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KKK-T-2807
November 12, 1992
SUPERSEDING
MIL-T-82073D
27 February 1987

FEDERAL SPECIFICATION

TRUCKS, LUBRICATING AND FUEL SERVICING 4 BY 2 AND 4 BY 4

This specification is approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers commercial platform trucks equipped with lubricating and fuel servicing facilities necessary to provide complete service to equipment in the field.

1.2 Classification. Truck shall be of the following type and styles, as specified (see 6.2):

Type B - 24,000 pounds (lbs) gross vehicle weight (gvw) (minimum)

Style I - 4 by 2 truck chassis
Style II - 4 by 4 truck chassis

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

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*-------------------------------------------------------------------------*
*Beneficial comments (recommendations, additions, deletions) and any pertinent*
*data which may be of use in improving this document should be addressed to:  *
*Commanding Officer (Code 156), Naval Construction Battalion Center,          *
*621 Pleasant Valley Road, Port Hueneme, CA  93043-4300, by using the         *
*Standardization Document Improvement Proposal (DD Form 1426) appearing at    *
*the end of this document or by letter.                                       *
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FSC 2320

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Federal Specifications

W-B-131 - Battery, Storage, Vehicular, Ignition, Lighting and Starting
ZZ-T-381 - Tires, Pneumatic, Vehicular (Highway)

Federal Standards

FED-STD 123 - Marking for Shipment
FED-STD-297 - Rustproofing of Commercial (Nontactical) Vehicles
FED-STD-595 - Colors

Military Specifications

MIL-L-4387 - Lubrication Dispensing, Equipment Accessories
MIL-V-62038 - Vehicle, Wheeled, Preservation for Shipment and Storage of

Military Standards

MIL-STD-129 - Marking for Shipment and Storage
MIL-STD-209 - Slinging and Tiedown Provisions for Lifting and Tying Down Military Equipment
MIL-STD-1223 - Nontactical Wheeled Vehicles Treatment, Painting, Identification Marking & Data Plate Standards
MIL-STD-1791 - Design For Internal Aerial Delivery In Fixed Wing Aircraft
MS51335 - Pintle Assembly, Towing, 18,000 Lbs Capacity, Manual Release

(Unless otherwise indicated, copies of federal and military specifications and standards are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

Department of Transportation (DoT)

Federal Motor Vehicle Safety Standards and Regulations
Federal Motor Carrier Safety Regulations

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

Environmental Protection Agency (EPA)

Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines: Certification and Test Procedures
Interstate Motor Carrier Noise Emission Standards
Motor Vehicle Air Pollution Standards

(Application for copies should be addressed to the Public Affairs Office, Environmental Protection Agency, Rockville, MD 20852.)

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National Bureau of Standards (NBS)

H44 - Specifications, Tolerances, and Regulations for Commercial Weighing and Measuring Devices

(Application for copies should be addressed to Superintendent of Documents, Government Printing Office, Washington, DC 20402.)

(Copies of specifications, standards, handbooks, drawings, publications, and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Non-Government publications. The following document(s) form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents which are current on the date of the solicitation (see 6.2).

Society of Automotive Engineers, Inc. (SAE)

SAE J318 - Air Brake Gladhand Service (Control) and Emergency (Supply) Line Couplers - Trucks, Trucks-Tractors, and Trailers
SAE J350 - Spark Arrester Test Procedure for Medium Size Engines
SAE J534 - Lubrication Fittings
SAE J537 - Storage Batteries
SAE J551 - Performance Levels and Methods of Measurement of Electromagnetic Radiation from Vehicles and Devices (30-1000 MHz)
SAE J560 - Seven-Conductor Electrical Connector for Truck-Trailer Jumper Cable
SAE J588 - Turn Signal Lamps for Use on Motor Vehicles Less Than 2032 mm in Overall Width
SAE J589 - Turn Signal Switch
SAE J682 - Rear Wheel Splash and Stone Throw Protection
SAE J683 - Tire Chain Clearance - Trucks, Buses (Except Suburban, Intercity, and Transit Buses), and Combinations of Vehicles
SAE J688 - Truck Ability Prediction Procedure
SAE J704 - Openings for Six- and Eight-Bolt Truck Transmission Mounted Power Take-Offs
SAE J844 - Nonmetallic Air Brake System Tubing
SAE J1349 - Engine Power Test Code - Spark Ignition and Diesel

(Application for copies should be addressed to the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.)

Tire and Rim Association, Inc. (TRA)

TRA Yearbook

(Application for copies should be addressed to the Tire and Rim Association, Inc., 175 Montrose West Avenue, Copley, OH 44321.)

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Underwriters Laboratories Inc. (UL)

UL 87 - Power-Operated Dispensing Devices for Petroleum Products
UL 299 - Dry Chemical Fire Extinguishers
UL 842 - Valves for Flammable Fluids

(Application for copies should be addressed to the Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification takes precedence. Nothing in this specification, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Description. The lubrication and fuel servicing truck shall have a platform body mounted on a diesel- or gasoline-engine-driven chassis with cab. The truck shall be equipped essentially with diesel-engine-driven air compressor; gasoline, diesel fuel, water, and waste oil tanks; lubricating and hydraulic fluid containers; hose reels; dispensing equipment; air-operated lifts; and other equipment and accessories as are specified herein. The chassis model furnished shall be not older than the chassis manufacturer’s current model on the date of invitation for bids.

3.2 First production vehicle. The contractor shall furnish a truck for first production vehicle inspection.

3.3 Standard truck, components, and accessories. Except as specified herein, the truck, components, and accessories shall be the manufacturer’s standard or optional items which meet or exceed the requirements of this specification. All items shall be as represented and rated in the manufacturer’s sales information, including special or mounted equipment. Sales information shall be limited to specifications and technical material, identical to that furnished to authorized company representatives for selection of truck models and components. Truck, components, assemblies and accessories to be provided hereunder are standard or optional commercial products for the purpose of this specification. Such items shall be construed as commercial motor vehicle products, and shall comply with all DoT Federal Motor Vehicle Safety Standards and Regulations applicable on the date of manufacture.

3.3.1 Drain plugs. Drain plugs installed in manual transmission, transfer case, and rear axle shall be of the permanent magnet type.

3.3.2 Heavy-duty cooling system. A heavy-duty cooling system shall be furnished that shall maintain engine coolant at a temperature below the boiling point with truck loaded to rated gvw and operated at an altitude of 10,000 feet

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above sea level, or in an ambient air temperature of not less than 125 degrees (o) Fahrenheit (F).

3.3.3 Coolant system and indicators. Coolant system shall include a de-aeration system, a surge tank or a coolant recovery reservoir of not less than 2-quart capacity. A low coolant level or high coolant temperature alarm buzzer and red indicator warning light shall be provided on the cab dash instrument panel.

3.3.4 Towing device. Not less than two hooks or loops for towing the truck shall be furnished on the front of the truck.

3.3.5 Trailer towing package. A trailer towing package consisting of a pintle, safety chain attachment devices, a lighting receptacle, and associated reinforcements and wiring shall be installed on the rear of the vehicle. The pintle shall be of the type conforming to MS51335-2. The pintle shall be installed on the chassis frame with reinforcements to transfer pintle loads directly to the chassis rails. The rearmost portion of the pintle shall be forward, but not more than four inches forward, of the rearmost part of the vehicle. Two trailer safety chain attachment devices, one adjacent to each side of the pintle, shall be provided. Each attachment device shall provide an ultimate strength at least equal to the gvw of the truck furnished and comply with DoT Federal Motor Carrier Safety Regulations, section 393.70. The attachment devices shall be capable of accommodating a standard grab hook (2-3/16 inches wide, 47/64 inch thick and 31/64 inch throat width) for a 3/8-inch chain. The lighting receptacle conforming to SAE J560 with its conductors connected and color coded as specified therein, shall be mounted in a readily accessible location near the pintle.

3.3.6 Wheel splash and stone throw protection. The vehicle shall have a rigid splash shield ahead of the rear wheels and rubber mud flaps to the rear of the rear wheels. A metal strip, not less than 1/8-inch thick and not less than 1-inch wide, extending the entire width of the mud flap, shall be installed to prevent bolt heads or bolt nuts from damaging the mud flap. Splash shield and mud flap installations shall conform to the rear wheel splash and stone throw protection provisions of SAE J682.

3.3.7 Engine hour meter. An engine hour meter, having totalizing mechanism of not less than 9,999 hours, shall be furnished for the truck chassis engine to register accurately the number of hours of operating time. The meter shall be of rugged construction to ensure continuous trouble-free performance under severe operating conditions. Engine hour meter shall be mounted on the cab instrument panel or in the engine compartment in a readable location.

3.3.8 Air pollution control. Trucks shall comply with the EPA regulations governing control of air pollution from new motor vehicles and new motor vehicle engines in effect on the date of manufacture. In addition, trucks destined for California shall comply with State of California regulations governing air pollution control in effect on the date of manufacture.

3.3.9 Sound level. The interior sound level shall conform to DoT Federal Motor Carrier Safety Regulations, section 393.94. The vehicle exterior sound level shall conform to EPA Noise Emission Standards for Transportation Equipment, Medium and Heavy Trucks.

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3.3.10 Radio interference suppression. Unless otherwise specified (see 6.2), the vehicle shall be suppressed to limit electromagnetic radiation in accordance with SAE J551. Any body equipment emitting radiation shall be suppressed to the same level as the vehicle chassis.

3.3.11 Accessibility. The design of the vehicle and optional equipment shall permit access for routine servicing and shall permit access for replacement and adjustment of component parts and accessories with minimal disturbance of other components and systems.

3.4 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this specification are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification unless otherwise specified.

3.5 Truck weights, ratings, and dimensions.

3.5.1 Curb weight. Curb weight shall include weight of chassis and cab, with all attachments, accessories, equipment, body, full complement of fuel, lubricant, and coolant.

3.5.2 Weight rating. The gvw rating shall consist of curb weight, operator (weight computed at 175 lbs), and payload, to provide not less than the specified gvw.

3.5.3 Weight distribution. The distribution of the gvw for the purpose of establishing suspension, axle, and tire capacities shall be determined with the payload distributed over the truck body load area in the same manner as intended for vehicle end use.

3.5.4 Ratings. Component and vehicular ratings shall not be raised to meet the requirements of this specification. Minimum gvw shall be 24,000 lbs for type B truck.

3.5.5 Cab-to-axle. The cab-to-axle dimensions for Type B shall be not less than 100 inches.

3.5.6 Overall width. The overall width of the vehicle exclusive of mirrors, lights, reflectors, and tires shall be not more than 96 inches. Width over tires shall be not more than 100 inches.

3.6 Performance.

3.6.1 Speeds. High and low speed requirements shall be met with truck loaded to specified gvw. For style II trucks, performance requirements shall be met with the front wheel disengaged, except that when equipped with interaxle

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compensating devices, the truck shall meet the performance requirements with front wheel drive engaged.

3.6.1.1 High speed gradeability. Type B truck shall ascend a 2.5 percent continuous grade at 50 miles per hour (mph). Gradeability shall be verified with calculations in accordance with SAE J688 (see 6.4). Gradeability requirements shall be met with the transmission in direct drive and, when a multispeed axle or auxiliary transmission is furnished, with axle or auxiliary transmission in high speed ratio.

3.6.1.2 Low speed. Low speed shall be calculated with engine operating at not less than 35 percent of recommended governed speed, and shall provide a truck speed of not more than 4.5 mph for style I truck and not more than 3.5 mph for style II truck.

3.6.1.3 Maximum geared speed. Maximum geared speed for style I trucks at engine governed speed shall be not less than 58 mph. Conformance to geared speed specified shall be determined by calculating with the following formula:

$$\text{Maximum geared speed for} = \frac{\text{governed speed (revolutions per minute (rpm))}}{\text{total gear reduction X tire factor}}$$

3.6.2 Brake performance. Service brakes shall comply with the performance requirements specified in DoT Federal Motor Carrier Safety Regulations, section 393.52. Service brakes shall control and hold the truck, loaded to the rated gvw, on a 30 percent grade. Parking brake shall hold the truck, loaded to the rated gvw, headed either up or down the grade, without slipping on a 30 percent grade.

3.7 Chassis components.

3.7.1 Engine. The engine furnished shall be the chassis manufacturer’s standard or optional engine for the commercial model truck which meets or exceeds the requirements of this specification.

3.7.1.1 Diesel engine. Unless otherwise specified, the vehicle shall be equipped with liquid cooled, compression ignition, two-stroke or four-stroke cycle diesel engine, with not less than four cylinders. Engine net horsepower shall be in accordance with SAE J1349. A fan clutch to reduce fan speed automatically, when not required for engine cooling, shall be provided.

3.7.1.2 Gasoline engine. When specified (see 6.2), a gasoline engine shall be furnished and shall be the chassis manufacturer’s standard or optional engine for the commercial model truck which meets or exceeds the requirements of this specification. The truck shall be equipped with a liquid cooled, internal combustion, four-stroke cycle gasoline engine with not less than six cylinders. The engine furnished shall produce the required vehicle performance when operated on unleaded fuel with a research octane rating of 91, at engine speed not more than manufacturer’s recommended operating speed. The engine shall be capable of continuous, warranted operation on unleaded fuel. The rated net torque output of the engine shall be not less than 265 pound-feet. Engine net torque ratings and net horsepower shall be determined in accordance with SAE J1349. A fan clutch to reduce fan speed automatically, when not required for engine cooling, shall be provided.

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3.7.1.3 Oil filter. A full flow type oil filter shall be furnished.

3.7.1.4 Governor. An engine governor shall be furnished and set and sealed to limit engine to engine manufacturer's maximum recommended operating speed.

3.7.1.5 Coolant temperature control. Thermostatic control of engine coolant temperature shall be provided. On diesel-engine-driven vehicles, the control shall include partial thermostatic control of coolant flow through the radiator and thermostatically controlled radiator shutters or complete thermostatic control of all coolant flow through the radiator.

3.7.1.6 Silicon rubber hoses. Silicon rubber radiator and heater hoses shall be furnished.

3.7.2 Electrical systems. Electrical systems shall be in accordance with DoT Federal Motor Carrier Safety Regulations, sections 393.27 through 393.31 and 393.33.

3.7.2.1 Ignition system. For gasoline-engine-driven vehicles, 12-volt (V) direct current (DC) ignition system shall be furnished. Alternator of not less than 40-ampere (A) rated capacity and which provides not less than 16A DC output at normal engine idle speed shall be furnished.

3.7.2.2 Starting system. For diesel-engine-driven vehicle, a 12V or 24V DC starting system, with 12V lighting system, and not less than a 60A alternator, shall be furnished. The starter shall have an interlock system preventing engine cranking except when the transmission is in a neutral gear ("Park" is neutral gear). Engine starting equipment shall include an ether starting system or glow plug. If an ether system is furnished, it shall be of the measured shot type. Measured shot type ether system shall be key operated from the driver's compartment and shall be inoperative with the engine warm. Complete provisions for a replaceable reservoir of not less than 12 fluid ounces shall be furnished.

A reservoir need not be furnished.

3.7.2.3 Lighting. All vehicle lights, reflectors, and wiring shall be as specified herein and shall conform to DoT Federal Motor Carrier Safety Regulations, sections 393.12, 393.19, 393.20, and 393.22 through 393.26d. Lights and reflectors shall not be mounted on vertical surface rub rails unless recessed and fully protected or mounted on vehicle bumpers. Unused headlight cavities shall be covered flush with the adjoining body surfaces in a neat, workmanlike manner. Painted color shall be compatible with the surrounding area.

3.7.2.4 Turn signals. Turn signal lamps shall conform to SAE J588. Operating units shall conform to SAE J589, class A, and shall be mounted on the steering column. Vehicle shall be provided with double-faced front signal units and single-faced rear signal units installed in accordance with SAE J588. Turn signal operating units shall have a visible and audible flash indicator. Turn signals shall not be mounted on the engine compartment hood.

3.7.2.5 Batteries. Each battery shall be of 12V potential. The total reserve capacity rating and total cold cranking ampere rating at oF, both measured in accordance with SAE J537, shall be not less than as specified in

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table I. Batteries shall be of the maintenance-free type having the maintenance-free characteristics listed in W-B-131.

TABLE I. Batteries.

Engine type and engine displacement	Reserve capacity (minutes)	Cold cranking (amperes)
Gasoline (all)	110	450
Diesel (less than 400 cubic inches)	320	910
Diesel (400 cubic inches and over)	400	1200

3.7.2.6 Floodlights. Two sealed beam floodlights not less than 4-1/2 inches in diameter shall be furnished. Floodlights shall be mounted on swivel mounts, one on each side of rear cab top for illuminating the work area. Toggle switch for each light shall be located on the cab dash instrument panel.

3.7.3 Fuel system. Fuel system shall conform to DoT Federal Motor Carrier Safety Regulations, sections 393.65 and 393.67.

3.7.3.1 Air cleaner. Manufacturer’s standard air cleaner shall be furnished.

3.7.3.2 Fuel tank(s). Fuel tank(s) shall be manufacturer’s standard with not less than 30 gallons total capacity. When more than one tank is furnished on diesel-engine-driven vehicles, means shall be provided to assure equalized fuel level in both tanks. When more than one tank is furnished on gasoline-engine-driven vehicles, a selector valve connecting either tank to engine fuel intake shall be provided and means shall be provided to monitor the fuel level of either tank from a single fuel gage.

3.7.3.3 Fuel and water separator. Manufacturer’s standard or optional fuel filter shall be provided. A fuel and water separator shall be furnished. The separator shall include a water coalescer and a drain valve. A combination filter/separator may be furnished.

3.7.4 Exhaust system. The exhaust system shall conform to DoT Federal Motor Carrier Safety Regulations, section 393.83. A spark arrester, having an 80 percent arresting efficiency when rated in accordance with SAE J350, shall be furnished, unless a turbocharged engine is provided. Vertical exhaust mufflers capable of being reached easily by personnel entering or leaving either side of the cab shall be provided with a heat shield. Vertical exhaust systems shall be furnished with a hinged rain cap. All portions of the vehicle exhaust system which project to the rear of the cab shall be shielded from fuel, lubricants and hydraulic fluid sources. The shield(s) shall direct fluids spilled from the tank and drums, leaking down the tank and drums, or spraying from any leaking seals, away from the exhaust system. Shields shall be separated not less than 1-1/2 inches, measured vertically, and not less than 6 inches, measured horizontally, from the nearest exhaust system component. The shielding shall not interfere with servicing any component requiring periodic servicing.

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3.7.5 Gear train.

3.7.5.1 Automatic or semiautomatic transmission. Unless otherwise specified (see 6.2), the vehicle shall be provided with an automatic or semiautomatic transmission. Input torque capacity of the transmission shall be at least equal to the maximum torque delivered by the engine. The transmission shall include a hydraulic torque converter and not less than four gear ratios. Normal driving range selector position shall provide not less than four gear ratios without movement of the selector. The transmission shall be provided with SAE J704 power takeoff opening(s).

3.7.5.1.1 Transmission. When specified (see 3.7.5.1), a manually shifted transmission shall be provided on the truck. Input torque capacity of the transmission shall be at least equal to the maximum torque delivered by the engine. Transmission shall be provided with two power takeoff openings for style I and one power takeoff opening for style II, conforming to SAE J704. Transmission shall provide for maximum ease of shifting in all speeds.

3.7.5.1.2 Speeds. Truck shall be provided with the number of speeds specified in table II. When more than four forward speeds are required, multispeed transmission, auxiliary transmission, or multispeed axle shall be furnished. Gear ratios in the transmission and other gear selection equipment shall be matched to provide a progressive shifting pattern throughout the complete range, and shall provide the required truck performance specified in 3.6.1.

TABLE II. Transmission requirements.

Truck style	Minimum number of forward speeds
I	4
II	8

3.7.5.1.3 Transfer case. On style II truck, a transfer case shall be provided. Unless the transfer case is equipped with device which compensates for differential torque and speeds between front and rear axles, transfer case shall provide for driver selection of either two-wheel or four-wheel drive. When furnished, interaxle compensating devices shall provide for positive transfer of power to all driving axles.

3.7.5.1.4 Drive hubs. When specified for style II truck (see 6.2), manually operated drive hub for disengaging front wheels from power train shall be provided, unless the truck is equipped with interaxle compensating device between front and rear axles.

3.7.5.1.5 Clutch. Clutch shall be the largest capacity clutch offered for the model and class vehicle and engine furnished, with clutch torque capacity exceeding maximum delivered engine torque.

3.7.6 Drive line components. Drive line components shall be adequate to transmit the maximum delivered torque of the engine, as developed through the maximum gear train reduction.

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3.7.7 Frame. Chassis frame shall be the manufacturer's standard for the truck furnished. Frame shall have reinforcement extending at least from the front suspension rear hanger bracket to the rear spring front hanger bracket. Reinforcements shall provide sufficient structural strength in the chassis frame through increased bending moment to at least equal the loads imposed. Chassis frame rails shall not project beyond the rear end of the body.

3.7.8 Suspension. Truck shall be equipped with suspension system with components having a rated capacity at least equal to the load imposed on each member, measured at the ground, with truck loaded to rated gvw. When suspension capacity is rated at the spring pads, unsprung weight shall be deducted. Truck shall be equipped with hydraulic, double-acting shock absorbers at the front wheels.

3.7.9 Axles. Axle rating shall be at least equal to the load imposed on each axle, measured at the ground, with truck loaded to rated gvw. A single reduction rear axle shall be furnished. Gear ratio shall provide performance specified in 3.6.

3.7.9.1 Traction control. The vehicle shall be furnished with a traction control on the rear axle. The traction control shall actuate automatically to ensure that power is transmitted to the wheels having traction when the opposite wheel loses traction. Maximum traction capabilities shall be maintained at all times under each drive wheel for the life of the vehicle.

3.7.10 Wheels, rims, tires, and tubes. Unless wide base tires are specified, the truck shall be equipped with single front and dual rear wheels. Rim and tire ratings shall conform to TRA recommendations for the type and size of tires furnished. Tire and rim sizes shall be the same for all wheels on each truck. Unless otherwise specified (see 6.2), wheels shall be of the 10 stud disc type.

3.7.10.1 Tires. Tires shall be tube or tubeless type with highway tread. Tires shall be of rated capacity at least equal to the load imposed on each tire, measured at each wheel, at the ground, with truck loaded to rated gvw. Steel belted radial or, when specified (see 6.2), bias ply tires shall be furnished. Tires shall conform to TRA recommendations or to ZZ-T-381 with a size designation system the same as the TRA.

3.7.10.2 Tubes. Tubes, when furnished, shall be of heavy-duty type, and shall be of proper size for tires furnished. Tire flaps shall be provided in accordance with TRA recommendations.

3.7.10.3 Tire chain clearance. Clearance shall be provided for installation and use of tire chains in accordance with SAE J683. Allowance for spring deflection shall be included.

3.7.10.4 Carrier for spare tire assembly. A carrier for a spare wheel assembly shall be installed in a readily accessible location on the vehicle. Threaded fasteners, when used to secure the spare tire carrier, shall be constructed of or plated with corrosion-resistant material. The carrier design shall enable removal or mounting of spare wheel assembly using only tools specified in 3.7.17.1.

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3.7.10.5 Spare tire assembly. A spare tire assembly shall be furnished. The spare tire assembly shall include an inflated spare tire mounted on the spare wheel or rim. The spare tire shall be the same size, tread design and load range (ply rating) as the tire furnished on the vehicle.

3.7.11 Brakes. Brakes shall conform to DoT Federal Motor Carrier Safety Regulations, sections 393.40 through 393.43 and 393.45 through 393.52.

3.7.11.1 Air brakes. The vehicle shall be equipped with full air brakes. The braking system, complete with all necessary components, shall include:

a. Air compressor, unloader-head type, engine driven and engine lubricated, air or water cooled, and having a capacity of not less than 7-1/4 cubic feet per minute.
b. Air storage reservoir(s) with not less than 2,000 cubic inches total capacity; each tank equipped with drain, and with safety and check valves between compressor and last reservoir tank.
c. Foot control, suspended or treadle type.
d. Air control valves.
e. Air pressure gage, visible to the driver.
f. Low air pressure warning, visible and audible.
g. Service brake stop lamp switch.
h. Automatic moisture ejector.
i. An air dryer shall be furnished.
j. Automatic slack adjusters.

3.7.11.2 Trailer brake control system. In addition to the components specified in 3.7.11.1, a trailer brake control system shall be furnished. The trailer brake control system shall include:

a. Identification of emergency and service lines.
b. Coincident control of trailer brakes with prime mover foot control.
c. Independent hand control for trailer brakes.
d. Towing vehicle protection valve with dash control and automatic breakaway feature.
e. Trailer stoplight control operable with foot brake and with hand control for trailer brakes.
f. Two SAE J844 coiled air hoses, not less than 110 inches long, when fully extended, with SAE J318 gladhand couplers on both ends of hoses. The hoses shall be packaged and stowed in the vehicle tool compartment for shipping.
g. Air connectors for trailer with SAE J318 gladhand couplers mounted at the rear of the vehicle, located to preclude interference with trailer.
h. Dummy gladhand couplers with chains.

3.7.12 Cab. Manufacturer shall furnish a full-width cab. Cab doors shall be equipped with locks, operable from inside the cab through mechanical linkage, with at least the curb side door equipped with external, key-operated lock. Drip rails shall be furnished above cab doors. Cab shall have upholstered, full-width, adjustable seat and back or individual, adjustable driver’s seat and individual passenger seat. Interior lighting shall be provided. Manufacturer’s

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standard fastenings and two pairs of seat belts shall be furnished and installed. The color of the upholstery and the interior finish shall be compatible with the exterior color. White upholstery shall not be furnished.

3.7.13 Steering. Manufacturer's standard power steering shall be furnished.

3.7.14 Windshield wipers and washers. Truck shall be equipped with dual windshield wipers and windshield washers. Windshield wipers shall be multispeed type and operated by electric or air motor(s).

3.7.15 Bumper. Unless the bumper is an integral part of the vehicle cab, a channel type bumper shall be provided.

3.7.16 Rear end protection. Rear end of truck shall be protected in accordance with DoT Federal Motor Carrier Safety Regulations, section 393.86.

3.7.17 Tool stowage. Stowage space of sufficient size to accommodate vehicle jack, hand tools, antiskid chains, and emergency reflective triangles shall be furnished for retaining equipment during vehicle operation. Stowage space for these tools may be furnished inside the cab. When stowage space for these tools is located outside of cab, it shall be weatherproof and shall provide for locking with a padlock.

3.7.17.1 Tools. When specified (see 6.2), each vehicle shall be furnished with tools required for exchanging mounted tire assembly with the spare assembly, and shall include a jack, jack handle and wheelnut wrench. The jack shall be of such closed height as to permit its location under axle, or other satisfactory lift point, at any wheel with the tire flat. The jack, without blocking, shall be capable of raising any wheel of the loaded vehicle to a height adequate to permit removal and replacement of wheel and tire assembly.

3.7.18 Heater and defroster. Hot water heater shall be provided. Heater shall have fresh air intakes. Discharge outlets shall be provided to direct air to floor and to defroster louvers. Heater shall be complete with blower and mounted controls convenient to the driver.

3.7.19 Controls and operating mechanisms. All controls and operating mechanisms shall be located for left-hand drive. Controls shall be complete and conveniently operable by the driver. Lever controls shall be designed and located to permit easy entrance and exit of operator to and from driver's compartment. Instruments and controls shall be identified as to their function and installed in a manner to facilitate removal and servicing. Instruments shall be panel mounted.

3.7.20 Accessories and equipment. Chassis equipment shall be complete with all accessories furnished as standard equipment by the manufacturer. The following minimum equipment shall be furnished:

a. Key-operated ignition switch.
b. Ammeter, charging indicator, or voltmeter.
c. Fuel gage.
d. Oil pressure gage or indicator.
e. Speedometer with recording odometer.
f. Engine temperature gage or indicator.

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g. Dual sunvisors.
h. Front door mounted armrest on driver's side.
i. Driver's compartment ventilator other than window.
j. Manufacturer's standard electric horn.
k. Tachometer (diesel-engine-driven vehicles).

3.7.21 Rearview mirrors. Outside rearview mirrors shall be mounted on each side of the cab. The mirrors shall be of the combination type having flat and convex areas enclosed in a common housing. The flat portion shall have not less than 50 square inches of reflective area. The convex portion shall have less than 20 square inches of reflective area. The mirrors shall have not less than three supporting arms.

3.7.22 Back-up alarm. The vehicle shall be provided with an audible, pulsating, signaling device (electrical or mechanical) to caution personnel when the vehicle is in the reverse gear operation.

3.8 Truck body. Platform type body shall be furnished. Body shall have the minimum dimensions specified in table III.

TABLE III. Dimensions.

	Type B
Overall length, not less than (inches)	168
Overall width (+/-1 inch)	95

3.8.1 Body (type B). Body shall be provided with a steel subframe and an open steel grating platform.

3.8.1.1 Body frame. Body framing shall be a completely welded structure with members of minimum gage thickness specified in table IV for carbon steel; high tensile steel may be furnished in two gages lighter weight in accordance with US revised standard gage sizes. There shall be not less than 12 full-width crossmembers for type B, including ends and stub crossmembers as required for proper spacing over axle. Crossmembers shall be of full channel, pressed steel construction reinforced by gusset plates or brackets at points of attachment to longitudinal sills. Contact edges of crossmembers with longitudinal sills, and edges of welded reinforcements shall be welded for not less than 50 percent of the edge length. Longitudinal sills shall be constructed of structural steel channels or formed channels. Formed channel sills shall be reinforced within the sill, at each crossmember of body mounting point, with formed channel reinforcement.

TABLE IV. Framing gages.

	US revised standard gage no.	Equivalent inches
Crossmembers	10	0.1345
Side and end rails	12	0.1046
Longitudinal sills	10	0.1345
Reinforcements	10	0.1345

3.8.2 Body mounting. Body shall be secured with U-bolts, twin studs, or by brackets, and shall include a breaker strip.

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3.8.2.1 U-bolts or twin studs. When U-bolts or twin studs are used, there shall be not less than four U-bolts or twin studs per side, each having 9/16-inch minimum body diameter with 5/8-inch thick minimum thread diameter. The plates shall be at least 1/2-inch thick. Vehicle chassis frame shall be braced, using hardwood blocks at each mounting point unless mounting point is located at a full depth, frame crossmember. Blocks shall incorporate a keeper strap or groove for mounting bolt, and shall be of a width to assure retention. Two shear bolts shall be provided, one on each side of rear portion of body subframe to maintain body alinement of truck chassis. Forward body mounting bolts shall be located to the rear of the tapered portion of breaker strips (see 3.8.2.3).

3.8.2.2 Brackets. When brackets are used, they shall be bolted to the web of the chassis frame rails. The body mounting brackets shall provide means of drawing the body down on the chassis rails, and provisions shall be made to prevent lateral shifting of the breaker strips. When additional holes are required to secure mounting brackets to chassis frame rails, they must be located within the area of the rail which is designated as being safe for drilling in accordance with the chassis manufacturer's body builders layouts. Attachments shall not interfere with nor obstruct chassis components.

3.8.2.3 Breaker strips. A breaker strip, of not less than 1-1/16-inch thickness, shall be installed between longitudinal sills and truck chassis frame. Breaker strips shall have a taper of 1 inch in 18 inches at forward end.

3.8.3 Floor. The platform shall be floored with open steel grating except at the areas of the tank and fittings that will protrude through the floor. The grating shall be capable of accepting the loads imposed. The top surface of the grating shall be flush. Grating bearing bars shall be not more than 1 inch center-to-center and the grating crossbars shall not be more than 2 inches in length. The weight of the grating shall be not less than 12 lbs per square foot.

3.9 Service equipment. The lubrication, fuel dispensing, and air dispensing system equipment and components to be provided shall be as specified herein. The equipment and components as shown in figure 1 shall be installed on the type B truck. The equipment shall be located on the platform body for each truck such that proper weight distribution longitudinally and transversely shall be provided. Figure 1, illustrating an approximate location of the equipment and location, may vary according to weight distribution needed. Height of mounted equipment above the truck platform shall be not more than 70 inches for the type B truck. All piping, fittings, connections, mountings, and other features necessary to provide a complete and operable unit shall be provided. Mounted equipment which exceeds the height of 102 inches when in the servicing position, shall be attached to the body with removable fasteners to allow the overall height to be reduced.

3.9.1 Lubricant drums. The following standard commercial drum containers shall be provided:

a. Chassis grease - 120-lb drum.
b. Hydraulic fluid - 55-gallon drum.
c. Gear lubricant - 55-gallon drum.
d. Engine oil - 55-gallon drum.

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The drums for type B truck shall be located approximately as shown in figure 1, (see 3.9). Drum tops, bung hole seals for the 55-gallon drums, follower plate for the 120-lb drum, anchor rods with eyebolts and fastening nuts, and drum locators shall be provided. The flanged drum tops for 120-lb drums shall be made of not less than 0.0598-inch (US revised standard gage No. 16) nominal thick sheet steel. Flanged drum tops for 55-gallon drums shall be made of not less than 0.1196-inch (US revised standard gage No. 11) nominal thick sheet steel. Anchor rods and eyebolts shall be of not less than 1/2-inch diameter steel. Drum tops and attachments shall be treated for corrosion resistance. Drum locators shall be bolted or welded to the platform.

3.9.2 Hose reels.

3.9.2.1 Lubricant and air hose reels. Hose reels for lubricant hoses and air hose shall be manufacturer's current standard heavy-duty, spring operated, automatic retractable type with pawl and locking mechanism. Reels shall be equipped with hose guide assembly, consisting of four rollers to guide and center the reel hose and protect the hose from scuffing. Hose stops shall be furnished on each reel. The following hose reels shall be furnished:

a. Air hose reel.
b. Chassis grease hose reel.
c. Hydraulic fluid hose reel.
d. Engine oil hose reel.
e. Gear lube hose reel.

The hose reels for type B truck shall be located as shown in figure 1.

3.9.2.2 Gasoline and diesel fuel hose reels. Reels for gasoline and diesel fuel dispensing hose shall be the manufacturer's current standard heavy duty, spring operated, automatic retractable type. Reels have a hose capacity of not less than that specified in 3.9.3.4. The hose shall travel through openings fitted with four-way roller guide assembly for each reel. Hose stops shall be provided to stop hose retraction at control valves. The hose reels for type B truck shall be located as shown in figure 1.

3.9.3 Tubing and hose. Hydraulic and pneumatic lines shall be seamless steel tubing, 5/8-inch outside diameter and 0.083 (Birmingham or Studs gage No. 14) wall thickness. The steel tubing shall be provided with flexible hose and hydraulic and pneumatic fittings of the dry seal type at their connecting ends. Flexible hose and its fittings shall have a capacity in excess of the maximum capacity delivered by the power source. Hose used for the connections shall be clamped with nonchafing clamps and located to avoid damage to the hose and shall be of adequate length for the application. Hoses conforming to 3.9.3.1 through 3.9.3.4 shall be mounted on the applicable hose reels. Pads shall be welded to the sides of the fuel tank to support the air and lubricating lines. Pads shall be drilled and tapped and fitted with chafe-proof clamps. Clamps shall suspend the tubing of the platform and support the steel tubing. Tubing shall be provided with quick-disconnect fitting to connect to the hose of the air-operated pumps and lifts and to the discharge hose to the air-operated pumps. The steel tubing shall be accessible for service. Minimum amount of hose and tubing shall lay on the platform. Steel tubing entrance and exit ends

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shall be provided with minimum of six inches of rubber hose coupling and clamped to preclude vibration and fatigue. Lubrication and air lines shall be marked or color coded for identification of product.

3.9.3.1 Chassis grease hose. Chassis grease hose shall be manufacturer's standard for the service intended. Length of reel hose shall be not less than 40 feet.

3.9.3.2 Engine oil, gear lubricant, and hydraulic fluid hoses. Hoses shall be manufacturer's standard for the service intended. Length of reel hose shall be not less than 40 feet each.

3.9.3.3 Air hose. Air hose with quick-disconnect type coupling shall be manufacturer's standard for service intended. Length of reel hose shall be not less than 50 feet.

3.9.3.4 Gasoline and diesel fuel delivery hoses. Gasoline and diesel fuel delivery hoses shall be manufacturer's standard for the service intended. Hoses shall be of 3/4-inch inside diameter (id) and not less than 25 feet in length, with externally threaded, 3/4-inch American Standard taper pipe thread (NPT) couplings at each end.

3.9.4 Lubricant dispensing control valves. Each reel mounted lubricant hose shall be furnished with a control valve connected to the discharge end. Control valves shall be of squeeze type, designed for one hand operation, and for positive shutoff upon trigger release without leakage against maximum developed pump pressure.

3.9.4.1 Grease valve assembly. The high pressure control valve for chassis lubricant shall conform to MIL-L-4387, type VI, class 1, style A, except that in lieu of the extension shown, the valve shall be equipped at the outlet opening with a 12-inch long, whip-end hose fitted with an adapter, rigid extension, and hydraulic coupler, assembled in accordance with the manufacturer's standard practice. The hydraulic coupler shall conform to MIL-L-4387, type 1, class 1, style A. Valve assembly shall be connected to the dispensing hose with a Z-swivel conforming to MIL-L-4387, type VII, class 3, except that the hose and connection shall be internally threaded 3/8-inch NPT.

3.9.4.2 Gear lube valve assembly. The low pressure control valve with meter, nozzle, and extension for gear lubricant shall conform to MIL-L-4387, type VI, class 2, style A. Valve inlet shall mate with gear lubricant hose assembly.

3.9.4.3 Engine oil and hydraulic fluid valve assemblies. The low pressure control valves with meter, nozzle, and extension for engine oil and hydraulic fluid shall conform to MIL-L-4387, type VI, class 2, style B. Valve inlet shall mate with the respective hose assembly.

3.9.5 Fuel dispensing nozzles. Reel mounted hoses for dispensing gasoline and diesel fuel shall have nozzles connected to the discharge end. The inlet of the nozzle shall have internal 3/4-inch id. Control valve shall be of the type that will permit operating the nozzle with use of arctic gloves. Nozzles shall conform to the requirements of UL 842. Nozzles shall not be equipped with notched handles that permit unattended operation.

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3.9.6 Control valve and fuel nozzle cabinets. Sheet metal cabinets shall be furnished for the storage of control valves and fuel nozzles. The fuel nozzles shall be connected to the fuel dispensing hoses when stored in the cabinets. The slotted opening in each cabinet to accommodate the hose shall have a rubber bushing to prevent chafing of the hose. The fuel nozzle cabinets for type B truck shall be located approximately as shown in figure 1. The gasoline and diesel fuel cabinet shall be equipped with a top hinged cover. Each cabinet shall be provided with a nozzle quick-acting hand-operating retaining clamping device. Cabinet shall be fabricated of not less than 0.0747-inch (US revised standard gage No. 14) sheet steel. All material edges shall be blended and deburred to remove sharp corners. Cover shall be provided with full-length hinges with stainless steel hinge pins and sockets, locking type handle with a key-operated lock or provisions for a 1-inch padlock. Cabinet cover shall be furnished with a neoprene gasket to preclude vibration. Means shall be provided to retain cover in open position at least 60o above the horizontal plane of the truck. Drain holes shall be provided in the bottom of the cabinet.

3.9.7 Cabinet. A cabinet for the discharge end of each rear reel hose shall be provided transverse to the body platform at the rear of the truck, and shall be located approximately as shown in figure 1 for the type B truck. Cabinet shall be furnished with top hinged rear door(s). The floor of the cabinet shall be provided with a 20o (+/-5o) slope to the rear. The discharge ends of each reel hose shall be secured to the cabinet floor with quick-acting hand-operated clamps. Each hose discharge end shall be marked for identification of product. Cabinet shall be fabricated of not less than 0.0747-inch (US revised standard gage No. 14) sheet steel. Cabinet and door(s) shall be reinforced to preclude vibration. Door(s) corners shall be provided with not less than a 1/4-inch blended radius. All material edges shall be blended and deburred to remove sharp corners. Door(s) shall be provided with full length hinges with stainless steel hinge pins and sockets, locking type handle with a key-operated lock or provisions for a 1-inch padlock. Cabinet door(s) shall be furnished with a neoprene gasket to preclude vibration. Means shall be provided to retain door(s) in open position at least 10o above the horizontal plane of the truck. Drain holes shall be provided in the bottom of the cabinet.

3.9.8 Air-operated lifts. Two air-operated lifts for removing lubricant and hydraulic fluid pumps from drums shall be provided. The air-operated lifts for type B truck shall be located approximately as shown in figure 1. Lifts shall operate on air pressures from 50 to 200 lbs per square inch (psi) and shall have a raised height of not less than 98 inches. The horizontal arm shall be adjustable for any pump height, have an attached safety hook, and be capable of rotating through an arc of 360o in the horizontal plane. Lifting capacity shall be not less than 150 lbs. A built-in pressure regulating device shall prevent rapid movement and allow operation at uniform speed.

3.9.9 Lubricant pumps. Industrial type, reciprocating, air powered pump shall be provided for each lubricant and hydraulic fluid drum container. Each pump shall be furnished with an air pressure regulator and gage (see 3.9.12.1). All pump and air motor parts shall be of corrosion-resistant metal or treated for corrosion resistance. Pumps shall be equipped to provide self-priming and positive feed.

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3.9.9.1 Grease pump. Chassis grease pump shall have a pressure ratio of not less than 40 to 1. Pump shall be of sufficient length to efficiently and completely remove grease from 120-lb commercial drums to within 2 inches from the bottom. Type B truck shall be furnished with heavy-duty pump. With air pressure regulated at 100 psi, an ambient temperature not more than 40oF, the pump shall be capable of delivering not less than 2 lbs of chassis grease per minute for type B truck through the delivery plumbing, hose and dispensing valve.

3.9.9.2 Hydraulic fluid, engine oil, and gear lubricant pumps. Pumps for hydraulic fluid, engine oil, and gear lubricant shall have a pressure ratio of not less than 4 to 1. Pumps shall be of sufficient length to efficiently and completely remove lubricant from 55-gallon commercial drums to within 2 inches from the bottom. Type B truck shall be furnished with heavy-duty pump. With air pressure regulated at 100 psi, an ambient temperature not more than 40oF, the pump shall be capable of delivering not less than 9 lbs of product per minute for type B truck through the delivery plumbing, hose and dispensing valve.

3.9.10 Fuel dispensing pump. Dispensing pumps for gasoline and diesel fuel shall be double acting, and of 1 to 1 ratio and shall be capable of delivering not less than 9 gallons per minute through the delivery plumbing, hose and nozzle with 50 psi of air pressure. Each pump shall be furnished with air pressure regulator and gage. Gate valve, strainer (see 3.9.14), and other accessories as needed shall be furnished. Fuel dispensing pumping units, including related components and parts, shall be in compliance with UL 87. Each pump shall be provided with an air pressure regulator and dial gage (see 3.9.12.1).

3.9.11 Air compressor unit. The manufacturer’s standard air compressor unit shall be provided. The air compressor shall be of the air cooled type. The air compressor shall have a free air capacity of not less than 50 cubic feet per minute at a rated discharge pressure of 175 psi for type B truck. Air receiver tank capacity shall be not less than 60 gallons for type B truck. The air compressor shall be powered by a diesel engine. The engine fuel tank shall have a sufficient capacity for not less than 4 hours of continuous operation. The air compressor unit shall be located approximately as shown in figure 1 and shall be horizontally mounted on the truck platform (see 3.9).

3.9.12 Air distribution stand. An air distribution stand shall be provided and mounted on the truck platform body. The air distribution stand for truck B shall be located approximately as shown in figure 1. Individual pressure regulators and dial gages shall be provided for reel air hose, each pump hose reel dispensing lubricants and hydraulic fluid, and each fuel dispensing pump. The air distribution stand shall be in an accessible location and operable from ground level. Each pressure regulator and dial gage shall be marked for identification of product.

3.9.12.1 Air pressure regulators. Air pressure regulators shall be of corrosion-resistant material, or treated for corrosion-resistance, and shall have an operating range of not less than 0 to 20 psi. Regulators shall be provided with dial-type gages having a range of not less than 200 psi and marked

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in not less than 5-lb graduations and 200-lb figure intervals. Regulators shall have one 3/8-inch NPT inlet opening, one 3/8-inch NPT outlet opening, and two opposed openings 1/4-inch NPT for gage mounting, all internally threaded.

3.9.13 Fuel tank(s). A partitioned, combination gasoline and diesel fuel tank(s) shall be provided. The fuel tank(s) shall be fabricated from steel sheet of not less than 0.1046-inch (US revised standard gage No. 12) nominal thickness. The manufacturer's standard manhole, filler opening, and venting system shall be provided for each compartment. The fuel tank(s) shall be provided with baffles to restrict fluid movement. Tank(s) outlet couplings for connecting the fuel dispensing pumps shall be firmly welded to the tank(s). Fuel dispensing tank(s) shall be provided with drains from the bottom of the tank(s) compartments to the side of the truck opposite the truck chassis exhaust system. Drain shall have sufficient slope to drain contents. Drain shall have a gate valve at compartment outlets and unions on the downstream side for disconnecting the tank(s) from the drains for maintenance purposes. Drain caps with security chains shall be furnished. Side compartment outlets shall be provided with unions between the gate valves and the side tank(s) outlets. Sufficient area shall be provided for maintenance of plumbing. Tank(s) shall be capable of being removed from the truck by removing the tank(s) holddown, nonferrous plate shall be furnished and installed at the top of the tank(s) at each filler opening, marked to identify type of fuel in each compartment. A capacity marker or indicator of corrosion-resistant construction shall be provided in each compartment at the side of the filler opening to preclude overfilling the compartments.

3.9.13.1 Type B truck tank. Minimum tank capacity shall be 500 gallons of diesel fuel and 200 gallons of gasoline. Approximate tank dimensions of the partitioned or combined single tanks shall be: height - not to exceed 102 inches, width - 32 inches, and length - 88 inches; fuel tank shall be located approximately as shown in figure 1 (see 3.9). The fuel tank shall be located on the longitudinal centerline of the truck.

3.9.13.2 Tank mounting. Tank shall be mounted to a suitable subframe. The subframe shall be mounted to the truck chassis as specified in 3.8.2. The subframe shall be of all steel construction and arc welded.

3.9.14 Fuel strainers. The fuel pumping units shall be equipped with strainers installed in the fuel line between tank outlet and dispensing pump. Screen shall be of not less than 40 mesh, noncorrosive, and readily removable for cleaning. The effective flow area of the screen shall be not less than four times the minimum suction inlet pipe area. Unions shall be installed on the intake and discharge side of the strainers. Installation shall provide working area for the size tool needed to maintain service without disassembly of the attaching components. Check valves shall be provided.

3.9.15 Fuel measuring units. A measuring unit shall be provided on the fuel outlets to register the total gallons of gasoline and diesel fuel dispensed. The unit shall be of positive displacement type, 1-1/4-inch size, consisting of a measuring chamber, gear train, housing, and register. The meter shall be of compact, rugged design. The mechanism shall be corrosion resistant and readily accessible for servicing and replacement. Maximum working pressure shall be 125 psi and maximum rate of flow not less than 30 gallons per minute. The register shall be of direct readings, reset type, equipped with totalizer and zero-start

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delivery slip printer. Printing wheel capacity shall be 9,999 gallons. The performance requirements and acceptance tolerance listed in NBS H44 shall apply to the measuring units.

3.9.16 Water tank. A water tank of not less than 30-gallon capacity, with base dimensions not to exceed 12 inches wide and 18 inches deep, shall be provided. The water tank for type B truck shall be located approximately as shown in figure 1. Tank shall be fabricated from galvanized steel sheet of not less than 0.0897-inch (US revised standard gage No. 13) nominal thickness. Water flow shall be through a 3/4-inch male garden hose adapter, for attaching a hose. Mark water storage container: NOT FIT FOR DRINKING WATER.

3.9.17 Waste oil tank. A waste oil tank of not less than 30-gallon capacity shall be provided and mounted under the platform body at the curbside front of the body. The waste oil tank for type B truck shall be located approximately as shown in figure 1. The waste oil tank shall be fabricated from steel sheet of not less than 0.1046-inch (US revised standard gage No. 12) nominal thickness. Tank dimensions shall be approximately 29 inches in length, 24 inches in width, and 12 inches in height. A dispensing hose, 3/4-inch diameter and 6 feet in length, shall be provided and equipped with connection for coupling to the tank outlet. The tank outlet shall be fitted with a 3/4-inch gate valve with internal threads. The discharge end of the valve shall be fitted with a brass 3/4-inch male pipe thread and 3/4-inch male garden hose adapter for connecting the dispensing hose. A 2-inch pipe with threaded filler opening shall be provided. The threaded filler opening shall be fitted with a 2-inch brass cap with a 1/2-inch round brass bar, 4 inches long, centered on the brass cap and continuously brazed on each side of the bar. When cap is screwed on the 2-inch filler opening, the 1/2-inch brass bar handle shall be not less than 1 inch and not more than 1-1/2 inches above top of the platform, measured from under the 1/2-inch bar. Cap shall be provided with a corrosion-resistant security chain. The waste oil shall be marked for identification.

3.9.18 Storage, tool, and accessory cabinets. A storage cabinet, tool cabinet, and accessory cabinet shall be provided and shall be located approximately as shown in figure 1 for type B truck. The storage cabinet, 30 inches high, 24 inches wide, and 18 inches deep, made for stowing the hand bucket pump, grease gun, hand suction gun, and radiator water can (see 3.19.9 items, 1, 2, 4, and 12 respectively) shall be mounted on the truck deck. Tool cabinet and accessory cabinet shall be attached under the truck platform at the streetside front of the body. Tool cabinet shall be approximately 24 inches long, 15 inches high, and maximum width practicable. Accessory cabinet shall be approximately 36 inches long, 24 inches high, and maximum width practicable. The storage cabinet and accessory cabinet shall be equipped with side hung doors, piano hinges with stainless steel or brass hinge pins locking handles, and two point locking mechanism operable by the same key. The tool cabinet shall have provisions for locking with a padlock or key-operated lock. Cabinets shall be fabricated of not less than 0.0747-inch (US revised standard gage No. 14) nominal thick steel sheet. Suitable brackets or holddown devices shall be provided for the accessories stored in the cabinets to prevent movement during transport. Cabinets shall be weatherproof. Drain holes shall be provided and designed to preclude road splash entering the cabinets.

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3.9.19 Accessories. The accessories listed herein shall be provided with each truck. One each is required except where otherwise indicated.

Item	Description
1	Hand bucket pump, with hose, accessories, and lid to fit standard 30-lb grease bucket. The reinforced type of hose shall be terminated with a straight swivel, ball check, and giant buttonhead coupler for independent truck lubrication.
2	Grease gun, lever operated, not less than 14-ounce capacity, consisting of the following principal component parts: head, refill fitting, operating hand lever, piston, barrel, end cap, follower rod, check valve, extension, hydraulic coupler, and seals. The grease gun shall be capable of developing a pressure of 7,000 lbs without damage or leaking.
3	Air blow gun, with quick opening coupling nipple to suit the air line coupler of the reel air hose. Gun shall be the manufacturer's current standard, suitable for air blast cleaning and shall be of the type that will permit operation by one hand with use of arctic glove. Gun shall seal completely against the air flow at all pressures up to 125 psi.
4	Gun, suction type, hand operated, for draining and refilling high viscosity oils. Gun shall be of 11- to 12-ounce capacity, equipped with a 3/8-inch id flexible nozzle tube 12 inches long. Gun shall be the manufacturer's standard cylindrical body type. The handle end of the body shall be provided with screw type cap. When filled with oil, the pump shall be capable of withstanding a pressure of 25 lbs, applied to the pump handle, without leakage.
5	Air check and gage, for standard and large bore tire valves. Gage shall be the manufacturer's current standard type, which permits the inflation attachment to be operated with heavy gloves or mittens. The gage shall register pressures through 120 psi and shall indicate pressure of tire while connected to the valve with the air inflation valve released. Gage shall be provided with a quick operating coupling nipple to suit the air line coupler of the reel hose.
6	Extension, flexible hose, 12 inches long, for use with item 2, grease gun. Hose shall be of 3/16-inch id, reinforced type, with end adapters. Hose shall withstand a proof pressure of not less than 8,000 psi.

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7 Hydraulic coupler, conforming to MIL-L-4387, type I, class 1, style A, size 2.

8 Standard buttonhead coupler. Coupler shall give fast, positive seal on standard buttonhead fittings. Inlet shall have 1/8-inch internal NPT.

9 Giant buttonhead coupler, similar to item 8, shall give seal on giant buttonhead fittings. Inlet shall have a 1/8-inch internal NPT.

10 Oiler, cylindrical body, pistol grip type, pump fed, 1/2-pint capacity, 6-inch rigid bent spout. Oiler shall be suitable for delivering either a drop or stream of oil, as wanted. The body and spout shall be of all metal construction. The pump shall be self priming.

11 Funnel, offset type. The funnel shall be the manufacturer's current standard type of 5-quart capacity and 1-inch outlet diameter.

12 Radiator water can. Can shall be of 12-quart capacity, with long, high-neck spout and swingball handles provided with wood grip. Can shall be made of black plate sheet steel with 1/2-inch raised bottom. All joints shall be filled with zinc and the can heavily galvanized inside and outside.

13 Oil drain pan. The specially fabricated pan shall be of not less than 0.0747-inch (US revised standard gage No. 14) nominal thick steel sheet, and shall be approximately 15 inches wide, 20 inches long, and 3 inches high. Top edge shall be folded.

14 Battery water container with hydrometer. The battery water container shall be molded from a natural or synthetic rubber compound with an integral bail type lifting handle at the top, specially designed neck to hold the hydrometer inside the container, and an eye or buttoned-in holder for holding the end of the filling hose when not in use. The filling hose shall be sealed to the bottom side of container to prevent leaks. Container shall have an approximate capacity of 4 quarts. Hydrometer shall be the manufacturer's current standard with rubber bulb that fits snugly into the neck of the container when the hydrometer is stored inside the container. The barrel shall be of clean glass that permits easy reading of the float scale. Float shall be accurate to within +/-5 points (0.005) specific gravity at 80oF.

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15 A drop light reel, with 30-foot length of extension cord and light handle assembly, shall be mounted near the lubricant hose reels. Extension cord shall be provided with a plug matching the receptacle specified in 3.11. Light handle shall be of pistol-grip type, made of crackproof insulating material. Lamps shall have a chromium or cadmium-plated reflector guard with hanger hook. Reel shall be provided with a gravity action locking mechanism.

16 Two fire extinguishers, dry chemical, cartridge pressurized, shall be furnished. Each extinguisher shall have a dry chemical capacity of not less than 18 lbs and shall have a UL rating of not less than 80-B:C. The fire extinguishers shall be mounted on the platform body with quick-disconnect hand-operated retaining devices. The fire extinguishers shall be located approximately as shown in figure 1 for the type B truck. Extinguishers shall conform to all applicable construction and test requirements of UL 299.

3.10 Quick release and connecting devices. All connections to operating accessories shall be of the quick-disconnect coupling type.

3.11 Electrical receptacle. An electrical receptacle, enclosed in a box that is flush mounted at the rear of the truck near drop light reel (see 3.9.19, item 15), shall be provided. Receptacle shall be connected to the truck battery by conductors not smaller than No. 12 American Wire Gage size. The circuit shall be protected by a circuit breaker or fuse. Wiring shall be protected by a nonmetallic covering, capable of withstanding severe abrasion or enclosed in a metal sheath or conduit. Wiring shall be securely supported.

3.12 Grounding devices. A positive means to dissipate static electricity shall be provided. This shall be accomplished by a reel mounted grounding cable. Grounding cable shall have all components securely bonded to provide a continuous conductive path from cable termination to the truck frame. The reel shall be of the automatic rewind type and the cable shall be of sufficient length to connect to any truck within reach of the fully extended fuel hoses. In addition, a chain or ground strap shall be provided to ground the truck.

3.13 Lubrication. Means for lubrication shall be in accordance with the manufacturer’s standard practice. The lubricating points shall be easily visible and accessible. Hydraulic lubrication fittings shall be in accordance with SAE J534. Where use of high pressure lubricating equipment, 1,000 psi or higher, will damage grease seals or other parts, a suitable warning shall be affixed to the equipment in a conspicuous location.

3.14 Instruction plates. Photoetched, corrosion-resistant plates, showing schematic of all valves, valve controls, equipment, lubrication and complete operating instructions shall be fastened on the inside of the rear cabinet in a protected and visible location.

3.15 Painting and marking. The treatment, painting, identification markings and data plates shall be in accordance with MIL-STD-1223, and shall meet the

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marking requirements for the appropriate military service specified by the procuring agency. Unless otherwise specified (see 6.2), the exterior shall be gloss white matching color chip number 17925 of FED-STD-595. The finish coat shall be acrylic based enamel or polyurethane system.

3.16 Rustproofing. Unless otherwise specified (see 6.2), the vehicle shall be rustproofed in accordance with FED-STD-297.

3.17 Servicing and adjusting. Prior to acceptance of the truck by the Government, the contractor shall service and adjust the truck and compressor unit for immediate operational use as required in the operator's manual. The servicing and adjusting shall include at least the following:

a. Inflation of all tires.
b. Adjustment of brakes.
c. Proper functioning of all lighting and electrical systems.
d. Wheel alinement.
e. Adjustment of truck and air compressor unit (see 3.9.11) to include tune-up.
f. Complete lubrication with grades of lubricants recommended for ambient temperature at the delivery point.
g. Cooling system filled to capacity with a clean solution of equal parts by volume of water and antifreeze (ethylene glycol).
h. Servicing of windshield washer reservoir with water and appropriate additives.

The truck and air compressor unit shall be conspicuously tagged to identify the lubricants and their temperature range.

3.18 Air transportability. When specified (see 6.2) the unit shall meet the air transportability requirements of C-130, C-141 and C-5A aircraft in accordance with the requirements of MIL-STD-1791. The unit shall be reduced to a configuration to meet the air transportable restricted dimension, and shall be limited to the removal and relocation of mechanically attached (non-welded) components, and shall not affect the transportability of the item, including the ability to negotiate, without interference, a 15 foot ramp at an angle of 17o between two horizontal surfaces. If self-powered, the item shall be transportable under its own power with the operator in the standard seat provided. Removal, relocation or reinstallation time of all components required to achieve the reduced configuration shall not exceed one man-hour. Components which require removal or relocation to achieve the reduced configuration and the removal, relocation, reinstallation process shall be described in the equipment manual(s) delivered. When delivered to the Government, the unit shall not be in the reduced configuration.

3.19 Lifting and tiedown attachments. When specified (see 6.2), the equipment shall be equipped with lifting and tying down attachments. Lifting and tiedown attachments shall conform to Type II or Type III of MIL-STD-209. A non-ferrous transportation plate shall be provided and mechanically attached to the equipment. Transportation plates shall be inscribed with a diagram showing the lifting attachments, and the required length and size of each sling cable. A silhouette of the item furnished showing the center of gravity shall be provided on the transportable plate. Tying down attachments may be identified

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by stenciling or other suitable marking. Tiedown marking shall clearly indicate that the attachments are intended for the tiedown of the equipment on the carrier when shipped.

3.20 Workmanship.

3.20.1 Steel fabrication. The steel used in fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finished product. Manufacturing processes shall not reduce the strength of the steel to a value less than intended by the design. Manufacturing processes shall be done neatly and accurately. All bends shall be made by controlled means to insure uniformity of size and shape.

3.20.2 Bolted connections. Boltholes shall be accurately punched or drilled and shall have the burrs removed. Washers or lockwashers shall be provided in accordance with good commercial practice, and all bolts, nuts, and screws shall be tight.

3.20.3 Riveted connections. Rivet holes shall be accurately punched or drilled and shall have the burrs removed. Rivets shall be driven with pressure tools and shall completely fill the holes. Rivet heads, when not countersunk or flattened, shall be of approved shape and of uniform size for the same diameter of rivet. Rivet heads shall be full, neatly made, concentric with the rivet holes, and in full contact with the surface of the member.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor’s overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.1.2 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

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a. First article inspection (see 4.2.1).
b. Quality conformance inspection (see 4.2.2).

4.2.1 First production vehicle inspection. The first production vehicle produced under the contract shall be inspected by the contractor at his plant under the direction and in the presence of Government representatives. This inspection shall include the examination of 4.3 and the tests of 4.4. The purpose of the inspection shall be to determine vehicle conformity with the requirements of the contract. Acceptance of the first production vehicle shall not constitute a waiver by the Government of its right under the provisions of the contract.

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.3, the tests of 4.4, and the packaging inspection of 4.6. This inspection shall be performed on the samples selected in accordance with 4.3.

4.3 Examination. Each truck shall be examined for compliance with the requirements specified in section 3 of this specification. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.4 Tests.

4.4.1 Vehicle weight. The first production vehicle shall be weighed to determine curb weight and distribution of curb weight on front and rear axle. The imposed loading on front and rear axle will be computed using the curb weight; the operator's weight computed at 175 lbs; and the payload, consisting of the chassis grease, hydraulic fluid, gear lubricant and engine oil, and weight of the respective drums; fuel storage tank with diesel and gasoline fuel; water tank with water; and waste oil tank with oil. In addition, all loose accessories shall be included to provide the gvw. Calculated imposed loads on front and rear axle will be utilized to ascertain that the suspension, axles, and tires furnished are of adequate capacity to meet the contract requirements.

4.4.2 Road test. The first production vehicle shall be road tested with payload by the contractor to assure that the vehicle will operate in accordance with 3.6.

4.4.3 Lubricant pumps delivery tests. Lubricant pumps shall be tested for compliance with the performance requirements specified herein. Determination of delivered quantities of lubricant shall be made by weighing or measuring the lubricant discharged into clean containers, on nonporous paper, or by other suitable means.

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4.4.4 Fuel dispensing unit tests.

4.4.4.1 Capacity and operation. The dispensing pumps shall be connected to suitable fuel containers and operated to determine conformance to 3.9.10 regarding discharge rate and proper functioning.

4.4.4.2 Measuring unit. The unit for measuring dispensed fuel shall be tested in accordance with NBS H44, to determine compliance with the requirements of 3.9.15.

4.4.4.3 Performance tests. The dispensing pump shall be tested as specified in UL 87, to determine conformance to the applicable performance requirements specified therein.

4.4.5 Air-operated lift test. The air-operated lift shall be tested using a load of 150 lbs and air pressure of approximately 100 psi. Weight shall be gradually lifted to 1/4, 1/2, 3/4, and maximum height, and then lowered, and the arm rotated to determine conformance to 3.9.8.

4.4.6 Production sample. Upon acceptance of the first production vehicle, it shall remain at the manufacturing facility as a production sample, and be the last truck shipped on the contract. The first production vehicle shall be reconditioned, including replacement of abnormally worn parts and paint touch-up or repainting, prior to delivery to enable it to be accepted as a contract item. The contractor shall maintain the first production vehicle in a serviceable condition for the duration of the contract.

4.5 Production truck tests. The contractor’s testing system shall, as a minimum, assure that the truck is capable of meeting requirements contained herein. At the point of final acceptance the contractor shall make available to the government records acceptable to the government indicating that the servicing and adjusting required by 3.17 have been accomplished.

4.6 Preparation for delivery inspection. The preservation/packaging and marking of the item shall be inspected to verify conformance to the requirements of section 5.

5. PREPARATION FOR DELIVERY

5.1 Preservation/packaging. Preservation/packaging shall be in accordance with the requirements of MIL-V-62038 with the level of preservation/packaging specified (see 6.2).

5.2 Marking. Marking shall be in accordance with MIL-STD-129.

5.2.1 Military agencies. Shipments to military agencies shall be marked in accordance with MIL-STD-129.

5.2.2 Civil agencies. Shipments to civil agencies shall be marked in accordance with FED-STD-123.

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6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Trucks covered by this specification are capable of providing complete service station type service for field maintenance of construction, weight handling, and material handling equipment. The type B, style II truck is equipped with 4-wheel drive to provide for negotiating rough terrain.

6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of this specification
b. Size and style required (see 1.2)
c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2)
d. When electromagnetic radiation suppression is required (see 3.3.10)
e. When gasoline engine is required (see 3.7.1.2)
f. When manual transmission is required (see 3.7.5.1)
g When drive hubs for style II truck are required (see 3.7.5.1.4)
h. Specify type of wheels (see 3.7.10)
i. When bias ply tires are required (see 3.7.10.1)
j. When tools for exchanging mounted tire assembly are required (see 3.7.17.1)
k. When other than gloss white exterior color is specified (see 3.15)
l. When rustproofing is not required (see 3.16)
m. When air transportability is required (see 3.18)
n. When lifting and tiedown are required (see 3.19)
o. Level of preservation and packaging required (see 5.1)

6.3 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL) incorporated into the contract. When the provisions of DoD Federal Acquisition Regulations (FAR) Supplement, Part 27, Sub-Part 27.475-1 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data should be delivered by the contractor in accordance with the contract or purchase order requirements.

6.4 Performance prediction. Completed copies of SAE J688 form and computation for speed requirements for truck model furnished under contract should be submitted as specified in the contract. Unless other conditions are cited in the contract, computation should be made for normal atmospheric pressure, normal ambient air temperature, and still dry air. The SAE Work Sheet Item 1 should include truck model number, wheel base, engine model number, and truck type. The factors to be used in predicting truck ability (see 3.6.1.1) are established as follows for the corresponding SAE J688 tables:

Table 1 - Tire Factor. This factor must relate to the size of tires furnished by the contractor in accordance with this specification.

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Table 2	-	Altitude Factor.	1.00
Table 3	-	Rolling Factor.	1.613
Table 4	-	Area Factor.	0.173
Table 5	-	Velocity Factor.	250.0
Table 6	-	Altitude Factor.	1.0
Table 7	-	Chassis Friction Horsepower. Use applicable power unit gvw (to nearest, high 1,000 lbs) and the engine rpm (to nearest 100 rpm) which is required for 50 mph speed.	
Table 8	-	Grade Factor.	0.75
Table 8A	-	Correction Factor.	Not required.
Table 9	-	Road Factor.	0.0

6.5 Subject term (key word) listing.

Air compressor
Dispensing equipment
Hose reels

6.6 Classification cross-reference. Cross-reference of classification changes between this specification and the superseded specification is as follows:

MIL-T-82073D	KKK-T-2807
Type A - 19,000 lbs gvw	Type A - deleted
Type B - 24,000 lbs gvw (minimum) Style I - 4 by 2 chassis Style II - 4 by 4 chassis	Type B - 24,000 lbs gvw (minimum) Style I - 4 by 2 chassis Style II - 4 by 4 chassis

MILITARY INTERESTS:

Military Coordinating Activity

Navy - YD

User Activities

Army - AT
Navy - MC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY:

Navy - YD

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FIGURE 1. Equipment layout for type "B" truck.
-FIGURE NOT INCLUDED-