

**SOW-03-835-2-08324A-2/1**

STATEMENT

OF

WORK

(SOW)

FOR IROAN OF THE

M816/M936/M936A1/

5-TON TRUCKS

NSN 2320-00-051-0489

NSN 2320-01-047-8754

NSN 2320-01-206-4078

**EFFECTIVE DATE: 18 December 2000**

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Statement of Work For the IROAN of the  
M816/M936/M936A1 5-Ton Trucks  
SOW-03-835-2-08324A-2/1

1.0 Scope. This Statement of Work (SOW) establishes and sets forth tasks and identifies the work efforts that shall be performed by the contractor as minimum requirements to assemble, integrate, make fully operational, calibrate, install, test, and inspect the M816/M936/M936A1 Series 5-Ton Trucks to a serviceable condition (Condition Code "A"). Condition Code "A" is defined as "Serviceable/Issuable without qualification, new, used, repaired or reconditioned materiel which is serviceable and issuable to all customers without limitation or restriction." The National Stock Numbers (NSN's) listed here are the M816 (2320-00-051-0489), M936 (2320-01-047-8754), and the M936A1 (2320-01-206-4078) Series 5-Ton Trucks.

1.1 Background. Inspect Repair Only As Necessary (IROAN) is defined as "That maintenance technique which determines the minimum repairs necessary to restore equipment, components, or assemblies to prescribed maintenance serviceability standards by utilizing all available diagnostic equipment and test procedures in order to minimize disassembly and parts replacement."

2.0 APPLICABLE DOCUMENTS. The following documents form a part of this SOW to the extent specified. Unless otherwise specified, the issues of these documents are those listed in the Department of Defense Index of specifications and Standards (DODISS) and supplement thereto which is in effect on the date of solicitation. In the event of conflict between the documents referenced herein and the contents of this SOW, the contents of this SOW shall be the superseding requirement.

## 2.1 MILITARY STANDARDS

MIL-STD-129	DOD Standard Practice for Military Marking
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## 2.2 Military Specifications

MIL-C-81309	Corrosion Preventive Compounds, Water Displacing, Ultra Thin Film
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MIL-PRF-62218	Corrosion Preventive Compounds, Cold Application (for new and fielded motor vehicles and trailers)
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## 2.3 Other Government Documents and Publications

ATPD 2241	Vehicles, Wheeled: Preparation for Shipment Storage of
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DMWR 9-2320-260	Depot Maintenance Work Requirement for M39 and M809 Series 5-Ton 6X6 Truck
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DMWR 9-2320-272	Depot Maintenance Work Requirements For M939
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and M939A1 Series 5-Ton 6X6 Truck (Diesel)

DMWR 9-2520-507 Depot Maintenance Work Requirements For Transfer Assembly, Timken Model T-138-10

DMWR 9-2520-508 Depot Maintenance Work Requirements for Fleet and Rear Axle Assemblies Rockwell International

DMWR 9-2520-509 Depot Maintenance Work Requirements for Transmission Assembly, Spicer Models 6352 and 6453

DMWR 9-2520-522 Depot Maintenance Work Requirement for Allison Automatic Transmission Model MT654CR

DMWR 9-2520-530 Depot Maintenance Work Requirements for Transfer Assembly Model T-1138-1

DMWR 9-2815-500 Depot Maintenance Requirement for Engine Assembly, Diesel NHC-250 Cummins

DMWR 9-3830-501 Winch Assembly of Truck 5-TON

DOD 4000.25-1-M Milstrip Manual

TC 9-510 Metal Body Repair and Related Opn

LO 9-2320-260-12 Truck 5-Ton M809 Series 6X6

L0 9-2320-272-12 Truck 5-Ton M939 Series 6X6

MI-2320-25/79 Installation of Brake Proportioning Valve Kit in the 5-Ton, M939/M939A1 Series Trucks

MI-2320-25/73 Installation of Seatbelts in the 5-Ton, M939/M939A1 Series Trucks

MI-2320-35/71 Installation of Seatbelts in the 2 1/2 Ton, M44 and 5-Ton, M809 Series Trucks

MI-11240-24/18B Installation of Fire Extinguisher and Bracket Tactical Motor Transport Vehicles

NAVICPINST 4491.2A Requisitioning of Contractor Furnished Materiel from the Federal Supply System

TB 9-2300-245-50	Wheeled Transport Vehicles: Chassis Dynamometer Procedures and Test Standards Under Simulated Load Conditions
TB 9-2300-247-40	Tactical Wheel Vehicles Repair of Frames
TB 43-0142	Safety Inspection and Testing of Lifting Devices
TM 43-0213	Corrosion Prevention and Control
TI-5820-25/22	Electromagnetic Environmental Effects (E3) Procedures for Installation of Communication Equipment on U.S. Marine Corps Platforms
TM 9-2320-260-10 W/CH 1-3	Truck 5-Ton 6X6 M809 (Diesel)
TM 9-2320-260-20	Truck 5-Ton 6X6 M809 (Diesel)
TM 9-2320-260-20P	Truck 5-Ton 6X6 M809 (Diesel)
TM 9-2320-260-34-1	Truck 5-Ton 6X6 M809 (Diesel)
TM 9-2320-260-34-2	Truck 5-Ton 6X6 M809 (Diesel)
TM 9-2320-260-34P-1	Truck 5-Ton 6X6 M809 (Diesel)
TM 9-2320-260-34P-2	Truck 5-Ton 6X6 M809 (Diesel)
TM 9-2320-272-10 W/CH1-4&A	Truck 5-Ton 6X6 M939 & M939A1 (Diesel)
TM 9-2320-272-24-1 THRU 4	Truck 5-Ton 6X6 M939 & M939A1 (Diesel)
TM 9-2320-272-24P-1	Truck 5-Ton 6X6 M939 & M939A1 (Diesel)
TM 9-2320-272-24P-2	Truck 5-Ton 6X6 M939 & M939A1 (Diesel)
TM 9-2610-200-14	Organizational Direct Support and General Support Maintenance, Care, And Repair of Pneumatic Tires And Inner Tubes
TM 9-2920-225-34	Generator Engine Assy AC-Gen Reg Assy
TM 9-2920-225-34P	Generator AC MOD AMA-5102UT/3002AC
TM 9-4910-571-12&P	Simplified Test Equipment For Internal Combustion Engines Reprogrammable

(STE/ICE-R)

TM 9-6140-200-14	Operator's Organizational Direct Support, and General Support Maintenance Manual for Lead-Acid Storage Batteries
TM 750-254 W/CH 1-2	Cooling Systems: Tactical Vehicles
TM 4750-15/1 W/CH1-2& SUP	Painting Registration Markings
TM 4750-15/2 W/CH 1-2	Camouflage Paint Patterns
8736857	Equipment Preservation Data Sheet(EPDS) (Truck, Wrecker, 5Ton, 6X6, M816)
8736988	Equipment Preservation Data Sheet(EPDS) (Truck, Wrecker, 5Ton, 6X6, M936)
8750163	Equipment Preservation Data Sheet(EPDS) (Truck, Wrecker, 5Ton, 6X6, M936A1)

**Military Handbooks (For Guidance)*****MIL-HDBK-61 Configuration Management Guidance*****2.4 Industry Standards**

ANSI/ISO/ASQC Q9002-1994	Quality Systems – Model for Quality Assurance in Production, Installation And Servicing
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**Industry Standards (For Guidance)**

<b><i>ANSI/EIA 649 Configuration</i></b>	<b><i>National Consensus Standard for Management</i></b>
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Copies of Military Standards and Specifications are available from the DOD Single Stock Point, Document Automation and Production Service, Building 4/D, 700 Robbins Avenue, Philadelphia, Pa. 19111-5094, Telephone (215) 697-2179 or DSN 442-2179, or <http://www.dodssp.daps.mil>. Copies of other government documents and publications required by contractors in connection with specific SOW requirements shall be obtained through the Contracting Officer: Commander, Attn: Contracting Officer (Code 891), Marine Corps Logistics Bases, 814 Radford Blvd., Albany, Georgia 31704-1128, commercial telephone number (229) 639-6761 or DSN 567-6761. Copies of engineering drawings, if applicable, shall be obtained from Life Cycle Management Center, Attn: Code 851-3, 814 Radford Blvd. Suite 20320, Albany, Georgia 31704-0320, commercial telephone number (229) 639-6410 or DSN 567-6410.

### 3.0 Requirements

#### 3.1 General Tasks

3.1.1 In fulfilling the specified requirements, the contractor shall render, yet shall not be limited to the following tasks:

a. Provide materials, labor, facilities, repair parts and missing parts necessary to inspect, diagnose, restore, test and calibrate as required the M816/M936/M936A1 Series 5-Ton Trucks. Upon completion of IROAN, repaired vehicles shall be Condition Code "A".

b. Provide all tools and test equipment required to test, inspect, and calibrate the M816/M936/M936A1 Series 5-Ton Trucks.

c. Conduct final-on-site testing which will be witnessed by Marine Corps Logistics Bases (MCLBA, Code 835-2), Albany, Georgia representatives.

d. Be responsible for all structural, electrical, and mechanical requirements associated with the IROAN and restoration of the M816/M936/M936A1 Series 5-Ton Trucks.

3.2 Detailed Tasks. Detailed tasks shall be as defined by the following paragraphs.

#### 3.2.1 Phase I – Pre-Induction

a. A pre-induction inspection analysis shall be made for every vehicle to be IROANed under the provisions of this SOW using the contractor diagnosis, inspection, and testing techniques to determine extent of work and parts required. These findings shall be annotated on the Pre-Induction Inspection Sheet located in Appendix A.

b. Test equipment shall be used to determine that assemblies and subassemblies meet prescribed reliability, performance and work requirements. In those cases when conformance to the SOW cannot be certified through existing inspection and testing procedures and by use of diagnostic equipment, the assembly shall be removed, disassembled, inspected, tested or repaired to the degree necessary to assure full conformance with this SOW.

c. Oil seal and gasket leakage. Evidence of lubricating or hydraulic oils passing through or around a seal is in itself not a defect; however, consideration must be given to the fluid capacity in the item being checked/inspected. Inspection shall normally be performed during and immediately following an operational test, but not sufficient duration to allow the fluids to return to ambient temperature. The following shall be used as a guide in determining degree of oil loss:

(1) Class I - Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.

(2) Class II - Leakage of fluid great enough to form drops, but not enough to cause drops to fall from the item being checked/inspected.

(3) Class III - Leakage of fluid great enough to form drops that fall from the item being checked/inspected.

#### NOTE

A Class I or II leak, except fuel system and brake system, is an acceptable condition at any time and does not require corrective action.

3.2.2 PHASE II - IROAN. IROAN shall be performed at the contractor facility. Information recorded on the IROAN Pre-Induction Inspection Sheets during pre-inspection phase shall be used as a guide by the contractor to achieve the mechanical baseline of production M816/M936/M936A1 Series 5-Ton Trucks. The following efforts shall be performed as part of the IROAN:

a. Detailed Mechanical Rework - Vehicles received for IROAN shall be reworked in accordance with the following paragraphs. All discrepancies noted on the IROAN Pre-Induction Inspection Sheets shall be repaired/replaced.

b. Hardware

(1) Replace broken, unserviceable and/or missing hardware including nuts, bolts, screws, washers, turn lock fasteners, etc., in accordance with TM 9-2320-260-20P, TM 9-2320-260-34P-1&2, and TM 9 2320-272-24P-1&2. Unserviceable would include any of the above that failed to function properly.

(2) Insure that proper hardware locking devices are present on all moving mechanical assemblies.

(3) Hardware normally supplied with commercial parts shall be used unless specifically prohibited.

#### NOTE

The requirement for separating the engine and transmission assemblies and running them on their independent dynamometers will be adhered to, unless during the pre-induction inspection, a chassis dynamometer test was performed and the engine and transmission passed performance specifications. If engine or transmission fail to meet performance specifications, then procedures will be followed as written.

c. Engine Assembly

(1) TEST PROCEDURES. After all pre-induction tests and inspections have been completed, the power pack shall be removed from the vehicle, steam cleaned, and inspected for loose or missing items. The engine assembly shall be separated from the transmission assembly. The transmission shall be processed in accordance with paragraph 3.2.2g. The engine assembly shall be attached to an engine dynamometer and the engine run-in test shall be performed at this time. Refer to paragraph 3.2.2d for the test procedures for the fuel system which shall be tested in conjunction

with the engine test. Record all results of this test on the Dynamometer Run-In Schedule, Appendix C.

(2) PASS/FAIL. After the engine run test has been finished, the completed Engine Dynamometer Run-in Schedule shall be compared with the acceptable operating specifications for the NHC 250 Cummins Engine. The engine assembly shall meet or exceed the minimum specifications to be considered as having passed. In the event the engine assembly fails to meet the specifications, further tests shall be performed in accordance with the Engine Dynamometer Run-in Schedule. Reference the IROAN Pass/Fail Logic Chart - Engine Assembly.

Change the engine oil and filter on all vehicles 100 percent.

#### NOTE

All fording valves shall be wired in the open position.

The above procedures for repair/replacement can be found in DMWR 9-2815-500, TM 9-2320-260-34-1, TM 9-2320-260-34P-1, TM 9-2320-272-24-1 THRU 4, and TM 9-2320-272-24P-1&2.

#### d. Fuel System

(1) TEST PROCEDURES. Test all fuel injectors during the dynamometer engine run-in test.

(a) Inspect the fuel pump assembly for loose or broken items and housing cracks. During the dynamometer engine run-in test, assure that the fuel pump is properly timed.

(b) Inspect the fuel primer pump for leakage.

(c) Inspect the air cleaner indicator for proper function.

(d) Inspect fuel tank and lines for rusting and leakage.

(e) Inspect ether cold starting system switch, cylinder valve, pressure switch, thermal close valve/bushing, and atomizer cylinder for proper function and cracked/leaking tubing (M939 Series only). (M809 Series only). Inspect engine cold starting switch, wiring and preheater.

(f) Inspect accelerator pedal and linkage for binding and proper function.

(g) Inspect air cleaner assembly for corrosion, damage and leaking.

(2) PASS/FAIL. Repair/Replace injectors that do not pass the dynamometer engine run-in test.

(a) Repair/Replace any fuel pump assembly that does not pass the dynamometer engine run-in test.

- free of leaks.
- (b) Replace the fuel primer pump if leaking. Assure that the pump is secure and free of leaks.
  - (c) Replace the air indicator if not functioning properly.
  - (d) Repair/Replace any fuel tank and lines that are rusting and leaking.
  - (e) Repair/Replace the ether cold starting system switch, cylinder valve, pressure switch, thermal close valve/ bushing, and atomizer cylinder that does not function properly. Repair/Replace any cracked/leaking tubing (M939 Series only). (M809 Series only). Repair/Replace engine cold starting system switch, wiring, and preheater that does not function properly.
  - (f) Repair/Replace the throttle linkage if binding. Replace all broken or bent accelerator pedals. Replace all broken and distorted springs.
  - (g) Repair/Replace any hose, tube, and clamp that is leaking, damaged, or stripped.
  - (h) Replace all fuel filters and air filters 100 percent.

The above procedures for repair/replacement can be found in TM 9-2320-260-34-1, TM 9-2320-260-34P-1, TM 9-2320-260-10 W/CH1-3, TM 9-2320-272-24-1 THRU 4, TM 9-2320-272-24P-1&2, and TM 9-2320-272-10 W/CH1-4&A.

e. Cooling System

- (1) TEST PROCEDURES. Inspect hose clamps for tightness.
  - (a) Inspect surge tank and cap for leaks.
  - (b) Inspect water manifold for leaks.
  - (c) Inspect thermostat housing for leaks.
  - (d) Inspect engine oil cooler for leaks.
  - (e) (M939 Series only). Inspect transmission oil cooler for leaks.
  - (f) Inspect fan blades for breaks, bends, and missing rivets.
  - (g) Inspect water pump for leaks and cracks.
  - (h) Inspect fan clutch for unusual noises.
  - (i) Inspect fan shroud for breaks or cracks.

(j) Inspect air compressor coolant lines for leaks and cracks.

(2) PASS/FAIL. Replace any hose clamp that shall not remain secure.

(a) Repair/Replace surge tank and/or cap if leaking.

(b) Replace "O" rings on the water manifold if leaking.

(c) Replace thermostat and gaskets 100 percent. Replace all cracked thermostat housings.

(d) Replace the engine oil cooler element and all "O" rings and gaskets as required. Replace oil cooler housing if broken/cracked or threads are stripped.

(e) (M939 Series only). Replace transmission oil cooler assembly as required. Replace transmission oil cooler if leaking. Replace transmission oil cooler hoses and/or "O" rings if leaking.

(f) Repair/Replace the fan blade if it is broken, bent, and rivets are missing.

(g) Repair/Replace the water pump if it is leaking or the housing is cracked and unusual noises are discovered.

(h) Replace the fan clutch if unusual noises are detected.

(i) Repair/Replace the fan shroud if it is broken.

(j) Repair/replace any air compressor coolant line that is leaking or cracked.

(k) Reverse flush, clean, and inspect the radiator and heater core 100 percent (repair as required). Straighten all bent fins that can be straightened. Retest the radiator and heater core for pressurization. It shall hold 15 PSI for three minutes without evidence of leakage or structural failure. Inspect the gaskets on the left and right sides of the radiator core for leaks. Flow test the radiator and heater core by pumping water through it.

(l) Replace coolant, coolant belts, radiator, and heater hoses 100 percent. Replace antifreeze protection to a temperature of -20 degrees Fahrenheit 100 percent.

The above procedures for repair/replacement can be found in TM 9-2320-260-20, TM 9-2320-260-20P, TM 9-2320-260-34-1, TM 9-2320-260-34P-1, TM 9-2320-260-34P-2, TM 9-2320-272-24P-1&2, TM 9-2320-272-24-1 THRU 4, and TM 750-254 W/CH 1-2.

#### f. Electrical System

NOTE

All trucks for IROAN shall not have batteries installed. Install batteries before testing the electrical system.

(1) TEST PROCEDURES. Inspect all wiring harnesses, battery cables, North Atlantic Treaty Organization (NATO) slave receptacle, trailer receptacle, Simplified Test Equipment for Internal Combustion Engines Reprogrammable (STE/ICE-R) receptacle, and components for corrosion, bent or missing pins, and ripped or torn insulation and tie wraps.

(a) Test the alternator, starter, and protective control box, with the Government Furnished Equipment (GFE) STE/ICE-R test equipment.

(b) Inspect instrument panel gauges for proper operation.

(c) Inspect headlights, blackout lights, amber warning light, turn signals, rear composite lights, floodlights, side marker lights, reflectors, and instrument panel lights for cracks, corrosion, moisture, broken and blown bulbs.

(d) (M939 Series only). Inspect instrument sending units, primary and secondary low air pressure/warning alarm buzzer switch, spring brake pressure switch, front wheel drive lock-in switch, transmission neutral start switch, horn switch, horn, horn button, ether cold start switch, emergency engine stop control, hand throttle control cable, heater blower motor switch, turn signal switch, amber warning light switch, headlight switch, dimmer switch, battery switch, circuit breakers, heater blower motor, stop light switch, wiper switch, washer switch, and ignition switch for proper operation.

(e) (M809 Series only). Inspect instrument sending units, low air pressure warning alarm buzzer switch, horn switch, horn, horn button, cold starting system switch, emergency engine stop control, heater blower motor switch, hand throttle control cable, turn signal switch, amber warning light switch, headlight switch, heater blower motor, stop light switch, wiper switch, washer switch, and ignition switch for proper operation.

(2) PASS/FAIL. Repair/Replace all missing and bent pins. Repair of insulation less than four inches in length may be accomplished using electrical tape. Tears or rips in excess of four inches will require installation of new conduit. Corrosion shall be removed from components. Upon removal of corrosion, if component does not function properly, replace component. Repair/Replace all damaged battery cables, NATO slave receptacle, trailer receptacle, and STE/ICE-R receptacle. Replace any missing or damaged tie wraps.

(a) Repair/Replace the starter, alternator, and protective control box assembly that do not pass the STE/ICE-R or other commercial tests. Install new dry batteries 100 percent.

(b) Replace any gauge or switch that does not function properly after assuring that the sending unit is not defective.

(c) Replace broken headlights, amber warning light, blackout light/lenses, turn signal light/lenses, floodlights, side marker lights/lenses, reflectors, and rear composite light/lenses. Also replace any blown bulb in the instrument panel and lighting system. Correct moisture in the

lighting system by replacing the light cover gasket. Replace any light assembly that was found missing during the pre-induction of the vehicle.

(d) (M939 Series only). Replace any sending unit that does not function properly. Replace any primary and secondary low air pressure switch/warning alarm buzzer, spring brake pressure switch, front wheel drive lock-in switch, transmission neutral start switch, horn switch, horn, horn button, ether cold start switch, emergency engine stop control, hand throttle control cable, heater blower motor switch, parking brake switch, turn signal switch, amber warning light switch, headlight switch, dimmer switch, battery switch, circuit breakers, heater blower motor, stop light switch, wiper switch, washer switch, and ignition switch that does not function properly.

(e) (M809 Series only). Replace any sending unit that does not function properly. Replace low air pressure warning alarm buzzer switch, horn switch, horn, horn button, cold starting system switch, emergency engine stop control, heater blower motor switch, hand throttle control cable, turn signal switch, amber warning light switch, headlight switch, heater blower motor, stop light switch, wiper switch, washer switch, and ignition switch that does not function properly.

#### NOTE

Do not install or procure ether bottle for cold starting system.

The above procedures for test/repair or replacement can be found in TM 9-2320-260-20, TM 9-2320-260-20P, TM 9-2320-272-24-1 THRU 4, TM 9-2320-272-24P-1&2, TM 9-6140-200-14, TM 9-4910-571-12&P, TM 9-2920-225-34, and TM 9-2920-225-34P.

#### g. Transmission

(1) TEST PROCEDURES. (M939 Series only). After pre-induction tests and inspections have been completed, the power pack assembly shall be removed from the vehicle, cleaned, and inspected for loose or missing items. The transmission assembly shall be separated from the engine assembly. The transmission assembly shall be attached to a transmission dynamometer and the transmission dynamometer tests shall be performed at this time. All applicable data shall be recorded at this time. All applicable data shall be recorded on the Hicklin Dynamometer Run Sheet MT-654 Transmission, Appendix D. If the contractor facility does not have a Hicklin Dynamometer, refer to DMWR 9-2520-522 for dynamometer requirements.

(a) Inspect the transmission torque converter for proper function.

(b) Inspect the transmission selector lever assembly cable and linkage for binding and proper operation.

(2) PASS/FAIL. Upon completion of the transmission assembly dynamometer run-in test, the data recorded shall be compared with the required specifications. The transmission assembly shall meet or exceed the minimum specifications to be considered as having qualified for reinstallation in a vehicle. In the event the transmission fails the testing, it shall be repaired prior to installation in a vehicle. The transmission oil, filter, and oil pan gasket shall be replaced on all transmissions 100 percent.

(a) Repair/Replace the transmission torque converter as required to ensure proper function.

(b) Repair/Replace the transmission selector lever assembly if it does not operate smoothly. Replace all broken cables. Repair/Replace any linkage part that does not function properly.

(3) TEST PROCEDURES. (M809 Series only). After pre-induction tests and inspections have been completed, the power pack assembly shall be removed from the vehicle, cleaned and inspected for loose or missing items. The transmission assembly shall be separated from the engine assembly. The transmission assembly shall be attached to a transmission dynamometer and the transmission dynamometer tests shall be performed at this time. All applicable data will be recorded at this time. All applicable data shall be recorded on the Hicklin Transmission Dynamometer Run Sheet. If the contractor does not have a Hicklin Dynamometer, refer to DMWR 9-2520-509 for dynamometer requirements. The transmission dynamometer run sheet shall be maintained and be available to the MCLB Albany, representatives.

(a) Inspect the transmission housing for cracks, and evidence of overheating.

(b) Inspect the transmission shifter for binding and proper operation.

(4) PASS/FAIL. Upon completion of the transmission assembly dynamometer run-in test, the data recorded shall be compared with the required specifications. The transmission assembly shall meet or exceed the minimum specifications to be considered as having qualified for reinstallation in a vehicle. In the event the transmission fails the testing, it shall be repaired prior to installation in a vehicle. The transmission gear oil shall be replaced on all transmissions 100 percent.

(a) Repair/Replace the transmission housing if cracked.

(b) Repair/Replace the transmission shifter if it does not operate smoothly.

The above procedures for repair/replacement can be found in DMWR 9-2520-509, DMWR 9-2520-522, TM 9-2320-260-34-1, TM 9-2320-260-34P-1, TM 9-2320-272-24-1 THRU 4, and TM 9-2320-272-24P-1&2.

#### h. Transfer Case

(1) TEST PROCEDURES. Inspect transfer case for cracks, and leakage. Metal chips in the oil are not acceptable. Inspect for vibration, unusual noises and proper function in all gear positions with no indication of overheating.

(a) Inspect transfer shift lever and linkage for proper operation.

(b) Inspect transfer mounts for deterioration.

(c) Inspect transfer control valve for proper operation.

(d) Inspect the transfer output shaft for excessive up and down play.

(2) PASS/FAIL. Replace cracked housing. If the transfer shows signs of leakage, it shall be repaired. The transfer shall function properly in all gear positions with no indication of overheating. Under operating conditions, the transfer shall be free of vibration or unusual noises. Metal chips in the oil are not acceptable and evidence of same shall be cause for complete disassembly, inspection, and repair. The transfer case oil shall be replaced 100 percent.

(a) Repair/Replace the transfer shift lever and linkage if binding and not locking in all operating positions.

(b) Replace transfer mounts if deteriorated or missing.

(c) Replace transfer control valve if not operating properly.

(d) Repair/Replace transfer output shaft that has more than .013 play, measured with a dial indicator.

#### NOTE

Contractor shall install a tag on the steering wheel that reads, "DO NOT SHIFT TRANSMISSION INTO REVERSE WHILE TRANSFER CASE IS IN LOW RANGE." Ensure tag is water resistant.

The above procedures for repair/replacement can be found in TM 9-2320-260-34-1, TM 9-2320-260-34P-1, TM 9-2320-272-24-1 THRU 4, TM 9-2320-272-24P-1&2, DMWR 9-2520-507, DMWR 9-2520-530, LO 9-2320-260-12, and LO 9-2320-272-12.

#### i. Clutch Assembly (M809 Series only).

(1) TEST PROCEDURES. Inspect cover plate for rust, corrosion, nicks, burrs, and deformation. Check cover plate for collapsed, broken or cracked springs. Inspect friction plate for rust, corrosion, nicks, burrs, and deformation. No looseness allowed in rivets and linings. No distortion allowed in spline. Inspect bearing for nicks, burrs, looseness, galling, and heat discoloration.

(a) Inspect clutch lever actuating link rod assembly for binding and proper function.

(b) Inspect clutch pedal return spring for proper operation.

(c) Inspect clutch pedal free travel for proper operation.

(2) PASS/FAIL. Repair/Replace cover plate assembly to ensure proper operation. Maximum warpage allowed on cover plate surface is .004 inch. Friction plate minimum wear limit thickness is .411 inch. Replace bearing that shows evidence of overheating, galling, or looseness.

- (a) Repair/Replace clutch lever actuating rod assembly if not operating properly.
- (b) Replace clutch pedal return spring if defective.
- (c) Adjust clutch pedal free travel as required.

The above procedures for repair/replacement can be found in TM 9-2320-260-20, TM 9-2320-260-34-2, TM 9-2320-260-34P-1, and DMWR 9-2815-500.

j. Front and Rear Axle Assemblies

(1) TEST PROCEDURES. Inspect axle assemblies for cracks and leakage. Metal chips in the oil are not acceptable.

- (a) Inspect the axle differential carriers for proper operation.
- (b) Inspect machine surfaces of steering knuckle joints for rust, damage, and leakage. Inspect steering knuckle boots and bearing for smooth operation and signs of leakage.
- (c) Inspect axle vent valve for proper function.

(2) PASS/FAIL. Replace all cracked housings. Repair all leaks. Metal chips in the oil are not acceptable and evidence of same shall be cause for complete disassembly, inspection, and repair. The front and rear axle assemblies shall have oil replaced 100 percent.

- (a) Repair/Replace an axle differential carrier that shows evidence of unusual noise, vibration or overheating.
- (b) Replace bent steering knuckles and noisy bearings. Outer machined surfaces of steering knuckle joints (live front axle) shall be free of rust or other damage. All bearings shall operate smoothly. All torn boots and leaking seals shall be replaced.
- (c) Replace axle vent valve if not functioning properly.

The above procedures for repair/replacement can be found in TM 9-2320-260-34-1, TM 9-2320-260-34-2, TM 9-2320-260-34P-1, TM 9-2320-272-24-1 THRU 4, TM 9-2320-272-24P-1&2, LO 9-2320-260-12, LO 9-2320-272-12, and DMWR 9-2520-508.

k. Brake System

(1) TEST PROCEDURES. (M939 Series). Inspect brake linings and brake drums for wear.

- (a) Inspect all fail safe brake chambers and air brake chambers for leaks, damage, and missing cage bolts.
- (b) Inspect all brake hoses for leaks.

- (c) Inspect spider assembly for wear.
- (d) Inspect parking/hand brake assembly for proper function.
- (e) Inspect parking/hand brake lining for wear.
- (f) Inspect wheel bearings and seals for galling and leaks.
- (g) Inspect air reservoir tanks for leaks and rust.

(h) Inspect spring brake dash control valve, brake relay valves (front and rear), wet reservoir safety valve, air reservoir check valve, limiting valve, front axle control valve, spring parking brake valve, air bleeder valves, brake treadle valve, air governor valve, alcohol evaporator, check valves, and air compressor for leaks and proper operation.

- (i) Inspect all air brake lines for cracks and leaks.
- (j) Inspect front and rear glad hands for hardened, cracked, and missing grommets.
- (k) Inspect front and rear glad hand ball valves for leaks and proper function.
- (l) Inspect brake proportioning valve for proper operation.

(2) PASS/FAIL. (M939 Series). Repair/Replace brake linings that do not have at least 50 percent of original thickness remaining. Replacement of brake linings shall be done on the right and left side brake assemblies. Minor heat cracks which do not extend to outer edge of drum are acceptable. Drums shall not be cracked or distorted. Concentricity of drums shall not exceed .012 inch. Maximum allowable increase in drum diameter (over original) shall not exceed 0.125 inch. Refinished drums which are machined to maximum allowable diameter are acceptable if remaining scores do not exceed 1/32 inch. Oversize drums shall be stamped on outer face of drum just above and between two studs on finished drums.

- (a) Repair/Replace fail safe brake chambers and air brake chambers that are leaking or show visual damage. Replace missing cage bolts.
- (b) Replace leaking or damaged brake hoses.
- (c) Repair/Replace spider assemblies showing signs of abnormal wear or cracks.
- (d) The parking/hand brake shall be complete with all linkage in a serviceable condition and properly adjusted.
- (e) Parking/hand brake lining shall have at least 50 percent of original thickness remaining or they must be replaced. No evidence of grease or oil shall be on the parking brake lining.

(f) Replace wheel seals which show evidence of leakage. Replace wheel bearings and races which show evidence of overheating, galling, flaking, or other damage.

(g) Repair/Replace all air reservoir tanks showing evidence of leaks, cracks, or other damage. Repair/Replace air reservoir tank support brackets that are cracked, broken, or otherwise damaged.

(h) Repair/Replace the spring brake dash control valve, brake relay valves (front and rear), wet reservoir safety valve, air reservoir check valve, limiting valve, front axle control valve, spring parking brake valve, air bleeder valve, brake treadle valve, air governor valve, alcohol evaporator, check valves, and air compressor if leaking and not operating properly.

(i) Replace brake lines if cracked or leaking. Brake lines will be of current diameter and length and free of kinks or flat sections. Fitting and nut shall not be distorted to the extent that they cannot be properly tightened.

(j) Replace front and rear glad hand grommets when they are hard, cracked, or missing.

(k) Replace front and rear glad hand ball valves that are leaking and not functioning properly.

(l) Repair/Replace brake proportioning valve as required.

#### NOTE

Ensure new Brake Proportioning Valve Kit has been installed.

The above procedures for repair/replacement can be found in TM 9-2320-272-24-1 THRU 4, TM 9-2320-272-24P-1&2, and MI-2320-25/79.

(3) TEST PROCEDURES. (M809 Series). Inspect brake linings and brake drums for wear.

- (a) Inspect all brake hoses and fittings for leaks.
- (b) Inspect parking/hand brake assembly for proper function.
- (c) Inspect parking/hand brake lining for wear.
- (d) Inspect wheel bearings and seals for galling and leaks.
- (e) Inspect air reservoir tanks for leaks and rust.
- (f) Inspect all air brake lines and fittings for cracks and leaks.

- (g) Inspect front and rear glad hands for hardened, cracked, and missing grommets.
- (h) Inspect front and rear glad hand ball valves for leaks and proper function.
- (i) Remove and inspect air pack assembly, master cylinder and wheel cylinders for leaks and proper operation.
- (j) Inspect brake linkage and return spring for proper operation.
- (k) Inspect air compressor for leaks and proper operation.

(4) PASS/FAIL. (M809 Series). Repair/Replace brake lining that does not have at least 50 percent of original thickness remaining. Replacement of brake lining shall be done on the right and left side brake assemblies. Minor heat cracks which do not extend to outer edge of drum are acceptable. Drums shall not be cracked or distorted. Concentricity of drums shall not exceed .012 inch. Maximum allowable increase in drum diameter (over original) shall not exceed 0.125 inch. Refinished drums which are machined to maximum allowable diameter are acceptable if remaining scores do not exceed 1/32 inch. Oversize drums shall be stamped on outer face of drum, just above and between two studs on finished drums.

- (a) Replace leaking or damaged brake hoses and fittings.
- (b) The parking/hand brake shall be complete with all linkage in a serviceable condition and properly adjusted.
- (c) Parking/hand brake lining shall have at least 50 percent of original thickness remaining or they must be replaced. No evidence of grease or oil shall be on the parking brake lining.
- (d) Replace wheel seals which show evidence of leakage. Replace wheel bearings and races which show evidence of overheating, galling, flaking, or other damage.
- (e) Repair/Replace all air reservoir tanks showing evidence of leaks, cracks, or other damage. Repair/Replace air reservoir tank support brackets that are cracked, broken, or otherwise damaged.
- (f) Replace brake lines if cracked or leaking. Brake lines will be of current diameter and length and free of kinks or flat sections. Fitting and nut shall not be distorted to the extent that they cannot be properly tightened.
- (g) Replace front and rear glad hand grommets when they are hard, cracked, or missing.
- (h) Replace front and rear glad hand ball valves that are leaking and not functioning properly.

(i) Repair/Replace air pack assembly, master cylinder and wheel cylinders if leaking and not operating properly.

(j) Repair/Replace the brake linkage and return spring if binding, broken or missing.

(k) Repair/Replace the air compressor if leaking and not operating properly.

The above procedures for repair/replacement can be found in TM 9-2320-260-20, TM 9-2320-260-34-1, and TM 9-2320-260-34P-1.

#### 1. Tires, Wheels, Splash Guards, and Spare Tire Davit Boom Assembly

(1) TEST PROCEDURES. Inspect tire inflation. Inspect for cupping, chunking, cuts, and cracks.

(a) Inspect wheels for cracks, breaks, and damaged mounting holes.

(b) Inspect for missing, damaged, or torn splash guards.

(c) (M939 Series only) Inspect spare tire davit boom assembly for proper operation.

(2) PASS/FAIL. Each tire must have 4/32 inch or more of tread remaining and be in good serviceable condition. All tires on a vehicle shall be matched to provide proper performance and approximately equal life. Tires shall not show evidence of cupping or chunking. Tires shall not have cuts or cracks greater than one inch in length, 1/8 inch wide. Tires shall not have cuts or breaks, regardless of length or width, which extend to the fabric. Rubber separation or bulges on tire side walls are not acceptable.

#### NOTE

Permissible differences in outside diameter are as follows:

(a) Under 30 inches, 1/4 inch

(b) Thirty-forty inches inclusive, 3/8 inch

(c) Over 40 inches, 1/2 inch

All tires that do not meet these requirements shall be replaced.

(a) Wheels shall be free of cracks, breaks, and damaged mounting holes. Wobble shall not exceed 1/2 inch. Above measurement is obtained by measuring the difference between high and low points on wheels adjacent to the bead on the tire while wheel is mounted on vehicle. Front end alignment and toe-in adjustment shall meet the standards prescribed in the technical manual. All wheels that do not meet these requirements shall be replaced.

(b) Repair/Replace splash guards (front and rear) that are missing, damaged, or torn.

(c) (M939 Series only) Repair/Replace the spare tire davit boom that does not operate properly.

The above procedures for repair/replacement can be found in TM 9-2610-200-14, TM 9-2320-260-20, and TM 9-2320-260-34P-1, TM 9-2320-272-24-1 THRU 4, and TM 9-2320-272-24P-1&2.

m. Steering Section

(1) TEST PROCEDURES. Inspect power steering pump, reservoir, and cap for leaks and proper function.

(a) Inspect all power steering cylinder hoses for leaks.

(b) Inspect steering gear for leaks, damage, wear, and proper function.

(c) Inspect all power steering tubing for leaks, cracks, kinks, or flat sections.

(d) Inspect upper and lower steering column assemblies for bends, breaks, cracks, and wear.

(e) Inspect pitman arm, drag link, tie rod ends, and tube for bends, breaks, cracks, deformities, and excessive play.

(f) Inspect steering wheel for cracks.

(g) Inspect for proper alignment and lubrication.

NOTE

All steering cylinders shall be removed and new seal kits and springs installed 100 per cent.

(2) PASS/FAIL. Repair/Replace the power steering pump, reservoir, and cap if leaking and not functioning properly. Replace power steering fluid 100 percent.

(a) Replace the power steering hoses if leaking.

(b) Repair/Replace the steering gear if damaged, worn, leaking, and not functioning properly.

(c) Repair/Replace the power steering tubing if cracked, kinked, leaking, or flattened.

(d) Repair/Replace the upper and lower steering column universal joints, splined couplings, and universal joint bearings that show rotary lost motion when rotated or shaken by hand.

(e) Replace drag link, pitman arm, tie rods, and tube that are bent, cracked, and deformed. The steering mechanism shall operate without binding or roughness on the drag link and steering linkage.

(f) Repair/Replace steering wheel as required.

(g) All vehicles shall be realigned and lubricated 100 percent.

#### NOTE

No welding or straightening (hot or cold) shall be permitted on steering gear controls. Steering wheels with minor cracks 1/8 of an inch wide or less which do not extend to the steering wheel core may be repaired by filling with a non-shrinking epoxy and sanded smooth.

The above procedures for repair/replacement can be found in TM 9-2320-260-20, TM 9-2320-260-34-2, TM 9-2320-260-34P-1, TM 9-2320-260-34P-2, TM 9-2320-272-24-1 THRU 4, TM 9-2320-272-24P-1&2, DMWR 9-2320-260, DMWR 9-2320-272, LO 9-2320-260-12, and LO 9-2320-272-12.

#### n. Propeller Shafts and Suspension Section

(1) TEST PROCEDURES. Inspect all propeller shafts, universal joints, and yokes for cracks or bends.

(a) Inspect shock absorbers for leaks and bushing deterioration.

(b) Inspect springs (front and rear) for sagging.

(c) Inspect torque rods.

(2) PASS/FAIL. Repair/Replace all propeller shafts that are cracked and bent. Repair/Replace universal joint sliding couplings and universal joint bearings that show rotary lost motion when rotated or shaken by hand. Replace yokes when cracked.

(a) Replace shock absorber when they have deteriorated or are leaking. Replace bushings if deteriorated.

(b) All spring wear pads shall be removed and rotated 180 degrees, however, sag can be measured by utilizing Go/NoGo gauge P/N 2000A251 which will eliminate this requirement. Repair/Replace all springs that have taken a permanent set and replace any broken leaf springs.

(c) Replace torque rods if separation of rubber from metal parts exceed 3/8 inch or rubber is not resilient.

The above procedures for repair/replacement can be found in TM 9-2320-260-34-2, TM 9-2320-260-34P-1, and TM 9-2320-272-24-1 THRU 4, and TM 9-2320-272-24P-1&2.

o. Frame Section

(1) TEST PROCEDURES. Inspect frame, side rails, engine mounts, and cross members for loose mounting and broken welds.

(2) PASS/FAIL. Repair/Replace the frame, side rails, engine mounts, and cross members that have loose mounting and broken welds.

The procedures for repair/replacement can be found in TM 9-2320-260-34-2, TM 9-2320-260-34P-1, TM 9-2320-272-24-1 THRU 4, TM 9-2320-272-24P-1&2, TB 9-2300-247-40, and DMWR 9-2320-272.

p. Exhaust and Deep Water Fording System

(1) TEST PROCEDURES. Inspect the exhaust and deep water fording system for leaks, cracks, holes, and proper operation.

(2) PASS/FAIL. Repair/Replace the exhaust and deep water fording system that has leaks, cracks, and holes (other than drain). Repair/Replace the control cable if it does not function properly.

The procedures for repair/replacement can be found in TM 9-2320-260-20, TM 9-2320-260-34-2, TM 9-2320-260-34P-1, TM 9-2320-260-34P-2, TM 9-2320-272-24-1 THRU 4, TM 9-2320-272-24P-1&2.

q. Front/Rear Bumpers, Cab Assembly, Glass, Windshield Wiper Assemblies, Pintles, and Towing Hooks.

(1) TEST PROCEDURES. Inspect front bumper and rear bumperettes for dents, alignment, and cracks.

(a) Inspect cab assembly, battery box, tool box, pioneer tool bracket, gas can bracket, cargo storage box, and ventilation/heater for breaks, cracks, and proper function. Doors, hood, and hardware shall function as intended. Inspect hood and cab for damage. For M939 Series only, inspect hood insulation for sagging, deterioration, missing insulation. Remove all insulation from cab/floor and inspect for corrosion.

(b) Inspect glass for breaks and cracks.

(c) Inspect windshield wiper for proper function.

(d) Inspect pintles and towing hooks for security.

- (e) Inspect mirror brackets for security.
- (f) Inspect seat belts for proper operation.
- (g) Inspect fire extinguisher bracket for serviceability.

(2) PASS/FAIL. Repair/Replace bumpers that cannot be properly aligned. Bumpers shall be mounted securely and free of cracks. Dents not to exceed 7/16 inch are acceptable when alignments are not affected.

(a) Repair/Replace cab assembly that has cracks, breaks, corrosion, and missing/damaged hardware. Repair/Replace the tool box, pioneer tool bracket, gas can bracket, and cargo storage box that has cracks, rust, breaks, and missing/damaged hardware. Dents, sags and bulges in the floor that do not exceed 7/16 inch are acceptable. Doors, hood, closures, and associated hardware shall function as intended. Indentations of no more than 1/2 inch are acceptable. The battery box shall be free of corrosion and acid deposits. Repair/Replace any ventilation/heater control cables, hoses, screens, and doors that are ripped, torn, and are not functioning properly. Repair/Replace the hood. For M939 Series only, repair/replace the hood insulation if damaged, sagging, deteriorated, or missing and replace cab/floor insulation 100 percent.

(b) Repair/Replace door and windshield glass that are cracked. Minor discoloration not more than 1-1/2 inches from the edge and on the right side of the windshield is acceptable. Scattered hairline scratches not within the driver's immediate vision are acceptable. Mounting and frames shall be secure. Seals shall be weather tight when this is the intended function. Slight weather checking on rubber seals is acceptable.

(c) Repair/Replace wiper motor that do not function properly. Replace wiper hoses that leak (minor weather checking is acceptable).

(d) Repair/Replace pintles and towing hooks that are not properly secured to vehicle. Securing cotter pin shall be attached and fastened properly. Towing hook shall be properly mounted. Pintles shall be lubricated and operate freely. End play in excess of 1/4 inch is not acceptable. Wear on pintle shaft or bushing, or both, to the extent of 1/8 inch is acceptable.

- (e) Mounting shall be secure. Adjustment features shall function properly.
- (f) Replace seat belts if they do not function properly.
- (g) Replace fire extinguisher bracket if missing.

#### Note

If seat belts or fire extinguisher bracket are missing, install at this time.

The procedures for repair/replacement can be found in LO 9-2320-260-12, MI-2320-25/73, MI-2320-35/71, MI-11240-24/18B, TM 9-2320-260-20, TM 9-2320-260-34-2, TM 9-2320-260-34P-

1, TM 9-2320-260-34P-2, LO 9-2320-272-12, TM 9-2320-272-24-1 THRU 4, TM 9-2320-272-24P-1&2.

r. Backs/Frames

(1) TEST PROCEDURES. Inspect seat backs, frames, and tracks for damage, sagging, broken springs, deteriorated frames and proper function.

(2) PASS/FAIL. Repair/Replace seat backs, frames, and tracks that have damaged, sagging, broken springs, deteriorated frames, and tracks that do not operate properly.

The above procedures for repair/replacement can be found in TM 9-2320-260-20, TM 9-2320-260-34-2, TM 9-2320-260-34P-1, TM 9-2320-272-24-1 THRU 4, and TM 9-2320-272-24P-1&2.

s. Wrecker Crane and Body Assembly

(1) TEST PROCEDURES. Inspect wrecker body for rust, cracks, dents, sags, waves, and bulges on body and side panels.

NOTE

Welded patches on wrecker body floors are acceptable when material used for patch is as thick as floor material and if patch is smooth and uniform with all excess splatter removed. Splices must fall on a supporting sill.

(a) Inspect all wrecker controls, clamps, brackets, levers, latches, braces, clevises, and linkage for damage, rust, binding, and proper function.

(b) Inspect sheaves, rollers, chains, sprockets, and drums for nicks, burrs, rust and deformation.

(c) Inspect wire rope for rust, corrosion, frayed strands, broken wires, kinks, and loose clips or fastenings.

(d) Inspect outrigger jack assemblies and booms for missing items, alignment, broken welds and proper operation.

(e) Inspect turntable for binding, roughness, wobble or damage to ensure proper function.

(f) Inspect front and rear winch for evidence of leaks or misadjustments. Operate winch under load to ensure proper operation.

(2) PASS/FAIL. Repair/Replace wrecker body that has dents, sags, waves, and bulges on body and side panels. Dents, sags, waves, and bulges on body and side panels not exceeding 3/8 inch are acceptable. Non-standard holes, 1/2 inch or less in diameter are acceptable.

(a) Repair/Replace all controls, clamps, brackets, levers, latches, braces, clevises and linkage that is damaged and does not function properly.

(b) Repair/Replace sheaves, rollers, chains, sprockets and drums that have nicks, burrs, rust or do not operate correctly.

(c) Replace wire rope that shows evidence of fraying, broken wires, or deterioration. Replace/Secure any loose clips or fastenings as required.

(d) Replace any items missing from outrigger jack assemblies and booms. Repair/Replace outrigger jack assemblies and booms that have broken welds or are misaligned.

(e) Repair/Replace turntable as required to ensure proper operation.

(f) Repair/Replace front and rear winch that is leaking or out of adjustment to ensure proper function.

#### NOTE

75 percent of cable length will be inspected.

The above procedures for repair/replacement can be found in TB 43-0142, DMWR 9-3830-501, TM 9-2320-260-20, TM 9-2320-260-34-2, TM 9-2320-260-34P-1, TM 9-2320-272-24-1 THRU 4, TM 9-2320-272-24P-1&2, DMWR 9-2320-260, and DMWR 9-2320-272.

#### t. Rust proofing and Painting (Exterior/Interior)

(1) TEST PROCEDURES. Inspect vehicle for body damage, cleanliness, and rust.

#### NOTE

Rust proofing does not apply to processing of fuel tanks, radiator, engine, transmission, vehicle suspension, transfer, and axles.

(2) PASS/FAIL. Repair all body and rust damage before rust proofing vehicle. All vehicles shall be rust proofed 100 percent. The contractor shall undercoat the unexposed (under site) and shaded area (i.e. under fenders) of the vehicles/equipment inducted for either rebuild or IROAN in the following manner:

(a) Clean area with either steam or high pressure water to remove dirt and loosen corrosion.

(b) Treat affected (corroded) area(s) with phosphoric fog.

(c) Reclean.

(d) Apply MIL-C-81309 Type I, a water displacing corrosion inhibitor, to the affected area(s).

(e) Apply MIL-PRF-62218 Type II (Approved undercoating). Firewalls may be similarly treated to a minimum thickness of 3.5 mils. However, do not apply undercoating to components located on firewalls which are subject to heat transfer or are normally not painted.

Treat stages I thru IV corrosion in isolated and hard to reach areas not normally undercoated in the following manner:

(a) Clean area with either steam or high pressure water to remove dirt and loosen corrosion.

(b) Brush a phosphoric acid solution on the affected areas. Remove corrosion manually, as required.

(c) Reclean.

(d) Prime and paint per latest edition of TM 4750-15/1 W/CH 1-2& SUP.

All vehicles require repainting and shall be painted with CARC paint and have 3-CCP applied. The painting of tires is not authorized. The removal of paint over spray from tires received for IROAN is not required. Precautions shall be taken to prevent further paint over spray on tires.

The above procedures can be found in TM 43-0213, TC 9-510, TM 4750-15/1 W/CH1-2& SUP, and TM 4750-15/2 W/CH 1-2.

u. Hydraulic System

(1) TEST PROCEDURES. Inspect hydraulic pumps, motors, Power Take-off, drums, rollers, reservoir, lines, winch control valve, hoses, and fittings for damage, rust, and leakage. Inspect the front and rear winch control and transmission power take-off control levers, cables, and linkage for proper operation.

(2) PASS/FAIL. Repair/Replace the hydraulic pumps, motors, reservoir, lines, winch control valve, hoses, cylinders and fittings that are damaged, rusted, or leaking. Repair/Replace the front and rear winch control and transmission power take-off control levers, cables, and linkage that are not operating properly.

NOTE

Replace the hydraulic fluid and filters 100 percent, all vehicles.

The procedures for repair/replacement can be found in LO 9-2320-260-12, TM 9-2320-260-10 W/CH1-3, TM 9-2320-260-20, TM 9-2320-260-34-2, TM 9-2320-260-34P-2, LO 9-2320-272-12, TM 9-2320-272-10 W/CH1-4&A, TM 9-2320-272-24-1 THRU 4, and TM 9-2320-272-24P-1&2.

v. Data Plates and Decals

(1) TEST PROCEDURES. Inspect vehicle for missing, damaged, and illegible data plates and decals.

(2) PASS/FAIL. Replace all data plates and decals that are missing and illegible. IROAN data plates shall be prepared by the DMA or contractor and contain the following information:

VEHICLE SERIAL NO. \_\_\_\_\_ REPAIRED IN  
ACCORDANCE WITH 5-TON IROAN STANDARDS.

\_\_\_\_\_  
CONTRACTOR

\_\_\_\_\_  
DATE

\_\_\_\_\_  
ODOMETER READING AT TIME OF IROAN

NOTE

Odometers and hour meters on vehicles IROANed under provisions of this IROAN SOW shall not be turned back to zero.

Position IROAN Data Plate on the right hand side of dash (below the grab handle and attach with rivets).

The above procedures for repair/replacement can be found in TM 9-2320-260-10 W/CH1-3, TM 9-2320-260-34P-1, TM 9-2320-260-34P-2, TM 9-2320-272-10 W/CH1-4&A, TM 9-2320-272-24P-1&2.

3.2.3 Phase III Inspection, Testing, and Acceptance

a. Inspection, testing, and acceptance of the vehicle shall be conducted in accordance with the Final Road Test Check List, Appendix E, and the Final Acceptance Checklist, Appendix B. These completed checklists shall be provided to the government.

b. The contractor shall be responsible for conducting all required tests. The contractor shall ascertain that all necessary personnel are available, the Final Road Test Check List has been distributed, and that the test area has been cleared of all equipment parts, components, etc., not required for the test.

c. Acceptance Testing. Vehicles IROANed under the provisions of this SOW shall be accomplished in accordance with best commercial practices. Chassis dynamometer procedures and test standards outlined in TB 9-2300-245-50 (Wheeled Transport Vehicles: Chassis Dynamometer Procedures and Test Standards Under Simulated Load Conditions).

d. The contractor shall be responsible for correcting any deficiencies identified during testing. The MCLB Albany, representatives may require the contractor to repeat tests, or portions thereof, if the original tests fail to demonstrate compliance with the 5-Ton Series SOW.

e. Observation of fluid leaks under a vehicle while performing a walk around inspection immediately after road test does not make the equipment defective. This leakage is an indication that further investigation is required to determine location and cause. The important thing to remember is the fluid capacity when the criticality of the component is questioned. If the inspector is in doubt, he/she should request assistance from his/her immediate supervisor.

f. When equipment is standing idle (not energized) and the component is at ambient temperature, any drop that falls, oil or hydraulic fluid, shall be classified as a major defect.

#### 3.2.4 Phase IV Packaging, Handling, Storage and Transportation (PHS&T)

a. The contractor shall be responsible for preservation and packaging of the items being repaired under the terms of this statement of work. Items being prepared for long term storage shall be in accordance with the level A requirements of ATPD 2241 and the applicable EPDS, i.e., 8736857 for M816, 8736988 for M936, 8750163 for M936A1. EPDSs may be obtained from Materiel Management Division, Logistics Support Section (822-1), Suite 20320, 814 Radford Blvd., Albany, Ga. 31704-0320, Commercial telephone (229) 639-6786 or DSN 567-6786. Items scheduled for domestic shipment, immediate use or overseas shipment with the exception of Maritime Prepositioned Forces (MPF), shall be level "B", Drive-On/Drive Off. Items prepared for level "B", Drive-On/Drive-Off scheduled for overseas shipment shall have a label affixed which reads, "NOT FOR WEATHER DECK STOWAGE." Items scheduled for MPF shall be prepared to level B, MPF Modified Drive-Away.

b. The terms "Drive-on/Drive-off" and "MPF Modified Drive Away" are defined as follows:

(1) Drive-On/Drive-Off - Batteries shall be hot and disconnected from vehicle electrical system. Terminals and leads shall be taped. Fuel tank shall be filled 1/4 full of JP5/8. The air intake system, exhaust and brake systems, drive-train and gauges shall be depreserved.

(2)MPF Modified Drive Away - Batteries shall be hot and connected to vehicle electrical system. Fuel tank shall be filled 3/4 full of JP5/8. The air intake system, exhaust and brake systems, drive-train and gauges shall be depreserved. Fire extinguisher bracket and seat shall be installed.

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

d. The Marine Corps will provide the contractor with the shipping address(es) for delivery of the repaired equipment. The contractor shall be responsible for arranging for shipment to the pre-designated site(s). The Marine Corps will be responsible for transportation costs associated with shipping the subject equipment to and from the contractor.

3.3 Configuration Control. The contractor shall apply configuration control procedures to established configuration items. The contractor shall not implement configuration changes to an

item's documented performance or design characteristics without prior written authorization. If it is necessary to temporarily depart from the authorized configuration, the contractor shall prepare and submit a Request For Deviation. MIL- HDBK-61 (paragraph 4.3 and Table 4-9) and ANSI/EIA-649 (paragraph 5.3.4) provide guidance for preparing this configuration control document.

3.4 Electromagnetic Environmental Effects (E3) Procedures. The contractor shall plan for and execute proper E3 control procedures when applicable in the IROAN process and shall use TI-5820-25/22 in conjunction with the detailed requirements specified in this SOW.

3.5 Quality Assurance Provisions. The Contractor shall provide and maintain a Quality System that as a minimum, adheres to the requirements of ANSI/ISO/ASQC Q9002-1994, Quality System Model for Quality Assurance in Production, Installation, and Servicing. The performance of the contractor and the quality of work delivered, material provided and documents written shall be subject to in-process review and inspection by the MCLB Albany, representatives during contract performance. Inspection may be accomplished at any work location. Authorized MCLB Albany, representatives shall be permitted to observe the work/task accomplishment or to conduct inspections at all reasonable hours. Acceptance Tests shall be held in-plant. Inspection by the MCLB Albany, representatives of all acceptance test plans and materials and associated lists furnished hereunder does not relieve the contractor from any responsibility regarding defects or other failures to meet contract requirements which may be disclosed prior to final acceptance. Failure of the contractor to promptly correct deficiencies discovered shall be reason for suspension of acceptance until corrective action has been accomplished.

The contractor shall have in place documented procedures and standards for quality assurance and the contractor's work shall be subject to in-process reviews and inspections for compliance with these procedures and standards by MCLB Albany, representatives. Noncompliance with procedures resulting in degraded quality of work may result in a stop-work order requiring action by the contractor to correct the work performed and to enforce compliance with quality assurance procedures or face contract termination. Notwithstanding such MCLB Albany, representative inspection, it shall be the contractor's responsibility to ensure that the entire system meets the performance requirements delineated and addressed in the 5-Ton SOW.

3.6 Government Furnished Equipment (GFE). MCLB Albany, will provide the following as GFE: Simplified Test Equipment for Internal Combustion Engines Reprogrammable (STE/ICE-R), NSN 4910-01-222-6589, 1 each.

3.6.1 GFE Accountability. The Management Control Activity (MCA), Marine Corps Logistics Bases, Albany, Georgia (MCA/Code 827-2) will coordinate assets in contractor's possession. The MCA will forward a GFE Accountability Agreement to the contractor for signature to establish a chain of custody and property responsibilities for Marine Corps assets.

3.6.2 Government Furnished Materiel (GFM). None.

3.7 Rejection

3.7.1 Failure to comply with any of the specified requirements listed herein shall be reason for rejection by the MCLB Albany, representatives. The contractor shall, at no additional cost to MCLB Albany, provide the following:

a. Develop an approach for modification or correction of all deficiencies.

b. Upon approval of a documented approach, the contractor shall correct the deficiencies and repeat the verification until an acceptable compliance with acceptance test procedures requirements is demonstrated.

3.8 Contractor Furnished Materiel (CFM). The Marine Corps has adopted the Navy's procedures regarding Contractor Furnished Materiel (NAVICPINST 4491.2A). In the event Contractor Furnished Materiel (CFM) is required for repair parts, contractor shall requisition repair parts through the DoD Supply System. DOD 4000.25-1-M, (MILSTRIP) Chapter 11, authorizes contractors to requisition through the DoD Supply System.

#### 4.0 Reports

4.1 The contractor shall provide Monthly Progress Reports summarizing the progress and status of the IROAN Program.

4.2 The contractor shall provide a Parts Usage Report for each 5-Ton truck IROANed. This report shall be in the Contractors format and as a minimum, list by nomenclature, National Stock Number (NSN), Part Number, price and quantity of all parts replaced.

All report deliverables shall be submitted in hard copy to Commander (Code 835-2), Marine Corps Logistics Bases, 814 Radford Blvd. Suite 20320, Albany, Georgia 31704-0320, unless directed otherwise in a Contract Data Requirements List.

APPENDIX A

IRDAW PRE-INDUCTION INSPECTION SHEETS FOR 5 TON FAMILY VEHICLES		
DATE:		
MODEL:		
U.S.M.C. NO.	MILES	
FOR ORDER NO.	HOURS	
PRODUCTION NO.		
ENGINE NO.		
TRANSMISSION NO.		
INSPECTOR'S NAME	RADGE NUMBER	SHOP NUMBER
<p>NOTE: THE FOLLOWING INSPECTION SHEETS ARE DIVIDED INTO SEVEN COLUMNS. THE INSPECTOR SHALL PLACE A CHECK IN THE COLUMN WHICH BEST DESCRIBES THE CONDITION OF THE ITEM BEING INSPECTED. FOR THOSE ITEMS THAT CANNOT BE INSPECTED FOR ANY REASON, THE INSPECTOR SHALL MAKE AN APPROPRIATE ANNOTATION IN THE REMARKS COLUMN. IF THE INSPECTOR FINDS A DEFECT THAT COULD CAUSE INJURY TO THE OPERATOR OR DAMAGE TO THE END ITEM, TESTING WILL CEASE UNTIL THE DEFECT IS CORRECTED OR THE DECISION IS MADE TO INDUCT THE VEHICLE INTO THE IRDAW CYCLE.</p>		



APPENDIX A

	SM	MT	ST	SN	NO	REMARKS
e. Fan belts for damage. . . . .						
f. Fan rotates freely. . . . .						
g. Radiator for leaks/cooling fins for damage and or obstructions. . . . .						
h. Engine oil check cold must be between low and full. . . . .						
i. Radiator level must be 1" below filler neck . . . . .						
j. Transmission oil check cold must be at cold. . . . .						
k. Electrical connections for looseness/damage . . . . .						
l. Air line connections for looseness/damage. . . . .						
m. Power steering reservoir cold check to cold mark. . . . .						
n. Steering arms and linkages for sufficient lubrication. . . . .						
o. Power steering oil crates . . . . .						
(1) Hose, lines, and fittings for damage/looseness. . . . .						
(2) Proper mounting . . . . .						
(3) Leaks . . . . .						
(4) Cooling fins for damage and or obstructions. . . . .						
p. Cab mount biscuits for damage/looseness . . . . .						
<b>3. CURB SIDE OF VEHICLE</b>						
a. side marker lamps for damage/security of mounting. . . . .						
b. Front wheel and tire. . . . .						
(1) Condition of tires (uneven gouges, & uneven/excessive wear) . . . . .						
(2) Lug nuts for obvious looseness . . . . .						
c. Passenger door. . . . .						
(1) Door for ease of operation, fit and sealing . . . . .						
(2) Window for ease of operation and damage. . . . .						
(3) Side mirrors for damage and security of mounting. . . . .						

APPENDIX A

	SECURITY	MOVEMENT	REPAIR	REMARKS
d. Steps for damage and security of MOUNTING.				
e. Air reservoirs:				
(1) Pet cocks for freedom of movement.				
(2) Hoses, lines, and fittings for damage and looseness.				
f. Storage boxes				
(1) Security of mounting.				
(2) Hinges for damage and looseness				
(3) Water in boxes.				
g. Hydraulic reservoir				
(1) Leakage				
(2) Hose, lines, fittings for looseness/damage.				
(3) No rust on dipstick/filler neck				
(4) Fluid level 1/2 way between low and full.				
h. Intermediate/rear wheels and tires				
(1) Condition of tires (cuts, gouges, uneven and excessive wear)				
(2) Lug nuts for obvious looseness				
(3) Mud flaps torn/missing/bent hardware.				
(4) Fenders for security of mounting/bent/loose bolts				
<b>4. REAR OF VEHICLE</b>				
a. Rear tail lights:				
(1) Damage				
(2) Security of mounting.				
b. Pintle hook				
(1) Freedom of movement				
(2) Security of mounting.				
(3) Lock pin and chain secured.				
c. Rear glad hands				
(1) Hose, lines, and fittings for damage/looseness.				
(2) Dust covers for damage/missing chains.				
d. Trailer light receptacle loose/damaged				
e. Lifting shackles missing				
f. Reflectors missing/damaged.				



APPENDIX A

	INSPECTION	DEFECTS	REPAIRS	REMARKS
<b>4. ROADSIDE OF VEHICLE</b>				
a. Intermediate/Rear wheels and tires				
(1) Condition of tires (cuts, gouges, uneven, and excessive wear)				
(2) Lug nuts for obvious looseness				
(3) Mud flaps torn/missing/bent hardware				
(4) Fenders for security of mounting/bent/loose				
b. Side marker lamps for damage/security of mounting				
c. Fuel tanks and lines				
(1) Security of mounting				
(2) Fuel lines and fittings for damage/looseness				
d. Air intake stack for damage/security of mounting				
e. Air cleaner				
(1) Obvious damage				
(2) Hoses/clamps/fittings for looseness/damage				
(3) Rust cup installed				
f. Drivers door				
(1) Door for ease of operation/fit/sealing				
(2) Window for ease of operation/fit/sealing				
(3) Side mirrors for damage and security of mounting				
g. Steps for damage/security of mounting				
h. Cab mount brackets for damage/security				
i. Front wheel and tire				
(1) Condition of tires (cuts, gouges, and uneven excessive wear)				
(2) Lug nuts for obvious looseness				
<b>5. REAR OF CAB</b>				
a. Spare tire				
(1) Damage				
(2) Security of mounting				



APPENDIX A

	STATUS	INSPECTION	REPAIR	REMARKS
b. Spare tire/carrier and davit assembly.				
(1) Tire securely mounted . . . . .				
(2) Tire davit, winch cable/handle for damage. . . . .				
7. <u>CAB INTERIOR</u>				
a. Batteries and cables. . . . .				
(1) Fluid level (up to split ring)				
(2) Posts and cables for looseness and corrosion . . . . .				
(3) Batteries for security of mounting. . . . .				
b. Glass for excessive scratches . . . . .				
c. Seats for ability to adjust and security of mounting. . . . .				
d. Instruction and data plates . . . . .				
(1) Location and proper installation. . . . .				
(2) Correct information on all the plates. . . . .				
8. <u>UNDERSIDE OF VEHICLE</u>				
a. <u>FRONT SUSPENSION</u> . . . . .				
(1) CV boot for damage. . . . .				
(2) Hoses, lines, fittings for looseness/damage. . . . .				
(3) Shock absorbers for looseness/damage. . . . .				
(4) Input/output shafts for mounting, lube. . . . .				
(5) Input/output seals for leaks. . . . .				
(6) Breather caps for freeplay/damage. . . . .				
(7) Front axle for proper level . . . . .				
b. Air Reservoirs. . . . .				
(1) Hoses/lines/fittings for damage/leaks/chafing. . . . .				
c. Transmission. . . . .				
(1) Mounting and security of components. . . . .				
(2) Leaks . . . . .				

APPENDIX A

	START	STOP	TIME	DATE	TIME	REMARKS
d. Transfer case (8 point 5/8 in 1/2 in drive socket) . . . . .						
(1) Mounting and security of components. . . . .						
(2) Check for proper level. . . . .						
(3) Input/output shafts for damage/looseness. . . . .						
e. Rear suspension . . . . .						
(1) Hoses, lines, and fittings for damage/looseness. . . . .						
(2) Input/output shafts for mounting, lube. . . . .						
(3) Input/output axle for leaks. . . . .						
(4) Breather caps for freeplay. . . . .						
(5) Intermediate/rear axles for proper levels . . . . .						
9. <u>TRUCK MOUNTS</u>						
a. <u>Garage bodies. . . . .</u>						
(1) Side and end panels for damage						
(2) Latches, hinges, and pins for damage. . . . .						
(3) Gauge tie down for broken welds . . . . .						
(4) Side racks for proper installation. . . . .						

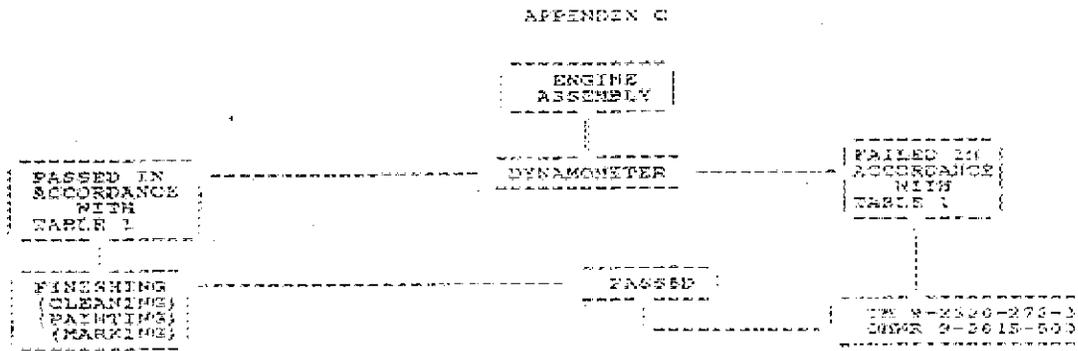
NO-ACC-07250 (ILSD) 11-91

APPENDIX B

TYPE OF VEHICLE 5-TON TRUCK	MODEL	CHASSIS SERIAL NO	USMC NO	MILEAGE
ACTIVITY	YEAR OF MANUFACTURE			

INSPECTION BY AUTHORIZED GOVT REP (SIGN & DATE)

GROUP	PART	SATISFACTORY		GROUP	PART	SATISFACTORY		COMMENTS
		SATISFACTORY	UNSATISFACTORY			SATISFACTORY	UNSATISFACTORY	
01	ENGINE			14	STEERING GEAR			
03	FUEL SYSTEM			15	FRAME			
03	TANK			15	TOWING CONNECTIONS			
03	INJECTORS			15	SHOCK ASSEMBLERS			
03	METER			15	SPRINGS			
03	PUMP			15	FENDERS			
03	ETHER START			15	HOOD			
04	MUFFLER & TAIL PIPE			15	HOOD			
05	FAN & WATER PUMP			15	BED			
05	RADIATOR			15	CAB			
05	BATTERY			15	FLOOR			
06	INSTRUMENTS			15	GLASS			
06	GENERATOR			15	INTERIOR TRIM			
08	LIGHTS			15	SEATS & UPHOLSTERY			
08	STARTER			15	BURNERS			
08	REGULATOR			15	BRONN GUARD & GRILL			
08	WIPERS			15	WIPERS & RENE			
07	TRANSMISSION			22	PAINT			
08	TRANSFER			22	FORGING PIT			
09	DRIVE SHAFT			22	WINCH			
10	FRONT AXLE			22	VEHICLE ACCESSORIES			
11	INTER AXLE							
11	REAR AXLE							
12	HAND BRAKE SYS							
12	SERVICE BRAKE SYS							
13	TIRES			ACCEPTANCE BY AUTHORIZED GOVERNMENT REPRESENTATIVE				
13	WHEELS							



IRCAI Pass/Fail Logic Chart - Engine Assembly

APPENDIX C

Acceptable Operating Specifications for NHC 280 Cummins Engine

Rated Power . . . . .	Minimum 250 hp at 2100 rpm
Idle Speed . . . . .	500 rpm
Minimum Engine Oil Pressure at Idle . . . . .	10-12 psi at 2250F
Normal Engine Oil Pressure . . . . .	30-70 psi at 1200 - 2100 rpm
Normal Oil Temperature . . . . .	120-2250F
Normal Coolant Temperature . . . . .	160-2000F
Normal Inlet Fuel Pressure . . . . .	150-180 psi at 2100 rpm
Fuel Inlet Temperature . . . . .	1000F maximum



APPENDIX C

DYNAMOMETER RUN-IN SCHEDULE  
 CUMMINS DIESEL IN-LINE 150 ENGINE - DYNAMOMETER TEST LOG

Test Period	Time in Minutes	Engine RPM	Dyno Load (H.P.)	Smoke Density	Oil Press	Oil Pump Temp	Water Temp	Fuel Rate
	5	1800	25					
	10	1875	425					
	15	2100	135					
	15	2100	213					
	15	2100	225					
	5	2100	340 - 54					
	1	1500						
	10	1800	10					

FINAL CHECK RUN. TORQUE Output  
 LB FT (551-625 corrected).

(16) Injector

- Normal lube oil pressure, 10 to 30 psi at 1800 at idle.
- NORMAY lube oil pressure, 20 to 30 psi at 2300 to 2100 rpm. (30 psi min)
- WDE oil pump temperature 1400 maximum at 2300 to 2100 rpm.
- Normal coolant temperature, 1800F to 2000F.
- Normal inlet fuel pressure 100 to 150 psi at 2100 rpm. Actual \_\_\_\_\_
- Fuel inlet temperature 1000 MAXIMUM. Actual \_\_\_\_\_
- Engine rpm: low idle 600; high idle, no load 2195-2215.

RUN-IN RECORD

Item No.	Test Results	Operator's Initials
1.	<u>Diesel Fuel Used</u> WU-F-400	
2.	<u>Oil Used</u> MIL-L-21266 15W/400	
3.	<u>Brake Horsepower</u> Corrected hp at 1800 rpm	(235 lb. ft. min.)

APPENDIX G

RUN-IN RECORD (COMBINE DIESEL IN-LINE (S) MOTO) 1

REMARKS:

- 1. If abnormal noise, describe conditions \_\_\_\_\_
- \_\_\_\_\_
- 2. Smoothness at idle \_\_\_\_\_
- 3. Engine malfunction \_\_\_\_\_
- \_\_\_\_\_

Operator \_\_\_\_\_ Date \_\_\_\_\_ Inspector \_\_\_\_\_ Date \_\_\_\_\_

CORRECTION FACTORS

- 1. Horsepower Correction Data:
  - a. Barometric pressure in Hg: \_\_\_\_\_
  - b. Wet bulb temperature of: \_\_\_\_\_
  - c. Dry bulb temperature of: \_\_\_\_\_
  - d. Observed HP: \_\_\_\_\_
  - e. Corrected HP: \_\_\_\_\_
  - f. Torque output @ 1500: \_\_\_\_\_
  - g. Torque output corrected @ 1500: \_\_\_\_\_

APPENDIX D

HICKLIN  
DYNAMOMETER RUN SHEET  
MT-884 TRANSMISSION

SERIAL NO. \_\_\_\_\_ DATE \_\_\_\_\_  
OPERATOR \_\_\_\_\_

Fill transmission to operating level with OE/HDC-10 weight oil, conforming MIL-L-2104C.

Set test stand drive unit for clockwise rotation.

Set input at 1200 rpm, closed throttle modulator setting, output unloaded, transmission through all ranges to fill clutches.

With output stalled, full throttle modulator setting, drive 4(5) range, stop transmission until fluid temperature reaches 170°F.

Check and reestablish correct fluid level.

REPORT 11  
 NO. 65898 TRANSMISSION PERFORMANCE RPN REPORT

Test	RPM	Throttle	Output	Specified Reading:	Actual
2000	2000	Full	Unstalled	Specified Reading: Main Pressure (2000-312 rpm) Governor Signal Pressure (2900-312 rpm) Governor Flow (6.8 GPM min.) Fuel Pressure (Governor) ... 11" Fuel	
Idle	RPM	Throttle	Range	Output Governor (In. Hg. 1520) Minimum of Input Speed (RPM 150) Required 190-205 rpm Actual	Major Pressure
Stall	1100/20	Full	4(5)	Stall	Actual

Test	RPM	Throttle	Range	Minimum 150 rpm	Actual			
Idle	2000/20	Closed	4(5)	Minimum 150 rpm	Actual			
Test		Range	Throttle	Output	Shift Point	Req	rpm	Actual
Ball Throttle	4(5)	Full	Unstalled	Unstalled	4-3	845-1250		
Upshift				500-1000	3-2	107-930		
					2-1	335-690		
					1-1	460-590		
					1-1	225-215		

NOTE: Governor load test diameter occurs.

Test	RPM	Throttle	Output	Shift Point	Req	rpm	Actual
Closed Throttle	4(5)	Closed	Unstalled	4-3	845-1250		
Governor				3-2	107-930		
				2-1	335-690		
				1-1	460-590		
				1-1	225-215		

NOTE: Reduce input speed with each gear diameter.





8. <u>Major components</u> . . . . .	
a. Leakage . . . . .	
9. <u>Paint</u> . . . . .	
a. Flaking paint . . . . .	
b. Scratches that penetrate the top coat . . . . .	
8. <u>Sheet metal damage</u> (cab, hood, body, etc.) . . . . .	
9. <u>Miscellaneous</u> . . . . .	
(items not previously addressed on Final Road Test Check List) . . . . .	



