

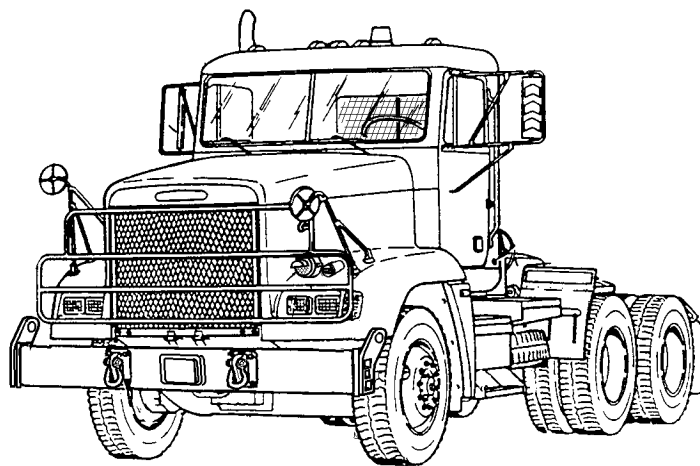
# TM 9-2320-302-10

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## OPERATOR'S MANUAL

FOR

**TRUCK, TRACTOR, LINE HAUL:  
52,000 GVWR, 6 X 4, M915A3  
(NSN 2320-01-432-4847)**



Approved for public release; distribution is unlimited.

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**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**May 2001**

TM 9-2320-302-10

TECHNICAL MANUAL  
TM 9-2320-302-10

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, D.C., 28 May 2001

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**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

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

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## HOW TO USE THIS MANUAL

This manual is designed to help you operate and maintain the M915A3 Tractor Truck.

### FEATURES OF THIS MANUAL:

- A Table of Contents is provided at the beginning of this manual.
- WARNINGS, CAUTIONs, NOTEs, subject headings, and other important information are highlighted in **BOLD** print as a visual aid.

### **WARNING**

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

### **CAUTION**

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

### **NOTE**

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

- Statements and words of particular importance are printed in CAPITAL LETTERS to create emphasis.
- Instructions are located with illustrations that show the specific task on which the operator is working.
- Dashed leader lines used in illustrations indicate that called out items are not visible (i.e. they are located within the structure). Dashed leader lines in the Lubrication Chart indicate that lubrication is required on BOTH sides of the equipment.
- Technical instructions include metric units in addition to standard units. A metric conversion chart is provided on the inside back cover.
- An alphabetical index is provided at the end of the manual to assist in locating information not readily found in the Table of Contents.

### **FOLLOW THESE GUIDELINES WHEN YOU USE THIS MANUAL:**

- Read through this manual and become familiar with its contents before attempting to operate or maintain the truck.
- A Warning Summary is provided
- the beginning of this manual and should be read before attempting to operate or maintain the truck.

TM 9-2320-302-10

**CHAPTER 1**  
**INTRODUCTORY INFORMATION WITH**  
**THEORY OF OPERATION**

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**GENERAL INFORMATION**

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**0001 00****SCOPE**

1. **Type of Manual.** This manual is for use in operating and maintaining the M915A3 Tractor Truck.
2. **Equipment Name and Model Number.** Truck, Tractor, Line Haul: 52,000 GVWR, 6X4, M915A3.
3. **Purpose of Equipment.** The M915A3 Tractor Truck is a 6 X 4 prime mover of semitrailers used primarily to transport containers, bulk cargo, and petroleum products over primary and secondary roads under worldwide climatic conditions in a military environment.

**MAINTENANCE FORMS, RECORDS, AND REPORTS**

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

**REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs)**

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

**CORROSION PREVENTION AND CONTROL (CPC)**

1. Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.
2. While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.
3. If a corrosion problem is identified, it can be reported using SF Form 368 (*Product Quality Deficiency Report*). Use of key words such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem. The form should be submitted to the address specified in DA Pam 738-750.

**OZONE DEPLETING SUBSTANCES (ODS)**

Listing to be provided by requiring activity.

**DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE**

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

**GENERAL INFORMATION - CONTINUED****0001 00*****PREPARATION FOR STORAGE OR SHIPMENT***

For preparation for storage or shipment procedures, refer to TM 9-2320-302-20.

***WARRANTY INFORMATION***

The vehicle is warranted by Freightliner Corporation in accordance with TB 9-2320-302-15. Warranty starts on the date found in block 23, DA Form 2408-9 in the logbook. Report all defects in material or workmanship to your supervisor, who will take appropriate action.

***NOMENCLATURE CROSS-REFERENCE LIST*****COMMON NAME****OFFICIAL NOMENCLATURE**

|                             |                                     |
|-----------------------------|-------------------------------------|
| Cold Start System . . . . . | Ether Quick-Start System            |
| Engine Coolant . . . . .    | Antifreeze, Ethylene Glycol Mixture |
| Gladhand . . . . .          | Quick Disconnect Coupling           |
| Jake Brake . . . . .        | Engine Brake                        |
| Komfort Loc® . . . . .      | Seat Belt Adjustment                |
| TufTrac . . . . .           | Rear Suspension System              |

***LIST OF ABBREVIATIONS*****NOTE**

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

**ABBREVIATION****DEFINITION**

|                |                                 |
|----------------|---------------------------------|
| AAL . . . . .  | Additional Authorization List   |
| ABS . . . . .  | Anti-Lock Brake System          |
| BII . . . . .  | Basic Issue Items               |
| C . . . . .    | Centigrade or Celsius           |
| CID . . . . .  | Cubic Inch Displacement         |
| cm . . . . .   | Centimeter                      |
| COEI . . . . . | Components of End Item          |
| CWS . . . . .  | Collision Warning System        |
| ECU . . . . .  | Electronic Control Unit         |
| F . . . . .    | Fahrenheit                      |
| GCWR . . . . . | Gross Combination Weight Rating |
| GVWR . . . . . | Gross Vehicle Weight Rating     |
| kg . . . . .   | Kilogram                        |

**GENERAL INFORMATION - CONTINUED****0001 00****LIST OF ABBREVIATIONS - CONTINUED**

| <b>ABBREVIATION</b> | <b>DEFINITION</b>                           |
|---------------------|---------------------------------------------|
| km.....             | Kilometer                                   |
| kPa .....           | Kilopascal                                  |
| kph .....           | Kilometers per Hour                         |
| kW.....             | Kilowatt                                    |
| l .....             | Liter                                       |
| lb .....            | Pound                                       |
| lb-ft.....          | Pound foot                                  |
| lph.....            | Liters per Hour                             |
| m .....             | Meter                                       |
| mm .....            | Millimeter                                  |
| PMCS .....          | Preventive Maintenance Checks and Services  |
| psi .....           | Pounds per Square Inch                      |
| rpm .....           | Revolutions per Minute                      |
| SINCGARS.....       | Single Channel Ground/Airborne Radio System |
| TMDE.....           | Test, Measurement, and Diagnostic Equipment |

## EQUIPMENT DESCRIPTION AND DATA

0002 00

***EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES*****1. Characteristics.**

- a. The M915A3 Tractor Truck is used to transport M871, M872, and M1062 semitrailers on line haul missions.
- b. It has a Gross Vehicle Weight Rating (GVWR) of 52,000 lb (23,608 kg) and is equipped with a two-way oscillating, sliding fifth wheel compatible with a two-inch kingpin. Maximum towed load on kingpin is 30,000 lb (13,620 kg).

**2. Capabilities and Features.**

- a. While operating on Class I roads, the fully loaded M915A3 can maintain a speed of 65 mph (105 kph) on level roads and 29 mph (47 kph) while ascending a 3 percent grade. It has a minimum turning diameter, curb-to-curb, of 53 ft 9 in (16.4 m).
- b. Average cruising ranges at Gross Combination Weight Rating (GCWR) with a full tank of fuel will vary based on conditions (e.g., varying loads, prolonged idle, and climatic conditions). Cruising range is optimally 400 miles (640 km).
- c. The M915A3 is equipped with an instrument panel mounted speedometer and tachometer which register truck ground speed and engine speed.
- d. The M915A3 has the following capabilities and features:
  - (1) air-activated front and rear non-asbestos cam brakes with a four-channel anti-lock brake system (ABS) to provide significantly improved handling and braking during emergency stops
  - (2) operation in temperatures from -25°F (-32°C) to +125°F (+52°C), and to -40°F (-40°C) with arctic kit installed
  - (3) start and climb capability of a 20 percent grade at GCWR in both forward and reverse directions
  - (4) fording capability up to 20 in (51 cm) deep for 5 minutes without damage or requiring maintenance before operations can continue
  - (5) two-passenger aluminum corrosion-proof cab with a 90 degree tilt-forward hood for service accessibility
  - (6) six cylinder, 12.7 liter, 430 horsepower, in-line turbocharged diesel engine built by Detroit Diesel
  - (7) Allison HD 4560P six-speed automatic transmission

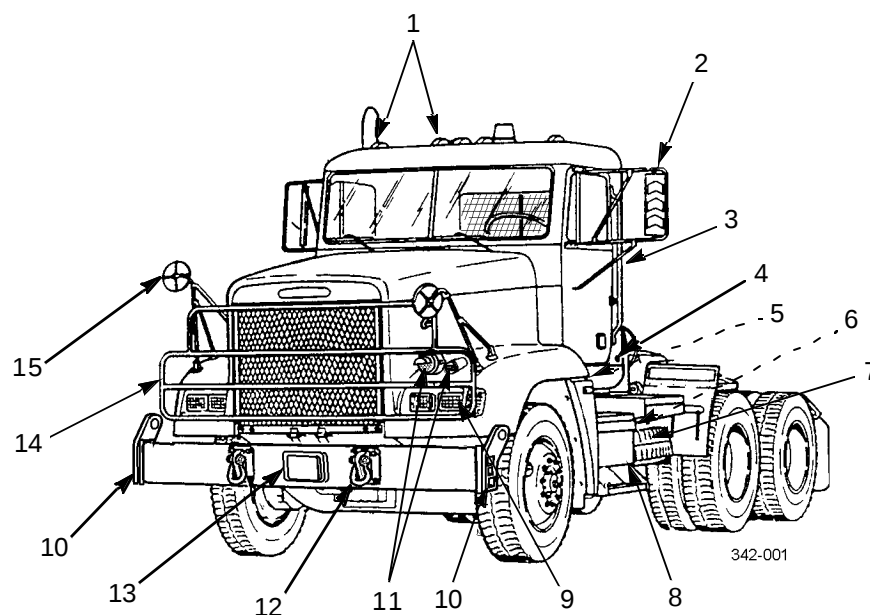
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**EQUIPMENT DESCRIPTION AND DATA - CONTINUED**

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**0002 00****EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES -  
CONTINUED**

- (8) Collision Warning System (CWS) that warns the driver of potentially dangerous driving situations by activating visual and audible alerts.
- e. When operating in arctic conditions, the M915A3 can be equipped with an arctic heater mounted under the cab, above the battery box. This provides heat for the cab and engine cooling system. The arctic heater may be operated prior to starting the engine to provide preheating of engine block.

**LOCATION AND DESCRIPTION OF MAJOR COMPONENTS**

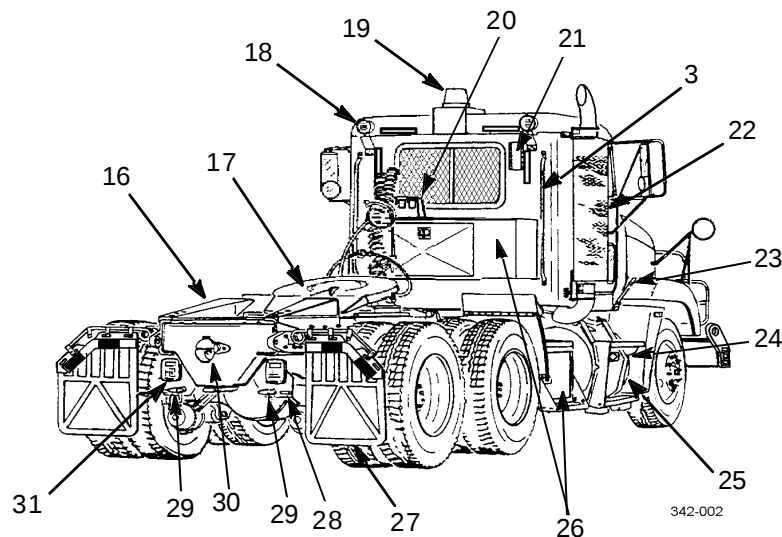
**EQUIPMENT DESCRIPTION AND DATA - CONTINUED****0002 00****LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - CONTINUED**

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

## EQUIPMENT DESCRIPTION AND DATA - CONTINUED

0002 00

## LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - CONTINUED



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

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**EQUIPMENT DESCRIPTION AND DATA - CONTINUED**

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**0002 00*****LOCATION AND DESCRIPTION OF MAJOR COMPONENTS - CONTINUED***

| <b>Key</b> | <b>Component</b>  | <b>Description</b>                                                            |
|------------|-------------------|-------------------------------------------------------------------------------|
| 24         | CWS Side Sensor   | Side looking collision warning system sensor.                                 |
| 25         | Fuel Tank         | Holds fuel. Steps mounted to tank provide access to cab.                      |
| 26         | Storage Boxes     | Provide stowage area for BII and other items.                                 |
| 27         | Mud Flaps         | Prevent water and debris from spraying up on passers by or towed semitrailer. |
| 28         | Blackout Lights   | Used during blackout conditions.                                              |
| 29         | Trailer Gladhands | Provide air supply for trailer brakes.                                        |
| 30         | Pintle Hook       | Coupling device for trailers with lunettes.                                   |
| 31         | Taillights        | Contain composite tail, stop, backup, and turn signal lights.                 |

**EQUIPMENT DESCRIPTION AND DATA - CONTINUED****0002 00****EQUIPMENT DATA****Dimensions:**

|                             |                   |
|-----------------------------|-------------------|
| Length (Overall) . . . . .  | 276.0 in (701 cm) |
| Height (Overall). . . . .   | 118 in (300 cm)   |
| Width (Overall) . . . . .   | 100 in (254 cm)   |
| Wheelbase . . . . .         | 162 in (411 cm)   |
| Ground Clearance . . . . .  | 9 in (23 cm)      |
| Angle of Approach . . . . . | 27°               |

**Weights:**

|                               |                        |
|-------------------------------|------------------------|
| Curb . . . . .                | 19,080 lb (8662 kg)    |
| GVWR. . . . .                 | 52,000 lb (23,608 kg)  |
| GCWR . . . . .                | 105,000 lb (46,670 kg) |
| Front Axle (Loaded) . . . . . | 12,000 lb (5448 kg)    |
| Rear Axle (Loaded) . . . . .  | 40,000 lb (18,160 kg)  |

**Capacities:**

|                                         |                          |
|-----------------------------------------|--------------------------|
| Engine Oil (Refill w/Filters) . . . . . | 41 qt (38.81 l)          |
| Cooling System . . . . .                | 65 qt (61.5 l)           |
| Fuel Tank. . . . .                      | 100 gal. (378.5 l)       |
| Power Steering Reservoir . . . . .      | 2 qt (1.9 l)             |
| Transmission . . . . .                  | 51 qt (48 l)             |
| Rear Axle (Forward/Rear). . . . .       | 13/14.5 qt (12.3/13.7 l) |

**Engine:**

|                                        |                                          |
|----------------------------------------|------------------------------------------|
| Manufacturer . . . . .                 | Detroit Diesel                           |
| Type . . . . .                         | 4-stroke, in-line<br>turbocharged diesel |
| Model. . . . .                         | DDEC IV                                  |
| Cylinders . . . . .                    | 6                                        |
| Displacement. . . . .                  | 755 CID (12.7 l)                         |
| Torque @ 1200 rpm. . . . .             | 1400 lb-ft (1898 N·m)                    |
| Maximum Horsepower @ 2100 rpm. . . . . | 430 (320.6 kW)                           |
| Maximum Governed Speed. . . . .        | 2100 rpm                                 |
| Oil Filter Type . . . . .              | 2 full flow,<br>replaceable elements     |
| Oil Filter Quantity . . . . .          | 2                                        |

**EQUIPMENT DESCRIPTION AND DATA - CONTINUED****0002 00****EQUIPMENT DATA - CONTINUED****Fuel System:**

Type..... diesel fuel injected

Fuel Filter Type..... 1 primary, 1 secondary  
replaceable element

Air Cleaner:

Type..... dry element

Quantity..... 1

**Cooling System:**

Radiator Working Pressure..... 10 psi (69 kPa)

Coolant Inhibitor Filter..... 1 replaceable element

**Electrical System:**

Type..... dual 12/24 volt

Batteries:

Quantity..... 4

Voltage..... 12 volt

**Transmission:**

Manufacturer..... Allison

Model..... HD 4560P

Type..... 6-speed automatic

Shift Selector..... pushbutton

**Front Axle:**

Manufacturer..... Rockwell

Type..... I-beam, FF961

Rated Capacity..... 12,000 lb (5448 kg)

Maximum Steering Angle..... 32°

**Rear Axle (Tandem):**

Manufacturer..... Rockwell, RT 40-145P

Rated Capacity..... 38,000 lb (17,252 kg)

Ratio..... 4.44:1

Inter-axle Differential..... bevel gear

Traction Control..... air controlled