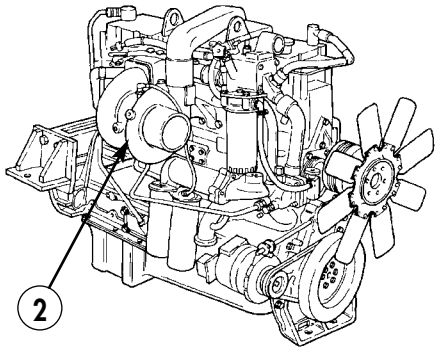
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			EXTERIOR	
13	Before	Air dryer	Check automatic drain valve (1) operation. With engine running, when air pressure reaches 120 psi (827 kPa), a sharp burst of air will be heard at the drain valve each time the compressor unloads.  	Automatic drain valve inoperative.
14	Before	Trailer brakes	**NOTE** Perform this check with the trailer loaded after the tractor and trailer are coupled.	
			a. Check for air leaks at the intervehicular connecting hoses, relay valve, and air reservoirs.	a. Any air leaks are evident.
			b. Apply trailer brakes only and attempt to move the tractor/trailer combination.	b. Brakes fail to hold tractor/ trailer combination from moving.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			INTERIOR	
15	During	Steering/ swaying	Observe an unusual sway, dip, or unstable handling.	Handling is unstable.
16	During	Gauges	Monitor all gauges and warning buzzers during operation.	Any gauge not functioning properly
17	After	Turbocharger	When shutting down engine, listen to turbocharger (2) for rattling noises. 	Unusual or rattling noises or a defective turbocharger.
			NOTE Operation of vehicles with inoperative horn may violate AR 385-55.	
18	After	Horns	Check operation of horns if tactical situation permits.	

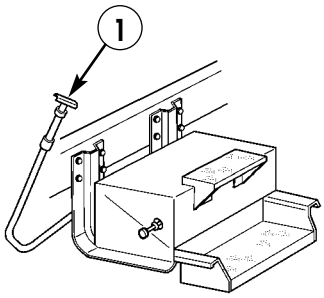
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			EXTERIOR	
			NOTE Operation of vehicles with malfunctioning lights may violate AR 385-55.	
19	After	Lights	Check operation of headlights, taillights, turn signals, brake lights, and blackout lights.	Mission requires blackout lights and lights are not operating.
20	After	Exterior of vehicle	Check for obvious damage to vehicle.	Any damage that would prevent operation.
			Check under vehicle for signs of leaks.	Any Class III leak is evident.
			Visually check for under-inflated and unserviceable tires (including spare). Check tires for leaks, cuts, gouges, cracks, or bulges. Remove all penetrating objects.	Tires have leaks, cuts, gouges, cracks, or bulges which could result in tire failure during operation. Two or more tires, including the spare, missing or unserviceable.
21	After	Exterior of vehicle (left side)	Check left-side view and spot mirrors and arms.	
22	After	Air reservoir and system	Drain air reservoirs completely. Check air lines and reservoirs for leaks and damage.	Any leaking or damaged air lines or reservoirs or oil coming from air tanks.

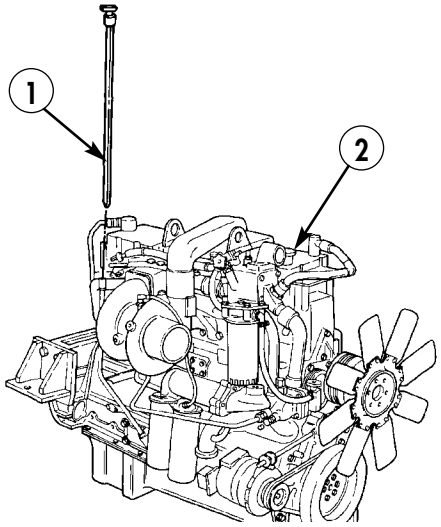
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
23	After	Exterior of vehicle (right side)	Check right-side view and spot mirrors and arms.	
24	After	Transmission	With transmission temperature gauge between 120°–250° F (49°–121° C) while idling in neutral with brake applied, remove dipstick (1) and check oil level. Dipstick (1) should read between high and low mark on hot run band. If below low mark on hot run band, add oil to bring level to mid-point of band. Approximately one quart will raise level from bottom line to middle of band. This method is preferred but oil level may be checked with transmission temperature below 120° F (49° C) by reading cold run band on dipstick (1). 	

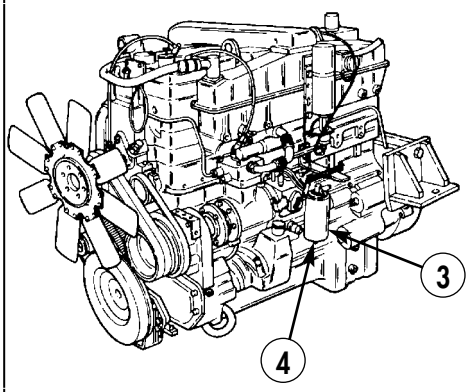
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			ENGINE COMPARTMENT **WARNING** • After raising engine compartment hood, ensure S-shaped safety hook is properly inserted through two matching holes in prop channel to prevent hood from failing accidentally. Failure to comply may result in injury to personnel. • When working in engine compartment with engine running, keep clear of cooling fan. The fan can engage at any time and serios injury to personnel may result. **CAUTION** Do not over fill engine oil crankcase. Failure to comply may reesult in damage to equipment.	
25	After	Engine oil level	Check oil dipstick (1) for proper oil level. Dipstick (1) should read between low and high marks. If below low mark, add oil through oil fill cap (2) to bring level to high mark. 	Engine has used more than one quart of oil per 100 miles.

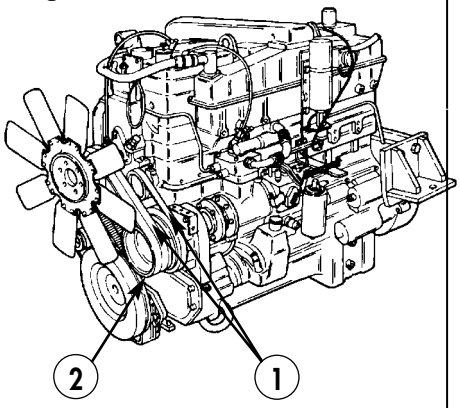
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			CAUTION If one quart or more of fuel must be drained from fuel filter before fuel is clear, fuel tank and fuel system must be inspected carefully. Report fuel contamination to organizational maintenance. Failure to comply may result in damge to equipment.	
26	After	Fuel filter	Check for leaks or damage. With engine running, open drain (4) on bottom of fuel filter (3). Drain fuel into suitable container until fuel runs clear. Close drain (4) securely. Dispose of fuel in accordance with local requirements.	Any Class III leak is evident.
				
27	After	Engine compartment	a. Check for fluid leakage and damage.	a. Any Class III leak is evident.
			b. Check oil filters for leaks.	b. Any Class III leak is evident.
			c. Visually check radiator, mounting brackets, and hoses for damages or coolant leaks.	c. Any Class III leak is evident.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

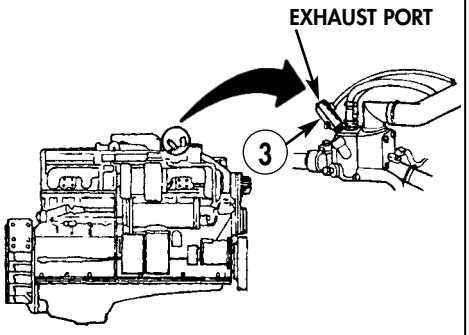
Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
28	After	Drivebelts	a. Check for frayed or cracked belts (1).	a. Any drivebelt missing, broken, or cracked to belt fiber. More than one crack 1/8 in. (3.2 mm) deep (50% belt thickness) within a 6 in. (152 mm) length. Frays >2 in. (51 mm).
			b. Check belt adjustment. Deflection should not be more than 1/2 in. (1.2 cm). If belts are loose, notify organizational maintenance. 	b. Deflection more than 1/2 in. (1.2 cm).
			c. Check pulleys (2) for damage or cracks.	c. Any pulleys damaged or cracked.
			d. Check water pump for any coolant leaks.	d. Any Class III leak is evident.
			e. Check air compressor for oil leaks or damage.	e. Any Class III leak or damage is evident.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

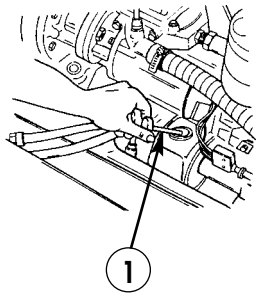
Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
29	After	Fan clutch and actuator	**WARNING** Engine must be off to check the fan clutch and actuator. Failure to comply may result in severe injury or death to personnel.	
			a. Check fan clutch for damage. Look for loose attaching bolts.	a. Damaged or loose hardware.
			b. Inspect hoses for looseness at fittings, for air leaks, fraying, cracks, and abrasions.	b Any air leak is evident.
			c. Check fan clutch actuator (3) for signs of leaks and loose hose connections.	c. Air leakage from the exhaust port when engine temperature is below 185° F (85° C).



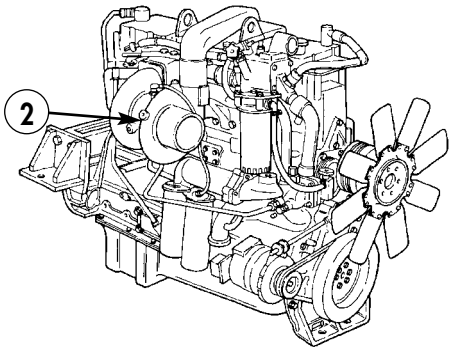
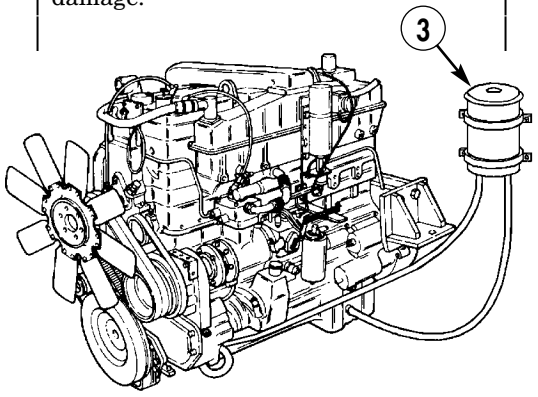
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			WARNING If Nuclear, Biological, or Chemical (NBC) exposure is suspected, all air filter media must be handled by personnel wearing protective equipment. Consult your unit NBC officer or NBC noncommissioned officer for appropriate handling or disposal instructions. Failure to comply may result in injury to or death of personnel.	
30	Weekly	Air cleaner	Remove dust and moisture boot, and empty air cleaner canister.	Air cleaner canister dust and moisture boot missing or damage is evident.
31	Weekly	Steering pump and reservoir	Inspect for loose steering pump mounting or damage. Check pump for leakage. Inspect pump hoses for deterioration and leaks.	Any Class III leak or steering pump mounting damage is evident.
			CAUTION Do not overfill steering pump reservoir. Failure to comply may result in damage to equipment.	
			With engine hot and engine off, check fluid level in steering pump for proper level. If level is low, add fluid to bring level to full mark on dipstick (1).  	

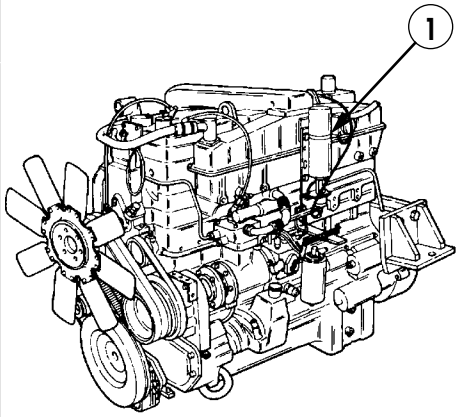
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
32	Weekly	Fan clutch and actuator	Check for leaks, damaged fins, loose or damaged hoses, debris, or dirt in radiator fins.	Any Class III leak is evident.
33	Weekly	Turbocharger	Inspect turbocharger (2) oil lines and fittings for signs of leaks or damage. Check air intake and exhaust ducts for loose bolts and clamps. Look for signs of hose damage. 	Any Class III leak is evident.
34	Weekly	Oil bypass filter	Check oil bypass filter (3) lines and fittings for leaks, looseness, and damage. 	Any Class III leak is evident.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
35	Weekly	Ether quick-start assembly	Inspect ether quick-start assembly (1) mounting for loose hardware. Check lines, fittings, and canister for damage. 	Any leak or reservoir damage is evident.

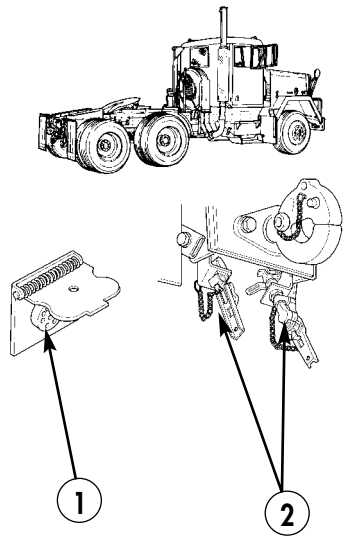
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			EXTERIOR	
36	Weekly	Tires	a. Check tire tread depth. Tread should not be worn beyond the level of the wear bar. b. Check for correct air pressure: Front – 105 psi (724 kPa), Rear – 95 psi (655 kPa).	a. Tire worn to or beyond wear bar.
37	Weekly	Wheels, studs, and nuts	Ensure all wheel stud nuts are tight using wheel stud nut wrench and handle.	Any wheel stud is missing or stud nut is loose.
38	Weekly	Air system	With air system charged and engine off, check air lines and fittings for leaks and damage.	Any reservoir, line, or fitting leaks or damage is evident.
39	Weekly	Frame	Visually inspect frame side rails, crossmembers, cab supports, and underbody supports for loose or missing bolts and cracked or broken welds.	Loose or broken side rails, cab supports, crossmembers, missing bolts, or broken welds.
40	Weekly	Fuel tank	Check fuel tank, lines, and fittings for leakage.	Any Class III leak is evident.

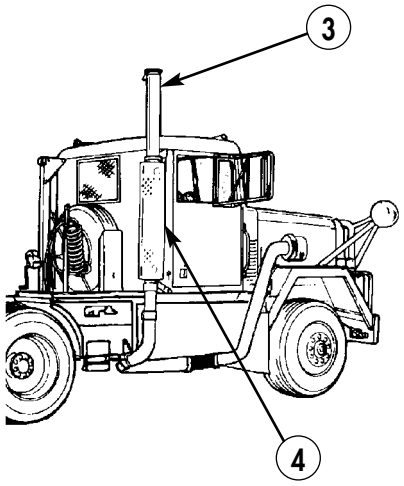
PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
41	Weekly	Trailer couplings	a. Check electrical connectors (1) and cable for damage. b. Check trailer air lines and quick disconnect couplings (2) for damage (front and rear).  	a. Electrical cable missing or damaged. b. Air lines leak or damage is evident.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
42	Weekly	Spare tire hoist and winch	Check spare tire hoist and winch operation. **WARNING** During normal operation the exhaust pipe and muffler will become very hot. Exercise caution not to make body contact or touch hot exhaust components with bare hands. Failure to comply may result in severe burns to personnel.	Spare tire hoise and winch damaged or does not operate.
43	Weekly	Exhaust system	Inspect exhaust stack (3) and muffler (4) for leaks, damage, and rusted through conditions. 	Any pipe, clamp, or hose leak; damaged, missing, or rust through is evident.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) (Contd)

Table 1. Preventive Maintenance Checks and Services (Contd).

ITEM NO.	INTERVAL	ITEM TO CHECK/ SERVICE	PROCEDURE	EQUIPMENT NOT READY/AVAILABLE IF:
			WARNING • Do not smoke, have open flame, or make sparks when performing battery maintenance. Batteries may explode, causing severe injury to personnel. • Remove all jewelry such as rings, bracelets, and identification tags. If jewelry comes in contact with battery terminals, a direct short can occur resulting in instant heating of jewelry or tools and damage to electrical system. Failure to comply may result in damage to equipment and injury to personnel.	b. Air lines leak or damage is evident.
44	Weekly	Batteries	Check electrolyte level. Electrolyte should be filled to level/split ring in battery filler opening (vent). If fluid is low, fill with distilled water to level ring. Run vehicle at least 15 minutes to charge battery. If fluid is gassing (boiling), notify organizational maintenance.	Battery is unserviceable, missing, leaking; terminals or cables are loose, corroded, or hold downs are not secure.
45	Weekly	Body	Check body and cab for damage or rusted through conditions that could impair operation.	
46	Weekly	Cab	a. Check cab mounts for cracks, breaks, and damage. b. Check doors, latches, and auxiliary equipment for proper operation.	a. Cab mounts or welds cracked or broken.

END OF WORK PACKAGE

MAINTENANCE PROCEDURES

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

LUBRICATION INSTRUCTIONS

INITIAL SETUP: Not Applicable

References
FM 9-207
TM 9-2320-283-20

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Refer to Army POL (WP 0001) for information concerning storage, use, and disposal of these liquids. Failure to do so may result in damage to environment and health of personnel.

NOTE

Use a drain pan to capture any draining fluids. Dispose of fluids in accordance with local policy and ordinances. Ensure all spills are cleaned up.

SERVICE INTERVALS

Scheduled lubrication intervals are based on normal operation. Change hard time intervals if lubricants are contaminated, or if the vehicle is being operated under adverse conditions (including longer than usual operating hours). The hard time interval may be extended during periods of low activity. If extended, adequate preservation precautions must be taken.

This Work Package (WP) has been revised, based on a DA program, to extend intervals to conserve lubricants. This instruction applies only to vehicles in normal operation. Lubricate more frequently under abnormal or extreme conditions (e.g., high or low temperatures, emersion in water, or exposure to sand or dust). Contaminated lubricants must be changed regardless of scheduled intervals.

LUBRICATION INSTRUCTIONS (Contd)

MILITARY SYMBOLS FOR LUBRICANTS AND INTERVALS

The following symbols are used in this WP:

Lubricant Symbols

OE/HDO—Lubricating Oil, Internal Combustion Engine, Tactical Service, MIL-L-2104C

OEA—Lubricating Oil, Internal Combustion Engine, Tactical Service, MIL-L-46167

GO—Lubrication Oil, Gear, Multipurpose, MIL-L-2105C

GAA—Grease, Automotive and Artillery, MIL-PRF-10924C

ATF—Fluid, Transmission (Dexron®)

Lubricant Interval Symbols

D—Daily

W—Weekly, as required, depending upon use.

1—1,000 mi (1,609 km) or 1 month, whichever occurs first.

3—3,000 mi (4,828 km) or 3 months, whichever occurs first.

6—6,000 mi (9,656 km) or 6 months, whichever occurs first.

12—12,000 mi (19,308 km) or 12 months, whichever occurs first.

24—24,000 mi (38,624 km) or 24 months, whichever occurs first.

Lubricant Interval Symbols and Man Hours Required

NOTE

The man hours shown have been established on an individual vehicle basis and hence are not applicable at maintenance facilities where production line methods are employed.

D — 0.3 hours.

W — 0.1 hours.

1 — 0.7 hours.

3 — 0.4 hours.

6 — 0.6 hours.

12 — 0.4 hours.

24 — 3.2 hours.

LUBRICATION INSTRUCTIONS (Contd)

CLEANING

WARNING

Skysol 100 solvent is combustible; DO NOT use or store near heat, sparks, flame, or other ignition sources. Use mechanical ventilation whenever product is used in a confined space, heated above ambient temperatures, or agitated. Keep container sealed when not in use.

Contact with Skysol 100 may cause skin irritation. Use chemical-resistant gloves. In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water. Wash contaminated clothing before reuse. Eye contact may cause irritation, tearing, or blurring of vision. Use face shield or goggles when eye contact may occur. In case of eye contact, flush eyes with large amounts of water for at least 15 minutes or until irritation subsides. Inhalation may cause irritation to upper respiratory passages. DO NOT have food or drink in the vicinity. Failure to comply may result in injury to personnel.

Clean lubrication fittings with Skysol 100 solvent and dry the fittings before lubricating.

LUBRICANTS

NOTE

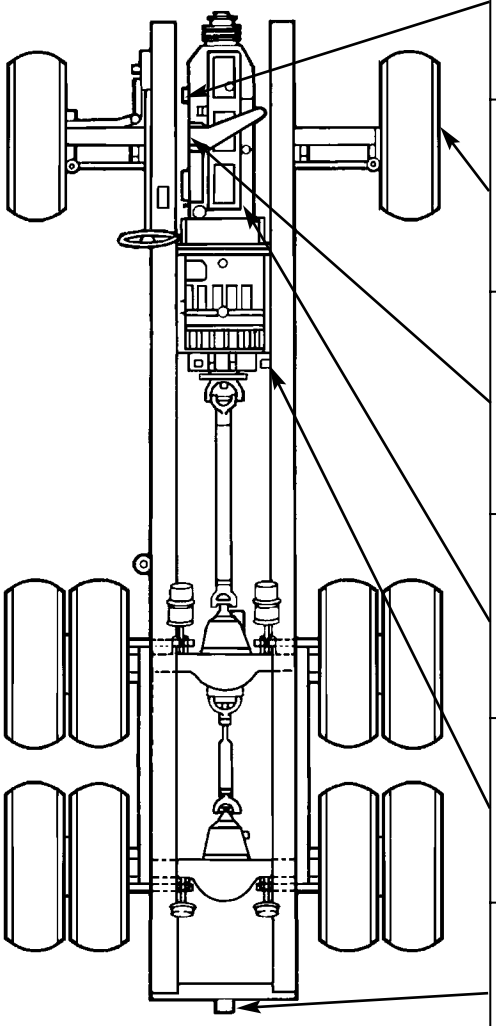
- For arctic operation lubrication instructions, refer to FM 9-207 Operations and Maintenance of Ordnance Materiel in Cold Weather.
- Perform lubrication after fording operations.
- Notes are located at the end of this WP.

Table 1. Use of Lubricants.

APPLICATION	CAPACITY	LUBRICANT	EXPECTED TEMPERATURE
Engine	44 qt (41.6 L) with both filters	OE/HDO–30	Above 32° F (0° C)
		OE/HDO–10	40–15° F (4 to 9° C)
		OEA (Arctic Grade) Oil	0–65° F (18–54° C)
Transmission	32 qt (30.3 L) with external filter	OE/HDO–30	Above 32° F (0° C)
		OE/HDO–10	40–15° F (4–9° C)
		OEA (Arctic Grade) Oil	0–65° F (18–54°C)
Differentials	Forward-Rear Axle, 38 pt (18 L) Rear-Rear Axle, 36 pt (17 L)	GO 85/140	Above 32° F (0° C)
		GO 80/90	40–15° F (4–9° C)
		GO 75	0–40° F (18–40° C)
		EP 75W90, SHC 75W90, or PAO 75W140	40–85° F (18–65° C)
Power Steering	2 qt (1.9 L)	OE/HDO–10 or OEA (Arctic Grade) Dexron® ATF is preferred.	All Temperatures

LUBRICATION INSTRUCTIONS (Contd)

Table 2. Lubrication Intervals and Locations.



M915A1

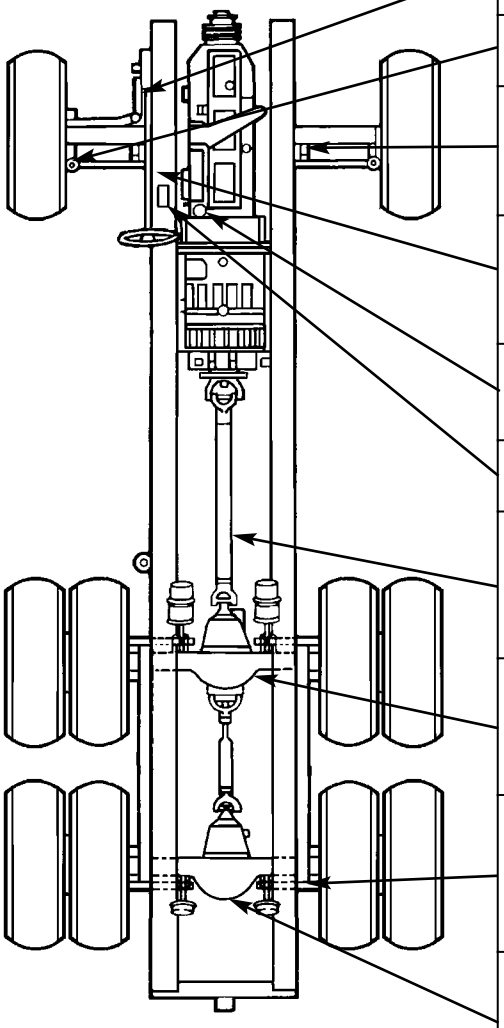
INTERVAL	LUBRICANT	PROCEDURE
D	OE/HDO–10, OEA	Power Steering Pump Fill and Level Check [6] (See note 8)
D	GO	Front Wheel Bearing Fill and Level Check [7] (See note 9)
D		Water Separator Fuel Filter Drain Moisture [10] (See note 10)
D	OE/HDO	Oil Level Dipstick Fill and Level Check [15] (See note 12)
D	OE/HDO, OEA	Transmission Fill and Level Check [20] (See note 15)
W	GAA	Pintle Hook [22] (See note 17)

NOTE

Numbers in brackets after lubrication entries refer to localized lubrication point figure numbers.

LUBRICATION INSTRUCTIONS (Contd)

Table 2. Lubrication Intervals and Locations (Contd).



M915A1

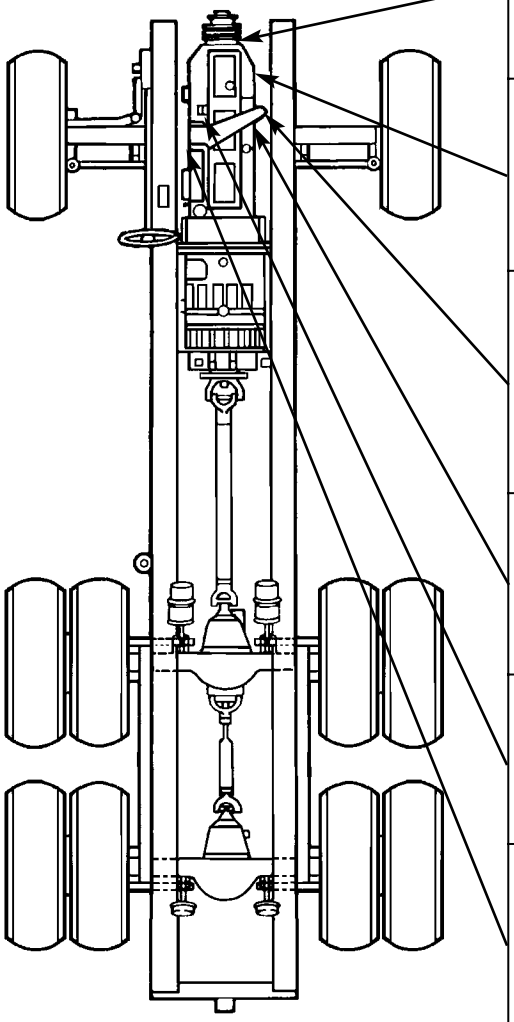
INTERVAL	LUBRICANT	PROCEDURE
3	GAA	Drag Link [5] (See notes 2 and 7)
3	GAA	Tie Rod [8] (See note 2)
3	GAA	Front Slack Adjusters and Bracket [17] (See note 2)
3	GAA	Steering Shaft Universals [5] (See notes 2 and 7)
3	OE/HDO	Accelerator Pedal and Linkage [11]
3	OE/HDO	Brake Pedal [11]
3	GAA	Driveline, Universal Joint, Slip Yokes, and Spline [19] (See notes 2 and 7)
3	GO	Forward-Rear Axle Differential Check and Fill [10] (See note 11)
3	GAA	Rear Slack Adjusters and Mounting Brackets [17] (See note 2)
3	GO	Rear-Rear Axle Differential Check and Fill [16] (See note 13)

NOTE

Numbers in brackets after lubrication entries refer to localized lubrication point figure numbers.

LUBRICATION INSTRUCTIONS (Contd)

Table 2. Lubrication Intervals and Locations (Contd).



M915A1

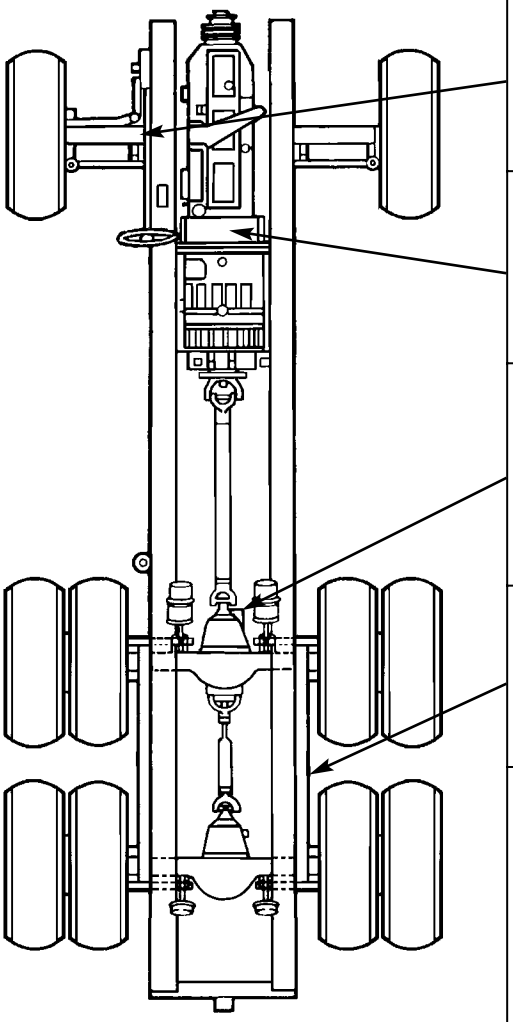
INTERVAL	LUBRICANT	PROCEDURE
6	GAA	Fan Clutch Element [4] (See note 6)
6	OE/HDO	Crankcase – Drain and Fill [13] (See note 12)
6	OE/HDO	Oil Filter (Full Flow) Replace [14] (See note 12)
6	OE/HDO	Oil Filter (Bypass) Replace [14] (See note 12)
6		Fuel Pump Screen – Clean [9] (See note 10)
6		Water Separator Fuel Filter Change Element [9] (See note 10)

NOTE

Numbers in brackets after lubrication entries refer to localized lubrication point figure numbers.

LUBRICATION INSTRUCTIONS (Contd)

Table 2. Lubrication Intervals and Locations (Contd).



M915A1

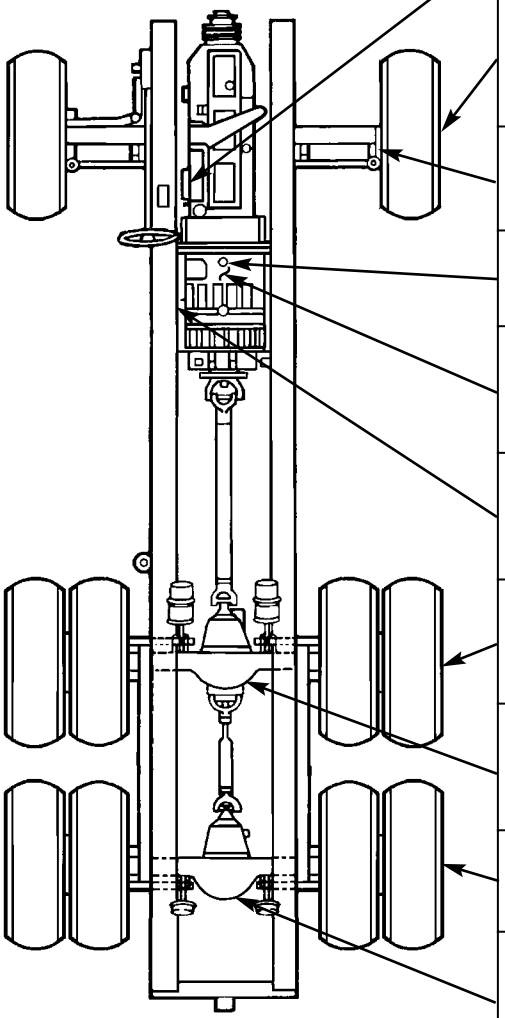
INTERVAL	LUBRICANT	PROCEDURE
12	GAA	Front Axle Spring [5] (See note 2 and 7)
12		Transmission Breather [20] (See note 15)
12	GO	Forward-Rear Axle Lube Pump and Magnetic Strainer [10] (See note 11)
12	GAA	Rear Axle Spring and Walking Beam [12]

NOTE

Numbers in brackets after lubrication entries refer to localized lubrication point figure numbers.

LUBRICATION INSTRUCTIONS (Contd)

Table 2. Lubrication Intervals and Locations (Contd).



M915A1

INTERVAL	LUBRICANT	PROCEDURE
24	OE/HDO	Starter [18] (See note 14)
24	GO	Front Wheel Bearings – Drain and Fill Element [7] (See note 9)
24	GAA	Front Wheel Knuckle Element [8] (See note 2)
24	OE/HDO OEA	Transmission Drain [20] (See note 15)
24		Transmission Internal Filter Clean or Replace [20] (See note 15)
24	OE/HDO	Transmission External Filter Replace [20] (See note 15)
24	GO	Forward-Rear Axle Hub Bearings [21] (See note 16)
24	GO	Forward-Rear Axle Drain [10] (See notes 11 and 13)
24	GO	Rear-Rear Axle Hub Bearings [21] (See note 16)
24	GO	Rear-Rear Axle Drain [16] (See note 13)

NOTE

Numbers in brackets after lubrication entries refer to localized lubrication point figure numbers.

LUBRICATION INSTRUCTIONS (Contd)

LOCALIZED LUBRICATION POINTS

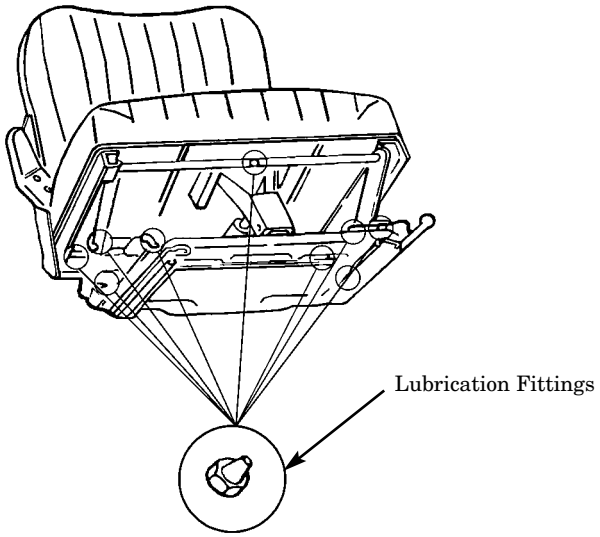


Figure 1. Driver's Suspension Seat.
(Note 3)

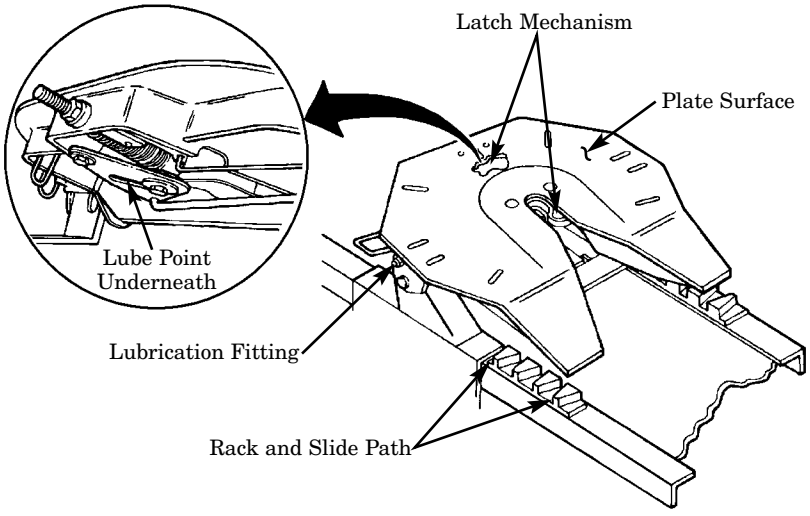


Figure 2. Sliding Fifth Wheel.
(Note 4)

LUBRICATION INSTRUCTIONS (Contd)

LOCALIZED LUBRICATION POINTS (Contd)

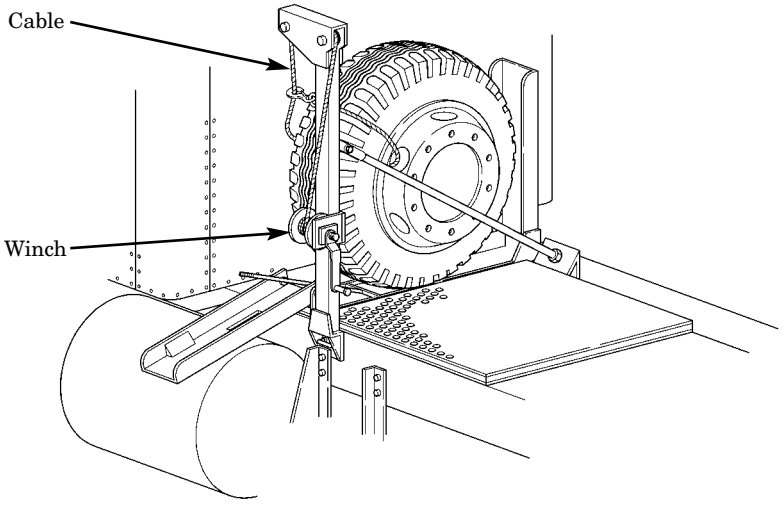


Figure 3. Tire Hoist.
(Note 5)

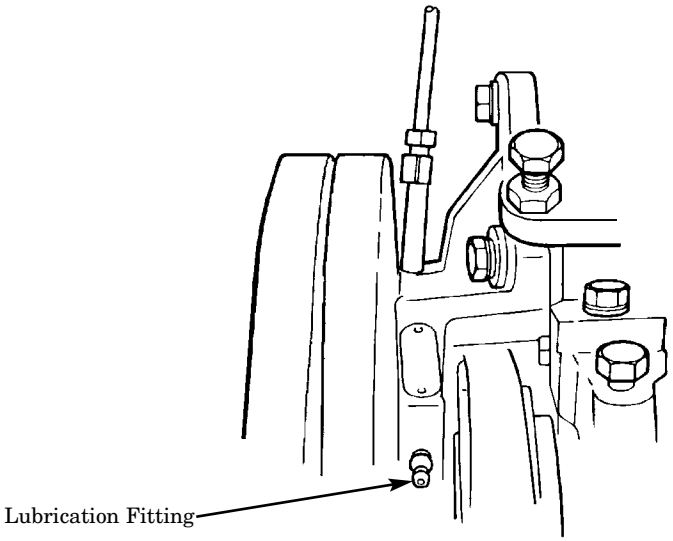


Figure 4. Fan Clutch.
(Note 6)

LUBRICATION INSTRUCTIONS (Contd)

LOCALIZED LUBRICATION POINTS (Contd)

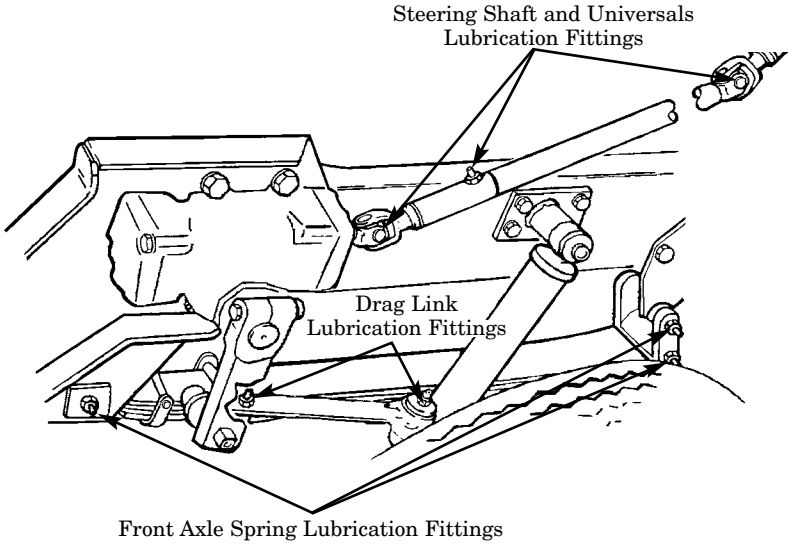


Figure 5. Steering Shaft and Universals, Drag Link, and Front Axle Spring. (Notes 2 and 7)

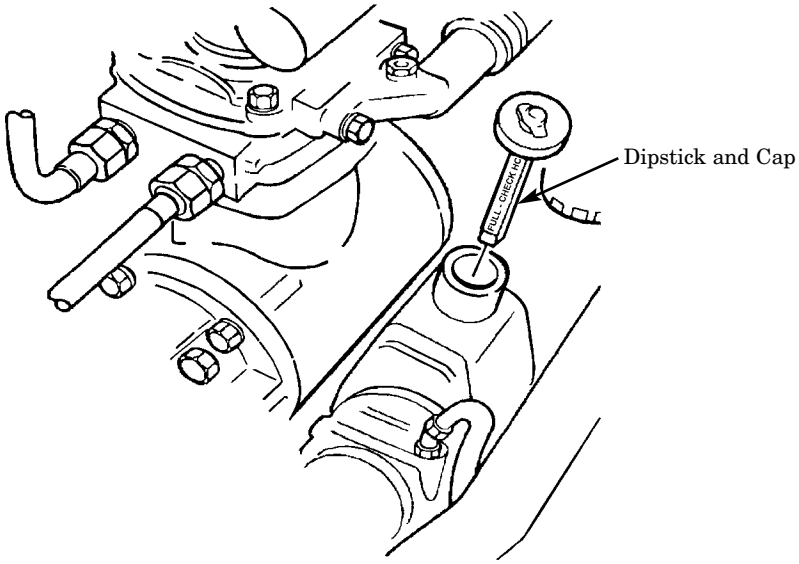


Figure 6. Power Steering Reservoir. (Note 8)

LUBRICATION INSTRUCTIONS (Contd)

LOCALIZED LUBRICATION POINTS (Contd)

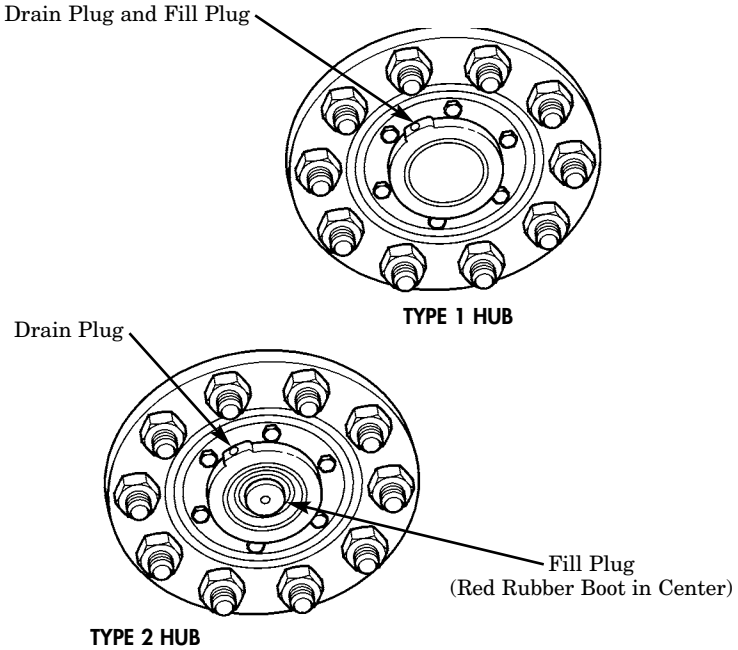


Figure 7. Front Axle Hubs.
(Note 9)

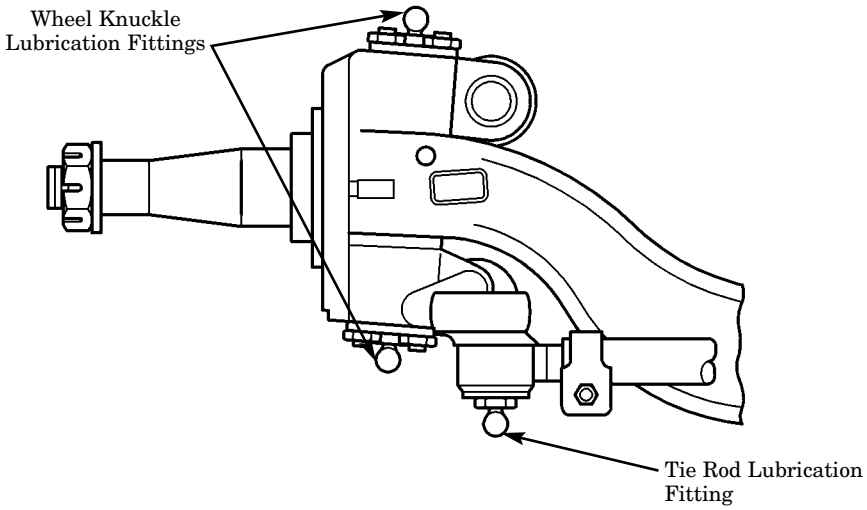


Figure 8. Front Wheel Knuckle and Tie Rod.
(Note 2)

LUBRICATION INSTRUCTIONS (Contd)

LOCALIZED LUBRICATION POINTS (Contd)

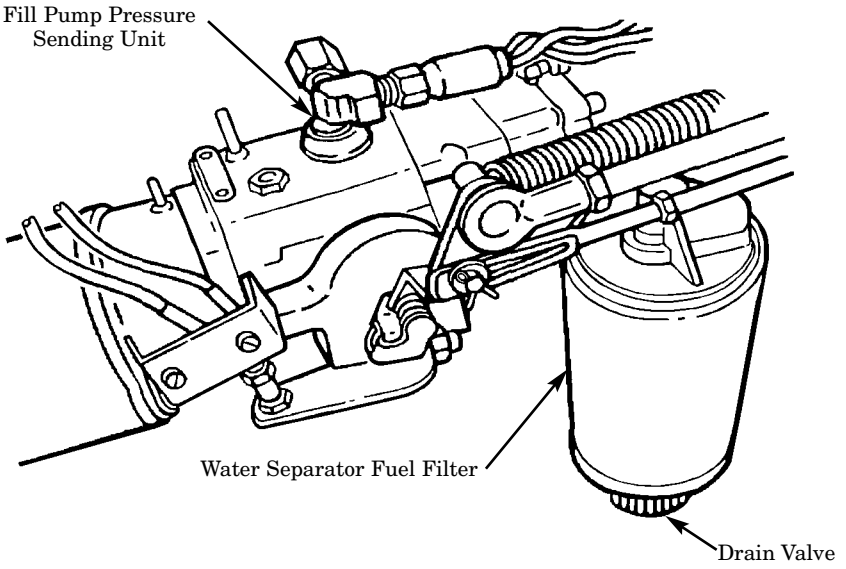


Figure 9. Fuel Pump and Filter. (Note 10)

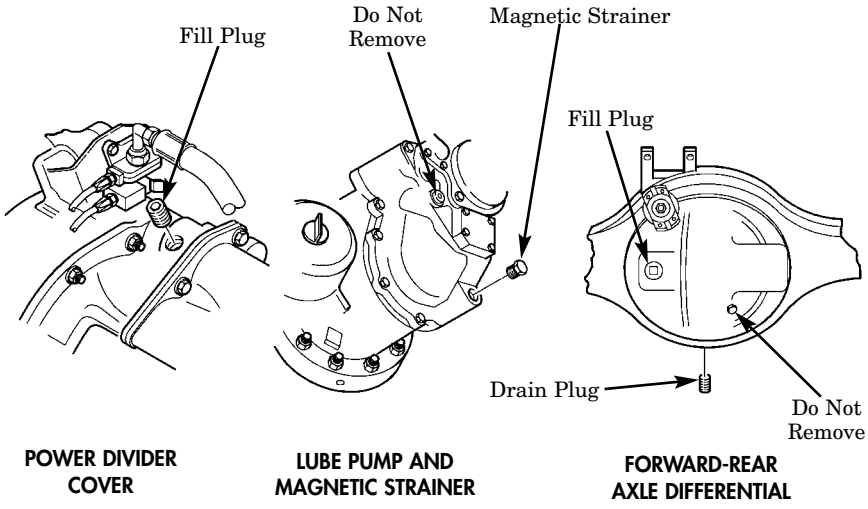


Figure 10. Forward-Rear Axle. (Notes 11 and 13)

LUBRICATION INSTRUCTIONS (Contd)

LOCALIZED LUBRICATION POINTS (Contd)

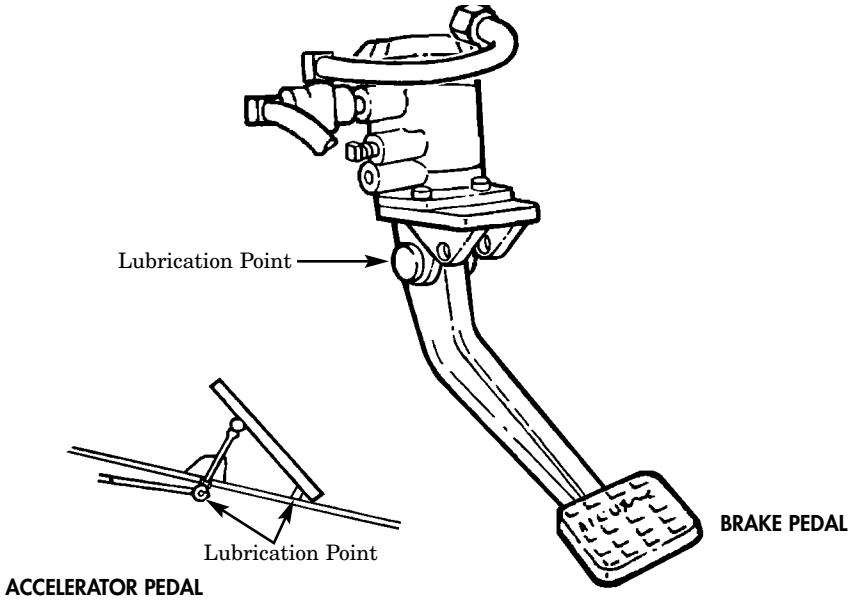


Figure 11. Brake and Accelerator Pedals.

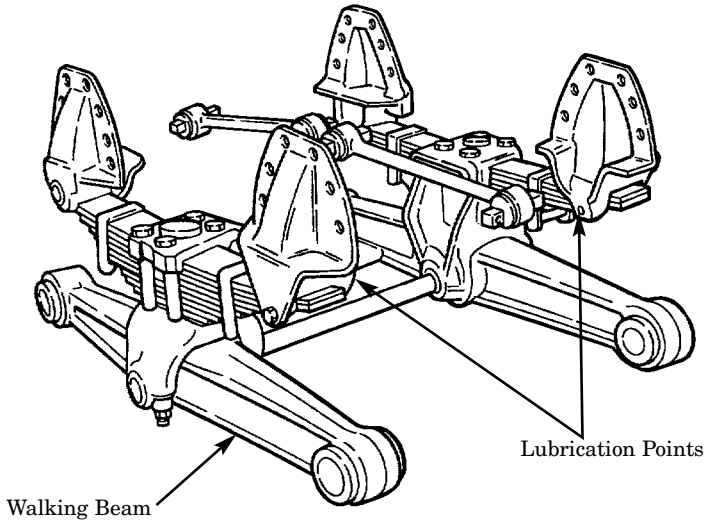


Figure 12. Rear Spring and Walking Beam.

LUBRICATION INSTRUCTIONS (Contd)

LOCALIZED LUBRICATION POINTS (Contd)

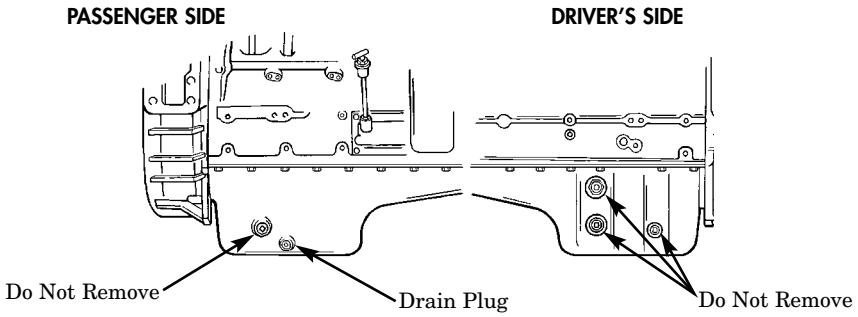


Figure 13. Crankcase.
(Note 12)

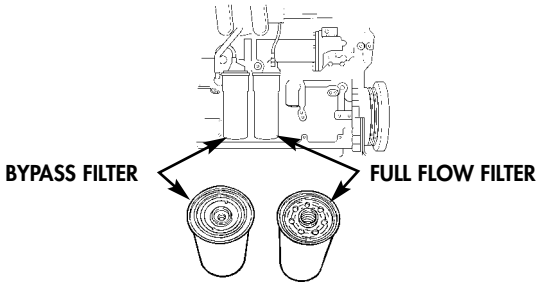


Figure 14. Oil Filters.
(Note 12)

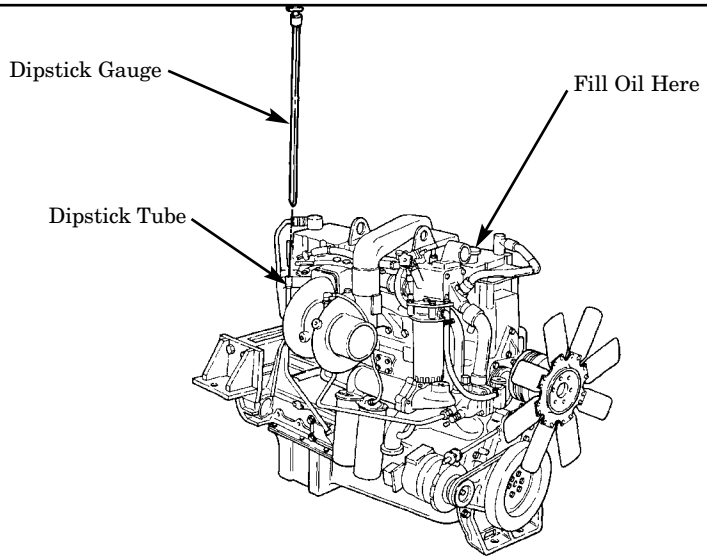


Figure 15. Engine Oil Level.
(Note 12)

LUBRICATION INSTRUCTIONS (Contd)

LOCALIZED LUBRICATION POINTS (Contd)

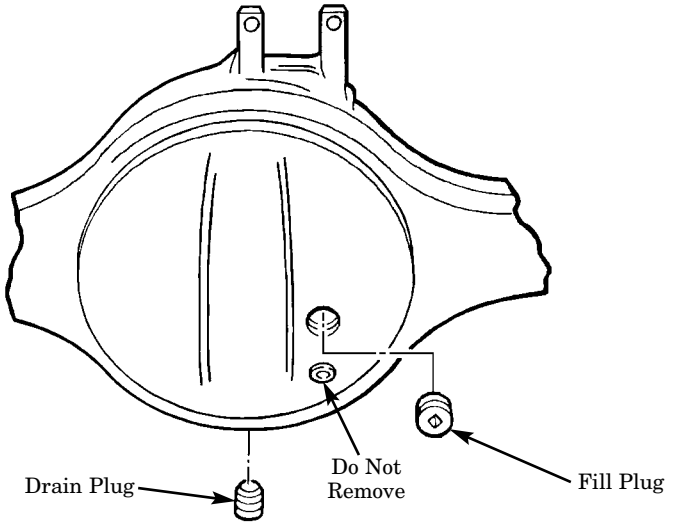


Figure 16. Rear–Rear Axle.
(Note 13)

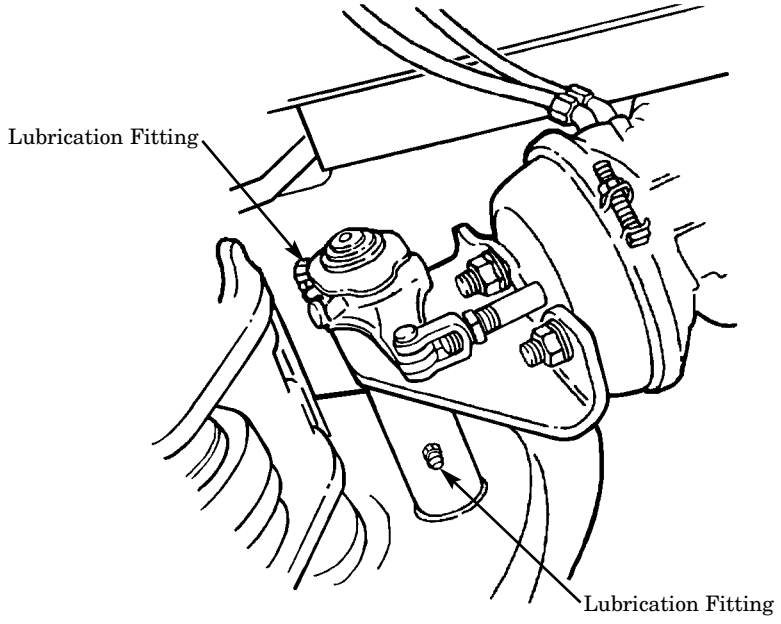
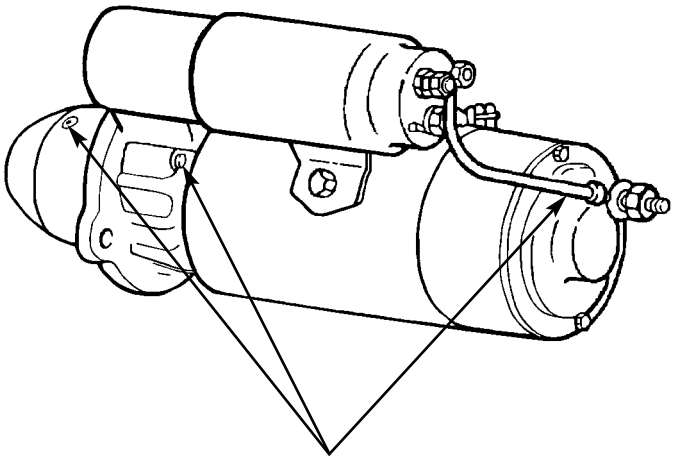


Figure 17. Front and Rear Slack Adjusters.
(Note 2)

LUBRICATION INSTRUCTIONS (Contd)

LOCALIZED LUBRICATION POINTS (Contd)



Socket Head Screws

Figure 18. Starter.
(Note 14)

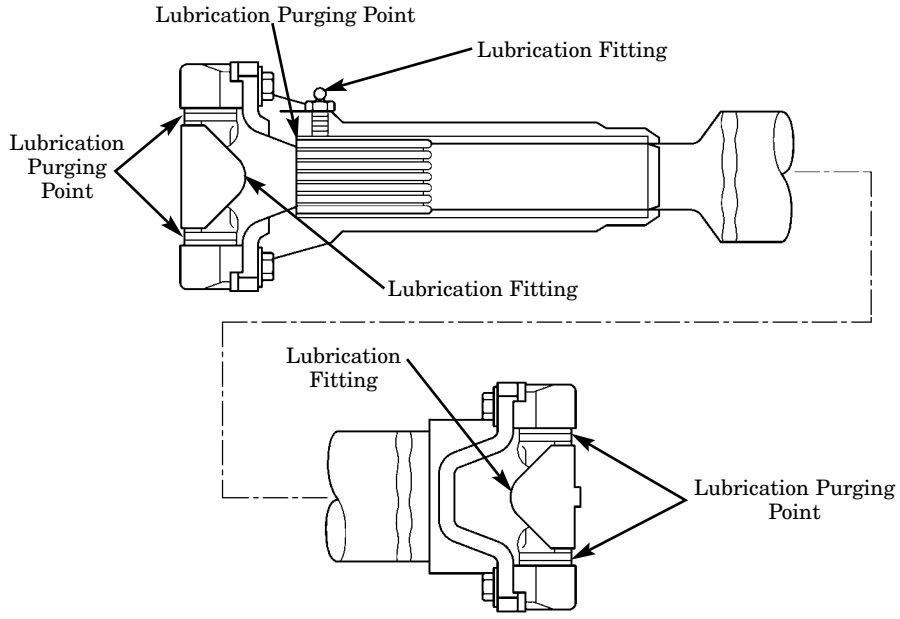


Figure 19. Driveshaft Universals, Slipyoke, and Splines.
(Notes 2 and 7)

LUBRICATION INSTRUCTIONS (Contd)

LOCALIZED LUBRICATION POINTS (Contd)

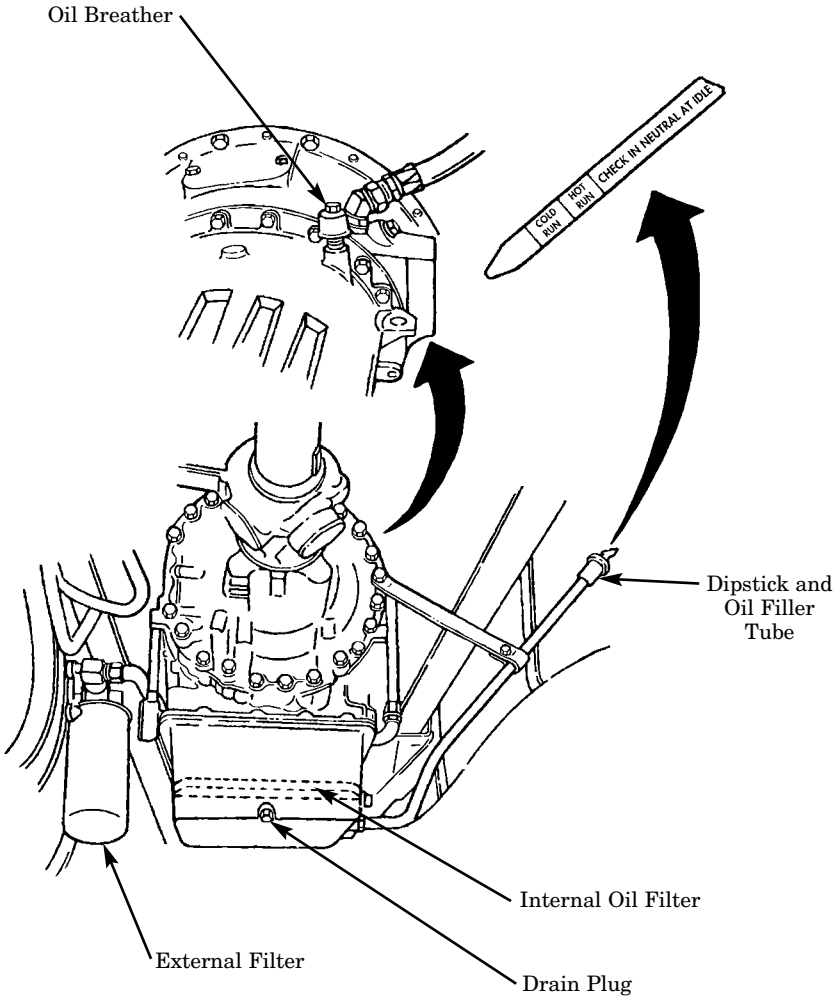


Figure 20. Transmission.
(Note 15)

LUBRICATION INSTRUCTIONS (Contd)

LOCALIZED LUBRICATION POINTS (Contd)

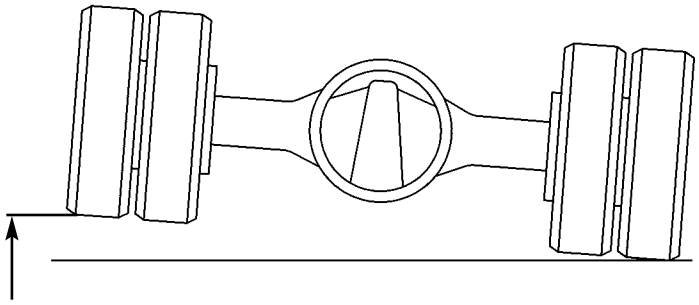


Figure 21. Rear Hub Bearing.
(Note 16)

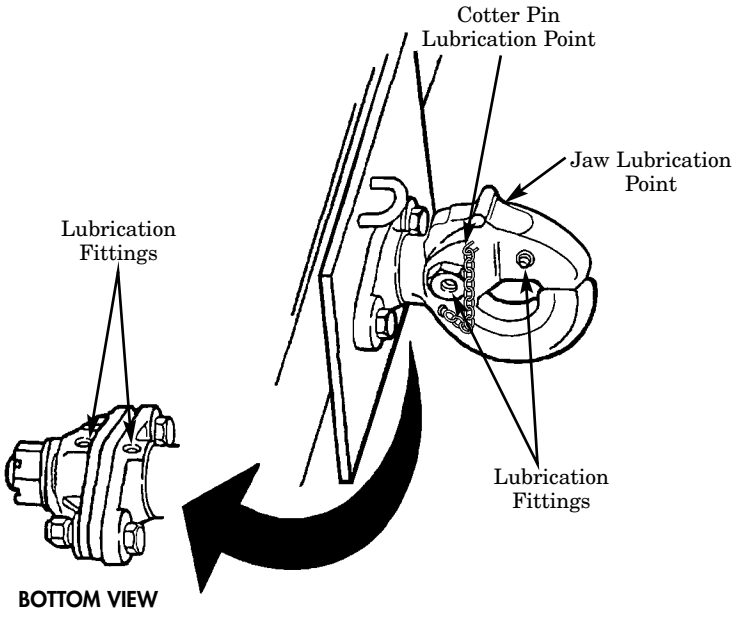


Figure 22. Pintle Hook.
(Note 17)

LUBRICATION INSTRUCTIONS (Contd)

NOTES

1. Oil Can Points

Every 1,000 mi (1,609 km) or each month, whichever occurs first, lubricate door, hood and side panel hinges, and latches.

2. Lubrication Fitting Points

The pressurized grease gun should be held on the fittings until new grease appears. This will ensure that all the contaminated grease has been forced out

3. Driver's Suspension Seat

Apply chassis grease (GAA) to lubrication fittings, weight adjuster, and slide rails at 12,000 mi (19,308 km) intervals.

4. Sliding Fifth Wheel

Apply a liberal amount of GAA lubricant to the top and bottom latch mechanisms every 1,000 mi (1,609 km) or each month, whichever occurs first.

Apply a liberal amount of GAA lubricant to the wheel plate surface every 1,000 mi (1,609 km) or each month, whichever occurs first.

Apply a film of OE/HDO-10 lubricant on the rack and slide path of the bracket on the sliding fifth wheel.

5. Tire Hoist

The following steps should be performed on a weekly basis:

WARNING

Do not get oil or grease on the fiber brake disc face of winch. Failure to comply may result in winch slippage and injury to personnel or damage to equipment.

a. All gears should have a film of grease at all times.

b. The two bushings at both ends of the drum shaft, the ratchet pawl, threads on the pinion shaft, and the steel handle disk should be wet with oil.

c. Apply GAA to cable.

6. Fan Clutch

CAUTION

Apply lubricant sparingly to the fan clutch fitting. Excessive use of lubricant may cause grease to enter the fan pulley grooves, causing slippage of the fan belts.

Every 6,000 mi (9,656 km) or 6 months, whichever occurs first, apply GAA lubricant to the fan clutch lubrication fitting.

LUBRICATION INSTRUCTIONS (Contd)

NOTES (Contd)

7. Steering Shaft Universals, Drive Line Universals, Slip Yokes, and Splines

Lubrication should be performed every 3,000 mi (4,828 km) or 3 months, whichever occurs first.

a. Check for looseness.

b. Apply grease.

c. Observe contaminated grease purging from all seals. Continue until new grease is exposed.

d. If the grease does not purge, rotate the universal joint until purging occurs.

e. If grease fails to purge after performing the above, remove the lubrication fitting and bearing cup. Inspect each and repair or replace as needed.

8. Power Steering Reservoir

Check daily with fluid hot and engine off. Filter should be changed when contamination is suspected or when system has to be repaired.

CAUTION

Before installing wheel bearings onto spindle, coat bearing journals with a film of gear oil to prevent premature damage.

OE/HDO-10 or OEA (Arctic Grade) is acceptable for use, but Dexron® ATF is preferred.

9. Front Wheel Bearings

Check daily for oil seal leakage, hub cap damage, or missing drain/fill plugs. Check for metal particles or contamination.

CAUTION

Before installing wheel bearings onto spindle, coat bearing journals with a film of gear oil to prevent premature damage.

The wheel bearings should be disassembled, cleaned, and inspected every 24,000 mi (38,624 km) or 24 months, whichever occurs first. New oil seals must be installed and lubricant brought to full mark.

10. Fuel Pump Screen and Water Separator Fuel Filter

WARNING

Compressed air used for cleaning purposes must not exceed 30 psi (207 kPa). Wear goggles/face shield and gloves when cleaning with compressed air. Failure to comply may result in injury to personnel.

a. Screen – Clean by soaking in a carbon dissolving agent, followed by flushing in a sonic cleaner unit, or clean the screen in fuel oil and dry with compressed air. Visually inspect screen for holes or embedded metal particles in mesh. Discard if damaged or worn and replace with new part.

b. Drain Moisture – Open drain valve and drain fuel for several seconds to allow water to escape. Close drain valve.

LUBRICATION INSTRUCTIONS (Contd)

NOTES (Contd)

11. Forward-Rear Axle with Lube Pump and Magnetic Strainer

Initially, the magnetic strainer should be checked and cleaned the first 1,000 mi (1,609 km) of operation. After that, check and clean the magnetic strainer every 24,000 mi (38,624 km) or 12 months, whichever occurs first.

WARNING

Compressed air used for cleaning purposes must not exceed 30 psi (207 kPa). Wear goggles/face shield and gloves when cleaning with compressed air. Failure to comply may result in injury to personnel.

To check and clean the magnetic strainer, remove the strainer from the power divider cover and inspect for wear material. Wash the magnetic strainer in solvent and blow dry with compressed air to remove oil and metal particles before reinstalling.

12. Crankcase

NOTE

Bring engine up to operating temperature before draining oil.

a. Check oil level daily. For accurate readings, wait at least one minute after engine shutdown for checking oil level. If on or below LOW mark, add 2 qt and recheck.

CAUTION

Oil filter leaks will develop if the filters are not properly tightened. The tightening requirement for the full-flow and bypass oil filter is one turn after oil filter gasket contact. Hand tightening may not be sufficient to achieve proper tightness; therefore, the use of an oil filter wrench is required to properly tighten the filters to prevent leaks.

b. Change oil, full flow oil filter, and bypass filter every 6,000 mi (9,656 km) or in 6 month intervals, whichever occurs first.

c. Oil Filter Installation Procedures:

   1. Clean the mounting surface and apply a light coat of clean lubricating oil to the filter gasket surface.
   2. Fill both filters with OE/HDO oil or OEA as required at key (See table 1).
   3. Tighten the filters until the gaskets contact the filter head surface. Use a filter wrench to tighten the filters one additional turn.

d. Check and clean crankcase breather and attaching hoses whenever oil and filters are changed.

e. Capacity:

   - Oil Pan: 9 gal. (34.1 L)
   - Bypass Oil Filter: 0.70 gal. (2.6 L)
   - Full-Flow Oil Filter: 0.93 gal. (3.52 L)

LUBRICATION INSTRUCTIONS (Contd)

NOTES (Contd)

13. Forward-Rear Axle and Rear-Rear Axle

a. Initial Operation – After the initial 1,000 mi (1,609 km) of operation, drain the differentials while the assembly is still warm from operation. Inspect the magnetic drain plug for signs of excessive metal particle buildup and notify your supervisor if this condition exists. Clean the magnetic drain plugs and magnetic fill plugs and replace when lubricant has stopped draining. Axles must not be flushed with any solvent such as kerosene.

b. Check Level – Check at 1,000 mi (1,609 km) intervals and maintain lube level with bottom of filler hole.

CAUTION

Prior to filling the forward-rear axle, remove the filler plug at the top of the differential carrier near the power divider cover and add 2 pt (1 L) of gear lube. Reinstall fill plug. Add the remaining 38 pt (18 L) to the forward-rear axle differential housing.

c. Drain and fill the forward-rear axle and rear-rear axle lubricant, including axle hubs, every 24,000 mi (38,624 km) or 24 months, whichever occurs first.

The following list of capacities should be used as a guide only. Do not overfill.

- Forward-Rear Axle. Fill forward-rear axle with 38 pt (18 L).
- Rear-Rear Axle. Fill rear-rear axle with 36 pt (17 L).
- Power Divider. Fill power divider with 2 pt (1 L).

14. Starter

Remove starter for lubrication every 24,000 mi (38,624 km) or 24 months, whichever occurs first (TM 9-2320-283-20).

Remove three socket head screws (see figure 18) and add three to five drops of OE/HDO-30 oil to each reservoir to lubricate the bushing of drive and drive spline. Clean with solvent, and then apply a thin coat of graphite grease (GAA) so the pinion will move freely.

15. Transmission

NOTE

The automatic transmission should be at operating temperature when the transmission oil is drained. This will ensure quicker and better drainage.

Initial Operation – Change the transmission oil and external transmission oil filter after the initial 3,000 mi (4,828 km) or 3 months, whichever occurs first. Discard the external transmission oil filter. Thereafter, the oil and external filter should be changed every 24,000 mi (38,624 km) or 12 months, whichever occurs first.

LUBRICATION INSTRUCTIONS (Contd)

NOTES (Contd)

Replace the external transmission oil filter and fill the transmission through the dipstick opening with 7.80 gal. (30 L).

Oil Level Check Procedure:

a. Check the oil while the vehicle is on level ground and the parking brake applied. Start the engine and shift the transmission through all drive ranges to fill the clutch cavities and oil passages; then shift to neutral.

b. Run the engine for at least one minute at 1,000–1,200 rpm to clear the system of air.

CAUTION

Do not overfill the transmission. Overfilling can cause aeration of the oil (milky appearance). If overfilling occurs, drain oil as required to bring it to the proper level.

c. Hot Oil Check (HOT RUN band). Be sure the temperature of the transmission oil has reached 120° F (49° C) or above. With the engine idling and the transmission in NEUTRAL, remove the dipstick from the oil filler tube and check the oil level. If the oil level registers in the HOT RUN band, the quantity of oil in the 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 necessary to bring the oil level to the middle of the HOT RUN band (approximately one quart of oil is required to move oil level from the bottom line of the HOT RUN band to the middle of the HOT RUN band).

d. Cold Oil Check (COLD RUN band). Run the engine for one minute at 1,000 rpm to charge the system. With the transmission oil temperature gauge reading below 120° F (49° C), and the engine idling with the transmission in NEUTRAL, remove the dipstick from the oil filler tube and check the oil level. If the oil level registers in the COLD RUN band, the quantity of oil in the transmission is safe for operating the vehicle. If it registers on or below the bottom line of the COLD RUN band, add the required amount of oil necessary to bring the oil level to the middle of the COLD RUN band (approximately one quart of oil is required to move the oil level from the bottom line of the COLD run band to the middle of the COLD RUN band).

Internal Oil Filter – The transmission internal oil filter should be changed every 24,000 mi (38,624 km) or 24 months, whichever occurs first.

Transmission Breather – The presence of dust and dirt will determine the frequency at which the breather requires cleaning.

CAUTION

If fluid level is low, bring to proper level with same oil grade or type. Mixing of oil grade or type will cause damage to internal transmission components. If changing oil grade or type, drain and flush completely before refilling.

OE/HDO-10 or OEA (Arctic Grade) is acceptable for use, but Dexron® ATF is preferred.

LUBRICATION INSTRUCTIONS (Contd)

NOTES (Contd)

16. Rear Hub Bearings

CAUTION

If maintenance or new hub bearings are required in either the forward-rear axle or rear-rear axle, it will be necessary to tilt each side of the rear axles to ensure adequate gear lube is supplied to the individual hub bearings after installation.

The following fill procedure is recommended:

a. Fill forward-rear axle and rear-rear axle with proper gear lube and replace filler plugs (see note 13 and figures 10 and 16).

b. Raise left side of rear axles approximately 4 in. (10.2 cm) above the ground. Maintain this position for two minutes to allow gear lube to flow into hub bearings at the opposite or right side (see figure 21).

c. Repeat this procedure for the opposite or right side (see figure 21).

d. With vehicle level again, add additional gear lube through the differential cover filler hole. The forward-rear axle and the rear-rear axle should each require 2 pt (1 L).

17. Pintle Hook

Lubricate all lubrication fittings with GAA; lubricate jaw and cotter pin.

END OF WORK PACKAGE

TROUBLESHOOTING PROCEDURES

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

CLEANING THE VEHICLE

INITIAL SETUP:

References
TM 9-247

GENERAL

Refer to TM 9-247 for a detailed description of cleaning compounds, cleaning solvents, and corrosion removing compounds.

EXTERIOR

- Never wipe off dirt when tractor is dry.
- Never wash tractor in direct sunlight or if the tractor exterior is hot to touch.
- Wash your truck often using cold or warm water (never use hot water or any strong detergent). Do not use abrasives to remove mud and dirt from your tractor.

INTERIOR

- Remove loose dust and dirt from cab interior components.
- Clean upholstery and seatbelts using a mild solution of warm water and soap (never use solvents or abrasives). Wipe dry all areas that have been washed.

END OF WORK PACKAGE

MAINTENANCE INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

FILLING THE FUEL TANK

INITIAL SETUP: Not Applicable

WARNING

When fueling tractor, ensure pump nozzle contacts the filling tube on the tractor fuel tank to carry off static electricity. Do not smoke or have open flame in fueling area. Failure to comply may result in injury or death to personnel or damage to equipment.

FUELING

1. Park vehicle, stop engine, and apply parking brake (WP 0004).
2. Wipe off any dirt on fuel tank (1) around filler cap (2).
3. Remove fuel tank filler cap (2) from fuel tank (1).
4. Fill fuel tank (1).
5. Install filler cap (2) on fuel tank (1).

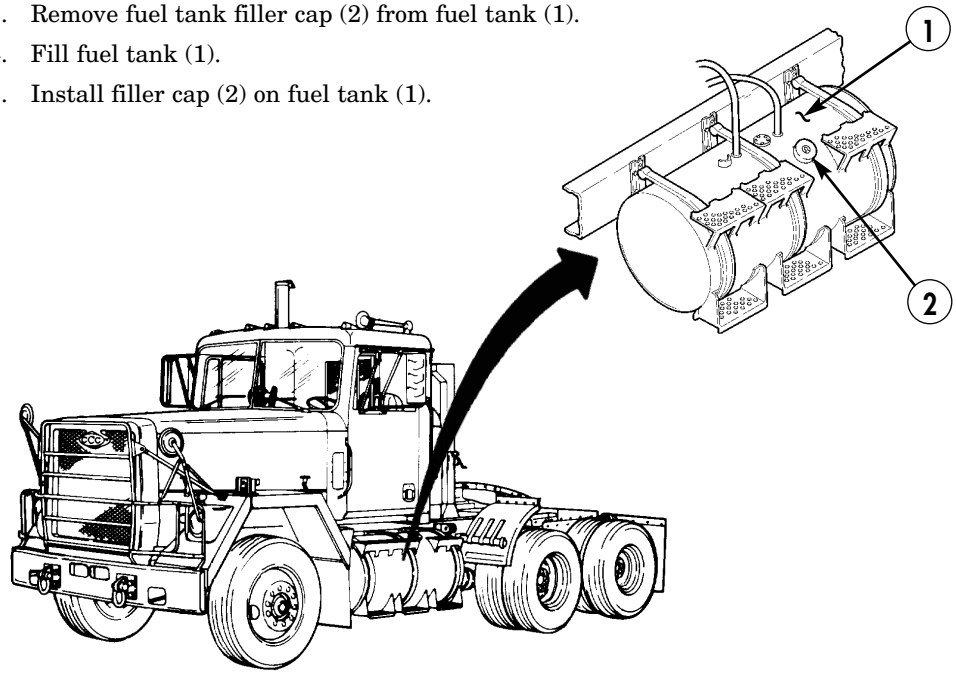


Figure 1. Fuel Tank and Filler Cap.

END OF TASK

END OF WORK PACKAGE

MAINTENANCE INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

COOLING SYSTEM SERVICE

INITIAL SETUP: Not Applicable

WARNING

Accidental or intentional introduction of liquid contaminants into the environment is a violation of state, federal, and military regulations. Failure to comply may result in damage to environment and health of personnel.

NOTE

Use a drain pan to capture any draining coolant. Dispose of fluids in accordance with local policy and ordinances. Ensure all spills are cleaned up.

COOLING SYSTEM SERVICE (Contd)

DRAIN LOCATIONS

The engine has three drains: Engine block drain (4) where the temperature sending unit is mounted, oil cooler drain/vent draincock (2), and thermostat housing drain/vent draincock (1). The oil cooler drain/vent draincock (2) and thermostat housing drain/vent (1) also serve as vents to allow trapped air to escape when filling the cooling system.

The radiator (6) has one drain location at lower left-hand side (right side if facing the truck). The draincock (5) faces toward the engine on the back side of the radiator bottom tank (6).

DRAINING COOLING SYSTEM

WARNING

Let radiator cool before removing cap. Remove radiator cap in two steps. First, place a thick cloth over the cap and slowly rotate cap left to its first stop; pause, and let pressure escape from cooling system. Then rotate cap counterclockwise until it can be removed. Failure to comply may result in severe burns to personnel.

1. Remove radiator cap from radiator (6).

NOTE

Use a drain pan to capture any draining coolant. Dispose of fluids in accordance with local policy and ordinances. Ensure all spills are cleaned up.

2. Open thermostat housing drain/vent (1), oil cooler drain/vent draincock (2), and radiator draincock (5).
3. Disconnect electrical connector from temperature sending unit (4).
4. Remove temperature sending unit (4) from engine block (3).
5. Allow all coolant to drain.

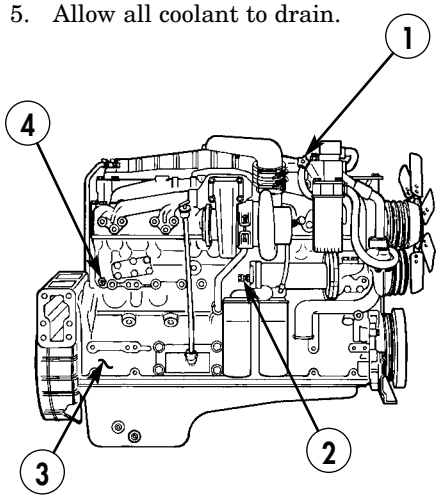


Figure 1. Engine Drain/Vent Draincocks.

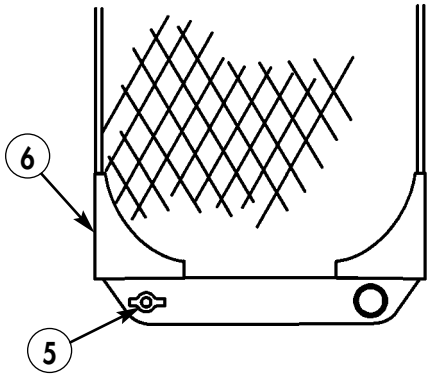


Figure 2. Radiator Draincock.

END OF TASK

COOLING SYSTEM SERVICE (Contd)

FILLING EMPTY SYSTEM

Fill the cooling system with a mixture of clean water and ethylene glycol antifreeze.

1. Apply thin coat of thread sealer on temperature sending unit (4) threads.
2. Install temperature sending unit (4) in engine block (3).
3. Connect temperature sending unit (4) electrical connector.
4. Close radiator draincock (5) on radiator (6).
5. Pour coolant into radiator (6) until sight glass is full and coolant flows from oil cooler drain/vent draincock (2) and thermostat housing drain/vent (1).
6. Close oil cooler drain/vent draincock (2) and thermostat housing drain/vent (1).
7. Start engine and allow it to reach normal operating temperature 180–200° F (82–93° C).
8. Recheck coolant level and fill until sight glass is full.
9. Install radiator cap on radiator (6).
10. Check for leaks.

END OF TASK

ADDING COOLANT TO PARTLY FILLED SYSTEM

WARNING

Let radiator cool before removing cap. Remove radiator cap in two steps. First, place a thick cloth over the cap and slowly rotate cap left to its first stop; pause, and let pressure escape from cooling system. Then rotate cap counterclockwise until it can be removed. Failure to comply may result in severe burns to personnel.

1. Remove radiator cap from radiator (6).
2. Open thermostat housing drain/vent (1).
3. Add coolant to radiator (6) until sight glass is full and coolant flows from thermostat housing drain/vent (1).
4. Close thermostat housing drain/vent (1).
5. Install radiator cap on radiator (6).
6. Check for leaks.

END OF TASK

END OF WORK PACKAGE

MAINTENANCE INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

WHEEL AND TIRE SERVICE

INITIAL SETUP:

Personnel Required:

Two

GENERAL

WARNING

Exercise caution when raising or lowering spare wheel and tire assembly. All personnel must stand clear during lifting operations. Should wheel and tire assemble fall over or drop from lift, serious injury to personnel may result.

Wheels and tires are inspected when performing weekly Preventive Maintenance Checks and Services (PMCS), (Work Package (WP) 0024). A spare wheel and tire assembly is provided on the M915A1 Tractor. A tire hoist is provided to raise and lower the spare wheel and tire assembly from stowed position. If a tire becomes flat during vehicle operation, stop the vehicle immediately and replace wheel and tire assembly if tactical situation permits. Notify your supervisor as soon as possible so wheel nuts can be torqued and flat tire can be repaired and returned to service. When changing tires, do not substitute type or size tire unless all tires on truck can be changed. Keep all tires the same.

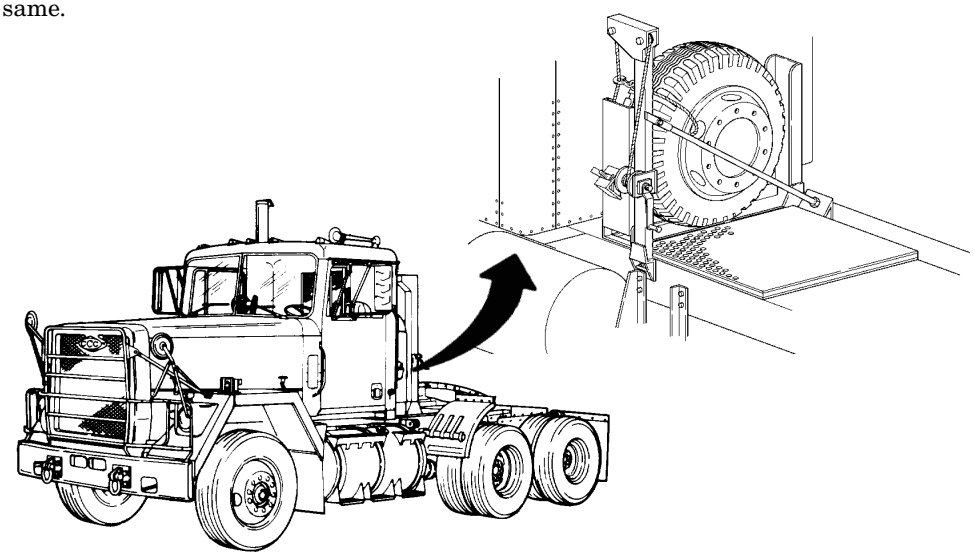


Figure 1. Spare Wheel and Tire Assembly.

WHEEL AND TIRE SERVICE (Contd)

REMOVING SPARE WHEEL AND TIRE FROM TIRE CARRIER

WARNING

- Exercise caution when raising or lowering spare wheel and tire assembly. All personnel must stand clear during lifting operations. Should wheel and tire assembly fall over or drop from lift, serious injury to personnel may result.
- When raising or lowering spare wheel and tire assembly the winch brake disc will get hot enough to burn personnel if touched. Do not touch hot clutch disc or injury to personnel may result.
- Ensure winch cable drum has a minimum of four full turns of cable prior to lifting spare wheel and tire assembly. Failure to comply may result in cable pulling off cable drum and injury to personnel or damage to equipment may result.

CAUTION

If winch brake disc shows signs of overheating, stop and allow 15 minutes for winch brake disc to cool down.

NOTE

The winch automatically brakes when pressure is taken off handle regardless of which direction it is being turned. If slack is needed to secure cable around wheel and tire assembly, you must pull on cable and turn handle in a counterclockwise direction at the same time. Do not pull out more cable then is needed.

1. Park vehicle on level ground, stop engine, apply parking brake, and chock wheels.
2. Install winch cable (1) through wheel opening (3), wrap it around wheel and tire assembly (2), and secure snap hook back on winch cable (1).
3. Remove tractor-to-trailer electrical cable at tractor.
4. Remove wing nut (6), lower spare tire carrier side panel (7), and remove bolt (5) from tire carrier base (4).

WHEEL AND TIRE SERVICE (Contd)

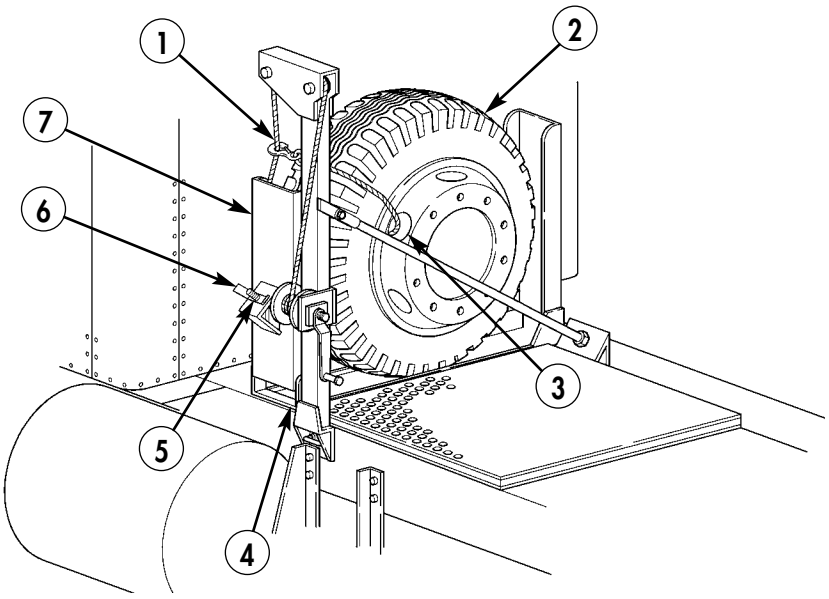


Figure 2. Spare Wheel and Tire Assembly.

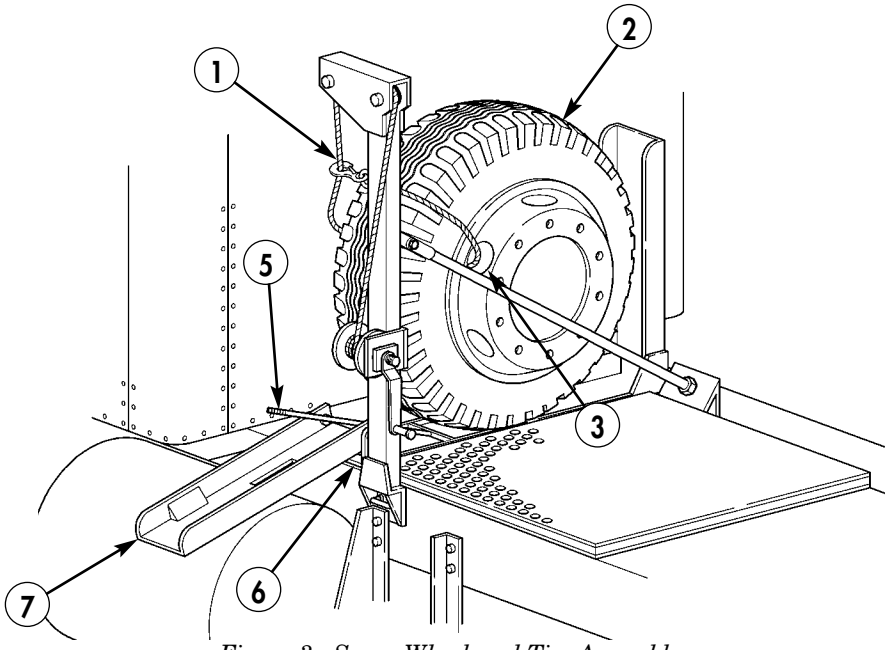


Figure 3. Spare Wheel and Tire Assembly.

WHEEL AND TIRE SERVICE (Contd)

REMOVING SPARE WHEEL AND TIRE FROM TIRE CARRIER (Contd)

WARNING

- Ensure winch cable drum has a minimum of four full turns of cable prior to lifting spare wheel and tire assembly. Failure to comply may result in cable pulling off cable drum and injury to personnel or damage to equipment may result.
- Ensure wheel and tire assembly does not suddenly drop from truck by guiding it down between fuel tank and fender. Failure to comply could cause the winch cable to snap and injury to personnel or damage to equipment may result.

NOTE

- Ensure cable is paying out when turning handle counterclockwise or handle will unscrew and winch will become inoperative.
- The winch automatically brakes when pressure is taken off handle regardless of which direction it is being turned. If slack is needed to secure cable around wheel and tire assembly, you must pull on the cable and turn the handle in a counterclockwise direction at the same time. Do not pull out more cable then is needed.
- This step requires two personnel.

5. Remove wheel and tire assembly from spare tire carrier (3) by lifting spare tire (2) on spare tire carrier side panel (6).
6. Take up slack in winch cable (1) by turning winch handle (4) in clockwise direction.
7. Turn winch handle (4) counterclockwise to lower spare tire (2) to ground while guiding it around fuel tank (5) and fender.
8. Remove winch cable (1) from wheel and tire assembly (2) and leave winch cable (1) payed out for storing flat wheel and tire assembly later.

WHEEL AND TIRE SERVICE (Contd)

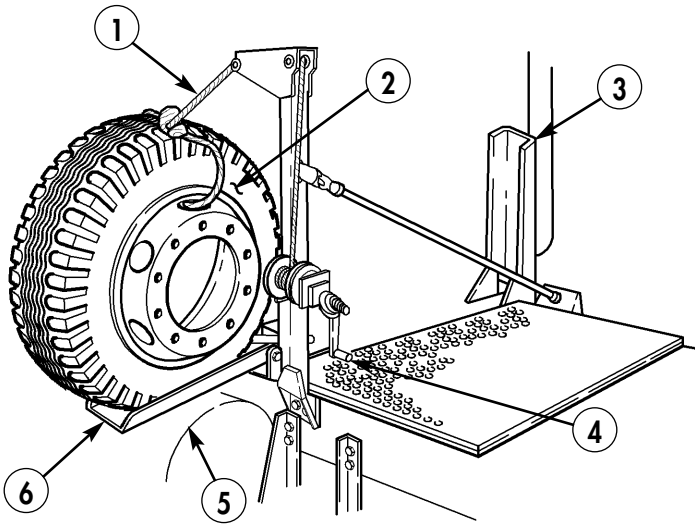


Figure 4. Spare Wheel and Tire Assembly.

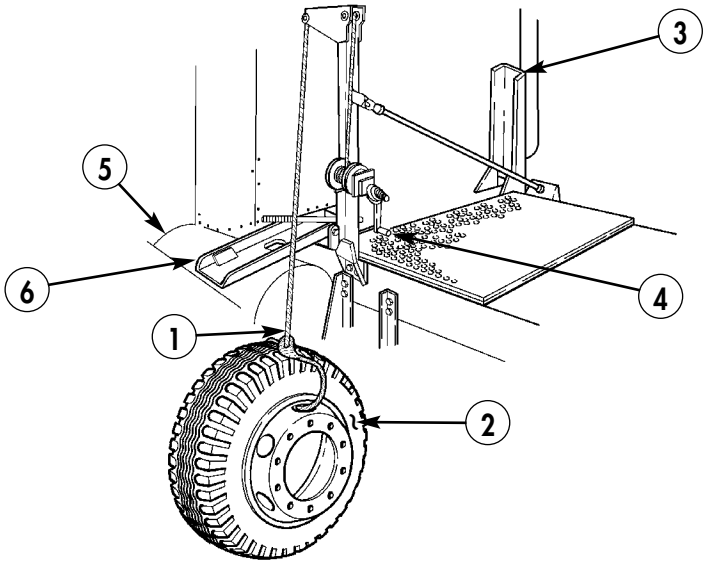


Figure 5. Spare Wheel and Tire Assembly.

END OF TASK

WHEEL AND TIRE SERVICE (Contd)

WHEEL AND TIRE REPLACEMENT

1. Park vehicle on level ground, stop engine, apply parking brake, and chock wheels.
2. Check tire pressure of wheel and tire assembly to be installed: front 105 psi (724 kPa), rear 95 psi (655 kPa). See Tire Inflation in this WP.

NOTE

Wheel nuts on left side have left-hand threads and must be turned clockwise to loosen. Wheel stud nuts on right side have right-hand threads and must be turned counterclockwise to loosen. Studs and wheel nuts are stamped L (left) and R (right).

3. Using spare tire mounting wrench, loosen all wheel nuts (1) from wheel and tire assembly (4) to be removed.
4. Position jack as instructed in jacking procedure, and raise axle until tire clears ground.
5. Remove all wheel nuts (2) from wheel and tire assembly (4) to be removed.
6. Remove wheel and tire assembly (4) from hub (2).
7. If inner dual wheel and tire assembly is also being replaced, remove inner wheel and tire assembly from hub (2).
8. Mount new wheel and tire assembly (4) on hub (2).
9. If inner dual wheel and tire assembly is being replaced, install new outer dual wheel and tire assembly (4) on hub (2) so inner valve stem is visible through hole in outer wheel (3).
10. Using spare tire mounting wrench, install all wheel nuts (1) on wheel (4) snugly.
11. Lower jack as instructed in jacking procedure.

NOTE

Wheel nuts on left side have left-hand threads and must be turned counterclockwise to tighten. Wheel stud nuts on right side have right-hand threads and must be turned clockwise to tighten. Studs and wheel nuts are stamped L (left) and R (right).

12. Tighten wheel nuts (1) alternately as shown in figure 6 and notify your supervisor to properly torque wheel nuts (1).
13. Release parking brake and remove wheel chocks.

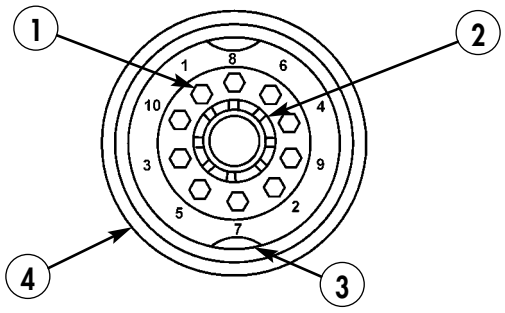


Figure 6. Wheel Nuts and Wheel.

END OF TASK

WHEEL AND TIRE SERVICE (Contd)

JACKING PROCEDURES

WARNING

- The tractor's hydraulic jack is intended only for lifting and is not a safe support for performing maintenance. Do not get under tractor unless it is properly supported by jack stands or wood blocks. Failure to comply may result in injury or death to personnel.
- Ensure parking brake is released and chocks are placed behind tires at opposite end of tractor to be raised prior to jacking operations. Do not place chocks in front of tires at opposite end of tractor to be raised; if tractor is not free to roll during jacking operations it may topple jack. Move chocks tight against tires after jacking and set parking brake. Failure to comply may result in injury to personnel or damage to equipment.

OPERATING JACK

1. To raise jack (3), use slotted end of two-piece handle (2) to rotate release valve on jack base (1) clockwise.
2. Insert two-piece handle (2) in jack socket and pump handle (2) to raise jack (3).
3. To lower jack (3), slowly rotate release valve on jack base (1) counterclockwise using slotted end of two-piece handle (2).

END OF TASK

FRONT AXLE JACK PLACEMENT

1. Place hydraulic jack (1) on ground (7) or a wood block if ground (7) is soft.
2. Place jack (3) under first small spring leaf (4) just forward of front axle (5).
3. Unscrew jack ram (3) counterclockwise until it reaches spring leaf (4).
4. Raise jack (3) by pumping handle (2) until tire (6) clears ground (7).

END OF TASK

REAR AXLE JACK PLACEMENT

1. Place hydraulic jack (1) on ground (7) or a wood block if ground (7) is soft.
2. Place jack (3) under walking beam (9) or (11) inboard of walking beam trunion support (10) at either forward-rear axle (8) or rear-rear axle (11) based on which axle has flat tire.
3. Unscrew jack (3) counterclockwise until it reaches walking beam (9) or (11).
4. Raise jack (3) by pumping handle (2) until both tires (6) clear ground (7).

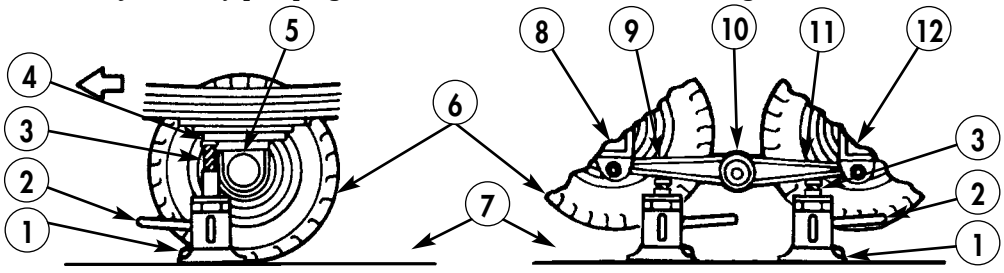


Figure 7. Front and Rear Axle Jacking Locations.

END OF TASK

WHEEL AND TIRE SERVICE (Contd)

INSTALLING SPARE WHEEL AND TIRE ON TIRE CARRIER

WARNING

- Exercise caution when raising or lowering spare wheel and tire assembly. All personnel must stand clear during lifting operations. Should wheel and tire assembly fall over or drop from lift, serious injury to personnel may result.
- When raising or lowering spare wheel and tire assembly winch brake disc will get hot enough to burn personnel if touched. Do not touch hot clutch disc or injury to personnel may result.
- Ensure winch cable drum has a minimum of four full turns of cable prior to lifting spare wheel and tire assembly. Failure to comply may result in winch cable pulling off cable winch drum and injury to personnel or damage to equipment may result.

CAUTION

If winch brake disc shows signs of overheating, stop and allow 15 minutes for winch brake disc to cool down.

NOTE

The winch automatically brakes when pressure is taken off handle regardless of which direction it is being turned. If slack is needed to secure cable around wheel and tire assembly, you must pull on cable and turn the handle in a counterclockwise direction at same time. Do not pull out more cable then is needed.

1. Install winch cable (5) through wheel opening (3), wrap it around wheel and tire assembly (4), and secure snap hook back on winch cable (5).
2. Take up slack in winch cable (5) by turning winch handle (2) in clockwise direction.

NOTE

This step requires two personnel.

3. Turn winch handle (2) clockwise to install wheel and tire assembly (4) onto spare tire carrier side panel (6) while guiding it around fuel tank (1) and fender.

WHEEL AND TIRE SERVICE (Contd)

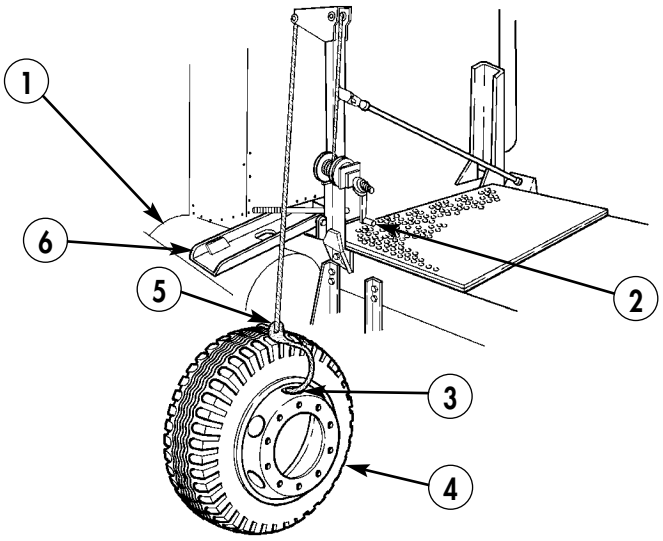


Figure 8. Spare Wheel and Tire Assembly.

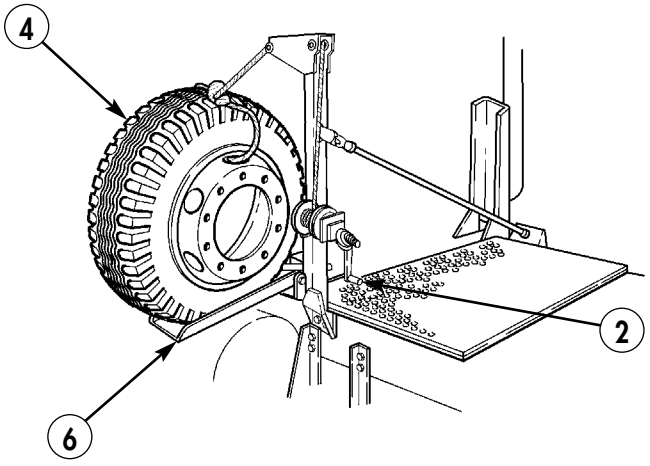


Figure 9. Spare Wheel and Tire Assembly.

WHEEL AND TIRE SERVICE (Contd)

INSTALLING SPARE WHEEL AND TIRE ON TIRE CARRIER (Contd)

4. Install wheel and tire assembly (2) on spare tire carrier (3).

NOTE

- After wheel and tire assembly has been secured, cable may be slightly loose but should remain attached to wheel and tire assembly.
- Crank handle must be in 12 o'clock or 6 o'clock position when not in use to avoid possible interference with trailer.

5. Install bolt (1) on tire carrier base (4).
6. Raise spare tire carrier side panel (5) and install wing nut (6) on bolt (1).
7. Connect tractor-to-trailer electrical cable electrical connector at tractor.
8. Release parking brake and remove wheel chocks.

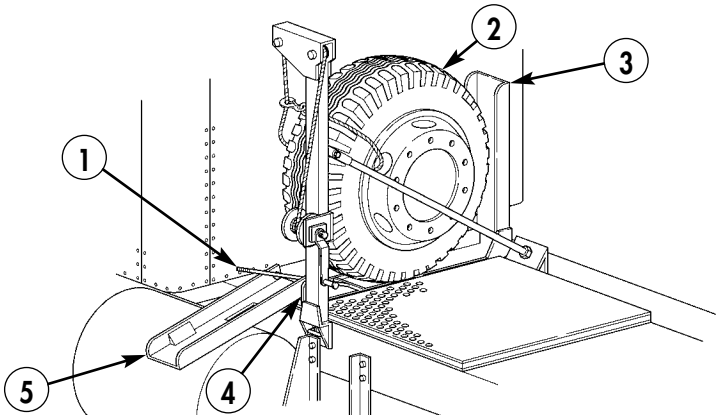


Figure 10. Spare Wheel and Tire Assembly.

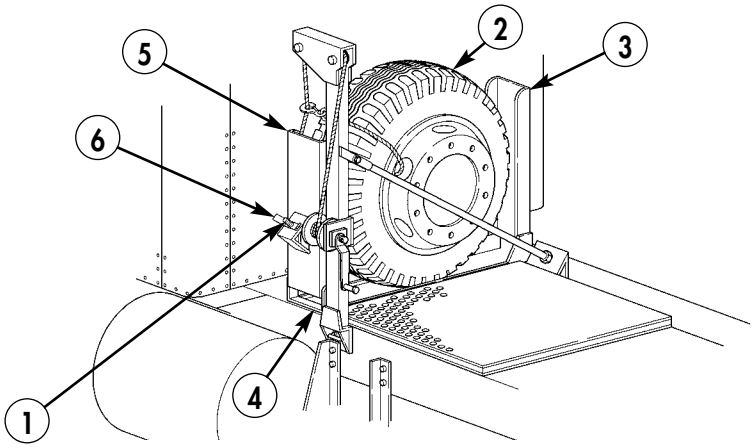


Figure 11. Spare Wheel and Tire Assembly.

END OF TASK

WHEEL AND TIRE SERVICE (Contd)

TIRE INFLATION

General

Checking tire air pressure is an important aspect of tire maintenance. Tire air pressure must be checked weekly. Recommended air pressures for all tires on all vehicle models have been carefully selected to provide maximum tire life and performance.

Check and adjust tire air pressure when tires are cold. Recommended air pressures are specified for cold tires (i.e., tires that have not warmed up due to vehicle operation). When vehicle is operated and tire warms up, tire air pressure increases; do not decrease warm tire air pressure to recommended air pressure for a cold tire. Following cross-country operations in mud, sand, or snow, ensure that tires are inflated for highway use.

WARNING

Stay clear of wheel when checking tire air pressure and inflating tire. Injury or death to personnel may result from exploding wheel components.

1. Remove tire pressure gauge from tool box.
2. Remove tire valve stem cap.
3. Check tire air pressure (Wheel and Tire Replacement in this WP).
4. If necessary, remove air hose from tool box and use quick disconnect fitting provided at rear of supply air reservoir (7) to put air in tires (see WP 0002 for recommended tire air pressures).
5. Install tire valve cap and tighten finger-tight.
6. Store tire pressure gauge and air hose in tool box.

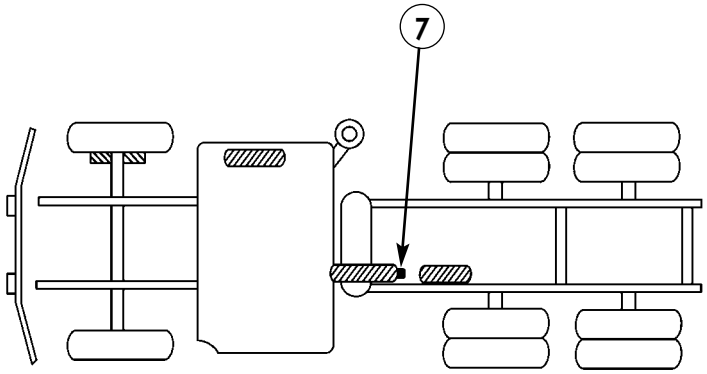


Figure 12. Supply Air Reservoir and Quick Disconnect.

END OF TASK

END OF WORK PACKAGE

MAINTENANCE INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

BATTERY INSPECTION

INITIAL SETUP: Not Applicable

WARNING

- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves when performing battery maintenance. Failure to comply may result in severe injury to personnel if acid contacts eyes or skin.
- Do not smoke, have open flame, or make sparks when performing battery maintenance. Batteries may explode causing severe injury to personnel.
- Remove all jewelry such as rings, bracelets, and identification tags. If jewelry comes in contact with battery terminals, a direct short can occur resulting in instant heating of jewelry or tools and damage to electrical system. Failure to comply may result in damage to equipment and injury to personnel.

BATTERY INSPECTION (Contd)

1. Park vehicle, stop engine, apply parking brake, and chock wheels.
2. Remove two battery box latches (3) from battery box cover (1).
3. Remove battery box cover (1) from battery box (5) by pulling locating pins (2).
4. Check test indicators (4) for green color. If any indicator (4) is completely dark or yellow in color, notify your supervisor.
5. Check the following connections. If connections are loose, notify your supervisor.
    a. Positive and negative battery posts.
    b. Jumper cable clamps-posts.
    c. All cable-clamp connections.
    d. Ground connection.
6. Check battery box (5) for signs of leaking batteries. If batteries are leaking, notify your supervisor.
7. Install battery box cover (1) on battery box (5) with two locating pins (2).
8. Secure battery box cover (1) to battery box (5) with two latches (3).
9. Release parking brake and remove wheel chocks.

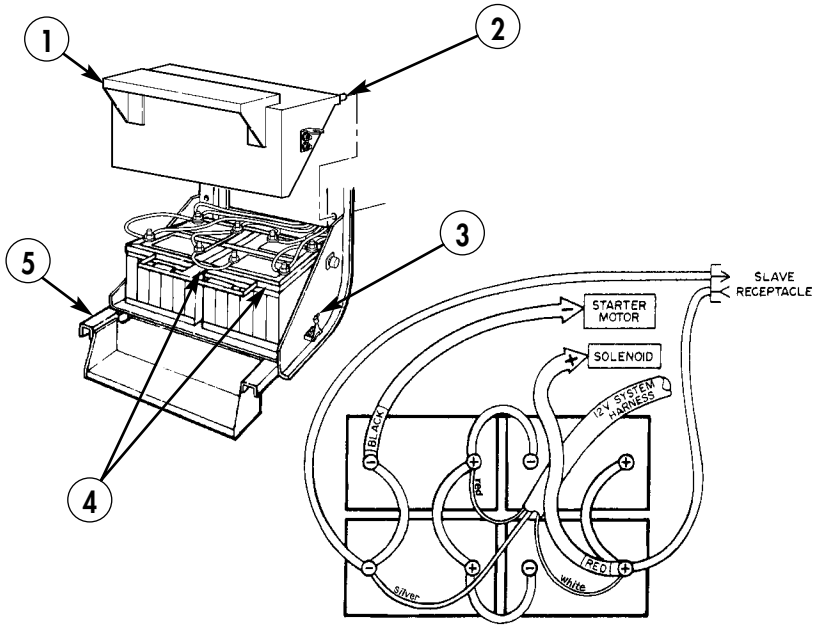


Figure 1. Battery Box, Batteries, and Cables.

END OF TASK

END OF WORK PACKAGE

MAINTENANCE INSTRUCTIONS

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

MAINTENANCE UNDER UNUSUAL CONDITIONS

INITIAL SETUP:

References

FM 9-207

GENERAL

This Work Package (WP) provides special instructions for maintaining vehicles under unusual conditions, which include extreme temperatures, humidity, difficult terrain, and fording. When operating under unusual conditions, it is especially important to keep the vehicle clean and adequately lubricated.

EXTREME COLD WEATHER

In extreme cold weather, it is essential that your tractor be in top condition, or it will be very difficult to get the tractor started. Always make sure that you have carefully performed your PMCS, and be sure to notify your supervisor of any problems.

- Always give engine extra time to reach its operating temperature range of 180–200° F (82–93° C).
- For detailed guidance on antifreeze protection, lubrication, electrical system service, and other maintenance requirements for extreme cold weather operations, refer to FM 9-207.

EXTREME HOT WEATHER

Check the engine coolant level frequently; make sure that you maintain coolant at proper level. Check cooling system (radiator, hoses, and lines) for possible leaks, and notify your supervisor of any problems.

Check tires frequently to make sure that each tire is inflated to the proper pressure (but be very careful not to over inflate tires). Wait until tires are cool before you adjust their pressures.

EXTREME HUMID WEATHER

In hot humid weather, exposed metal surfaces can rust rapidly. Fungus can grow in the fuel tank and on canvas tarps, seats, and other equipment. Frequent inspection, cleaning, and lubrication are necessary to maintain vehicle readiness in humid conditions. Fuel filters and air reservoirs must be drained frequently due to increased condensation in fuel

MAINTENANCE UNDER UNUSUAL CONDITIONS (Contd)

and air systems. Clean affected areas carefully and, if necessary, notify your supervisor of any needed parts.

END OF WORK PACKAGE

CHAPTER 5

SUPPORTING INFORMATION

FOR

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

SUPPORTING INFORMATION

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

REFERENCES

INDEX

The Department of the Army pamphlet (DA PAM) 25-30 contains records of current and obsolete publications and blank forms published by the Army, other military services, Department of Defense (DOD) activities, and other government agencies and activities. This pamphlet also provides resources for materials published by other services, but not available through this index, which are used worldwide.

Consolidated Index of Army Publications and Blank Forms . . . . . DA PAM 25-30

U.S. Army Equipment Index of Modification Work Orders. . . . . DA PAM 750-10

REFERENCES (Contd)

PUBLICATIONS

Technical Manuals (TMs)

Organizational Maintenance for M915A1 Truck Tractor . . . . . TM 9-2320-283-20
Organizational Maintenance Repair Parts and Special Tools List for M915A1 Truck Tractor . . . . . TM 9-2320-283-24P
Direct Support and General Support Maintenance Manual for M915A1 Truck Tractor. . . . . TM 9-2320-283-34
Direct and General Support Repair Parts and Special Tools List for M915A1 Truck Tractor . . . . . TM 9-2320-283-34P
Direct and General Support Maintenance Manual and Repair Parts and Special Tools List for Diesel Engine in M915A1 Truck Tractor . . . . . TM 9-2815-225-34&P
Organizational Care, Maintenance, and Repair of Pneumatic Tires, Inner Tubes, and Radial Tires . . . . . TM 9-2610-200-20
Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Materiel and Related Materials Including Chemicals. . . . . TM 9-247
Welding Theory and Application . . . . . TM 9-237
Painting Instructions for Field Use. . . . . TM 43-0139
Inspection, Care, and Maintenance of Antifriction Bearings . . . . . TM 9-214
Cooling Systems: Tactical Vehicles . . . . . TM 750-254
Chemical, Biological, and Radiological (CBR) Decontamination. . . . . TM 3-220
Principles of Automotive Vehicles . . . . . TM 9-8000
Procedures for Destruction of Tank-Automotive Equipment to Prevent Enemy Use . . . . . TM 750-244-6
Administrative Storage of Equipment . . . . . TM 750-90-1
Marking, Packaging and Shipment of Supplies and Equipment: General Packaging Instructions for Field Use . . . . . TM 746-10

REFERENCES (Contd)

Technical Bulletins (TBs)

Description, Use, Bonding Techniques, and Properties of Adhesives. . . . . TB ORD 1032
Use of Antifreeze Solutions, Antifreeze Extender, Cleaning Compounds, and Test Kit in Engine Cooling Systems . . . . . TB 750-651
M915A1 Winterization Kit . . . . . TB 9-2320-283-14
Warranty, M915A1 . . . . . TB 9-2300-295-15/20

Field Manuals (FMs)

NBC Decontamination . . . . . FM 3-5
First Aid . . . . . FM 4-25.11
Operations and Maintenance of Ordnance Materiel in Cold Weather . . . . . FM 9-207
Metal Body Repair and Related Operation. . . . . FM 43-2
Manual for the Wheeled Vehicle Driver . . . . . FM 21-305
Basic Cold Weather Manual . . . . . FM 31-70
Northern Operations . . . . . FM 31-71
Army Motor Transport Units and Operations . . . . . FM 55-30
Camouflage . . . . . FM 5-20
Vehicle Recovery Operations . . . . . FM 20-22

General Publications

Authorized Abbreviations, Brevity Codes, and Acronyms . . . . . AR 310-50
Prevention of Motor Vehicle Accidents . . . . . AR 385-55
The Army Driver and Operator Standardization Program (Selection, Training, Testing, and Licensing) . . . . . AR 600-55
Army Materiel Maintenance Policy . . . . . AR 750-1
Hearing Conservation Program . . . . . DA PAM 40-501
The Army Maintenance Management System (TAMMS) Users Manual . . . . . DA PAM-750-8
Guide for Motor Pool Operations . . . . . DA PAM 750-35
Rapid Field Classification Booklet . . . . . GTA 05-07-013

Forms

Recommended Changes to DA Publications. . . . . DA Form 2028
Equipment Inspection and Maintenance Worksheet . . . . . DA Form 2404/5988-E
Maintenance Request. . . . . DA Form 2407
Maintenance Request Continuation Sheet . . . . . DA Form 2407-1
Equipment Log Assembly (Records). . . . . .DA Form 2408
Product Quality Deficiency Report . . . . . SF 368

END OF WORK PACKAGE

SUPPORTING INFORMATION

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS

SCOPE

This Work Package (WP) includes the BII list for the M915A1 tractor, for the purpose of conducting an inventory of items required for safe and efficient vehicle operation.

NOTE

There are no COEI authorized for the M915A1 truck tractor.

COEI

This list is for information purposes only and is not authorization to requisition replacements. These items are part of the end item. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. COEI items are removed and separately packaged for transportation or shipment only when necessary. Illustrations are provided to help the operator locate and identify the items.

BII

These essential items are required to place an M915A1 tractor in operation, operate it, and perform emergency repairs on it. Although shipped separately packaged, BII must be with an M915A1 tractor during operation and when it is transferred between property accounts. Listing these items is authorization to request/requisition them for replacement, based on authorization of the end item by the Table of Organization and Equipment/Modified Table of Organization and Equipment (TOE/MTOE). Illustrations are provided to help the operator locate and identify the items.

COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS (Contd)

COEI AND BII LIST COLUMNS DESCRIPTION

Column (1) Illus Number—sequential illustration number.

Column (2) National Stock Number (NSN)—item stock number, used for requisitioning.

Column (3) Description, CAGEC, and Part Number—federal item name (in all capital letters) followed by a basic description when needed. The COEI and BII stowage location is also included in this column. The last line, below the description, is the Commercial and Government Entity Code (CAGEC) (in parentheses) and part number.

Column (4) Unit of Issue (U/I)—physical item quantity or count as issued; related to the NSN in column (2).

Column (5) Qty Rqr—quantity required.

COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS (Contd)

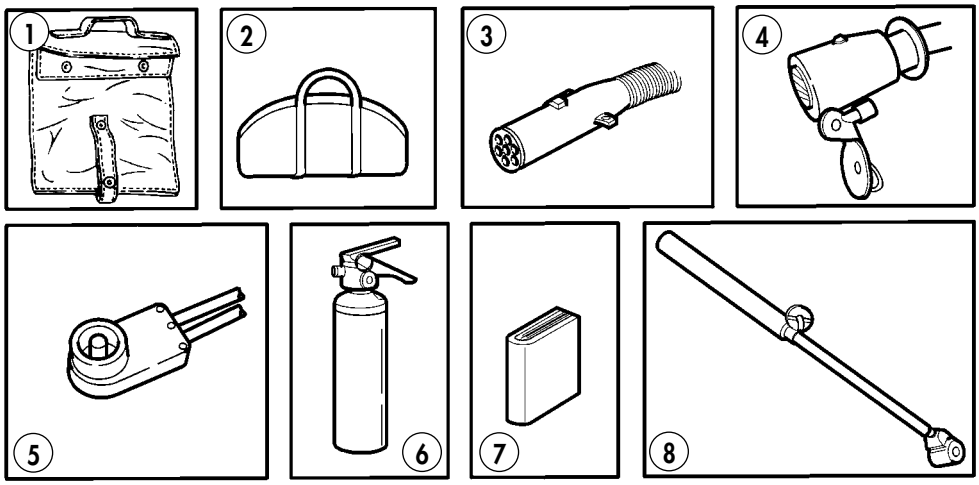


Figure 1. Basic Issue Items.

Table 1. Basic Issue Items List.

(1) ILLUS NUMBER	(2) NSN	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) U/I	(5) QTY RQR
1	2540-00-670-2459	BAG, pamphlet, cotton duck, 3 in. x 9-1/4 in. x 11-1/4 in. (in map compartment) (19207) 7961712	EA	1
2	5140-00-473-6256	BAG, tool (34623) 11655979	EA	1
3	2920-01-082-6214	Cable, 12V, 12 ft, 7-pin (34623) MA73-20001	EA	1
4	2590-01-082-3172	Cable, 24V, 12 ft (34623) MA 365-2000	EA	1
5	6150-01-022-6004	Cable, Slave (19207) 11682336-1	EA	1
6	4210-00-270-4512	Extinguisher, Fire (19207) 7714780	EA	1
7	7510-00-889-3494	Folder, Equipment Record (19207) 11677003	EA	1
8	4910-00-204-2644	Gauge, Tire Pressure 10–120 psi (26759) 7007624	EA	1

COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS (Contd)

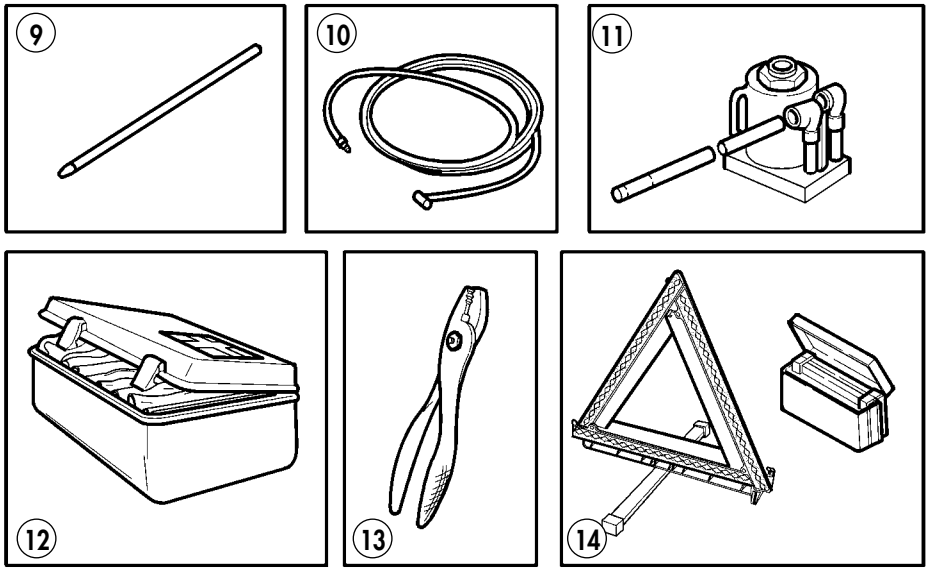


Figure 2. Basic Issue Items.

Table 1. Basic Issue Items List.

(1) ILLUS NUMBER	(2) NSN	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) U/I	(5) QTY RQR
9	5120-01-084-3298	Handle, Wrench (34623) 967556	EA	1
10	4720-01-119-5206	Hose, Tire Inflation (34623) MB 145-20065	EA	1
11	5120-00-224-7330	Jack, Hydraulic 12-Ton (04720) 0120	EA	1
12	6545-00-922-1200	Kit, First Aid (19207) 11677011	EA	1
13	5120-00-494-1911	Pliers, Slip Joint, 8-in. (19207) 11655775-3	EA	1
14	9905-01-090-9819	Reflectors, Vehicle (34623) 950	EA	1

COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEMS (BII) LISTS (Contd)

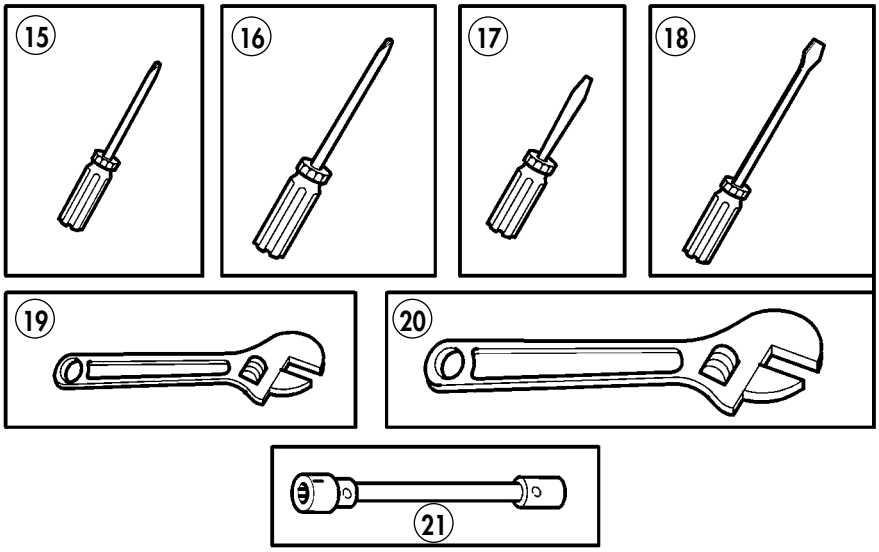


Figure 3. Basic Issue Items.

Table 1. Basic Issue Items List (Contd).

(1) ILLUS NUMBER	(2) NSN	(3) DESCRIPTION, CAGEC, AND PART NUMBER	(4) U/I	(5) QTY RQR
15	5120-00-234-8913	Screwdriver, Cross-Tip, 4-in. (96906) MS 15224-5	EA	1
16	5120-00-224-7375	Screwdriver, Cross-Tip 8-in. (55719) RGP84	EA	1
17	5120-00-222-8852	Screwdriver, Flat-Tip, 4-in. (77948) 225498	EA	1
18	5120-00-278-1280	Screwdriver, Flat-Tip, 8-in. (96906) MS 15219-2	EA	1
19	5120-00-240-5328	Wrench, Adjustable, 8-in. (96906) MS 15461-3	EA	1
20	5120-00-264-3796	Wrench, Adjustable, 12-in. (96906) MS 15461-5	EA	1
21	5120-01-088-2471	Wrench, Lug (19207) 41-W-3838-40	EA	1

END OF WORK PACKAGE

SUPPORTING INFORMATION

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

ADDITIONAL AUTHORIZATION LIST (AAL)

INTRODUCTION

This Work Package (WP) lists additional items that are authorized for support of the M915A1 tractor.

The Additional Authorization List (AAL) identifies items that are not required to accompany the vehicle and are not required to be turned in with the vehicle. All of these items are authorized by the Modified Table of Organization and Equipment (MTOE).

National Stock Numbers (NSNs), descriptions, and quantities are provided to identify and request additional items required to support the M915A1 tractor. These items are listed in alphabetical sequence by item name.

ADDITIONAL AUTHORIZATION LIST (Contd)

Table 1. Additional Authorization List.

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION, CAGEC, AND PART NUMBER	(3) U/I	(4) QTY RQR
5110-00-293-2336	Ax, SG L-BIT, 4-16-40-Wt 35.5–36.5 in. Long (19207) 6150925	EA	1
2540-00-933-6935	Chains, Tire: 11:00-24 Tire (96906) MS 500055-23	PR	2
4730-00-126-8443	Coupling, Hose (31009) 295460-C91	EA	1
5120-00-288-6574	Handle, Mattock-Pick 35.5–36.5 in. Long (19207) 11677021	EA	1
4720-00-740-9662	Hose, Air Connection (19207) 7409662	EA	2
5120-00-243-2395	Mattock, Pick Type 5 lb W/O Handle (19207) 11677022	EA	1
5120-00-293-3336	Shovel, Hand RD-PT D-HDL, Short Size 2 (81348) GGG-5-326	EA	1
2540-01-267-2912	Towbar, Medium Duty (19207) 8383002	PR	1
5340-00-545-2337	Clevis (19207) 8724449	EA	2
5315-00-539-9174	Pin (19207) 10929861	EA	2
5315-00-350-4326	Pin, Locking (19207) 5213744	EA	2
5510-00-491-0307	Hydraulic Jack Support, Wood, 4 x 8 x 9 in. (19207) CPR-103023-2	EA	1

END OF WORK PACKAGE

SUPPORTING INFORMATION

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4 M915A1

EXPENDABLE AND DURABLE SUPPLIES AND MATERIALS LIST

INTRODUCTION

Scope

This Work Package (WP) lists the expendable and durable supplies and materials that are required to operate and maintain the M915A1 tractor. This list is for informational purposes only and is not authorization to requisition items. These items are authorized by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items).

Expendable and Durable Items List Column Explanations

Column (1)—Item Number—sequential number assigned to each item. Item numbers are referenced in operator instructions.

For example, "Coat new shear pin (4) with grease (grease, automotive and artillery GAA, WP 0058, Item 7)."

Column (2)—Level—the lowest level of maintenance that requires the item.

C=Operator/Crew

Column (3)—National Stock Number (NSN)—used to requisition the item.

Column (4)—Item Name, Description, Commercial and Government Entity Code (CAGEC), and Part Number (P/N)—additional information required to identify and requisition the item.

Column (5)—Unit of Issue (U/I)—item physical measurement or count as issued.

EXPENDABLE AND DURABLE SUPPLIES AND MATERIALS LIST (Contd)

Table 1. Expendable and Durable Items List.

(1) ITEM NO	(2) LEVEL	(3) NSN	(4) ITEM NAME, DESCRIPTION, CAGEC, AND P/N	(5) U/I
			ANTIFREEZE, arctic, type IP, ethylene glycol, prediluted (60/40%), recycled engine coolant.	
			(58536) A-A-52624	
1	C	6850-01-464-9096	55 GAL. DRUM	DR
			ANTIFREEZE: type I, ethylene glycol, concentrated (100%), recycled engine coolant, concentration A, recycled.	
			(58536) A-A-52624	
2	C	6850-01-464-9125	1 GAL. CONTAINER	CO
3	C	6850-01-464-9137	5 GAL. CONTAINER	CO
4	C	6850-01-464-9152	55 GAL. CONTAINER	DR
			GREASE, AUTOMOTIVE AND ARTILLERY (GAA):	
			(81349) MIL-G-10924	
5	C	9150-01-197-7688	2-1/4 OZ TUBE	TU
6	C	9150-01-197-7693	14 OZ CARTRIDGE	CA
7	C	9150-01-197-7690	1-3/4 LB CAN	CN
8	C	9150-01-197-7689	6-1/2 LB CAN	CN
9	C	9150-00-197-7692	35 LB PAIL	CN
10	C	9150-01-197-7691	120 LB DRUM	DR
			DIESEL FUEL: ARCTIC	
			(81349) DFA	
11	C	9150-00-286-5282	5 GAL. CAN	CN
12	C	9150-00-286-5284	55 GAL. DRUM (16 gauge)	DR
13	C	9150-00-286-5285	55 GAL. DRUM (18 gauge)	DR
14	C	9150-00-286-5283	BULK	GL
			DIESEL FUEL: DF-1, WINTER	
			(81346) ASTM D 975	
15	C	9140-00-286-5287	5 GAL. CAN	CN
16	C	9140-00-286-5288	55 GAL. DRUM (16 gauge)	DR
17	C	9140-00-286-5289	55 GAL. DRUM (18 gauge)	DR
18	C	9140-00-286-5286	BULK	GL
			DIESEL FUEL: DF-2	
			(81346) ASTM D 975	
19	C	9140-00-286-5295	5 GAL. CAN	CN
20	C	9140-00-286-5296	55 GAL. DRUM (16 gauge)	DR
21	C	9140-00-286-5297	55 GAL. DRUM (18 gauge)	DR
22	C	9140-00-286-5294	BULK	GL

EXPENDABLE AND DURABLE SUPPLIES AND MATERIALS LIST (Contd)

Table 1. Expendable and Durable Items List (Contd).

(1) ITEM NO	(2) LEVEL	(3) NSN	(4) ITEM NAME, DESCRIPTION, CAGEC, AND P/N	(5) U/I
			LUBRICATING OIL: OE/HDO-10 (81349) MIL-L-2104C	
23	C	9150-00-189-6727	1-QT CAN	CN
24	C	9150-00-186-6618	5-GAL. DRUM	DR
25	C	9150-00-265-9429	55-GAL. DRUM, (16-gauge)	DR
26	C	9150-00-191-2772	55-GAL. DRUM, (18-gauge)	DR
27	C	9150-00-183-7807	BULK	GL
			LUBRICATING OIL: OE/HDO-30 (81349) MIL-L-2104C	
28	C	9150-00-186-6681	1-QT CAN	CN
29	C	9150-00-188-9858	5-GAL. DRUM	DR
30	C	9150-00-265-9436	55-GAL. DRUM, (16-gauge)	DR
31	C	9150-00-189-6729	55-GAL. DRUM, (18-gauge)	DR
32	C	9150-00-183-7808	BULK	GL
			LUBRICATING OIL: OE/HDO-50 (81349) MIL-L-2104C	
33	C	9150-00-265-9440	1-QT CAN	CN
34	C	9150-00-265-9442	5-GAL. DRUM	DR
35	C	9150-00-265-9441	55-GAL. DRUM	DR
			LUBRICATING OIL: ICE SUBZERO OEA (81349) MIL-L-46167	
36	C	9150-00-402-4478	1-QT CAN	CN
37	C	9150-00-402-2372	5-GAL. DRUM	DR
38	C	9150-00-491-7197	55-GAL. DRUM	DR
			LUBRICATING OIL: Multi-viscosity 10W/30 (81349) MIL-L-46152	
39	C	9150-00-186-6699	1-QT CAN	CN
40	C	9150-99-256-6411	5-GAL. DRUM	DR
41	C	9150-00-186-6703	55-GAL. DRUM	DR
			DEXRON® ATF	
42		9150-00-698-2382	1-QT CAN	CN
43		9150-00-057-4959	5-GAL. DRUM	DR
44	C	7930-00-282-9699	SOLUTION, SOAP	GL
			CLEANING COMPOUND: windshield washer systems (58536) A-A-59664	
45	C	6850-00-926-2275	BOX, 12-16 OZ BOTTLES	BX

END OF WORK PACKAGE

SUPPORTING INFORMATION

TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6X4
M915A1

STOWAGE AND SIGN GUIDE

INTRODUCTION

This Work Package (WP) shows the locations for stowing basic issue equipment and additional authorized equipment on the vehicle. A sign guide is also provided to show the location of data plates, decals, and stencils located on the vehicle.

STOWAGE AND SIGN GUIDE (Contd)

STOWAGE LOCATIONS

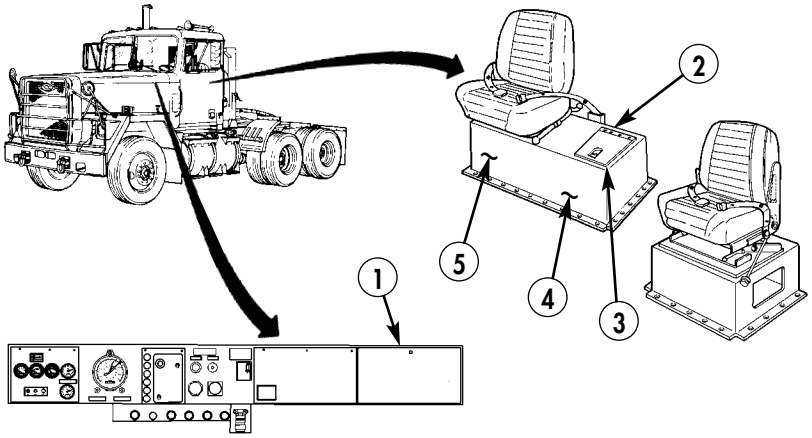


Figure 1. Stowage Locations.

Table 1. Stowage Location.

CALLOUT	STOWAGE LOCATION	BII ILLUSTRATION NUMBER	BII ITEMS STORED
1	Glove Box - Inside	1 7	Pamphlet Bag Equipment Recorder Folder
2	Tool Box - Outside Back	6	Fire Extinguisher
3	Tool Box - Inside Center	11	Hydraulic Jack
4	Tool Box - Outside Front	12	First Aid Kit
5	Tool Box - Inside Under Companion Seat	2 3 4 5 8 9 10 13 14 15 16 17 18 19 20 21	Tool Bag 12V Cable 24V Cable Slave Cable Tire Pressure Gauge Wrench Handle Tire Inflation Hose Slip Joint Pliers Vehicle Reflectors Cross-Tip Screwdriver, 4-in. Cross-Tip Screwdriver, 8-in. Flat-Tip Screwdriver, 4-in. Flat-Tip Screwdriver, 8-in. Adjustable Wrench, 8-in. Adjustable Wrench, 12-in. Lug Wrench

END OF WORK PACKAGE

INDEX

INDEX (Contd)

INDEX (Contd)

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 Tools Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE: 28 Oct 2006

TO: *(Forward to proponent of publication or form) (include ZIP code)* AMSTA-LC-LPIT Tech Pubs, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: *(Activity and location) (include ZIP code)* Co. B, 1st BN, 2nd Brigade Ft. Hood, TX 76445

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 9-2320-283-10	15 May 2006	TECHNICAL MANUAL OPERATOR'S MANUAL FOR TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6 X 4 M915A1

ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON *(Provide exact wording of recommended changes, if possible).*
	2-12					Reads: Latch secures bolster locks. Should read: Latch secures bolster travel locks.
	2-119					Reads: Release clutch pedal (11) slowly. Should read: Release clutch pedal (13) slowly.
	3-4				3-1, item 3	Reads: Engine cranks but fails to start at outside temperatures below 0°F (-27°C). Should read: Engine cranks, but fails to start at outside temperatures below 0°F (-17°C)

**Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE, OR TITLE:	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION:	SIGNATURE:
Pat Smith, 1LT	AV272-4162	Pat Smith, 1LT

DA FORM 2028, FEB 74 REPLACES DA FORM 2028, 1 DEC 68, WHICH WILL BE USED. USAPPC V3.00

TO: *(Forward direct to addressee listed in publication)*	FROM: *(Activity and location) (include ZIP code)*	DATE:
AMSTA-LC-LPIT Tech Pubs, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630		

PART II - REPAIR PARTS AND SPECIAL TOOLS LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION/FORM NUMBER	DATE	TITLE

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE, OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

USAPPC V3.00

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 Tools Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE:

TO: *(Forward to proponent of publication or form) (include ZIP code)* **AMSTA-LC-LPIT Tech Pubs, TACOM-RI** 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: *(Activity and location) (include ZIP code)*

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 9-2320-283-10	15 May 2006	TECHNICAL MANUAL OPERATOR'S MANUAL FOR TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6 X 4 M915A1

ITEM NO.	PAGE NO.	PARAGRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON *(Provide exact wording of recommended changes, if possible).*

**Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE, OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

TO: *(Forward direct to addressee listed in publication)* **AMSTA-LC-LPIT Tech Pubs, TACOM-RI** 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: *(Activity and location) (include ZIP code)*	DATE:

PART II - REPAIR PARTS AND SPECIAL TOOLS LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION/FORM NUMBER	DATE	TITLE

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE, OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

USAPPC V3.00

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 Tools Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE:

TO: *(Forward to proponent of publication or form) (include ZIP code)* **AMSTA-LC-LPIT Tech Pubs, TACOM-RI** 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: *(Activity and location) (include ZIP code)*

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 9-2320-283-10	15 May 2006	TECHNICAL MANUAL OPERATOR'S MANUAL FOR TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6 X 4 M915A1

ITEM NO.	PAGE NO.	PARAGRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON *(Provide exact wording of recommended changes, if possible).*

**Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE, OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

TO: *(Forward direct to addressee listed in publication)* **AMSTA-LC-LPIT Tech Pubs, TACOM-RI** 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: *(Activity and location) (include ZIP code)*	DATE:

PART II - REPAIR PARTS AND SPECIAL TOOLS LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION/FORM NUMBER	DATE	TITLE

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE, OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

USAPPC V3.00

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 Tools Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE:

TO: *(Forward to proponent of publication or form) (include ZIP code)* **AMSTA-LC-LPIT Tech Pubs, TACOM-RI** 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: *(Activity and location) (include ZIP code)*

PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 9-2320-283-10	15 May 2006	TECHNICAL MANUAL OPERATOR'S MANUAL FOR TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6 X 4 M915A1

ITEM NO.	PAGE NO.	PARAGRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON *(Provide exact wording of recommended changes, if possible).*

**Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE, OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

TO: *(Forward direct to addressee listed in publication)* **AMSTA-LC-LPIT Tech Pubs, TACOM-RI** 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: *(Activity and location) (include ZIP code)*	DATE:

PART II - REPAIR PARTS AND SPECIAL TOOLS LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION/FORM NUMBER	DATE	TITLE

PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

PART III - REMARKS *(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)*

TYPED NAME, GRADE, OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE

USAPPC V3.00

By Order of the Secretary of the Army:

PETER J. SCHOOMAKER
General, United States Army
Chief of Staff

Official:

JOYCE E. MORROW
Administrative Assistant to the
Secretary of the Army
0604702

Distribution:

To be distributed in accordance with the Initial Distribution Number (IDN) 380321 requirements for TM 9-2320-283-10.

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

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

SQUARE MEASURE

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

CUBIC MEASURE

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

LIQUID MEASURE

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

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

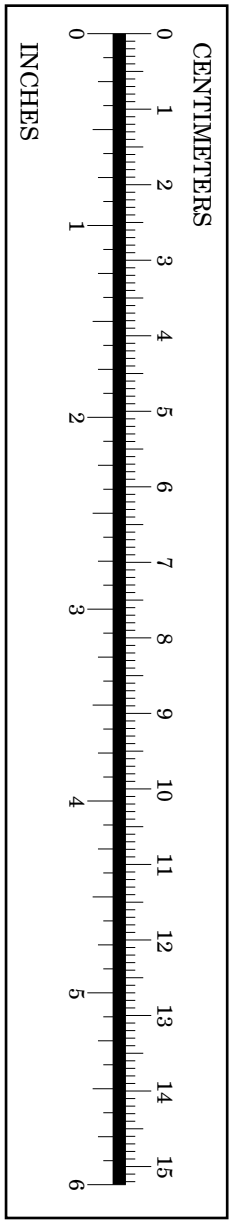
WEIGHTS

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

APPROXIMATE CONVERSION FACTORS

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

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



PIN 053355-000