MIL-T-46780D(AT)
23 February 1973
SUPERSEDING
MIL-T-46780C(MO)
27 May 1968

MILITARY SPECIFICATION

TRUCKS; 2 1/2 TON, 6x6, MILITARY DESIGN, M44A2 MULTI-FUEL ENGINE SERIES

1. SCOPE

1.1 Scope. This specification covers M44A2 series general and special purpose 2 1/2 ton, multi-fuel engine driven, six-wheel six-wheel drive, military design truck chassis, trucks, and truck tractors.

1.2 Classification. Vehicles shall be of the type and model specified (see table I and 6.2).

Table I. Type and model

Type	Model
(1)	(2)
Chassis, Truck	M44A2
Chassis, Truck	M45A2
Truck, Cargo	M35A2
Truck Cargo: Drop Side	M35A2C
Truck, Van, Shop	M109A3
Repair shop, Truck mounted	M185A3
Chassis, Truck, Modified	M45A2
Truck, Tank, Fuel Servicing	M49A2C
Chassis, Truck, Modified	M45A2
Truck, Tank, Water	M50A3
Chassis, Truck	M45A2G
Truck, Dump	M342A2
Chassis, Truck	M46A2
Chassis, Truck	M46A2C
Truck, Cargo	M36A2
Truck, Tractor	M275A2
Truck Maintenance, Pipeline Construction	M756A2
Truck, Maintenance, Earth Borer, Pole Setter	M764

FSC-2320

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

Federal

O-A-548	- Antifreeze, Ethylene Glycol.
P-D-680	- Dry Cleaning Solvent.
VV-B-680	- Brake Fluid, Automotive.
VV-F-800	- Fuel Oil, Diesel.
VV-L-800	- Lubricating Oil, General Purpose, Preservative, (Water-Displacing, Low Temperature).

Military

MIL-P-514	- Plates Identification, Instructions and Marking Blank.
MIL-L-2104	- Lubricating Oil, Internal-Combustion Engine.
MIL-L-2105	- Lubricant, Gear, Universal.
MIL-G-3056	- Gasoline, Automotive, Combat.
MIL-L-3150	- Lubricating Oil Preservative, Medium.
MIL-L-45199	- Lubricating Oil Internal Combustion Engine, High Out Put Diesel.
MIL-H-6083	- Hydraulic Fluid, Petroleum Base, Preservative.
MIL-L-6085	- Lubricating Oil, Instrument, Aircraft Low Volatility.
MIL-L-10295	- Lubricating Oil, Internal-Combustion Engine, Subzero.
MIL-C-10324	- Lubricating Oil, Gear; Subzero.
MIL-G-10924	- Grease, Automotive and Artillery.
MIL-C-11755	- Compound, Antifreeze, Arctic-Type.
MIL-C-11796	- Corrosion Preventive, Petrolatum, Hot Application.
MIL-P-12098	- Preservative, Hydraulic Brake Systems and Components.
MIL-S-13518	- Sealer, Surface, Wood Preservative.
MIL-H-13910	- Hydraulic Fluid, Non-Petroleum Base Automotive Brake, Arctic.
MIL-H-13919	- Hydraulic Fluid Petroleum Base Fire Control.
MIL-C-16173	- Corrosion Preventive, Compound Solvent Cutback, Cold Application.
MIL-G-23827	- Grease, Aircraft and Instrument, (For Low and High Temperatures).
MIL-F-46005	- Fuel, Compression Ignition Engine.
MIL-H-46046	- Preservative Fluid, Automotive Brake Systems and Components.
MIL-V-62038	- Vehicles Wheeled: Preparation for Shipment and Storage of.
MIL-E-62106	- Engine Military Standard Multi-fuel: 6 cylinder 140 H. P., LD-465-1 and LD-465-1C.

PURCHASE DESCRIPTION

DAPD-297 - Engine, Multi-Fuel: 6-Cylinder, 140 H.P., LD-465.

STANDARDS

Federal

FEDERAL STD. NO. 595 - Colors.

Military

MIL-STD-8 - Dimensioning and Tolerancing.
MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-130 - Identification Marking of Military Property.
MIL-STD-193 - Painting Procedures, Tactical Vehicles (Tracked and Wheeled).
MIL-STD-210 - Climatic Extremes for Military Equipment.
MIL-STD-461 - Electromagnetic Interference Characteristic Requirements For Equipment.
MIL-STD-642 - Identification Marking of, Combat, and Tactical Transport Vehicles.
MIL-STD-882 - System Safety Program for Systems and Associated Sub-Systems and Equipment Requirements For.
MIL-STD-1261 - Welding Procedures for Constructional Steels.
MS-21313 - Padlock Sets.
MS-51352-1 - Winch Assembly.

DRAWINGS

Army

7077063 - Chain, Tow.
7354276 - Closure Assembly , Hard Top.
11609000 - Body Assembly Complete.
7731417 - Harness Assembly, Radio Outlet.
8337178 - Kit A-Frame.
8345120 - Cover, Slave Receptacle Hole.
8688944 - Closure Kit Cargo Body.
10896388 - Kit, Arctic.
10896518 - Kit, Slave Receptacle.
10937002 - Kit, Electric-Brake.
10937003 - Kit, Air-Brake.
10937690 - Radio Outlet Installation.
10937874-1 - Kit, Water Fording.
10937874-2 - Kit, Water Fording.
10937874-3 - Kit, Water Fording.
10937799 - Kit, Heater Personnel.
10937963 - Kit, Arctic.
11601760 - Heater Kit, Cargo Body Closure.
11608959 - Arctic, Cargo Body Shelter, Kit Assembly.
11631700 - Snatch Block.
11623130 - Winch, Utility.

Corps of Engineers

D8154-1 thru-22	- Body, Pipeline Construction for Truck M756A2.
D4699-1-thru-3	- Lever, Spring Loaded Assembly for Truck M756A2.

ENGINEERING PARTS LIST

Army

EPL-8736563	- Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, W/Winch.
EPL-8736564	- Chassis, Truck: 2 1/2 Ton 6X6, M45A2, WO/Winch.
EPL-8736565	- Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, W/Winch.
EPL-8736566	- Truck Tank: Fuel Servicing, 1200 Gallon, 2 1/2 Ton 6X6, M49A2C, WO/Winch.
EPL 8736567	- Truck, Tank: Fuel, Servicing, 1200 Gallon, 2 1/2 Ton 6X6, M49A2, W/Winch.
EPL8736780	- Truck, Tank: Water, 1000 Gallon, 2 1/2 Ton, 6X6 M50A3 W/Winch.
EPL-8736569	- Truck, Van: Shop, 2 1/2 Ton, 6X6 M109A3, WO/Winch.
EPL-8736570	- Truck, Van: Shop 2 1/2 Ton, 6X6, M109A3, W/Winch.
EPL-8736571	- Truck Tractor: 2 1/2 Ton, 6X6 M275A2, WO/Winch.
EPL-8736573	- Chassis Truck: 2 1/2 Ton, 6X6, M46A2C, WO/Winch.
EPL-8736574	- Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, WO/Winch.
EPL-8736575	- Chassis Truck: 2 1/2 Ton, 6X6 M45A2, W/Winch.
EPL-8736576	- Chassis Truck: 2 1/2 Ton, 6X6, M44A2, W/Winch.
EPL-8736581	- Truck, Cargo: 2 1/2 Ton, 6X6, M35A2, WO/Winch.
EPL-8736582	- Truck, Cargo: 2 1/2 Ton, 6X6, M35A2, W/Winch.
EPL-8736588	- Repair Shop, Truck Mounted: 2 1/2 Ton, 6X6, M185A3, W/Winch.
EPL-8736589	- Truck, Dump: 2 1/2 Ton, 6X6, M342A2, W/Winch.
EPL-8736592	- Truck, Cargo: 2 1/2 Ton, 6X6 M36A2, WO/Winch.
EPL-8736593	- Truck, Cargo: 2 1/2 Ton, 6X6, M36A2, W/Winch.
EPL-8736594	- Chassis, Truck: 2 1/2 Ton, 6X6, M44A2 WO/Winch.
EPL-8736595	- Chassis, Truck: 2 1/2 Ton, 6X6, M46A2, WO/Winch.
EPL-8736775	- Truck, Tank: Water 1000 Gallon, 2 1/2 Ton, 6X6, M50A3 WO/Winch.
EPL-8736597	- Truck Tractor: 2 1/2 Ton, 6X6, M275A2, W/Winch.
EPL-8736598	- Truck, Dump: 2 1/2 Ton, 6X6 M342A2, WO/Winch.
EPL-8736600	- Repair Shop, Truck Mounted: 2 1/2 Ton, 6X6, M185A3, WO/Winch.
EPL-8736601	- Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, WO/Winch.
EPL-8736602	- Chassis Truck: 2 1/2 Ton, 6X6, M45A2G, WO/Winch.
EPL-8736603	- Chassis, Truck: 2 1/2 Ton, 6X6 M46A2C, W/Winch.
EPL-8736604	- Chassis, Truck: 2 1/2 Ton, 6X6, M45A2G, W/Winch.
EPL-8736733	- Truck, Cargo: Drop Side, 2-1/2 Ton, 6X6, M35A2C, WO/Winch.
EPL-8736735	- Truck, Cargo: Drop Side, 2-1/2 Ton, 6X6, M35A2C, WO/Winch.
EPL-8736769	- Truck, Maintenance Pipeline Construction, 2 1/2 Ton, 6X6, M756A2, W/Winch.
EPL-8736782	- Truck, Maintenance, Earth Borer Pole Setter, 2 1/2 Ton 6X6, M764, W/Winch.

SUPPLEMENTARY QUALITY ASSURANCE PROVISIONS

Master Lists

8736563	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, W/Winch.
8736564	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6 M45A2, WO/Winch.
8736565	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6 M45A2, W/Winch.
8736566	- Supplementary Quality Assurance Provisions for Truck, Tank: Fuel Servicing, 1200 Gallon, 2 1/2 Ton, 6X6, M49A2C WO/Winch.
8736567	- Supplementary Quality Assurance Provisions for Truck, Tank: Fuel Servicing, 1200 Gallon, 2 1/2 Ton, 6X6, M49A2C, W/Winch.
8736780	- Supplementary Quality Assurance Provisions for Truck Tank: Water, 1000 Gallon 2 1/2 Ton 6X6, M50A3 W/Winch.
8736569	- Supplementary Quality Assurance Provisions for Truck, Van: Shop 2 1/2 Ton, 6X6, M109A3, WO/Winch.
8736570	- Supplementary Quality Assurance Provisions for Truck, Van: Shop, 2 1/2 Ton, 6X6, M109A3, W/Winch.
8736571	- Supplementary Quality Assurance Provisions for Truck Tractor: 2 1/2 Ton 6X6, M275A2, WO/Winch.
8736573	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M46A2C, WO/Winch.
8736574	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton 6X6, M45A2, WO/Winch.
8736575	- Supplementary Quality Assurance Provisions for Chassis Truck: 2 1/2 Ton, 6X6, M45A2, W/Winch.
8736576	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M44A2, W/Winch.
8736581	- Supplementary Quality Assurance Provisions for Truck, Cargo: 2 1/2 Ton 6X6, M35A2, WO/Winch.
8736582	- Supplementary Quality Assurance Provisions for Truck, Cargo: 2 1/2 Ton, 6X6, M35A2, W/Winch.
8736588	- Supplementary Quality Assurance Provisions for Repair Shop, Truck Mounted: 2 1/2 Ton, 6X6, M185A3, W/Winch.
8736589	- Supplementary Quality Assurance Provisions for Truck, Dump: 2 1/2 Ton, 6X6, M34A2, W/Winch.
8736592	- Supplementary Quality Assurance Provisions for Truck, Cargo: 2 1/2 Ton 6X6, M36A2, WO/Winch.
8736593	- Supplementary Quality Assurance Provisions for Truck, Cargo: 2 1/2 Ton 6X6, M36A2 W/Winch.
8736594	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M44A2, WO/Winch.
8736595	- Supplementary Quality Assurance Provisions for Chassis Truck: 2 1/2 Ton, 6X6, M46A2, WO/Winch.

8736775	- Supplementary Quality Assurance Provisions for Truck Tank: Water 1000 Gallon, 2 1/2 Ton 6X6, M50A3 WO/Winch.
8736597	- Supplementary Quality Assurance Provisions for Truck Tractor: 2 1/2 Ton, 6X6, M275A2, W/Winch.
8736782	- Supplementary Quality Assurance Provisions for Truck, Maintenance; Earth Borer Pole Setter, 2 1/2 Ton 6X6, M764, W/Winch.
8736598	- Supplementary Quality Assurance Provisions for Truck, Dump: 2 1/2 Ton, 6X6, M342A2, WO/Winch.
8736600	- Supplementary Quality Assurance Provisions for Repair Shop, Truck Mounted: 2 1/2 Ton, 6X6, M185A3 WO/Winch.
8736601	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, WO/Winch.
8736602	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M45A2G, WO/Winch.
8736603	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton 6X6, M46A2C, W/Winch.
8736604	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6 M45A2G W/Winch.
8736733	- Supplementary Quality Assurance Provisions for Truck, Cargo: Drop Side 2 1/2 Ton, 6X6, M35A2C, WO/Winch.
8736735	- Supplementary Quality Assurance Provisions for Truck, Cargo: Drop Side 2 1/2 Ton, 6X6, M35A2C, W/Winch.
8736769	- Supplementary Quality Assurance Provisions for Truck, Maintenance, Pipeline Construction 2 1/2 Ton, 6X6, M756A2, W/Winch.
8736782	- Supplementary Quality Assurance Provisions For Truck Maintenance; Earth Borer Pole Sitter 2 1/2 Ton, 6X6, M764, W/Winch.

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

S-6-66 - Human Engineering Laboratories (HEL)

(Application for copies should be addressed to U.S. Army Engineering Laboratories, Aberdeen Proving Ground, Maryland.)

Federal Register, Volume 35 Number 219.

(Application for copies should be addressed to Environmental Protection Agency, Office of the Administrator, Motor Vehicles, Washington, D.C.)

3. REQUIREMENTS

3.1 First production vehicle. The first production vehicle of each model to be delivered under the contract shall be examined and tested as specified herein by Government personnel to determine compliance with the requirements of this specification. Vehicles submitted by the contractor shall be production models which are representative or the units to be delivered under the contract.

3.1.1. Reliability. The vehicle Mean Miles Between Failure shall not be less than 2600 miles during the first 20,000 miles (11,400 miles for van models) or operation. A failure for calculation of Mean Miles Between Failure (MMBF) shall when operated in accordance with the conditions outlined in Table VI, VII and VIII as applicable to the respective models. A failure for calculation of Mean Miles Between Failure (MMBF) shall be as defined by CDC/AMC Wheel and Track Vehicle Mission Failure Definition, dated 27 March 1972. The definition (excluding the amplification paragraph) reads:

a. A "failure" is defined as any malfunction of the end item that requires corrective action which cannot be deferred:

(1) Until the next scheduled maintenance (exclusive of lubrication services) if organizational maintenance is prescribed for correction, or--
(2) For the remainder of its specified life before overhaul, replacement, rebuild or salvage (as applicable) if direct or general support maintenance is prescribed for correction.

b. Corrective action is not deferrable if the malfunction causes (or would cause if not corrected:

(1) Inability to commence operation, cessation of operation or degradation of performance capability of the end item below that required for the accomplishment of its prescribed mission function, or--
(2) A critical or catastrophic hazard to personnel or equipment as defined by MIL-STD-882.

c. Any malfunction which the operator or crew (user) can remedy will not be considered a failure provided that the repair is authorized or prescribed as an operator function and can be accomplished within 30 minutes using only controls, tools or spare parts incorporated in or carried with the end item.

3.1.2 Durability. The vehicle with rated payload, shall have no less than .50 probability of completing a minimum of 20,000 miles (11,400 miles for van models) of operation without

replacement or overhaul of the engine, transmission transfer or differentials and shall have no less than a .82 probability of completing the first 20 000 miles (11,400 miles for van models) of operation without replacement or rebuild of body or frame.

3.1.3 Maintainability. The total scheduled maintenance, excluding driver/crew checks and services shall be no more than 85 man-hours (40 man-hours for van models) and the total unscheduled maintenance shall be no more than 92 man-hours (53 man-hours for van models) during the first 20,000 miles (11,400 miles for van models of operation). This equated to a Maintenance Ratio (MR) of .18 (.16 for van models) at 20 mph. The scheduled maintenance intervals shall be 6 months or 6000 miles, whichever comes first.

3.2 Materials. Materials as specified herein and in the referenced drawings, specifications and standards shall be free from all defects and imperfections that might affect the serviceability and function of the finished product.

3.2.1 Qualified products. With respect to all assemblies and component parts requiring product qualification in accordance with the pertinent specifications or drawings listed on the EPL cited in Table II , and necessary in the construction of this vehicle, the contractor shall be responsible for using only those products which are listed (by part or drawing number as QPL items) on the QPL or which have been approved for inclusion on such lists. Manufacturer's inspection records shall specifically list such component(s), name of supplier(s) (as listed on the QPL or in the approval letter), and number and date of the QPL from which the selection was made or date of approval letter when products are approved but not as yet listed on the QPL.

3.3 Construction. Vehicles shall be constructed in accordance with the drawings, specifications, and standards listed or referred to in the Engineering Parts Lists (EPL's) specified in Table II, and as supplemented herein. If more than 1 unit of a particular component is used in or on the vehicle, the components used shall be identical in make, material and quality. The riveting welding practices and quality shall be the same on each specific vehicle model. All parts sub-assemblies and assemblies requiring identification shall be identified in accordance with MIL-STD-130.

Table II. Engineering Part List

EPL-8736563	- Chassis Truck: 2 1/2 Ton 6X6, M45A2, W/Winch.
EPL-8736564	- Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, WO/Winch.
EPL-8736565	- Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, W/Winch.
EPL-8736566	- Truck Tank: Fuel Servicing, 1200 Gallon, 2 1/2 Ton, 6X6, M49A2C, WO/Winch.
EPL-8736567	- Truck, Tank: Fuel Servicing, 1200 Gallon, 2 1/2 Ton, 6X6 M49A2C, W/Winch.
EPL-8736780	- Truck Tank: Water, 1000 Gallon, 2 1/2 Ton, 6X6 M50A3 W/Winch.
EPL-8736569	- Truck Van: Shop 2 1/2 Ton, 6X6, M109A3, WO/Winch.

EPL-8736570	- Truck, Van: Shop, 2 1/2 Ton, 6X6, M109A3, W/Winch.
EPL-8736571	- Truck Tractor: 2 1/2 Ton, 6X6, M275A2, WO/Winch.
EPL-8736573	- Chassis, Truck: 2 1/2 Ton, 6X6, M46A2C, WO/Winch.
EPL-8736574	- Chassis, Truck: 2 1/2 Ton 6X6 M45A2, WO/Winch.
EPL-8736575	- Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, W/Winch.
EPL-8736576	- Chassis Truck: 2 1/2 Ton, 6X6, M44A2, W/Winch.
EPL-8736581	- Truck Cargo: 2 1/2 Ton, 6X6, M35A2, WO/Winch.
EPL-8736582	- Truck, Cargo: 2 1/2 Ton, 6X6, M35A2, W/Winch.
EPL-8736588	- Repair Shop, Truck Mounted: 2 1/2 Ton, 6X6, M185A3, W/Winch.
EPL-8736589	- Truck, Dump: 2 1/2 Ton, 6X6, M342A2, W/Winch.
EPL-8736592	- Truck, Cargo: 2 1/2 Ton, 6X6 M36A2, WO/Winch.
EPL-8736593	- Truck, Cargo: 2 1/2 Ton, 6X6 M36A2, W/Winch.
EPL-8736594	- Chassis Truck: 2 1/2 Ton, 6X6, M44A2, WO/Winch.
EPL-8736595	- Chassis, Truck: 2 1/2 Ton, 6X6, M46A2, WO/Winch.
EPL-8736775	- Truck Tank: Water 1000 Gallon, 2 1/2 Ton, 6X6, M50A3, WO/Winch.
EPL-8736597	- Truck Tractor: 2 1/2 Ton 6X6, M275A2, W/Winch.
EPL-8736598	- Truck, Dump: 2 1/2 Ton, 6X6, M342A2 WO/Winch.
EPL-8736600	- Repair Shop, Truck Mounted: 2 1/2 Ton, 6X6, M185A3, WO/Winch.
EPL-8736601	- Chassis Truck: 2 1/2 Ton 6X6, M45A2 WO/Winch.
EPL-8736602	- Chassis Truck: 2 1/2 Ton, 6X6, M45A2G, WO/Winch.
EPL-8736603	- Chassis, Truck: 2 1/2 Ton, 6X6, M46A2C, W/Winch.
EPL-8736604	- Chassis, Truck: 2 1/2 Ton, 6X6, M45A2G, W/Winch.
EPL-8736782	- Truck, Maintenance; Earth Borer Pole Setter, 2 1/2 Ton, 6X6, M764, W/Winch.
EPL-8736733	- Truck, Cargo: Drop Side 2 1/2 Ton, 6X6, M35A2C, WO/Winch.
EPL-8736735	- Truck, Cargo: Drop Side, 2 1/2 Ton, 6X6, M35A2C, W/Winch.
EPL-8736769	- Truck, Maintenance Pipeline Construction, 2 1/2 Ton, 6X6, M756A2, W/Winch.

3.3.1 Special kits. When specified (see 6.2) the following kits shall be furnished as required for a specific vehicle.

3.3.1.1 Deep water fording kit. A fording kit shall be furnished for a specific vehicle in accordance with drawings specified in Table III. With the kit installed, vehicles shall ford hard-bottomed, fresh or salt water crossings remaining immersed for a period of 15 minutes without damage to vehicle. Van trucks M109A3 and M185A3, shall ford water to a depth of 60 inches. All other models shall ford water to a depth of 78 inches. With the kit installed, the vehicle shall be capable of operating continuously on land before and after fording operations, without damage to vehicle.

Table III. Fording kits

Model	Fording Kit Drawing	Model	Fording Kit Drawing
M35A2	10937874-1	M50A3	10896550
M109A3	10937874-1	M36A2	109378742
M185A3	10937874-1	M342A2	10937874-3
M49A2C	10937874-1	M764	11609777
M35A2C	10937874-1		

3.3.1.2 Arctic kit. The arctic kit furnished shall be in accordance with Drawing 10896388, for all models except, Truck Tractor M275A2. The Arctic kit when furnished for the M275A2, shall be in accordance with drawing 10937963. With the kit installed, the vehicle cab shall be adequately heated to provide comfort for operating personnel at temperatures as low as minus 65 °F.

3.3.1.2.1 Arctic Cargo Body shelter kit. The cargo body arctic shelter kit when furnished shall be in accordance with drawing 11608959, which is composed of Cargo Body Enclosure kit drawing number 8688944 and Cargo Body Enclosure Heater kit 11601760.

3.3.1.3 A-frame kit. The A-frame kit furnished shall be in accordance with Drawing 8337178. The kit includes an A-frame or derrick mounted at the front of vehicle for use as a general-utility lifting device, and as a derrick in conjunction with the vehicle winch.

3.3.1.4 E1ectric-brake kit. The electric-brake kit furnished shall be in accordance with Drawing 10937002.

3.3.1.5 Air-brake kit. The air-brake kit furnished shall be in accordance with Drawing 10937003.

3.3.1.6 Slave receptacle kit. The slave receptacle kit furnished shall be in accordance with Drawing 10896518.

3.3.1.7 Personnel hot water heater kit. The hot water personnel heater kit shall be in accordance with Drawing 10937799.

3.3.1.8 Hard top. When specified (see 6.2) the hard top closure furnished shall be in accordance with Drawing 7354276, and insulated with fireproof or highly fire resistant material.

3.3.1.8.1 Rear windows. The double-sash type windows furnished in the hard top rear panel shall be capable of sliding either up or down, or to the side for added ventilation.

3.3.2 Soft top. When specified (see 6.2), the soft top furnished and installed in accordance with applicable drawings shall provide the maximum protection for the personnel when vehicle is operating in adverse climatic conditions.

3.3.3 Electrical circuits. The electrical circuits shall maintain continuity from end to end without evidence of internal or external shorts during all vehicle operating conditions.

3.3.3.1 Headlights. The main headlights furnished on all type trucks shall be mounted, and adjusted with the vehicle on a level surface so the center of the upper beam will focus on the road 300 feet ahead of the loaded vehicle. Means shall be provided for subsequent adjustments as necessary.

3.3.3.2 Radio receptacle. When specified (see 6.2), the radio receptacle furnished shall be in accordance with Drawing 7731417, and shall be installed in accordance with Drawing 10937690.

3.3.4 Controls. All electrical, mechanical, and hydraulic controls shall operate without malfunction throughout all ranges of operation under all vehicle operating conditions.

3.3.5 Adjustment mechanisms. All adjustment mechanisms shall function properly, and maintain adjustment settings during all vehicle operating conditions.

3.3.6 Stowed material. All on vehicle material (OVM) shall be stowed on the vehicle in spaces provided to assure the items will not interfere with other components and operation of vehicle.

3.3.7 Fuel servicing tank trucks (M49A2C). All seams and joints of the tank shall be liquid tight without caulking and shall not leak when under 2 pounds per square inch (psi) pressure. The tank body and equipment shall conform to requirements of the drawings and as specified by the procurement documents.

3.3.8 Water-tank trucks (M50A3). The water-tanks furnished for mounting on truck chassis (M45A2) shall be of the 2 compartment type 500 gallons forward and 500 gallons rear) with a nominal capacity of 1000 gallons and provide space for the stowage of equipment. Actual capacity of each compartment shall provide a minimum of 3 percent greater than nominal to allow for expansion. Fully loaded water-tank truck shall have clearance for approved tire chains.

3.3.8. Tank body. The tank body furnished shall be in accordance with Drawing 11609000 with insulated compartments. Parts, fittings, and piping in contact with water shall be of corrosion-resistant material not affecting the potability of the water. Where dissimilar materials are utilized, effective means shall be taken to prevent corrosion from electrolytic action.

3.3.8.2 Piping and connections. Piping shall be provided with connections and gate valves to permit gravity or pressure discharge. Piping shall be insulated, or protected within the insulated space.

3.3.8.3 Equipment cabinet. A weather-proof equipment cabinet shall be provided at the rear of the tank body for housing the pump, manifold and control valves or valve handles as necessary. The cabinet shall include a rack for three 25 foot lengths of 1 1/2-inch discharge hose, and shall protect stowed equipment against road shock.

3.3.8.4 Hose stowage tubes. Hose stowage tubes, for six 10-foot lengths of 2-inch water suction hose, shall be installed along each side of the tank. These tubes may be incorporated in the tank subframe structure. The interior of the tubes shall be free of sharp points or edges.

3.3.8.5 Insulation jackets. The tank compartments shall be covered with fiberglass not less than 1 1/2-inch in thickness. This insulation shall be covered with a jacket of sheet metal, welded to the tank. At the top of the tank body, the jacket shall be level for a minimum width of 24 inches, and reinforced to form a catwalk on top of the body. This catwalk shall be flanged up at the sides to form a hand-hold for personnel using the side catwalks.

3.3.8.6 Heating chamber. A heating chamber shall be located underneath the tank, within the insulated area, connected to the vehicle-engine exhaust system and provided with an exhaust gas outlet. Valves shall be provided to direct the flow of exhaust gases through the heating chamber. Precautionary instruction plate to be provided within vehicle cab (see 3.7.3).

3.3.8.7 Catwalks. Self-cleaning grating or non-skid catwalks shall be furnished for each side and shall be provided with side skirts, wheel cutouts and provision for installing tarpaulin bows, without interfering with operation of tank equipment, and resembling the side end panels of cargo trucks. The M35A2 cargo truck bows, covers, and end curtains shall be readily installed. When specified (see 6.2), the bows, covers, and end curtains shall be furnished with the tank body. The installed catwalks shall withstand stresses of lifting slings attached to bogie lifting shackles.

3.3.8.8 Equipment. All parts and equipment shall be furnished with the tank body. The couplings, nozzles, strainer, and wrenches shall be stowed in the wooden tray furnished with the equipment cabinet.

3.3.8.9 Padlocks. Manhole and filler-opening covers shall be secured by padlocks conforming to Standard MS-21313 with 2-1/2 inch shackle and chained to prevent loss. All locks on each vehicle, including the locks on the cabinet doors, shall be operable by the same key, furnished in duplicate for each vehicle. When specified (see 6.2) master keys shall be furnished.

3.3.9 Truck, maintenance pipeline construction M756A2 W/W. The truck maintenance pipeline construction, M756A2 W/W, consisting of a body and access as shown on Corps of

Engineers Drawings D8154-1 thru -22 and D4699-l thru -3 (see 6.7) and mounted on a 2 1/2 Ton M45A2 truck chassis (modified) with under frame spare tire mounting, front mounted winch, midship mounted winch, full torque power-take-off, and cab mounted control lever for power take off, shall meet all the requirements of this specification without loosening or shifting of body and its components.

3.3.9.1 Material (body and accessories). The material for body and accessories shall be as specified herein and as shown on applicable drawings. Where material specifications containing options are referenced on the drawings and no option is specified on the drawings, the contractor shall select the option best suited for the intended use.

3.3.9.1.1 Flooring. Flooring may be of random length and width, but no piece shall be less than 3 1/2 inches wide and the length of any piece shall be not less than the center-to-center span of three bolsters. All butt joints shall be centered over a bolster. Butt joints on two adjacent boards shall not be placed on the same bolster. Angles, 2-by 1/4 inch shall be welded to bolsters at each butt joint to assure sufficient seat under the ends of wood. Flooring shall be cut and drilled before preservative treatment and paint are applied.

3.3.9.1.2 Ease of maintenance. The body design and accessory installations shall permit accessibility to all parts for maintenance and repair with general purpose tools. The components and accessories shall be individually removable without removing other components or accessories. Drain plugs, lubrication fittings adjustable parts and components shall be protected from mud and debris.

3.3.9.2 Body electrical system. The body shall be equipped with a water-proof electrical system of 24 volt design and in accordance with the applicable drawings and shall meet the requirements and be compatible with existing wiring on the M45A2 truck chassis for military electrical systems.

3.3.9.3 Floodlights. Floodlights shall be mounted as shown on the drawings. The lights shall be of the two wire type (live and ground wires). When the body is mounted, the grounding wire terminal shall be attached to the truck chassis by means of bolt, star washer and nut. The live lead shall be connected from the main lighting switch at terminal "J" (preventing floodlight operation during blackout operation) to each floodlight housing switch.

3.3.9.4 Body equipment operating controls. The controls shall operate the various system without malfunction under all operating requirements.

3.3.9.4.1 Power take-off control lever. The contractor shall install control lever to operate the rear power-take-off. The lever shall be located to the left of the driver near the hand brake and shall be spring loaded as shown on drawing D 469-1 thru -3 (see 6.7) the lever shall not remain engaged when released by the operator.

3.3.9.5 Removable cargo body. Unless otherwise specified (see 6.2) a removable cargo

body consisting of removable sides and ends, troop seats and lazy backs, safety straps, bows, paulin, end curtains and tailgate shall be furnished with each M756A2 vehicles.

3.3.9.6 Lubrication and lubricants. All accessories and body surfaces requiring lubrication shall be lubricated with Military lubricants specified in Table IV for the ambient temperature.

3.3.9.7 Instruction plates. Each vehicle shall be equipped with instruction plates, including warnings and cautions suitably located, describing any special procedures to be followed in operating the equipment. Instruction plates shall be in accordance with applicable drawings, and shall meet performance requirements of MIL-P-514.

3.3.9.8 Welding. Welding required for construction of the body shall meet requirements of MIL-STD-l261, unless otherwise specified (see 6.2).

3.3.9.9 Lifting. Truck, maintenance pipeline construction M756A2 w/w with the A-frame attached at the rear shall be capable of transporting a suspended 3000 pound load a distance of 50 feet without damage to the vehicle or any of its components.

3.3.10 Van type trucks. Van type trucks.

3.3.10.1 Waterproofness. The van bodies and all components shall be waterproof to preclude the entrance of water due to rain, melting snow, and road splash as well as to prevent the penetration of moisture resulting from other causes. Vapor barrier material shall be applied to prevent possible accumulation of condensation on interior of van body. Prior to riveting the seams shall be coated with sealer to provide a waterproof joint.

3.3.10.2 Lightproofness. Each van body with window blackout shades covering the window and with access doors closed shall be lightproof sufficiently so that light from interior of van is not visible from outside the van at night.

3.3.11 Truck, maintenance: earth borer pole setter (M764). The earth auger truck shall consist of a modified M35A2 cargo and M45A2 truck chassis providing for power divider body mounted winch outrigger and earth boring machine installations.

3.3.11.1 Body winch. The rear winch shall be a reversible drum type with a 700 foot length 1/2" diameter cable capacity, with a positive drive cable leveling device. A winch shaft shear pin with replacement instructions shall be incorporated to provide for a free-wheeling drive sprocket in event of operational overload. Winch rated line pull at first cable layer on drum shall be 15,000 lbs. maximum. A winch auxiliary shaft shall be provided to drive capstan, or wire reel. Mounting shall resist a 15,000 pound line pull.

3.3.11.2 Boring machine. The earth boring machine equipment shall be capable of boring holes to a diameter of 30 inches and to a depth of 10 feet vertically. The auger shaft shall be driven through a power divider, which allows independent operation of the body winch, or boring machine. CAUTION (see 3.7.3). The transer shift lever of truck transfer must be in neutral position during all boring, to avoid movement of truck. The operation of the truck transmission gear shift shall control the truck engine speed to the auger shaft. Levelers shall permit boring vertical holes regardless of truck position and anchor holes to an angle of 45 degrees. A leveling bubble indicator shall be provided to show when auger is properly vertically oriented. The powered vertical leveler shall permit stowage of the integral pole derrick in a near level travel position. The auger bar control levers shall remain in a neutral position until pressure is applied to the levers by the operator.

3.3.11.3 Mounting. The earth boring machine shall be designed to be readily removable, or replaceable. Provision shall be made for towing a trailer behind the truck with boring machine removed.

3.3.11.4 Outrigger. A left band and a right hand hydraulic outrigger shall be provided integral with the boring machine support structure, to relieve the loads imposed on the truck springs; and to provide truck stability during boring, or winching, operations. The outrigger shall operate under a maximum hydraulic system pressure of 1500 psi and shall perform safely within the load limitations of the winch and derrick. Mechanical locks are provided to prevent drifting of the cylinders during vehicle travel. CAUTION (see 3.7.3). The truck is not to be moved while a weight is suspended from the derrick assembly.

3.3.11.5 Pole derrick. The pole derrick shall be a tripod frame of steel tubing supported from the truck aft body, with an adjustable center leg, with head sheave. The tripod support legs shall be straight, round, steel tubing and shall be free of any kinks, flats, dents or other mechanical defects. When used in conjunction with the body winch, it shall be capable of supporting posted weights at different derrick positions, with a maximum weight of 9,000 pounds, plus 25 percent safety factor. The pole derrick with associated winch and equipment shall be able to remove, install and straighten poles 45 feet in length. The pulling load limit with universal sheave block, shall be 5,000 pounds from any direction. The derrick shall be stowable on truck body, when not in use, in such a manner that it will not prevent the opening of the cab doors.

3.3.11.6 Derrick support jack. The pole derrick supports of 15 ton capacity each shall be provided for truck stability during winch and derrick operation. The adjustable support jack shall be mounted on truck body aft frame and be removable for stowage in truck body for travel. CAUTION (see 3.7.3). The truck is not to be moved while a weight is suspended from the pole derrick.

3.3.11.7 Wheel chocks. Metal triangular wheel chocks shall be provided to adequately restrict vehicular movement when operating the truck body winch and pole derrick.

3.4 Performance. A complete vehicle, loaded with rated payload and serviced with standard products specified (see Table IV and 6.6) shall meet performance requirements specified herein. Vehicle, serviced and equipped for existing climatic conditions, shall operate as specified without special equipment. Unless otherwise specified, performance shall be demonstrated on relatively level, smooth, hard-surfaced roads free of loose material.

Table IV. Fuels, lubricants, and preservative materials.

Application	Specification	Types or grades
Corrosion preventives:		
Petrolatum	MIL-C-11796	Grade 1, 2, 3
Preservative	MIL-H-46046	One
Nonlubricating	MIL-C-16173	Grade 1, 2, 3
Engine oils: (for special instructions see 6.6)		
Heavy duty (operational)	MIL-L-2104	10, 30
Subzero	MIL-L-10295	one grade
Fuels:		
Gasoline, combat	MIL-G-3056	Type I, II
Fuel oil, diesel	VV-F-800	All grades
Fuel, C.I.E.	MIL-F-46005	Type I, II
Grease:		
Automotive and artillery	MIL-G-10924	One grade
Aircraft and instrument	MIL-G-23827	One grade
Hydraulic oils:		
Hydraulic brake fluid	VV-B-680	One grade
Hydraulic brake fluid (arctic)	MIL-H-13910	One grade
Preservative	MIL-H-6083	Type I
Lubricating oils:		
Universal, gear	MIL-L-2105	75, 80, 90
Subzero, gear	MIL-L-10324	One grade
Instrument	MIL-6085	One grade
Preservative, medium, oil can	MIL-L-3150	One grade
Preservative, special	VV-L-800	One grade
Coolant compounds:		
Antifreeze, ethylene glycol	O-A-548	Type one
Compound antifreeze:		
Subzero	MIL-C-11755	One grade

3.4.1 Environmental. Unless otherwise specified, the vehicle shall operate in ambient air temperature of plus 115°F to minus 25°, and with special equipment installed, at temperature ranges of minus 25°F to minus 65°F. The complete vehicle when in storage shall withstand

climatic extremes as specified in standard MIL-STD-210, without deterioration that may cause failure of any component part of the vehicle.

3.4.2 Vehicle loading. Vehicle performance characteristics shall be demonstrated with the specific vehicle loaded as specified (see Table XIV) with full complement of fuel, lubricant, and coolant, with driver and assistant driver or equivalent weight of 200 pounds each, with winch assembly or 500 pound equivalent weight, mounted at the front of the vehicle to simulate mounting of winch, with soft-top cab, and with full vehicular equipment. Gross weight shall not include tire chains, metal cab enclosures, or special equipment kits.

3.4.3 Engine. Vehicle shall meet all performance requirements specified herein, when engine conforming to MIL-E-62106 is installed.

3.4.3.1 Cooling system. Cooling system shall maintain a coolant temperature out of the engine of not greater than 220°F with no evidence of aeration from the radiator under all environmental and performance conditions specified herein and in the engine specification.

3.4.3.2 Exhaust system. The exhaust system as installed shall be gastight and leakproof to prevent the concentration of exhaust gas in the occupied areas and shall be in accordance with HEL-STD S-6-66.

3.4.4 Cross-country operation. The vehicle except truck tractor in combination with semitrailer shall transport the rated cross-country (CC) payload and towed-load over unimproved roads trails, open fields, hills and rough cross-country terrain.

3.4.4.1. Limited cross-country operation. The vehicle shall transport the rated limited cross-country (CC) payload and towed load over reasonably firm terrain other than highways or roads.

3.4.4.2 Transfer case. The air operated transfer case for front axle drive, shall operate between air pressure of 50 psi to vehicle maximum air pressure.

3.4.5 Highway operation. The vehicle shall transport the rated highway (HY) payload over prepared roads. Performance shall be demonstrated on smooth, dry, relatively level, concrete roadway.

3.4.5.1 High speed. The vehicle shall operate at a sustained high speed of not less than 50 miles per hour (mph).

3.4.5.2 Low speed. The vehicle with towed load shall operate at a low speed of not more than 2 1/2 mph with the engine operating in the speed range which delivers a maximum torque.

3.4.6 Water fording operation. The vehicle shall transport the rated cross-country payload and towed load when fording hardbottom crossings of fresh or salt water, at least

30 inches depth for a 15 minute period, without requiring addition of special equipment or adjustments.

3.4.7 Gradeability. The vehicle shall demonstrate gradeability on prepared slopes and grades specified, without stalling slipping, overheating or upsetting.

3.4.7.1 Longitudinal grades. The vehicle shall ascend not less than a 3 percent grade at a minimum speed of 30 mph when loaded with cross-country payload and towed load. Vehicle shall ascend 60 percent grade when loaded with cross-country payload and without towed load. Grades shall have smooth, dry concrete road surface.

3.4.7.2 Side slopes. The vehicle shall negotiate 20 percent side slopes in either direction when loaded with cross-country payload.

3.4.8 Braking ability. The vehicle fully equipped and loaded with highway payload, shall be decelerated, held, and controlled by use of the brakes under the conditions specified for each braking system. Road surface shall be smooth, dry concrete.

3.4.8.1 Service brakes. Application of service brakes shall stop, hold, and control the vehicle when descending 60 percent grades. On relatively level roadway, application of service brakes shall bring the vehicle to a complete stop from a speed of 20 mph within 30 feet, from position at instant of application.

3.4.8.2 Hand (parking) brake. Application of the hand brake shall hold vehicle less a towed load, motionless on a dry concrete, 40 percent grade when headed up or headed down grade with rated cross-country payload (see table XIV).

3.4.9 Cramping angle. The front wheels shall have a full cramping angle of 27 to 28 degrees at the wheel on the inside of the turning circle. Axle stops shall be provided and adjusted to obtain the angle specified. When adjusted axle stops shall be so set that the angle adjustment cannot be readily altered and shall positively limit the cramping angle to the value specified.

3.4.10 Fuel dispensing filter separator system (M49A2C). With vehicle engine operating at governed rpm of 1100 and transmission in second gear, the dispensing system shall dispense fuels other than diesel oil through the filter separator system, at a discharge rate of not less than 42 GPM and not more than 48 GPM of clean fuel at the end of a 35 foot length of 1-1/2 inch discharge hose shall be maintained. When dispensing diesel oil the discharge rate of 42 GPM may be reduced to 25 GPM. The dispensing system shall operate without malfunction or leaks and the dump valve shall function properly.

3.4.10.1 Fuel cleanliness. The filter separator shall remove all undissolved water and shall limit the passage of solid contaminants to not more than 0.5 milligrams per liter of fuel.

3.4.11 Rotary pump discharge rate (water tank truck M50A2). The pump shall eject all water from itself and from its piping within two minutes, when installed with the gate valve in the suction line partly open, with the discharge port at the side of the pump open and the tank emergency valve closed. With suction port 16 feet above the water source, and the discharge hose placed in a filler opening of one compartment, the pump shall prime itself when starting dry, and shall produce a flow of water of not less than 70 gallons per minute at its discharge outlet, with the water at not more than 50°F temperature, using 40 feet of 2-inch suction hose with a foot strainer, and 25 feet of 1 1/2 inch discharge hose. The dispensing system shall operate without malfunction or leaks.

3.4.12 Dump trucks (M343A2). With the hydraulic system filled with engine oil of the type and grade specified in Table IV for the applicable temperature, and adjustments completed shall demonstrate performance requirements with loads specified herein during dumping operations. The hydraulic system controls shall control and actuate the system to raise and lower the dump body and hold body in any position during the raising and lowering range of operation. The controls shall operate without binding, interference, or failure using hand effort only.

3.4.13 Drop side cargo body. The drop sides and tailgate shall be capable of being raised and lowered freely without binding. The locking devices shall retain the sides and tailgate rigidly in closed position without chatter or failure using hand effort only. The drop sides on model 35A2C shall be interchangeable from left to right sides and from right to left.

3.4.14 Winches. Unless otherwise specified (see 6.2) winches conforming to MS 51352-1, controls and equipment shall be installed in accordance with applicable drawings on vehicles requiring winches. When specified (see 6.2) a snatch block conforming to drawing 11631700 and a chain assembly conforming to drawing 7077063 shall be furnished with each winch.

3.4.15 Wheel balance. Wheels, hubs, brake drums, tires and tubes shall be in balance to prevent front wheel vibration and tire wear.

3.4.16 Radio-interference suppression. Unless otherwise specified (see 6.2) each vehicle shall be radio-interference suppressed in accordance with the tactical vehicle requirements Class IIIA of MIL-STD-461.

3.5 Wood treatment. All wood parts for vehicles furnished in accordance with this specification shall be cleaned and treated in accordance with the requirements of MIL-STD-193.

3.6 Undercoating. When specified (see 6.2), vehicles shall be undercoated in accordance with MIL-STD-193.

3.7 Painting, marking, and data plates.

3.7.1 Painting. The vehicle, body(s) and components shall be cleaned, treated, and painted in accordance with MIL-STD-193, as specified for the appropriate service (see 6.2). Painted surfaces shall be free from sags, runs and thin areas.

3.7.2 Marking. Vehicle marking shall be in accordance with MIL-STD-642, as specified for the appropriate service (see 6.2).

3.7.3 Data plates. Unless otherwise specified (see 6.2) data plates conforming to Type III, Composition A, Class 2 of MIL-P-514 shall be used. Warning or precautionary data plates will be provided where necessary to protect personnel or equipment.

3.8 Servicing adjustment and cleaning. The contractor shall service the vehicle for operational use prior to delivery. Such servicing shall include, as a minimum the focusing of lights, the proper adjustment of the engine, electrical system, brake system, front wheel alinement and tire pressure. Unless otherwise specified, the chassis, engine and all running gear shall be serviced with lubricants of the proper grade for the climatic conditions (see 6.8). Engine cooling system shall be serviced with a solution of ethylene glycol (see Table IV) and water in equal parts by volume. In addition, the fuel servicing tank body and related piping on fuel servicing truck M49A2C shall be thoroughly flushed through the filtering system with a suitable solvent to assure the removal of all contaminants which my have accumulated during the fabrication process. The flushing operation shall be performed using a set of clean-up filter coalescer elements. The fuel monitor fuses my be removed for this flushing operation. The use of water as a flushing agent is not acceptable.

3.9 Workmanship. The workmanship on all production vehicle(s) shall be of a quality to assure that vehicles procured under the contract shall meet the requirements specified herein. Particular attention shall be paid to marking of parts, plating, painting, machine-screw assemblage, welding and brazing, and freedom of parts from burrs and sharp edges. Electric hydraulic and lub lines shall be located in a manner so as to prevent possible damage by rugging on adjacent lines or appendages. No condition shall exist which may create a safety hazard to operating or maintenance personnel.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier 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 Contractor quality control system. Unless otherwise specified by the procuring activity, the contractor shall provide and maintain an effective inspection and quality control system acceptable to the Government covering the supplies under the contract. A current written description of the system shall be submitted to the Procuring Contracting Officer or his authorized representative prior to initiation of production. The contractor will not be restricted to the inspection station or to the method of inspection listed provided that an equivalent limitation is included in the approved quality control procedure. The contractor shall notify the Government and obtain approval for any change to the written procedure that might affect the degree of control required by this specification or other applicable documents referenced therein.

4.1.2 Government evaluation. All quality control operations performed by the contractor will be subject to Government evaluation at unscheduled intervals. Evaluation will consist of (a) validating the conformance of the contractor to his established quality instructions, (b) continuous contractor decision verification of the contractor's documented evidence relative to product quality characteristics. Deviation from the prescribed or agreed-upon procedures, or instances of poor practices which might have an effect upon the quality of the product, will be immediately called to the attention of the contractor. Failure of the contractor to promptly correct deficiencies discovered shall be cause for suspension of acceptance until such time objective evidence has been furnished by the contractor that corrective action has been taken to eliminate the conditions which caused the deficiencies and to preclude recurrences.

4.1.3 Qualified products and materials. The contractor's inspection records shall be checked to determine contractor conformance to 3.2. The contractor shall provide the Government with evidence that materials (see 3.2.1) used are as specified in the applicable specifications and drawings.

4.1.4 Parts and components. Parts, components and assemblies shall be inspected in accordance with Engineering Parts Lists (see Table II) and Master List of Supplementary Quality Assurance Provisions (see Table V).

Table V. Supplementary Quality Assurance Provisions

8736563	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, W/Winch.
8736564	- Chassis, Truck: 2 1/2 ton, 6X6, M45A2, WO/Winch
8736565	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M45A2 W/Winch.
8736566	- Supplementary Quality Assurance Provisions for Truck, Tank: Fuel Servicing, 1200 Gallon 2 1/2 Ton, 6X6 M49A2C, WO/Winch.
8736567	- Supplementary Quality Assurance Provisions for Truck, Tank: Fuel Servicing, 1200 Gallon, 2 1/2 Ton, 6X6 M49A2, W/Winch.
8736780	- Supplementary Quality Assurance Provisions for Truck, Tank: Water, 1000 Gallon, 2 1/2 Ton, 6X6 M50A3, W/Winch.
8736569	- Supplementary Quality Assurance Provisions for Truck, Van: Shop, 2 1/2 Ton, 6X6 M109A3, WO/Winch.
8736570	- Supplementary Quality Assurance Provisions for Truck, Van: Shop, 2 1/2 Ton, 6X6 M109A3, W/Winch.
8736571	- Supplementary Quality Assurance Provisions for Truck Tractor: 2 1/2 Ton, 6X6, M275A2 WO/Winch.
8736573	- Supplementary Quality Assurance Provisions for Chassis Truck: 2 1/2 Ton, 6X6, M46A2C, WO/Winch.
8736574	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, WO/Winch.
8736575	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, W/Winch.
8736576	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M44A2, W/Winch.
8736581	- Supplementary Quality Assurance Provisions for Truck, Cargo: 2 1/2 Ton, 6X6, M35A2, WO/Winch.
8736582	- Supplementary Quality Assurance Provisions for Truck, Cargo: 2 1/2 Ton, 6X6, M35A2, W/Winch.
8736588	- Supplementary Quality Assurance Provisions for Repair Shop, Truck Mounted: 2 1/2 Ton, 6X6 M185A3, W/Winch.
8736589	- Supplementary Quality Assurance Provisions for Truck, Dump: 2 1/2 Ton, 6X6, M342A2, W/Winch.
8736592	- Supplementary Quality Assurance Provisions for Truck, Cargo: 2 1/2 Ton, 6X6 M36A2, WO/Winch.
8736593	- Supplementary Quality Assurance Provisions for Truck Cargo: 2 1/2 Ton, 6X6 M36A2, W/Winch.
8736594	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M44A2, WO/Winch.
8736595	- Supplementary Qua1ity Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M46A2, WO/Winch.

8736775	- Supplementary Quality Assurance Provisions for Truck, Tank: Water 1000 Gallon, 2 1/2 Ton, 6X6, M50A3 WO/Winch.
8736597	- Supplementary Quality Assurance Provisions for Truck Tractor: 2 1/2 Ton, 6X6 M275A2, W/Winch.
8736598	- Supplementary Quality Assurance Provisions for Truck Dump: 2 1/2 Ton 6X6, M342A2, WO/Winch.
8736600	- Supplementary Quality Assurance Provisions for Repair Shop Truck Mounted: 2 1/2 Ton, 6X6, M185A3, WO/Winch.
8736601	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M45A2, WO/Winch.
8736602	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M45A2G , WO/Winch.
8736603	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M46A2C, W/Winch.
8736604	- Supplementary Quality Assurance Provisions for Chassis, Truck: 2 1/2 Ton, 6X6, M45A2G, W/Winch.
8736733	- Supplementary Quality Assurance Provisions for Truck, Cargo: Drop Side, 2 1/2 Ton, 6X6 M35A2C, WO/Winch.
8736735	- Supplementary Quality Assurance Provisions for Truck, Cargo: Drop Side, 2 1/2 Ton, 6X6, M35A2C W/Winch.
8736769	- Supplementary Quality Assurance Provisions for Truck Maintenance, Pipeline Construction, 2 1/2 Ton, 6X6, M756A2 W/Winch.
8736782	- Supplementary Quality Assurance Provisions for Truck, Maintenance, Earth Borer, Pole Sitter, 2 1/2 Ton 6X6, M764, W/Winch.

4.1.5 In-process inspection.

4.1.5.1 In-process inspection. During fabrication of the first production vehicle of each model, an in-process inspection will be conducted by Government representatives (see 3.1) to evaluate conformance of materials and workmanship with drawing and specification requirements. These inspections shall be made at the contractor's or sub-contractor's facility prior to the application of primer or paint.

4.1.5.2 Review and evaluation. Review and evaluation of records for processing procedure, inspection systems and plan of quality control, will be conducted on the following: material, welding, surface hardening, heat treating, protective finishes, etc.

4.1.5.3 Complete vehicle inspection. The first vehicle of each model, when complete shall be inspection by the Government, subsequent to contractor's inspection at the acceptance inspection location specified in contract, to determine conformance to contract and specification requirements.

4.1.5.3.1 Corrections. Corrections found necessary as a result of above inspection shall be made by the contractor on the vehicle.

4.1.5.3.2 Vehicle disposition. Upon completion of inspection and acceptance of the first production vehicle of each model, these vehicles shall remain at the manufacturing facility as production samples. These vehicles may be released for shipment after 120 days from start of production or when the production run of the particular model has been completed prior to the 120 day time limitation. If the quality level of the subsequent produced vehicles exceeds the acceptance standard, the first production vehicle may be released sooner at the discretion of the Purchasing Contracting Officer. The contractor shall service and maintain the vehicle(s) during this period in accordance with the application documents for care and preservation while in storage. If the quality level of the subsequent produced vehicles exceeds the acceptance standard, the first production vehicle may be released sooner at the discretion of the Contracting Officer. The contractor shall service and maintain the vehicles during this period in accordance with the applicable documents for care and preservation while in storage.

4.1.5.4 First production vehicle test. After inspection, and acceptance of the first production vehicle two of each model (or less, as may be prescribed by the Procuring Contracting officer) from the immediate production following, shall be selected by the Government and, after inspection by contractor shall be subjected to examinations and tests for conformance to this specification and Tables VI, VII, and VIII as applicable to the model vehicle. The tests will require a maximum of 90 days at a Government test site. The contractor shall support the tests by providing replacement parts necessary for completion of tests. Delay in test completion caused by the vehicle breakdown or failure of the contractor to adequately support the vehicle with parts during the tests shall not be the basis for adjustments of the contract delivery schedule or contract price.

Table VI. 20,000 mile test for all models, except Van models and Truck Tractors

Course	Mileage & speeds	Vehicle loading
Hard surface	8000 miles at varying speed up to maximum	Highway payload (see Table XIV)
Secondary	5850 miles at speeds applicable to conditions of terrain	Highway payload (see Table XIV)
Level and hilly Country	6000 miles at speeds applicable to conditions of terrain	Limited cross and Cross-country (see Table XIV)
Belgian block	150 miles at speeds applicable to conditions of terrain	Cross-country (see Table XIV)

Table VII. 20,000 mile test for truck tractors in combination with applicable semitrailers

Course	Mileage & speeds	Vehicle loading
Hard surface	12,000 miles at varying speed up to maximum	Highway payload (see Table XIV)
Secondary	4,850 miles at speeds applicable to conditions of terrain	Limited Cross-Country payload (see Table XIV)
Level and hilly cross-country	3,000 miles at speeds applicable to conditions of terrain	Limited cross-country payload (see Table XIV)
Belgian block	150 miles at speeds applicable to conditions of terrain	Limited cross-country payload (see Table XIV)

Table VIII. 11 400 mile test for van models

Course	Mileage & speeds	Vehicle loading
Hard surface	7,500 miles at varying speed up to maximum	Highway payload (see Table XIV)
Secondary	1,525 miles at speeds applicable to conditions of terrain	Highway payload (see Table XIV)
Level and hilly cross-country	2,275 miles at speeds applicable to conditions of terrain	Limited cross-country and Cross-county (see Table XIV)
Belgian block	100 miles at speeds applicable to conditions of terrain	Cross-country (see Table XIV)

NOTE: Fifty percent of the test specified in Tables VI and VII shall be performed with applicable towed loads.

4.1.5.4.1 Reliability verification. To determine conformance to 3.1.1, reliability requirements will be verified at a 50% confidence level while the vehicle is subjected to first production vehicle test. The Mean Miles Between Failure (MMBF) shall not be less than specified.

4.1.5.4.2 Durability verification. To determine conformance to 3.1.2, the durability requirements will be verified at a 50% confidence level while the vehicle is subjected to first production vehicles test.

4.1.5.4.3 Maintainability verification. To determine conformance to 3.1.3, the maintainability requirements will be verified during first production vehicle test.

4.1.5.4.4 Test Failure. Failure of the vehicle to comply with any of the requirements specified or any deficiency of a workmanship or materials nature found on the vehicle during or as a result of the 20,000 or 11,400 mile test as applicable, will be cause for rejection of the vehicle. Further, the Government will refuse to continue acceptance of production vehicles until evidence has been provided by the manufacturer that corrective action has been taken to eliminate the deficiency. Any deficiency found during or as a result to 20,000 or 11,400 mile test shall be prima facie evidence that all vehicles already accepted prior to completion of the 20,000 or 11 400 mile test are similarly deficient, unless evidence satisfactory to the contracting officer is furnished by the contractor that they are not similarly deficient. Such deficiencies on all vehicle shall be corrected by the contractor at no cost to the Government.

4.2 Inspection provisions.

4.2.1 Lot size. An inspection lot shall consist of all vehicles of one type from one day's production, submitted at one time for acceptance inspection.

4.2.1.1 Sampling for inspection. For the purpose of visual, dimensional and primary functional inspection, a representative sample shall be selected from each inspection lot in accordance with inspection level II of MIL-STD-105. Before sampling may be accomplished by the contractor, the contractor shall 100% inspect the first 20 vehicles to establish a process average (see 6.3) to allow normal sampling in accordance with MIL-STD-105.

4.2.1.2 Examinations. Visual, dimensional, and primary functional examination shall consist of examination of the vehicle for conformance to the applicable drawings and this specification. Examination shall be performed against the classification of defects and with the acceptable quality levels shown in Table IX and Table X. The following constitutes a part of the classification of defects (see 6.4 and 6.5)

(a) Any drip constitutes a major defect when the vehicle has been standing idle and the components are at ambient temperature.

(b) Any droplet that occurs at a static fit metal to metal or gasket combination shall constitute a major defect.

Table IX. Major AQL = Defects/100 Units

Defect No.	Defects	Methods of Inspection
101	Steering mechanism: malfunction; unusual noise; leaks (see 6.4)	Visual and functional
102	Engine: malfunction; unusual noise; leaks mounting improper	Visual and functional
103	Clutch: malfunction; unusual noise	Visual and functional
104	Transmission: malfunction; unusual noise; leaks, (see 6.4) mounting improper	Visual and
105	Prop. shafts: malfunction; misalignment, unusual noise	Visual and functional
106	Transfer: malfunction; unusual noise, leaks (see 6.4) mounting improper	Visual and functional
107	Power takeoff: malfunction; unusual noise; leaks (see 6.4)	Visual and functional
108	Compressed air devices: malfunction; unusual noise leaks	Visual and functional
109	Rotary pump: malfunction; unusual noise	Functional
110	Hydraulic hoist: malfunction; unusual noise; leaks (see 6.4)	Visual and functional
111	Cooling system components: malfunction; unusual noise; leaks; damage; improper clearance	Visual and functional
112	Engine governors: malfunction; seals defective or fig	Visual and functional
113	Fuel system components: malfunction; damage; leaks (see 6.4)	Visual and functional
114	Instrumentation switches, warning, indicating and safety devices: malfunction; damage	Visual and functional
115	Electrical system components: malfunction; damage; unusual noise	Visual and

Table IX. Major AQL = 25 Defects/100 Units (Cont'd)

Defect No.	Defects	Method of Inspection
116	Service, handbrakes and locks: malfunction; unusual noise; leaks (see 6.4)	Visual and functional
117	Axles: malfunction; unusual noise; leaks (see 6.4)	Visual and functional
118	Speed: nonconformance	Functional
119	Windshields and windows: fogged; cracked; broken	Visual
120	Tire damage	Visual
121	Intervehicle cable and hose: improper lengths; damaged	Visual
122	Lubrication system components: (engine) damage; leaks (see 6.4)	Visual and functional
123	Fifth wheel: malfunction; improper assembly or installation; welding defects	Visual and functional
124	Frame structure and welding defects	Visual
125	Tank structure and welding defects	Visual
126	Suspension system components: damage; leaks (see 6.4)	Visual
127	Exhaust system components: damage; leaks	Visual
128	Controls: malfunction; clearance improper	Visual and functional
129	Miscellaneous items or accessories: malfunction; damage	Visual and functional
130	Suspension system components: malfunction; damage	Visual and functional
131	Shock absorbers: damage; leaks (see 6.4)	Visual and functional

Table X. Minor AQL = 150 Defects/100 Units

Defect No.	Defects	Method of Inspection
201	Controls: improper adjustment or assembly	Visual and functional
202	Coolant: low of improper mixture	Visual and functional
203	Lubricants: levels and types improper, (all units)	Visual
204	Wheels and tires: improper size; type and mounting	Visual
205	Pulleys and fan: misalignment; improper mounting or clearance	Visual
206	Belts: tension improper; defective	Visual
207	Shock absorbers: improper installation or assembly	Visual
208	Wiring or tubing: defective; improper assembly, installation or coding	Visual
209	Brake system components: improper assembly installation, or protection	Visual
210	Body, cab doors, hood items, stowage brackets and boxes: improper fits, assembly, or installation; defective weldments, racks, bows, flooring, seals, benches, or hardware	Visual
211	Sheet metal and welding defects	Visual
212	Electrical system components: improper installation or assembly	Visual
213	Paint: application and color improper	Visual
214	Suspension system components: improper installation or assembly	Visual
215	Steering system components: improper installation, assembly or clearance	Visual
216	Exhaust system components: improper assembly or installation	Visual

Table X. Minor AQL = 150 Defects/100 Units (Cont'd)

Defect No.	Defects	Method of Inspection
217	Cooling system components: improper assembly or installation	Visual
218	Fuel system components: improper assembly or installation	Visual
219	Lube fittings: defective; missing or improperly installed	Visual
220	Cushions, upholstery, canvas tops and curtains: damaged; improper fit and installation	Visual
221	Trim defects	Visual
222	Misc. items or accessories: missing; improper assembly or installation	Visual and functional
223	Decals, marking, data and instruction plates: incomplete data; missing, improper location or size: vehicle registration and identification marking	Visual
224	Protective coatings: applications; missing or improperly processed	Visual
226	Lubrication improper	Visual

4.2.1.3 Unclassified defects. All defects having no bearing on function, safety, interchangeability or life, but are considered departures from good workmanship will be noted in writing. Workmanship deficiencies falling within this category and recurring in 5 consecutive lots or ten lots or more within a thirty-day period will be added to the minor classification with no increase to AQL's.

4.2.1.4 Recurring major deficiencies. A major deficiency (see 6.5) is recurring when the same defect occurs more than once in the same sample or when the defect occurs in two successive samples. A major defect may be considered recurring when the historical inspection records ("P" chart or approved equivalent) reflect such a condition. Recurring major deficiencies shall be cause for the entire lot or lots to be inspected for the recurring deficiencies. The deficiencies shall be corrected when found.

4.3 Classification of tests.

(a) Acceptance tests, 4.3.1 through 4.3.1.21.
(b) Control tests, 4.3.2 through 4.3.2.13.
(c) Comparison test (CY), 4.3.3 through 4.3.3.12.

4.3.1 Acceptance of tests. Each completed vehicle (less payload) shall be operated for a distance of not less than 5 miles, at place of manufacturer by the contractor and subjected to examinations (see table IX and X) and subjected to test specified herein (see table XI). Vehicle shall be driven in reverse gear a minimum of 50 feet. Vehicle shall be free of any defects specified in Table IX, and shall meet all performance requirements specified herein.

4.3.1.1 Test failure. If a vehicle fails to pass any acceptance test specified herein, the Government inspector shall withhold acceptance of subsequent vehicles until evidence has been provided by the contractor that the corrective action bas been taken.

Table XI. Location for tests

Title	Paragraph Numbers	Place of Manufacture	Government Proving Ground
Acceptance tests	4.3.1	X	X
Hard top and rear window check	4.3.1.2	X	X
Soft top check	4.3.1.3	X	X
Electrical circuits check	4.3.1.4	X	X
Headlights check	4.3.1.4.1	X	X
Radio receptacle check 4.	4.3.1.4.2	X	X
Controls check	4.3.1.5	X	X
Adjustment mechanism check	4.3.1.6	X	X
Truck, tank fuel servicing (M49A2C) tank leak test	4.3.1.7	X	
Water tank truck (M50A3) body and components check	4.3.1.8	X	
Truck maintenance pipeline construction check	4.3.1.9	X	
Removable cargo body check	4.3.1.9.1	X	X
Transfer case, front axle engagement check	4.3.1.10	X	X
Braking ability check	4.3.1.11	X	
Cramping angle check	4.3.1.12	X	
Dump truck check	4.3.1.13	X	
Dump side cargo body check	4.3.1.14	X	
Winch check	4.3.1.15	X	
Wheel balance check			

Table XI. Location for tests (Cont'd)

Title	Paragraph Numbers	Place of Manufacture	Government Proving Ground
Wood treatment check	4.3.1.17	X	
Undercoating check	4.3.1.18	X	
Painting marking and data plate check	4.3.1.19	X	
Servicing adjustment and cleaning check	4.3.1.20	X	
Fuel dispensing filter separator system check (M49A2C)	4.3.1.21	X	X
Control tests	4.3.2	X	X
Special kits checks	4.3.2.2	X	
Stowed material check	4.3.2.3	X	X
Fuel tank body and piping leak test	4.3.2.4	X	X
Catwalks functional test	4.3.2.5	X	X
A-frame, power take-off and winch operational test (M756A2).	4.3.2.6	X	X
Waterproofness van bodies check	4.3.2.7	X	X
Lightproofness check, van bodies	4.3.2.7.1	X	X
Performance operational tests all-type vehicles	4.3.2.8	X	X
Engine and cooling system test	4.3.2.8.1	X	X
Transfer case tests	4.3.2.8.2	X	X
Highway operational speed tests	4.3.2.8.3	X	X
Braking ability tests	4.3.2.8.4	X	X
Cramping angle test	4.3.2.8.5	X	X
Exhaust system check	4.3.2.8.6	X	X
Fuel dispensing filter separator system check (M49A2C)	4.3.2.9	X	X
Water tank rotary pump operational test	4.3.2.10	X	X
Dump truck operational test	4.3.2.11	X	X
Drop side cargo body interchangeability check	4.3.2.12	X	X
Winch operational test	4.3.2.13	X	X
Body winch operational test	4.3.2.14	X	X
Boring machine check	4.3.2.15	X	X
Outrigger check	4.3.2.16	X	X
Derrick operation test	4.3.2.17	X	X
Derrick support jack test	4.3.2.18	X	X
Wheel shocks check	4.3.1.19	X	X

Table XI. Location for tests (Cont'd)

Title	Paragraph Numbers	Place Manufacture	Government Proving Ground
Comparison tests	4.3.3		
Special kits operational tests	4.3.3.2		X
Water tank trucks, capacity and tire chain clearance check	4.3.3.3		X
Equipment cabinet test	4.3.3.4		X
Heating chamber check	4.3.3.5		X
Environmental operational tests	4.3.3.6		X
Vehicle loading tests	4.3.3.7		X
Vehicle operational tests	4.3.3.8		X
Water fording test	4.3.3.9		X
Grade and side slope tests	4.3.3.10		X
Service and parking brake test	4.3.3.11		X
Radio interference suppression tests	4.3.3.12		X
Preservation, packaging and vehicle processing	4.4	X	

4.3.1.2 Hard top and rear window check. To determine conformance to 3.3.1.8 and 3.3.1.8.1, vehicles with hard top closure shall be checked for completeness and proper installation of the hard top, the windows shall be operated and checked for operational requirements and adjustment.

4.3.1.3 Soft top check. To determine conformance to 3.3.2, vehicles with soft top shall be checked for completeness, proper installation and damage to soft top.

4.3.1.4 Electrical circuits check. To determine conformance to 3.3.3 and 3.3.9.2, electrical circuits supplying current to the vehicle equipment shall be checked at all points to assure continuity throughout the circuits.

4.3.1.4.1 Headlight checks. To determine conformance to 3.3.3.1, with vehicle on a level surface the lights shall be operated, and checked for operational requirements and adjustment.

4.3.1.4.2 Radio receptacle check. To determine conformance to 3.3.3.2, when installed the radio receptacle shall be checked for continuity.

4.3.1.5 Controls check. To determine conformance to 3.3.4, all controls shall be operated and checked for functional requirements.

4.3.1.6 Adjustment mechanism check. To determine conformance to 3.3.5, all adjustment mechanisms shall be checked for proper adjustment and adjusted if required.

4.3.1.7 Trucks tank fuel and fuel servicing (M49A2C) tank leak test. To determine conformance to 3.3.7, the tank of each truck shall be tested for leaks by a minimum air pressure of 2 PSI applied to the whole tank and dome if it be non-compartmented. If compartmented each individual compartment shall be similarly tested with adjacent compartments empty and at atmospheric pressure. Air pressure shall be maintained for a period of at least five minutes during which the entire surface of all joints under pressure shall be coated with a solution of soap and water, heavy oil, or other material suitable for the purpose, foaming or bubbling of which indicates the presence of leaks. All closures shall be in place during test. During this test operative relief devices shall be clamped, plugged or otherwise rendered inoperative; such clamps, plugs and similar devices shall be removed immediately after the test is finished. Tanks failing to pass this test shall suitably be repaired and the above tests shall be continued until no leaks are discovered. Every tank tested shall withstand such pressure without distortion or evidence of impending failure or failure. Failure to meet requirements is sufficient cause for rejection.

4.3.1.8 Water tank truck (M50A3) body and components check. To determine conformance to 3.3.8 through 3.3.8.9 the water tank truck body and components, shall be checked for completeness and proper assembly stowage of hoses and other equipment shall be checked for ease of removal and for stability of retainment under all vehicles operating conditions. The tank piping and all fitting shall be checked for leaks. There shall be no leaks.

4.3.1.9 Truck maintenance pipeline construction check. To determine conformance to 3.3.9 through 3.3.9.4 and 3.3.9.6 through 3.3.9.8, the body and accessories shall be checked for meeting requirements and overall dimensions specified on applicable drawings. Materials, wiring, welding and case of maintenance shall be as specified. The body components and controls shall be checked for performance, except vehicle operational requirements.

4.3.1.9.1 Removable cargo body check. To determine conformance to 3.3.9.5, all vehicles furnished with removable cargo body shall be checked for completeness of body and all equipment. The removable sides and tailgate shall be checked for binding and ease of removal. All equipment shall be checked for proper location and interference with other components. Bows, paulin and curtains shall be checked for damage and ease of installation.

4.3.1.10 Transfer case, front axle engagement check. To determine conformance to 3.4.4.2, each vehicle shall be operated and checked for front axle engagement on specified air pressure.

4.3.1.11 Braking ability check (less payload). To determine conformance to 3.4.8, through 3.4.8.2, during tests, the ability of the brakes to stop and hold vehicle as specified shall be observed for functional requirements.

4.3.1.12 Cramping angle check. To determine conformance to 3.4.9 during testing each vehicle shall be cramped as specified and checked for performance specified.

4.3.1.13 Dump truck check. To determine conformance to 3.4.12, the hydraulic system shall be operated as specified and checked for functional requirements.

4.3.1.14 Drop side cargo body check. To determine conformance to 3.4.13, the sides and tailgate shall be checked for completeness of assembly, proper mounting, and locking.

4.3.1.15 Winch check. To determine conformance to 3.4.14, the winch and controls shall be checked for completeness and proper installation.

4.3.1.16 Wheel balance check. To determine conformance to 3.4.15, the front wheels shall be checked for balance.

4.3.1.17 Wood treatment check. To determine conformance to 3.5, all wood used in manufacturer of vehicles shall be checked for meeting the specification requirements.

4.3.1.18 Undercoating check. To determine conformance to 3.6, undercoating shall be as specified.

4.3.1.19 Painting, marking and data plate check. To determine conformance to 3.7.1 through 3.7.3, the painting marking and data plates shall be as specified or as specified by the procurement document.

4.3.1.20 Servicing adjustment and cleaning check. To determine conformance to 3.8, servicing and adjustments shall be checked for requirements specified, including all stowed material (OVM), as specified in contract and vehicle completely cleaned. On fuel servicing vehicles the tank body piping and components shall be cleaned by flushing as specified.

4.3.1.21 Fuel dispensing filter separator system check (M49A2C). To determine conformance to 3.4.10, the fuel dispensing filter separator system shall be operated (with or without filtering elements and fuses) using number 1 diesel oil or solvent conforming to P-D-680, and checked for functional requirements (less fuel cleanliness check). When filtering elements and fuses are used in checking, they shall be replaced with new elements and fuses (slave filters may be sued) after completion of test. The dump valve shall be checked for proper operation.

4.3.2 Control tests. One of the first ten production vehicles of each model, and one per month thereafter, selected by the Government, shall be operated at the place of manufacturer for a distance of not less than 50 miles on hard surfaces roads with designated or simulated highway payload.

4.3.2.1 Test failure. If the vehicle selected fails to comply with the requirements specified herein it will be cause for Government refusal to continue acceptance of vehicles until evidence has been provided by the contractor that corrective action has been taken to eliminate the conditions.

4.3.2.2 Special kits check. To determine conformance to 3.3.1 through 3.3.1.7, a specific kit when furnished shall be installed on vehicles, and checked for proper installation or interference with other components. When installation of kits require permanent change in vehicle configuration or adaption, such as weldments, drilled holes, metal cutouts, etc., prior approval must be obtained from the Procuring Contracting Officer. When testing Arctic Kits, 3.3.1.2 and 3.3.1.2.1, for conformance the Carbon Monoxide Concentrations must be measured and comply to levels cited in Materiel Test Procedure 2-2-614 (see 4.3.2.8.6).

4.3.2.3 Stowed material check. To determine conformance to 3.3.6 all manufacturer and depot installed OVM shall be stowed on the selected vehicle. All items shall fit in the spaces provided. The equipment shall be removed after the check. The OVM used shall be of the latest configuration available to the contractor.

4.3.2.4 Fuel tank body and piping leak test (M49A2C). To determine conformance to 3.3.7, after the 50 mile road test, each compartment and all joints and piping shall be tested for leaks by the air and bubble method (see 4.3.1.7) and as follows:

> Using the vehicle fueling equipment, one tank compartment shall be filled with 600 gallons of number 1 diesel oil, or solvent conforming to P-D-680. All welds adjacent to the tank compartment and the emergency relief valve shall be examined for leaks. The compartment shall be emptied, and, the same procedure shall be repeated on the other tank compartment. During tests, all piping and valves shall be checked for leaks and function. Leaks shall be corrected by rewelding or tightening. On completion of repairs unit shall be retested in accordance with the above procedure.

4.3.2.5 Catwalks functional tests. To determine conformance to 3.3.8.7 vehicle shall have a set of bows, covers, and end curtains installed, and checked for interference, ease of installation, resemblance on the cargo trucks, and ability to withstand lifting stresses.

4.3.2.6 A-frame power take-off, winch operational and lifting test (M756A2). To determine conformance to 3.3.9.4.1 and 3.3.9.9, with the A-frame winch and all controls including the rear power-take-off installed on the vehicle the winch, all controls and A-frame shall be functionally tested for lifting and transporting the specified load. Any loosening or shifting of components shall constitute a failure of this test.

4.3.2.7 Waterproofness van bodies check. To determine conformance to 3.3.10.1, each vehicle selected shall have the van body subjected to not less than 15 minutes spray test. The spray shall be delivered by nozzles operating at 25 pounds (minimum) per square inch (PSI) water pressure, sufficient in number to afford full coverage of the roof, floor, sides, front and rear of body. Nozzles shall be placed within two feet of area being tested. During water test all doors and windows shall be closed. If leaks occur within the van body, the vehicle shall be rejected until defects have been corrected and van body retested with above procedure.

4.3.2.7.1 Light proofness check van bodies. To determine conformance to 3.3.10.2, each van body with access door closed and blackout shades down, shall be placed in bright sunlight or exposed to high intensity illumination. No light shall be visible inside van body. The test shall be repeated at night with all sources of illumination operating within the van body. No light shall be visible outside of van body.

4.3.2.8 Performance operational tests (all type vehicle). To determine conformance to 3.4, during the 50 mile road test the vehicle shall meet performance requirements of 3.4.3, 3.4.3.1, 3.4.3.2, 3.4.4.2 through 3.4.5.2 and 3.4.8 through 3.4.9. In addition, to determine there will be no loosening or shifting of the body and its component as specified in 3.3.9, the M756A2 w/w truck test is to include not less than 15 abrupt stops from a speed of 25 MPH in forward direction, not less than 5 abrupt stops from a speed of 5 MPH in reverse direction, and not less than 20 sharp turns (10 to the right and 10 to the left) at maximum safe speeds in forward gear. During this operation the A-frame shall be erected at rear, the headlights shall be on and the 4 way flash signals shall be operated. There shall be no loosening or shifting of the body and its components. Vehicles selected with a removable cargo body shall be checked after this test for damage and shifting of stowed accessories.

4.3.2.8.1 Engine and cooling system test. To determine conformance to 3.4.3 and 3.4.3.1, during these tests, the engine and it's components and the cooling system shall be observed for performance requirement.

4.3.2.8.2 Transfer case test. To determine conformance to 3.4.4.2, during these tests, the front wheel drive shal1 be engaged, and shall perform as specified.

4.3.2.8.3 Highway operational speed tests. To determine conformance to 3.4.5 through 3.4.8.2, during these tests the vehicle shall be operated at specified speeds and the vehicle observed for performance requirements.

4.3.2.8.4 Braking ability tests. To determine conformance to 3.4.8 through 3.4.8.2, during tests, the ability of the brakes to stop and hold vehicle as specified shall be observed for functional requirements.

4.3.2.8.5 Cramping angle test. To determine conformance to 3.4.9 during tests the vehicle shall be cramped as specified and checked for requirements specified, in addition all steering controls, and steering of vehicle at all speeds shall be observed for ease of operation, and vehicle control.

4.3.2.8.6 Exhaust system check. To determine conformance to 3.4.3.2 the exhaust system shall be tested for conformance to U.S. Army Test and Evaluation Command, Common Engineering Test Procedure 2-2-614, Toxic Hazards Test for Vehicles. Tests shall be conducted with the hard top/soft top in place and windows rolled up. Test will be conducted when the Arctic Kit is installed.

4.3.2.9 Fuel dispensing filter separator system test (M49A2C). To determine conformance to 3.4.10 and 3.4.10.1, using number 1 diesel oil or solvent conforming to P-D-680 the fuel dispensing filter separator system shall be operated. The system shall meet the gallons of discharge per minute, fuel cleanliness requirements, and the dump valve shall be tested for proper operation. The dispensing system shall operate without malfunction or leaks. After completion of the test new filtering elements and fuses shall be installed. This test shall be accomplished at place of manufacture and Government Proving Grounds (see table XI).

4.3.2.10 Water tank rotary pump operational test. To determine conformance to 3.4.11, the water rotary pump shall be operated as specified and checked for self priming ability and gallons per minute of discharge.

4.3.2.11 Dump truck operational test. To determine conformance to 3.4.12, with specified load in dump body the controlling and operating mechanisms shall be operated and checked for performance requirements.

4.3.2.12 Drop side cargo body interchangeability. To determine conformance to 3.4.13, the drop sides shall be changed from one side to the other and checked for interchangeability requirements.

4.3.2.13 Winch operational tests. To determine conformance to 3.4.14, the vehicles with winches installed shall have the winch functionally tested for conformance to requirements to specification for specified winch.

4.3.2.14 Body winch operational test (M764). To determine conformance to 3.3.11.1, demonstrate body winches and mountings ability to withstand 15,000 pounds rated line pull at first layer on bare drum. Pull shall be checked by raising a 15, 000 lb weight 3 to 5 ft high. It will also be demonstrated that the winch shaft shear pin, T.S., having been broken (between 15,000 and 16,000 pounds) by an overload, will provide for a free wheeling drive sprocket and may be replaced according to instructions found on the vehicle. Winch must demonstrate capability of allowing a man to take off cable by hand. Cable must rewind evenly on drum under tension with power applied.

4.3.2.15 Boring machine check. (M764) To determine conformance to 3.3.11.2, demonstrate machine's ability bore vertical holes 30 inches in diameter and 10 feet in depth. Demonstrate ability to bore holes 5 feet deep with the 16-inch auger at an angle of 45° from vertical to the left or right.

4.3.2.16 Outrigger check. (M764) To determine conformance to 3.3.11.4, demonstrate stability of truck during boring and winching operations through the use of left-hand and right-hand hydraulic outriggers. Truck springs must be free of overload during working operations. Demonstrate ability to lock cylinders or outriggers to prevent drifting during vehicle travel.

4.3.2.17 Derrick operation test. (M764) To determine conformance to 3.3.11.5, with the aid of the winch, erect the derrick in an "on truck tripod" position using proper sheaves and spindle bars, etc., lift a weight of 5,000 pounds five feet from the ground. Demonstrate ability to remove, install and straighten poles 45 feet in length. Demonstrate ability to lift a 9,000 pound weight with the center leg on the ground and supported by the I beam.

4.3.2.18 Derrick support jack test. M764) To determine conformance to 3.3.11.6, remove 15-ton capacity jacks from truck body and demonstrate truck stability during derrick operations. Do not move truck while a weight is suspended from the pole derrick.

4.3.2.19 Wheel chocks check. (M764) To determine conformance to 3.3.11.7 demonstrate wheel chocks ability to restrict movement of truck during derrick operations with brakes applied.

4.3.3 Comparison test. The Government may select vehicles anytime during the contract production period and conduct comparison tests. Test shall be conducted at a Government test site as outlined in Table XII and Table XIII as applicable. Test vehicles loaded as specified in 3.4.2 and 6.6, with all on-vehicle material stowed in place, will be subjected to all previously performed examinations and all test in Table XI as applicable.

Table XII. Comparison test of 4050 miles for all models except van and expansible van models

Course	Mileage and speeds	Vehicle payload
Paved surface	900 miles; up to 50 mph	Highway
Level cross-country	1550 miles; as applicable to conditions of terrain	Limited Cross-country
Hilly cross-country	1550 miles; as applicable to conditions of terrain	Cross-country or limited cross-country as applicable
Belgian block	50 miles; as applicable to conditions of terrain	Cross-country or limited cross-country as applicable

Table XIII. Comparison test of 2250 miles for van and expansible van models

Course	Mileage and speeds	Vehicle payload
Hard surface	250 miles speeds varying up to maximum	Highway
Secondary	750 miles at speeds applicable to conditions of terrain	Highway
Level cross-country	600 miles at speeds applicable to conditions of terrain	Limited Cross-country
Hilly cross-country	600 miles at speeds applicable to conditions of terrain	Cross-country
Belgian block	50 miles at speeds applicable to conditions of terrain	No load

4.3.3.1 Test failure. Failure of any vehicle to comply with any of the requirements specified in the contract or any major deficiency of a workmanship or materials nature occurring during or as a result of the test, may be cause for refusal to continue acceptance of vehicles by the Government until evidence has been provided by the manufacturer that corrective action has been taken to eliminate the conditions.

4.3.3.2 Special kits operational tests. To determine conformance to 3.3.1 through 3.3.1.7, a specific kit when furnished with a vehicle or subsequent to arrival of vehicle for testing the kit shall be installed on vehicle and checked for operational requirements.

4.3.3.3 Water-tank trucks, capacity, and tire chain clearance check. To determine conformance to 3.3.8, the tank shall be filled to capacity and vehicle operated as specified, and checked for capacity requirements and tire chain clearance.

4.3.3.4 Equipment cabinet test. To determine conformance to 3.3.8.3, the equipment shall be stowed as specified and vehicle operated cross country as specified in table XII, and equipment checked for damage.

4.3.3.5 Heating chamber check. To determine conformance to 3.3.8.6, during this test the heat shall be put through the chambers, the two-way valve and control operated, exhaust-gas outlet checked for exhaust escape, and heat chamber function.

4.3.3.6 Environmental operational tests. To determine conformance to 3.4.1, the vehicle, properly serviced and equipped shall be subjected to the applicable tests in high and low temperatures.

4.3.3.7 Vehicle loading tests. To determine conformance to 3.4.2, the specific vehicle furnished for this test shall be loaded as specified (see 6.6, Table XIV).

4.3.3.8 Vehicle operational test. To determine conformance to 3.4.3, through 3.4.5.2, vehicle shall be loaded to GVW, operated as specified and checked for cross country, highway performance, and cooling system requirements.

4.3.3.9 Water fording test. To determine conformance to 3.4.6 the vehicle shall be operated in water of a minimum of 30 inches in depth for at least 15 minutes. While vehicle is submerged shut the engine down for a minimum of one minute and restart. Immediately following the fording test, vehicle shall be examined for evidence of water leaks. Remove all wheels and hubs and examine bearing areas for evidence of water, drain the oil from the differentials, transmission and transfer cases and examine for evidence of contamination by water. Any evidence of contamination by water shall be cause for rejection of the vehicle.

4.3.3.10 Grade and side slope tests. To determine conformance to 3.4.7 through 3.4.7.2, the vehicle shall be operated on specified grades, slopes, and checked for performance requirements.

4.3.3.11 Service and parking brake test. To determine conformance to 3.4.8 through 3.4.8.2, the vehicle shall be operated on level roadway and specified grades, and the braking systems checked for operational requirements.

4.3.3.12 Radio interference suppression test. To determine conformance to 3.4.16 the vehicle shall be subjected to a radio interference suppression test as specified or as specified in procurement document.

4.4 Preservation, packaging and vehicle processing. Material and equipment shall be inspected prior to shipment to assure conformance to the applicable requirements specified in section 5 of this specification.

5. PREPARATION FOR DELIVERY

5.1 Vehicle processing. Vehicles shall be processed for shipment and storage in accordance with MIL-V-62038 to the extent indicated on the Vehicle Preservation Data Sheets furnished by the procuring activity (see 6.2).

6. NOTES

6.1 Intended use. The vehicles covered by this specification are intended for general use by the United States Armed Forces in transporting personnel or cargo, or in providing for special tasks, during tactical military operations. When fitted with special equipment kits, the vehicles are intended for use under extreme or unusual conditions of climate, weather, terrain, and military service.

6.2 Ordering data. Procurement documents should specify the following:

(a) Title, number, and date of this specification.
(b) Type and model vehicle required (see 1.2).
(c) Special kits as required (see 3.3.1).
(d) Hard top if required (see 3.3.1.8).
(e) Soft top required (see 3.3.2).
(f) Radio receptacle if required (see 3.3.3.2).
(g) Bows, covers, and end curtains as required (see 3.3.8.7).
(h) Master keys if required (see 3.3.8.9).
(i) Removable sides, troop seats lazy backs safety straps bows, paulin, end curtains and tailgate if not required (see 3.3.9.5).
(j) Welding if not as specified (see 3.3.9.8).
(k) Winch not required (see 3.4.14).
(l) Snatch block and chain assembly required (see 3.4.14).
(m) Radio interference if other than specified (see 3.4.16).
(n) Undercoating if required (see 3.6).
(o) Treatment and painting for service as required (see 3.7.1).
(p) Service marking as required (see 3.7.2).
(q) Data plates if other than specified (see 3.7.3).
(r) Preparation for delivery as required (see 5.1).

6.3 Process average. Sampling may be initiated if the process average value for the first twenty vehicles inspected is less than the AQL specified in the Classification of Defects for major and minor defects. Process average shall be computed as follows:

$$\text{Process average} = \frac{\text{Number of defects}}{\text{Number of vehicle inspected}} \times 100$$

If the computed process average exceeds the specified AQL, 100 percent inspection shall be performed and continued until such time that the process average for twenty consecutive vehicles is less than the specified AQL.

6.4 The following definitions shall be used for the classification of defects for leaks:

Weep: - Any evidence of fluid beyond the seal.

Seep: - Any evidence of fluid beyond the seal that does not result in the formation of a droplet

Droplet: - Any evidence of fluid beyond the seal that results in the formation of a droplet.

Drip: - Any evidence of fluid beyond the seal where droplet forms and falls.

6.5 Definitions of recurring major and minor defects. The Government Inspector will verify that a thorough inspection of each vehicle is performed by the contractor not only for the listed characteristics, but also for any other departures from good workmanship. The Government Inspector will assure that all deficiencies encountered during the inspection are enumerated on the Deficiency Sheet for the vehicle. The defects noted on Deficiency Sheet shall contain sufficient description to enable the Government Inspector and the contractors representative to classify the deficiency in accordance with the classification of defects of the vehicle specification and definitions contained in MIL-STD-105. Corrective action shall be taken for recurring deficiencies.

6.6 Weight and loads. Weights and load allowances shall be in accordance with the following (Table XIV),

Table XIV. Net weights and load allowances

Model	Net Weight[1]	Maximum gross load allowance[2]			Maximum payload allowance[3]			Towed load allowance[4]		
	W/W	CC	LCC	HY	CC	LCC	HY	CC	LCC	HY
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
M44A2	10,850	7,500	10,000	13,330	-	-	-	6,000	8,000	10,000
M45A2	11,850	7,400	9,900	13,200	-	-	-	6,000	8,000	10,000
M35A2	13,900	-	-	-	5,000	6,500	10,000	6,000	8,000	10,000
M35A2C	14,160	-	-	-	5,000	6,500	10,000	6,000	8,000	10,000
M109A3	15,530	-	-	-	-	5,000	7,500	-	6,000	8,000
M185A3	17,300	-	-	-	-	5,000	7,500	-	6,000	8,000
*M45A2	11,900	7,400	9,900	13,200	-	-	-	6,000	8,000	10,000
M49A2C	15,125	-	-	-	-	-	-	6,000	8,000	10,000
					600 Gal[6]	600 Gal[6]	12,000 Gal[6]			
**M45A2	11,920	7,400	9,900	13,200	-	-	-	6,000	8,000	10,000
M50A3	14,620	-	-	-				6,000	8,000	10,000
					500 Gal[5]	500 Gal[6]	1,000 Gal[6]			
M45A2G	11,850	7,400	9,900	13,200	-	-	-	6,000	8,000	10,000
M342A2	16,155	-	-	-	5,000	6,500	10,000	6,000	8,000	10,000
M46A2	11,230	7,200	9,700	13,000	-	-	-	6,000	8,000	10,000
M46A2C	12,260	7,200	9,700	13,000	-	-	-	6,000	8,000	10,000
M36A2	15,110	-	-	-	5 000	6,500	10,000	6,000	8,000	10,000
M275A2	12,110	-	-	-	-	7,000	12,000	-	17,000[5]	24,000[5]
M756A2	17,020	-	-	-	5,000	6,500	10,000	6,000	8,000	10,000

LCC Limited cross-country HY Highway W/W With winch CC Cross-country

1. Net weighs, in pounds (column 2).

   (a) Truck chassis - Includes weight of chassis with soft top cab installed, fuel lubricants, coolants, and winch (500 pounds), but does not include tire chains, modification kits, and operating personnel.
   (b) Trucks - Includes truck chassis, as specified in (a) above, body and any special equipment installed.

2. Gross load allowance, in pounds (columns 3, 4, and 5)

   Includes body, payload, and operating personnel (400 pounds), for truck chassis only.

3. Payload allowance, in pounds (columns 6, 7, and 8) - except as noted,

   Covers payload for complete truck.

4. Towed load allowance, in pounds (columns 9, 10, and 11)

   Includes pintl towed trailers, equipped with pneumatic tires.

5. Semitrailer towed loads includes truck tractor fifth wheel load allowances.

6. Payload allowance for cross-country limited to use of forward tank compartment only.

NOTE: *Basic chassis for M49A2C
**Basic chassis for M50A3

6.7 Drawings. Drawings D 8154-1 thru -22 and D 4699-1 thru -3 depicting the body, accessories, and installation on the M45A2 truck chassis (modified) are Corps of Engineers design drawings and are not intended for use as shop drawings. Critical dimensions and tolerances are furnished; however, the contractor is responsible for preparing his own manufacturing drawings. Where tolerances are not shown or where those prescribed could cumulatively result in improper fits, the contractor is responsible for providing tolerance in accordance with MIL-STD-8 for the various machining operations to insure proper fit, assembly and operation of equipment and accessories of the body. No deviation from dimensions shown on the Corps of Engineers design drawings is permissible without prior approval of the contracting officer. All parts, sub-assemblies and assemblies requiring identification shall be identified in accordance with MIL-STD-130.

6.8 Oils. Unless otherwise specifically directed by Contracting Officer, the engines shall be serviced with oil conforming to grade 30 of MIL-L-45199 for period between 1 April to 31 October and the engines shall be serviced with oil conforming to MIL-L-45199 except the grade shall be SAE 20 for period between 1 November to 31 March.

Custodian:
Army - AT

Preparing activity:
Army - AT
Project No. 2320 - A843