SOW CHANGE PROPOSAL

SOW-04-CSLE-09599A-2/1 SOW-05-PMM152-09599A-2/1	Change 2 Change 1	9 December 2003

STATEMENT OF WORK (SOW)
for the
Inspection and Repair Only As Necessary (IROAN) of the
ARMORED COMBAT EARTHMOVER (ACE)
NSN 2350-00-808-7100

SOW-04-CSLE-09599A-2/1 w/SCP 1
SOW-05-PMM152-09599A-2/1

Replace Change SOW-04-CSLE-09599A-2/1 w/SCP 1 and SOW-05-PMM152-0599A-2/1 in it's entirely with the attached SOW.

If approved, does this proposed change have the potential to have an impact on the cost or schedule?
* Yes /_X_/ or No /__/ (Place and X in the appropriate block)

*Changes that have the potential to impact cost or schedule will be reviewed by Maintenance Directorate (MD) and an impact statement provided to LCMC. Changes that do not have the potential to impact cost or schedule may not be reviewed by MD.

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SOW-04-CLSE-09599A-2/1 09 December 2003

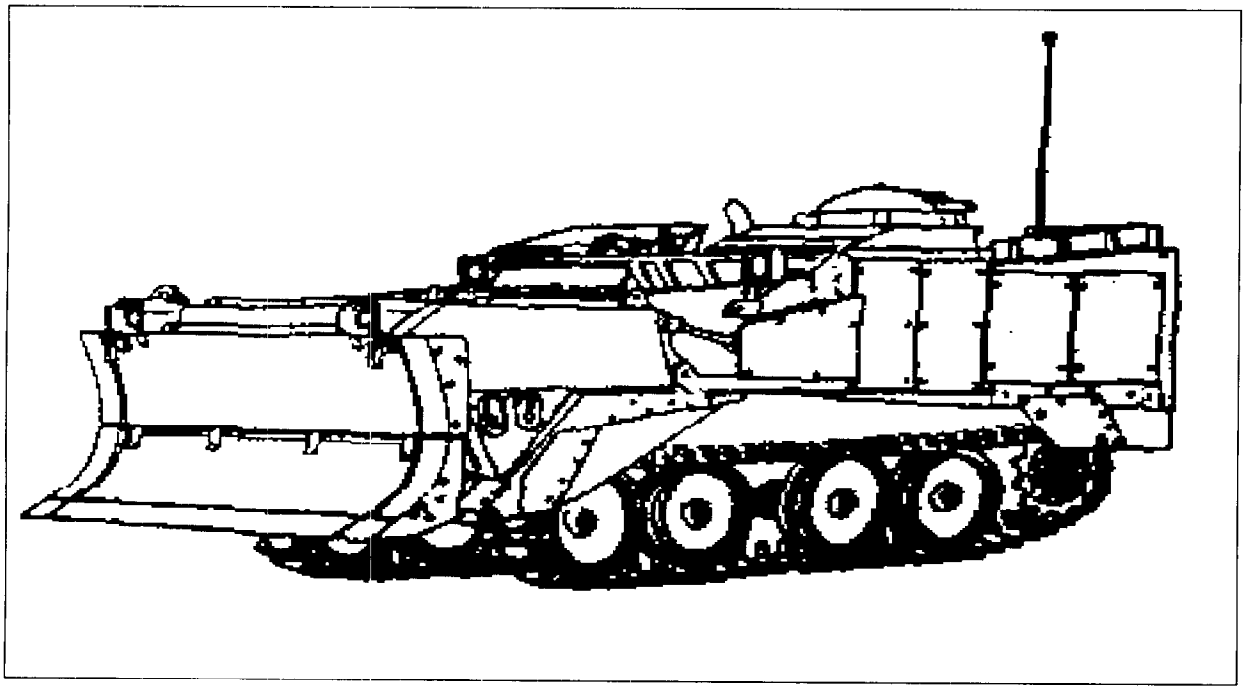
STATEMENT OF WORK

FOR THE

INSPECT AND REPAIR ONLY AS NECESSARY (IROAN)

OF THE

ARMORED COMBAT EARTHMOVER (ACE)
MODEL M9



NSN 2350-00-808-7100

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STATEMENT OF WORK
FOR THE IROAN OF THE
ARMORED COMBAT EARTHMOVER (ACE)
NSN 2350-00-808-7100 MODEL M9

1.0 SCOPE. This Statement of Work (SOW) establishes, sets forth tasks and identifies the work efforts that shall be performed by the Contractor (for purpose of this SOW, Contractor is defined as the commercial or government entity performing the IROAN) to IROAN the Armored Combat Earthmover (ACE), Model M9 (hereafter referred to as the M9 ACE), Weapon System Code 3Q, National Stock Numbers (NSN) 2350-00-808-7100. This document contains requirements to a restore the M9 ACE to Condition Code "A". Condition Code "A" is defined as "serviceable/issuable without qualification, new, used, repaired or reconditioned material which is serviceable and issuable to all customers without limitation or restriction, including material with more than six months shelf life remaining." Questions related to this SOW should be addressed to the M9 ACE Equipment Specialist, Marine Corps Systems Command (MCSC) (Code PMM152), 814 Radford Blvd., Suite 20343, Albany, Georgia 31704-0343, commercial telephone number (229) 639-6983 or DSN 567-6983.

1.1 Background. IROAN is defined as: "The 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."

1.2 Item Identification. The M9 ACE, NSN 2350-00-808-7100 is a full tracked, armored combat engineer vehicle. It is capable of excavating defensive positions for armored vehicles and artillery as well as creating other protective and fighting positions for weapons, material and personnel. Additional capabilities include mobility enhancement by breaching obstacles such as antitank ditches and escarpments.

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 DoD Technical Publication Systems 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 requirements.

2.1 Military Standards

MIL-STD-129	DoD Standard Practice: Military Marking for Shipment and Storage
MIL-STD-130	DoD Standard Practice for Identification Marking of U.S. Military Property

MIL-STD-642	DOD Standard Practice for Identification Marking of Combat and Tactical Transport Vehicles
MIL-STD 3003	Vehicle, Wheeled; Preparation for Shipment and Storage of

2.2 Other Government Documents and Publications

DoD 4000.25-1-M	Military Standard Requisitioning and Issue Procedures (MILSTRIP)
TM 4750-15/1	Painting and Registration Marking for Marine Corps Combat and Tactical Equipment.
TM-09599A-10/1	Operator's Manual, Armored Combat Earthmover
TM-09599A-24/2 Volumes 1 & 2	Organizational and Intermediate Maintenance Manual
TM-09599A-24P/3	Organizational and Intermediate Maintenance Manual (Parts)
TM 9-4910-571-12&P w/chg 1&2	Simplified Test Equipment For Internal Combustion Engines Reprogrammable (STE/ICE-R) Operators Manual.
TM 4795-34/2	Corrosion Prevention and Control
TM 5-2350-262-20-3	Hydraulic Troubleshooting Test Procedures
MCO P11262.2A Section 2003	Inspection, Testing, and Certification of Tactical Ground Load Lifting Equipment
MI 09599A-35/3	Installation of New Design Drive Hub and Sprocket and Modification on Final Drive Shaft
MI 09599A-35/1	Installation of the Actuator Access Plates on the M9 Armored Combat Earthmover
MI 09599A-45/*	(Draft) Actuator Mounting Ring Installation For M9 Armored Combat Earthmover
MI 09599A-25/*	(Draft) Installation of Final Drive Fluid Levels Dipstick
DMWR 5-2815-240	ENGINE

DMWR 5-2520-535	FOR TRANSMISSION & TORQUE CONVERTER
DMWR 5-2520-536	FOR TRANSFER CASE
DMWR 5-2530-503	FOR STEER UNIT
DMWR 5-2350-262-2	FOR MAIN HYDRAULIC PUMP
DMWR 5-2350-262-1	Depot Maintenance Work Requirement for Armored Combat Earthmover (ACE) M9

Military Handbooks (For Guidance)

MIL-HDBK-61	Configuration Management

2.3 Industry Standards

ANSI/ISO/ASQC Q9001-2000	Quality Management Systems – Requirements
ISO 4021	Hydraulic Fluid Power Particular Contamination Analysis-Extraction of Fluid From Lines of an Operational System

Industry Standards (For Guidance)

ANSI/EIA-649	National Consensus Standard for Configuration Management

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, commercial telephone number (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, Contracts Department, (Code 891), P. O. Drawer 43019, 814 Radford Blvd., Marine Corps Logistics Command, Albany, GA 31704-3019, commercial telephone number (229) 639-6761 or DSN 567- 6761. Copies of engineering drawings, if applicable, shall be obtained from Supply Chain Management Center, Attn: Code 566-1A, 814 Radford Blvd., Suite 20320, Albany, Georgia 31704-0320, commercial telephone number (229) 639-6476 or DSN 567-6476.

3.0 REQUIREMENTS

3.1 General Tasks. 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 services necessary to troubleshoot, test, diagnose, engineer, integrate, install, repair and calibrate as required to make fully operational, the M9 ACE.

b. Conduct final-on-site testing for witness by the Marine Corps Systems Command (MCSC) Code PMM152, Albany, Georgia, and/or their representatives.

c. The Contractor shall be responsible for all structural, electrical and mechanical requirements associated with the repair and restoration of the M9 ACE.

3.2 IROAN Objective and Functions. After IROAN, the M9 ACE shall have, as a minimum, the following characteristics:

a. Reliable as per system specifications. System specifications for the M9 ACE can be found throughout the M9 ACE Technical Manuals. These specifications are not always expressed in numbers but in some cases, specifications are expressed as an inspection. Specifications are listed with each assembly/subassembly's remove, inspect and repair procedures in the Technical Manual that addresses the component being repaired or IROANed.

b. Maintainable.

c. Serviceable (Condition Code "A").

d. Latest Marine Corps Configuration.

e. All M9 ACE systems and components shall operate as design intended.

f. All M9 ACE shall have a like new appearance.

3.3 Specific Tasks. The following tasks describe the different phases for the IROAN of the M9 ACE.

Phase I	Pre-Induction (Initial Inspection)
Phase II	IROAN
Phase III	Inspection, Testing and Acceptance
Phase IV	Packaging, Handling, Storage and Transportation (PHS&T)

3.3.1 Phase I Pre-Induction

a. The Contractor shall inspect in detail M9 ACE transported to the Contractor for IROAN under provisions of this SOW. The Contractor shall ensure that the inspection is sufficient to determine the condition of the inspected M9 ACE and the extent of work and repair parts required. The findings of this inspection shall be annotated on the M9 ACE Pre-Induction Checklist and shall be maintained and made available upon request by MCSC, Code PMM152,

Albany, Georgia, and/or their representatives. The M9 ACE Pre-Induction Checklist, Final Inspection Checklist and Configuration Checklist (Appendix A) may be duplicated in a electronic data base and maintained in that data base. If data is selected to be provided electronically to MCSC, Code PMM152, Albany, Georgia, the database program must be agreed to by the Contractor and MCSC, Code PMM152, Albany, Georgia and/or their representative(s).

b. Test equipment shall be used to determine that assembly and subassembly's meet prescribed reliability, performance and work requirements. In those cases when conformance to the SOW cannot be certified through existing inspection and testing procedures or by use of diagnostic equipment, the assembly shall be removed, disassembled, inspected, tested and repaired to the degree necessary to assure full conformance with this SOW. M9 ACE will be operational tested 100 percent in accordance with this SOW.

c. Oil seals and gaskets 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 temperatures. The following shall be used as a guide in determine degree of oil loss:

(1) Class I - Seepage of fluid (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 LEAK, EXCEPT FUEL SYSTEM, BRAKE SYSTEM, AND POWER STEERING SYSTEMS IS AN ACCEPTABLE CONDITION AT ANY TIME AND DOES NOT REQUIRE CORRECTIVE ACTION.

3.3.2 Phase II - IROAN. After Pre-Induction Tests and Inspections have been completed, IROAN of the M9 ACE shall be accomplished in accordance with this SOW and the M9 ACE Technical Manuals. Deficiencies noted on the M9 ACE Pre-Induction Checklist (Appendix A) during Phase I shall be repaired, rebuilt or replaced. The following efforts shall be performed as part of the IROAN:

a. Service And Parts Manual. The Service and Parts Manuals listed below contain repair procedures and repair parts for the complete M9 ACE. The Trouble Shooting Guide contained in these manuals is to be used along with the Pre-Induction Checklist in helping identify deficiencies with the M9 ACE. Repair procedures contained in these manuals are to be used to repair deficiencies identified on the Pre-Induction Checklist.

TM-09599A-10/1	Operators Manual
TM-09599A-24/2 Volumes 1 & 2	Organization and Maintenance Manual, Volumes 1 and 2
TM-09599A-24P/3	Organization and Maintenance Manual (Repair Parts)
TM 9-4910-571-12&P w/chg 1&2	Simplified Test Equipment for Internal Combustion Engines Reprogrammable (STE/ICE-R) Operators Manual
TM 5-2350-262-20-3	Hydraulic Troubleshooting Test Procedures
MI 09599A-35/3	Installation of New Design Drive Hub and Sprocket and Modification on Final Drive Shaft
MI 09599A-35/1	Installation of the Actuator Access Plates on the M9 Armored Combat Earthmover
MI 09599A-45/* (Draft)	Actuator Mounting Ring Installation For M9 Armored Combat Earthmover
MI 09599A-25/* (Draft)	Installation of Final Drive Fluid Levels Dipstick
DMWR 5-2815-240	ENGINE
DMWR 5-2520-535	FOR TRANSMISSION & TORQUE CONVERTER
DMWR 5-2520-536	FOR TRANSFER CASE
DMWR 5-2530-503	FOR STEER UNIT
DMWR 5-2350-262-2	FOR MAIN HYDRAULIC PUMP
DMWR 5-2350-262-1	Depot Maintenance Work Requirement for Armored Combat Earthmover (ACE) M9

The Asterisk contained in a publication number indicates these publications are drafts. The draft publications are authorized for use in applying modification as required by this SOW. These publications are obtained from the MCSC, Code PMM152 Equipment Specialist, commercial telephone number (229) 639-6983 or DSN 567-6983.

The Service Manuals listed may contain provision for corrosion control, painting, and packaging. Provisions for corrosion control, painting and packaging are provided within this SOW and shall be the superseding requirement. Maintenance tasks identified in the service manual shall be followed in the IROAN of the M9 ACE.

Repair parts are listed in TM-09599A-24P/3. All repair/replacement parts shall be ordered using this manual. TM-09599A-24P/3 also establishes the basic configuration of the Marine Corps M9 ACE.

TM-09599A-24/2, Volumes 1&2, contains many STE/ICE-R troubleshooting procedures. Follow test procedures in the current TM 9-4910-571-12&P w/chg 1&2 to run the STE/ICE-R CI Engine GO NO-GO Chain as directed by, Page 3-17 of TM-09599A-24/2, Volumes 1&2. Refer to TM 9-4910-571-12&P and repair or replacement procedures in chapter 4 of TM-09599A-24/2, Volumes 1&2, to complete all equipment conditions. All STE/ICE-R tests identified in TM-09599A-24/2, Volumes 1&2 shall be conducted to determine condition of components/systems being tested.

Modification Instructions not applied prior to IROAN shall be applied during IROAN. Use of the draft Modification Instructions is authorized.

b. Detailed Mechanical Work. M9 ACE received for IROAN shall be worked in accordance with the following paragraphs. All discrepancies noted on the IROAN Pre-Induction Checklist shall be repaired/replaced.

c. Hardware

(1) Replace broken, unserviceable and/or missing hardware, including nuts, bolts, screws, washers, turn lock fasteners and one time use items, etc., in accordance with the IROAN. Unserviceable would include any of the above that failed to function properly or when corrosion exists.

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

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

(4) Hardware used in this IROAN shall be in accordance with TM-09599A-24P/3.

d. Power Train. The M9 ACE Power Train consists of seven major components. These components are the vehicle engine, transfer case, transmission, drive shaft, steer unit, final drives and drive sprocket assemblies. These components are to be cleaned, inspected, tested, adjusted, repaired, rebuilt or replaced as required by Depot Maintenance Work Requirements and technical manuals identified under each component listed in paragraphs 3.3.2.d subparagraphs (1) through (7).

(1) Vehicle Engine. The engine shall be rebuilt 100 percent in accordance with DMWR 5-2815-240.

(2) Transfer Case. The transfer case shall be rebuilt 100 percent in accordance with DMWR 5-2520-536. Replace metallic hydraulic lines that contain flat spots or kinks that may restrict flow or eventually result in leakage. Stripped or rounded off fittings are not permitted. Replace nonmetallic hydraulic lines 100 percent. Replace transfer case oil 100 percent. Transfer case shall operate freely and without symptoms of transfer case malfunctions identified in the troubleshooting charts of TM-09599A-24/2, Volumes 1&2.

(3) Transmission/Torque Converter. The transmission and torque converter shall be rebuilt 100 percent in accordance with DMWR 5-2520-535.

(4) Drive Shaft. Transmission and steer unit input and output yokes shall be securely mounted in their proper place without leakage. Remove any and all foreign material from propeller shaft. Replace universal joints 100 percent. Slip yoke shall function as intended with no excessive radial movement. Repair/replacement procedures are found in TM-09599A-24/2, Volumes 1&2.

(5) Steer Unit. The steer unit shall be rebuilt 100 in accordance with DMWR 5-2530-503. Steer unit selector level and linkage shall function as intended without excessive play. Steer unit mounting plates, turnbuckle and hardware shall be functional and complete. No missing items are permitted. All guards, plates and pans (oil) shall be functional and installed in their proper location. Replace metallic hydraulic lines that contains flat spots or kinks that may restrict flow or eventually result in leakage. Stripped or rounded off fittings are not permitted. Replace nonmetallic hydraulic lines that contain blisters or deformations to the outer covering. No excessive abrasion or scrubbing areas on outer surface of both the nonmetallic and metallic hoses and lines are acceptable. Steer unit output coupling, steer selector lever and linkage, steer unit brake lever, and steering wheel and linkage adjustment shall be checked and adjusted as required. Adjustment procedures for these assemblies are founded in TM-09599A-24/2, Volumes 1&2.

(6) Final Drives. Final Drive Assemblies shall be free of cracks, breaks, leakage and any structural damage that may prevent proper operation. Final Drive Assemblies shall operate as intended without vibrations, load noise, or overheating. Final Drive Assembly oil shall be replaced 100 percent. Final Drive Assembly disconnect/connect assemblies shall be free of damage and any foreign material. Final Drive Assembly disconnect/connect assemblies shall operate as intended. Replace nonmetallic breather hoses that contain blisters or deformations to the outer covering. Excessive abrasion or scrubbing areas on outer surface of hoses are not permitted. Stripped or rounded off fittings are not permitted. Repair/replacement procedures are founded in TM-09599A-24/2, Volumes 1&2.

(7) Drive Sprocket Assembly. Hub assembly shall be free of cracks, breaks, warpage and structural damage that may prevent proper installation and operation. Inter/outer sprockets

shall not be worn to the wear ring on any one side. Replace sprockets as required. Replace missing, broken, or stripped inter sprocket shelf locking bolts and outer sprocket/hub final drive studs. Replacement procedures are found in TM-09599A-24/2, Volumes 1&2.

e. Suspension System. The M9 ACE suspension system consists of rotary actuators, accumulators, road wheel and road wheel arms, track, track adjusting cylinders, adjusting flange, and the bump stop and bump stop cylinder assemblies. These assemblies are to be cleaned, inspected, tested, adjusted and repaired/replaced as needed. Suspension system components shall be IROANed of all deficiencies annotated on the Pre-Induction Checklist. Repair/replacement procedures are founded in TM-09599A-24/2, Volumes 1&2.

(1) Rotary Actuators. M9 ACE rotary actuators require special tools and test equipment to repair and to test repaired rotary actuators. Rotary actuators that malfunction due to internal problems are required to be replaced. Assure rotary actuator problems are not due to the problems related to the M9 ACE hydraulic system before removing rotary actuator for replacement. Rotary actuator troubleshooting procedures are found in TM-09599A-24/2, Volumes 1&2. Rotary actuators shall be free of any and all deficiencies identified in the troubling shooting chart. Replace metallic hydraulic lines that contain flat spots or kinks that may restrict flow or eventually result in leakage. Stripped or rounded off fittings are not permitted. Replace nonmetallic hydraulic lines 100 percent. Class II and III leakage at the actuator ports is not permitted. Check torque settings of actuator mounting bolts to assure bolts are not loose. If bolts cannot be tightened, inspect hull thread inserts for looseness, corrosion and damage. Repair inserts in accordance with procedures identified in TM-09599A-24/2, Volumes 1&2. All rotary actuator mounting bolts shall be tightened to specifications.

(2) Accumulators. Accumulators shall be tightly secured in their mounting place without leakage. Test torque setting of accumulators. Accumulators shall be torque to 169-187 lb-ft (229-254 N-m). Test accumulator charge using test procedures identified in TM-09599A-24/2, Volumes 1&2, page 4-880 through 4-883. Repair/replacement procedures are founded in TM-09599A-24/2, Volumes 1&2.

(3) Track Adjusting Cylinders. Inspect check valves for leakage. If grease is leaking from the valves, replace valves. Replace damaged check valves. Check cylinders for cracks. Replace cracked and damaged cylinders. Inspect and functional test track adjusting cylinders using test procedures identified in TM-09599A-24/2, Volumes 1&2, page 3-188, Step 7. Repair/replace cylinders that do not maintain tension. Test cylinders using procedures in TM-09599A-24/2, Volumes 1&2, page 3-186, Step 2, before replacing cylinders that will not maintain tension. This procedure will remove any air that may be trapped in the cylinder.

(4) Bump Stop Assembly. Inspect Bump Stop Assembly hydraulic lines for flat spots or kicks that may restrict flow or eventually result in leakage. Stripped or rounded off fittings are not permitted. Replace hydraulic lines 100 percent. Inspect Bump Stop Assembly to assure assembly is not jammed. Remove jamming material or repair damaged Bump Stop Assembly. Test Bump Stop Assembly hydraulic pressure using procedures identified in TM-09599A-24/2, Volumes 1&2, page 3-281. Repair/replace Bump Stop Assembly as test results may require.

Test Bump Stop Assembly flow rate as per instructions identified in TM-09599A-24/2, Volumes 1&2, page 3-286. Repair/replace Bump Stop Assembly components as may be required by flow test results.

(5) Adjusting Flange. Inspect flange assembly for cracks, breaks and structural damage. Replace damaged flange assemblies. Closely inspect flange assembly track adjusting cylinder mounting ears for cracks and breaks. Replace flange assemblies that show any structural damage in this area. Inspect flange alignment pins to assure pins are in place. Replace missing pins. Closely inspect vehicle hull at the area that the adjusting flanges and final drive assemblies are installed. Hull should not be damaged, cracked, or show any signs of deformities. If suspected problems are identified, remove final drive and adjusting flange to facilitate a thorough inspection of the hull. Repair/replace components as required. Inspect flange assembly for leakage. Replace oil barrier as required. Inspect flange assembly for missing or damaged alignment half-ring. Replace half-rings as required. Repair/replacement procedures are founded in TM-09599A-24/2, Volumes 1&2.

(6) Road Wheel Arms. Inspect road wheel arms for structural damage such as cracks, breaks and bends. Remove arm retainer to inspect splines on both the road wheel arm and actuator assemblies. Replace any and all arm and actuator assemblies that contain damage or stripped splines. Inspect area between the road wheel arms and hull assembly for any foreign material (such as barb wire). Remove material as required. If foreign material is found or inspection indicates that foreign material has been trapped in this area, remove road wheel arm and replace actuator seals, gaskets and packing. Inspect seal, gasket and packing surfaces on the road wheel arm and actuator. Replace road wheel arm and actuator as required. Inspect road wheel arm hub assembly for looseness, loud noises, binding and structural damage. Remove hub assembly cap and inspect hub bearings for looseness or lack of proper lubrication. Replace bearing that emits noise during operation and that has run without proper lubrication. Test hub nut torque setting. Adjust as required. Replace nut-retaining cotter pins 100 percent. Inspect road wheel mounting bolts for stripped threads, bent and missing bolts. Replace missing, stripped or bent bolts. Replace missing or damaged lubrication fittings. Road wheel Arm repair/replacement procedures are found in TM-09599A-24/2, Volumes 1&2, pages 4-906 through 4-910. Road wheel Hub Assembly repair/replacement procedures are found in TM-09599A-24/2, Volumes 1&2, pages 4-801 through 4-807.

(7) Road Wheels. Replace road wheels 100 percent. Check road wheel alignment. If alignment is more than 3/8 inches, inspect other suspension components to determine cause of misalignment (Misalignment may be caused by bent or damaged road wheel arms). Repair/replace as required to obtain correct alignment. Alignment procedures are identified in TM-09599A-10/1, page 3-63. Road wheel replacement procedures are found in TM-09599A-10/1, pages 3-64 through 3-65 and TM-09599A-24/2, Volumes 1&2, pages 4-788 through 4-800.

(8) Track. Replace vehicle track 100 percent. Adjust track in accordance with track tension checks contained in TM-09599A-10/1. Track shoe replacement procedures are found in TM-09599A-10/1, pages 3-55 through 3-62. Track replacement procedures are found in TM-09599A-24/2, volumes 1&2, pages 4-815 through 4-821.

(9) Vehicle Brakes. Vehicle brakes shall function as intended without binding, dragging, or sticking. Vehicle brakes shall stop vehicle in a straight line without pulling to one side. Check operation of service brake valve. Repair/replace as required. Inspect brake chamber and brake linkage for loose, damaged, or missing hardware. Replace/repair as required. Adjust steer unit brake levers to obtain correct measurement. Brake system shall be free of any and all brake deficiencies contained in the Troubleshooting Guide in TM-09599A-24/2, Volumes 1&2. Inspect vehicle parking brake for proper operation. Check parking brake lever and cable adjustment. Adjustment procedures are found in TM-09599A-24/2, Volumes 1&2, Page 4-41. Parking brake shall operate as intended.

f. Earth Moving Components. The M9 ACE contains two components that are identified as earth moving components. These components are the Ejector Assembly and Apron/Dozer Assembly. This section addresses the Scraper Cutting Edges also. Hydraulic components related to the operation of these assemblies are to be considered as part of the assembly they control. The earth moving components are to be cleaned, inspected, tested, adjusted and repaired/replaced as required. All nonmetallic hoses are to be replaced 100 percent. Repair/replacement procedures are founded in TM-09599A-24/2, Volumes 1&2.

(1) Ejector Assembly. Perform preliminary troubleshooting procedures in TM-09599A-24/2, Volumes 1&2 to test hydraulic operation of ejector assembly. Repair/replace defective components as required. Check ejector assembly for mechanical binding. Inspect ejector, rollers, and hydraulic cylinder for jamming, damage, wear and alignment. Inspect ejector control lever stop to ensure it is not restricting movement of control lever. Inspect ejector wear plates for damage. Adjust as necessary to achieve 0.25-in. (.64-cm) clearance from hull. Replace/repair damaged ejector components and remove any foreign material jamming the ejector. Weld holes and cracks in the ejector assembly that may allow dirt and other foreign material to enter the ejector cavities. Gouges that do not exceed 1/8 inch in depth and are less than six inches in length are allowed. Rebuild ejector cylinder 100 percent. Inspect ejector stowage box for damage. Repair as required.

(2) Cutting Edges. Inspect cutting edges for wear and damage. If cutting edges have been turned, replacement of cutting edges is mandatory.

(3) Apron/Dozer Assembly. Perform preliminary troubleshooting procedures in TM-09599A-24/2, Volumes 1&2 to test hydraulic operation of the apron/dozer assembly. Repair/replace defective components as required. Check apron/dozer assembly for mechanical binding. Rebuild hydraulic cylinders 100 percent. Replace hydraulic hoses 100 percent. Repair/replace as required. Inspect apron/dozer assembly for structural damage such as holes, cracks and breaks. Repair by welding is permitted. When welding is required, follow welding specification contained in TM-09599A-24/2, Volumes 1&2. Gouges that do not exceed 1/8 inch in depth and are less than six inches in length are allowed. Inspect apron latch assembly for damage and missing parts. Repair/replace as required. Inspect extension assemblies and bits for damage and missing parts. Repair as required. Replace apron wear plates and side seals 100

percent. Inspect apron/dozer hinge bushings and pins for wear and damage. If only one set of bushings or pins require replacement, replace all pins and bushings.

g. Fuel System. The fuel to power the engine is pumped out of the fuel tank by an engine-mounted fuel pump. The fuel pump is driven by the air compressor. Fuel is filtered before it reaches the engine by a fuel/water separator that is located under the fuel tank. Fuel may be shut off at the fuel tank by a shut off valve. Fuel is drained from the fuel/water separator by a drain valve located in the rear of the vehicle.

(1) The M9 ACE fuel system shall be inspected and tested for proper operation. Replace nonmetallic fuel hoses 100 percent.

(2) Replace fuel filters 100 percent. Inspect water separators and fuel pump for damage, leakage, and proper operation. Clean, repair, replace separators and fuel pump as needed. Inspect filter, water separator and fuel pump lines for damage that may restrict fuel flow or that may result in leakage after short use. Fuel line fittings shall not be rounded off or be in such a condition that will prevent them from being tightened to correct torque specifications. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

(3) Inspect fuel tank for cracks or leakage. Inspect fuel tank screen for damage. Inspect fuel tank using best commercial practices. Repair/replace as necessary. Inspect fuel sender unit for correct operation. Repair/Replace as needed.

(4) Inspect metallic fuel supply lines for cracks or damage that may restrict fuel flow or may result in leakage after short use. Replace nonmetallic fuel hoses 100 percent. Repair/replace as necessary. Repair/replace procedures can be found in TM-09599A-24/2, Volumes 1&2.

h. Air System. M9 ACE air system shall be inspected for and shall be free of any and all problems identified in the troubleshooting guide contained within TM-09599A-24/2, Volumes 1&2. M9 ACE air assembly contains the following subassemblies. These assemblies are to be inspected, tested and replaced/repaired as required.

(1) Air Compressor. Air compressor shall be free of any and all problems identified in the troubleshooting guide. Repair/replacement procedures are found in TM-09599A-24/2, Volumes 1&2.

(2) Air System Components. Air system components shall operate as intended. Air system components are the governor, safety valve, air reservoirs, service brake valve, trailer brake valve, trailer service brake couplings and shutoff valve. These components are to be inspected, tested, adjusted, repaired, or replaced as per operational requirements contained in TM-09599A-24/2, Volumes 1&2. Nonmetallic hoses are to be replaced 100 percent.

(3) Brake Chamber. Brake chamber shall operate as intended without binding or sticking. Brake chamber shall be inspected, tested, adjusted, repaired, or replaced as per operational requirements contained within TM-09599A-24/2, Volumes 1&2.

(4) Inspect metallic air lines for cracks or damage that may restrict airflow or may result in leakage after short use. Air line fittings shall not be rounded off or be in such a condition that will prevent them from being tightened to correct torque specifications. Repair/replace as necessary. Repair/replace procedures can be found in TM-09599A-24/2, Volumes 1&2.

i. Engine Cooling System.

(1) Inspect and test cooling system by pressurizing the system 5 PSI above the pressure marked on the radiator pressure cap. Check all connections and hoses for the cooling system for leakage. Cooling System shall retain a pressure reading of 5 PSI above pressure marked on radiator cap for at least five minutes. Loss of coolant is not permitted under the provisions of this SOW.

(2) Inspect radiator for cracks, leaks, bent fins and clogging that will prevent airflow through radiator. Clean, repair or replace radiator as required. Reverse flush, clean and inspect radiator core 100 percent. Clean radiator by ultrasonic cleaning and/or rod out radiators 100 percent. Straighten bent fins that can be straightened. Inspection and repairs are to be within standard commercial practice.

(3) Inspect water inlet manifold, thermostat housing and water pump for leakage. Inspect water pump assembly for unusual noise that may indicate that the pump bearings require replacement. Repair/replace as required. Replace thermostats 100 percent. Repair/replacement procedures are found in TM-09599A-24/2, Volumes 1&2.

(4) Inspect engine oil cooler for proper operation and leakage. Remove coil assembly, clean, inspect and replace as required. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

(5) Inspect fan assembly for breaks, bends and missing rivets. Inspect fan assembly for missing bolts and washers. Repair/replace components that contain any of these deficiencies.

(6) Inspect fan shroud for breaks or cracks. Inspect fan shroud and guard for missing mounting hardware (nuts, bolts, washers and brackets). Repair/replace components that contain any of these deficiencies.

(7) Inspect water pump drive assembly for damage, leakage, looseness, worn bearings and correct function. Inspect mounting hardware for looseness, missing, or damaged parts. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

(8) Replace hose clamps 100 percent . Replace coolant hoses 100 percent.

(9) Replace coolant. Antifreeze protection shall be to a temperature of -35 degrees Fahrenheit.

(10) Inspect transmission oil cooler for proper operation and leakage. Remove oil cooler assembly, clean, inspect and replace as required. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

j. Hydraulic System. The hydraulic system provides hydraulic pressure to energize the suspension system, operate the winch, ejector, apron assembly and bilge pump. Hydraulic system components are to be inspected, tested and replaced/repaired as required. Inspection, testing, and repair/replacement procedures are contained in TM-09599A-24/2, Volumes 1&2. TM 5-2350-262-20-3 can be used to assist in the hydraulic system trouble shooting process. Samples of hydraulic oil should be drawn from reservoir using ISO 4021 or an equivalent method of sampling. Oil is analyzed to determine if it is suitable for further use. If there is evidence of a grossly contaminated hydraulic system, caused by pump or motor failure, water contamination, or vandalism, hydraulic system shall be flushed and new oil and filters replaced.

NOTE: Since hydraulic system flushing is expensive, time consuming and results not totally assured, flushing should be done only when absolutely necessary.

(1) Hydraulic Reservoir. Inspect hydraulic tank assembly for damage, corrosion and leakage. Inspect tank mounting hardware for looseness and missing components. Inspect hydraulic tank filler cap for correct fit and water tightness. Repair/replace reservoir and reservoir components that contains any of these deficiencies.

(2) Main Hydraulic Pump. Rebuild the main hydraulic pump 100 percent. Pumps that are beyond rebuild are to be replaced. Rebuild main hydraulic pump in accordance with DMWR 5-2350-262-2. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

(3) Hydraulic High Pressure Filters. Replace filters 100 percent. Inspect filter assemblies and filter guards to assure they are firmly mounted in their correct mounting position. Inspect filter housing hose adapters to assure they contain no damage or leakage. Repair/replace high-pressure filter assemblies, filter guard, and hose adapters as required. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

(4) Directional Control Valve Bank. Rebuild Directional Control Valves 100 percent. Hydraulic directional control valve bank shall be secured in its proper mounting position. No missing mounting hardware is allowed. Replace hydraulic hoses 100 percent. Inspect control valve control bank operator control mechanical linkages to assure proper operation and adjustment. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

(5) Hydraulic Manifolds. Inspect hydraulic manifolds for damage and leakage. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

(6) Compensating Hydraulic Pump. Rebuild compensating hydraulic pump 100 percent. Inspect pump hose fittings for looseness, damage and leakage. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

(7) Main Hydraulic Accumulator. Test main hydraulic accumulator in accordance with test procedures found in TM-09599A-24/2, Volumes 1&2, pages 4-455 through 4-458. Replace accumulator as required. Repair/replace accumulator charge and gauge assembly that fails to function as intended. Repair/replacement procedures are found in TM-09599A-24/2, Volumes 1&2.

(8) Hydraulic Return Line Filter. Replace filters 100 percent. Inspect filter assembly to assure they are firmly mounted in their correct mounting position. Inspect filter housing hose adapters to assure they contain no damage or leakage. Repair/replace filter assembly and hose adapters as required. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

(9) Hydraulic Lines And Hoses. Metallic lines shall contain no flat spots, corrosion or kinks that may restrict flow or eventually result in leakage. Replace all metallic lines that contains these deficiencies. Nonmetallic lines are to be replaced 100 percent

(10) Hydraulic Cylinders. All hydraulic cylinders shall be rebuilt 100 percent. Hydraulic cylinders beyond rebuilding shall be replaced.

(11) Bilge Pump. Inspect, clean and operational test vehicle bilge pump. Replace hydraulic hoses and fittings 100 percent. Replace pumps that do not function as intended. Clean or replace damage bilge pump screen. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

k. Vehicle Electrical System. M9 ACE operator station contains gauges, meters, switches, and various other electrical components. These components shall be inspected, operational tested, repaired or replaced as required. Inspect all wiring harnesses, battery cables for corrosion, bent or missing pins, and ripped or torn insulation and tie wraps. 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 shall require installation of new conduit. Corrosion shall be removed from components. Upon removal of corrosion, if component does not function properly, replace component. Replace all damaged battery cables. Replace any missing or damaged tie wraps. The following electrical systems shall be inspected and tested for proper operation.

(1) Inspect electrical panel gauges and meters for proper operation. Replace any electrical gauge or switch that does not function properly after assuring that the sending unit is not defective. Replace hour meters if nonfunctional.

(2) Inspect instrument panel warning lights. Replace warning lights that are not operational. Test warning light activation devices to assure they function correctly. Repair/replace as required.

(3) Inspect slaving receptacle for proper operation. Repair/replace slaving receptacles that are damaged or are not operational.

(4) Inspect and test operate all switches, fuses and circuit breakers. Replace electrical switches that do not operate as intended. Replace all relays, fuses and circuit breakers that are not functioning properly or are blown out.

(5) Inspect all wiring harnesses. Replace any wiring that is frayed or broken. Electrical wiring with deteriorated or defective insulation shall be repair/replaced as required. Repair by splicing is acceptable when the wire used to make the splice is the same wire size and color. The wire splice joint shall be soldered and covered by heat shrinkable electrical insulation tubing shrunk to finished wire size and extending one inch beyond each side of the spliced joint.

(6) Vehicle batteries shall be replaced 100 percent with wet, fully charged batteries. All battery to ground cable/straps shall be replaced. Battery clamps shall be clean and securely fastened to battery post. No cracks are allowed. Battery box shall be free of corrosion and damage. Clean and repair as needed. Battery hold down devices shall operate as intended. Repair/replace as required.

(7) Inspect the headlights, blackout lights, turn signals, rear composite lights, flood lights, reflectors and instrument panel lights for cracks, corrosion, moisture, broken and blown bulbs. Replace any headlights, blackout lights, turn signals, floodlights, side marker lights, reflectors and instrument panel lights that are blown out or broken.

(8) Inspect and operational test cab heater fan assembly. Inspect, clean, and/or replace fan blades and guards as required. Inspect fan motor for proper operation. Motors shall operate as intended without overheating or locking up. Replace motor as required.

(9) All electrical components identified in TM-09599A-24/2, Volumes 1&2, pages 4-52 and 4-53 shall function as intended. Components that do not function as intended shall be repaired or replaced. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2, pages 4-54 through 4-219.

l. Engine Compartment Fire Extinguisher. Inspect engine compartment fire extinguishers to assure extinguishers contain correct charging. Replace extinguishers that are not property charged. Inspect hose assemblies, hose couplings and fittings, nozzles and mounting hardware. Hoses shall be free of any and all damage that may prevent proper operation. Nozzle assemblies shall be clean and free of foreign material that will prevent proper operation. Fire extinguisher shall be firmly secured in mounting bracket and mounting brackets firmly secured to the engine bulkhead. Fire extinguisher control cable shall be operational and firmly secured in its

proper position. Inspect access cover to assure proper fit and seal. Repair/replace any of these components that do not meet these requirements.

m. NBC Filter Assembly. Inspect NBC Filter Assembly housing for damage. Replace filters 100 percent. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

NOTE: General safety instructions for handling filters are contain in TM-09599A-24/2, Volumes 1&2, page 4-1177. These instructions are provided as a WARNING in subject TM. All precautions pertaining to this warning shall be strictly observed. Failure to comply may result in severe injury or death to personnel.

Replace filter housing components if bent or rusted through and will not seal. Replace filter cover door seals 100 percent. Inspect air hoses for damage such as rips, tears, corrosion and dry rot. Replace hoses as required. Inspect hose clamps to assure none are missing and all clamps will maintain tightness. Test filter switch for proper operation. Repair/replace as required.

n. Radio Equipment. Inspect, clean and test radio mounting frame, radio equipment box, electrical harnesses, radio cables, antenna harness and the antenna base.

NOTE: M9 ACEs provided for IROAN under provisions of this SOW will not be provided with complete radio systems. Radio equipment listed below will be provided or considered as missing.

(1) Radio Base, Mounting. The radio base shall be securely mounted in the radio equipment box. Base shall be free of any and all damage and corrosion that may prevent proper operation of the radio. Repair/replace radio bases that does not meet this requirement.

(2) Radio Equipment Box. Radio equipment box shall be firmly secured to vehicle hull. Equipment box shall contain no damage that will allow water or other material from entering equipment box and operators position. Replace/repair radio equipment boxes that do not meet this requirement.

(3) Electrical Cable Assemblies And Wiring Harnesses. Using standard commercial practices, inspect electrical cables, wiring cable and harness clamps, grommets, connectors and connector mounting brackets for damage or missing components. Repair/Replace faulty items and assemblies as identified by inspection.

(4) Antenna Harness And Base. Inspect antenna harness for damage. Antenna harness that contains rips and tears in the outer cable insulation shall be replaced. Inspect cable clamps, grommets, connectors and brackets for damage and missing components. The radio antenna harness shall not be spliced. Inspect antenna base to assure base is firmly secured to vehicle hull. Inspect harness connector for damage and correct fit. Repair/Replace any item or assembly that contains any of the deficiencies identified above.

o. Hatch Assembly, Driver's. Inspect hatch assembly. No damage, missing parts, cracks in periscope, or damaged hinges are allowed. Inspect locking mechanism for missing or broken parts. Check locking mechanism for correct operation. Inspect hatch for proper locking in fully closed and open position. Inspect hatch mounting hardware to assure hatch is securely mounted to vehicle hull. Repair/replace procedures are found in TM-09599A-24/2, Volumes 1&2.

p. Operators Seat. Inspect operators seat. No cushion damage is allowed. Inspect for completeness, proper operation and damage. Replace all cushions that contain any of the deficiencies identified above.

q. Hull, Hull Assemblies And Plates. All inspection/repair/replacement procedures for the following paragraphs (1) through (13) are identified TM-09599A-24/2, Volumes 1&2.

(1) Inspect hull sides for damage. Weld cracks are not allowed. Gouges that do not exceed 1/8 inch in depth and are less than six inches in length are allowed.

(2) Inspect forward panel of front track well for damage. Measure depth of wear caused by track, depth of wear must not exceed ½ inch.

(3) Inspect track wear plates that are bolted to the hull for damage. None Allowed. Measure depth of wear caused by track, depth of wear must not exceed 1/16 inch.

(4) Inspect armor plates for damaged and missing components. Replace damage plates and missing components.

(5) Inspect rear door for damage. Open and close door to ensure proper movement. Check door latch for damage and proper operation. Door shall contain no damage and shall function as intended. Replace door seal 100 percent. Repair/replace door as required.

(6) Inspect pintle hook for damage and proper operation. Rotate pintle hook to ensure freedom of movement. Ensure the pintle will open and close. No binding is allowed. Repair, replace and lubricate as required.

(7) Inspect rear handles for bends and damage. Repair/replace handles as required.

(8) Inspect rear step assembly for damage. None allowed. Replace as required.

(9) Inspect hull drain valve for cracks, dents, damage and missing parts. Ensure valve is functional. Repair/replace as required.

(10) Inspect bottom hull access panels for gouges. Gouges that do not exceed 1/8 inch in depth and are less than six inches in length are allowed. Replace damaged and missing plates and plate hardware as required.

(11) Inspect bowl floor and sides of bowl for rips and tears. None allowed. Gouges that do not exceed 1/8 inch in depth and are less than six inches in length are allowed. Inspect areas of bowl where ejector guide rollers roll along hull. Depth of wear on hull must not exceed 1/8 inch. Inspect for bulges in the areas of bowl where ejector guide rollers roll along hull. Bulges must be repaired by cutting out bulge and welding in a new piece of aluminum. Inspect bowl debris shield. Shield shall contain no damage and be installed. Replace missing debris shields. Gouges that do not exceed 1/8 inch in depth and are less than six inches in length are allowed.

(12) Inspect engine compartment access doors and radiator grilles for damage. Replace doors and grilles that are damaged and are not operational.

(13) Inspect hull assembly for any missing brackets, supports, plates and flooring. Repair/replace as required.

r. Winch Assembly. Inspect, clean, and operational test winch assembly to include winch controls and hydraulic hoses. The winch assembly (drum and gear housing) requires replacement if damaged and will not operate as intended. Repair of the winch assembly is confined to the following assemblies and tasks. Inspect shall be in accordance to best commercial practices or TM 5-09599A-24/2, Volumes 1&2 when sited.

(1) Winch Motor. Inspect and operational test winch motor. Replace winch motor that does not function as intended.

(2) Winch Brake Valve. Inspect and operational test brake valve. Replace brake valves that do not function as intended.

(3) Hydraulic Hoses. Replace hydraulic supply hoses 100 percent Repair/replace procedures can be found in TM 5-09599A-24/2, Volumes 1&2.

(4) Wire Rope Assembly. Wire rope assembly shall meet specification contained in MCO P11262.2A, Section 2003. If specifications are not meet, wire rope is to be replaced.

(5) Winch Shift Control Assembly. Inspect and operational test winch shift control assembly. Inspect and test control level lock assembly. Repair as required. Inspect winch control cable to ensure proper operation without binding. Check jam nut at control assembly to ensure nut is tight and secure cable to assembly as intended. Adjust control assembly using procedures contained in TM-09599A-24/2, Volumes 1&2, page 4-952.

(6) Winch Drum Cover. Inspect cover for missing mounting hardware. Cover may contain bulges caused by improper wire rope retrieval. Cover shall not contain bulges that are cracked or that are worn through. Covers are required to be securely fastened in their proper mounting position. Any damage to the cover that prevents correct mounting and does not provide a water seal is not acceptable. Replace cover plate that do not meet these requirements.

s. Rust Proofing And Painting (Exterior/Interior). All vehicles shall be rust proofed as required. Rust proofing shall be in accordance with TM 4795-34/2.

(1) Prime and paint per latest edition of TM 4750-15/1.

(2) Do not steam clean operators station. Steam in this area will cause serve damage to the vehicle control panel, heater assembly, operators' seat and other similar components.

(3) All exterior and interior surfaces of the M9 ACE shall be painted in accordance with instructions provided in TM-09599A-24/2, Volume 1&2, Section IV. Paint color shall be Desert Sand or Green Camouflage. Color of individual M9 ACEs will be identified by the M9 ACE Material Manager, Supply Chain Management Center, Code 583-1, 814 Radford Blvd., Suite 20320, Albany, GA. 31704-0320, upon induction into the IROAN cycle.

t. Data Plates And Decals.

DATA PLATE. Each IROAN M9 ACE shall have an IROAN data plate affixed next to the original vehicle data plate. The data plate shall meet the requirements of MIL-STD-130 and TM-09599A-24/2, Volumes 1&2. Replace all data plates and decals that are missing and illegible. IROAN data plates shall be prepared by the Contractor and contain the following information:

VEHICLE SERIAL NO_____
REPAIRED IN ACCORDANCE WITH SOW-04-CLSE-09599A-2/1.
CONTRACTOR_____
DATE_____
HOUR METER READING AT TIME OF REBUILD_____

NOTE: Hour meters on vehicles IROANed under provisions of this SOW shall not be turned back to zero.

RECORD JACKET: All major equipment or components serial numbers that are replaced during IROAN are to be identified by the Contractor to be recorded in the record jacket of the M9 ACE (This include engines, transmissions, etc.). Information will list the M9 ACE serial number, name of equipment/component(s) replaced, serial number of deficiency equipment/component(s), serial number of replacement equipment/component(s), and if the equipment/component(s) is new or rebuilt.

3.3.3. Phase III - Inspection, Testing And Acceptance.

a. Inspection, testing and acceptance of the M9 ACE shall be conducted in accordance with TM-09599A-24/2 Volume 1, TM-09599A-24/2 Volume 2, and this SOW.

b. The Contractor shall be responsible for conducting required tests and shall ensure MCSC (Code PMM152), Albany, Georgia and/or their representatives are available to complete

the final acceptance. Acceptance test shall be held at the Contractor's facility. MC SC, Code PMM152, Albany, Georgia, and/or their representatives shall be given a minimum of two weeks notice prior to beginning acceptance testing. The test area shall be cleared of all equipment parts, components, etc., not required for the test.

c. The Contractor shall be responsible for correcting any deficiencies identified during inspection/testing. MCSC, Code PMM152, Albany, Georgia, and/or their representatives, may require the Contractor to repeat tests or portions thereof, if the original tests fail to demonstrate compliance with this SOW.

d. M9 ACE shall be lubricated and greased in accordance with the vehicle lubrication chart contained within TM-09599A-10/1, Chapter 3. All coolant and oil levels shall be to proper levels.

e. Vehicle Markings. Registration numbers and other markings shall be applied in accordance with TM 4750-15/1 and MIL-STD-642. Lifting and tie down attachments shall be identified with one-inch letters indicating "SLING POINT" or "TIE DOWN."

3.3.4. Phase IV – Packaging, Handling, Storage, And Transportation (PHS&T).

a. The Contactor shall be responsible for preservation and packaging of item(s) being repaired under the terms of this statement of work. Items scheduled for long-term storage shall be in accordance with the Level "A" requirements of MIL-STD-3003. Items scheduled for domestic shipment, immediate use, or shipment to overseas destinations with the exception of Maritime Prepositioned Forces (MPF), shall be Level "B", Drive-on/Drive-off. Items being prepared for overseas shipment shall have a label affixed which reads, "NOT FOR WEATHER DECK STOWAGE." Cranes scheduled for shipment to MPS shall be Level "B", MPS 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 will be hot and disconnected from vehicle electrical system. Terminals and leads shall be taped. Fuel tank shall be filled ¼ full of JP5/8. The air intake system, exhaust and brake systems, drive train and gauges are to be depreserved.

(2) MPF Modified Drive Away: Batteries shall be hot and connected to vehicle electrical system. Fuel tank shall be filled ¾ full of JP5/8. The air intake system, exhaust and brake systems, drive train and gauges are to be depreserved. Fire extinguisher bracket and seats (all) shall be installed.

c. Marking for shipment and storage 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 equipment to and from the contractor.

3.4 Configuration Management.

3.4.1 Configuration Status Accounting (CSA).

a. The Contractor shall determine the application status of approved configuration changes by visual inspections to the extent possible. MCSC, Code PMM152, Albany, Georgia, will identify the configuration changes to be inspected by furnishing a Configuration Checklist (Appendix C) to the Contractor. The Contractor shall use one checklist for each M9 ACE to record the inspection findings along with other required data.

b. The Contractor shall record serial numbers of the assemblies listed on the Configuration Checklist. The Contractor shall record the information on the same form that was used to record the application status of configuration changes.

3.4.2 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 (RFD). MIL-HDBK-61 and ANSI/EIA-649 provide guidance for preparing this configuration control document.

3.5 Government Furnished Equipment (GFE) Accountability/Government Furnished Materiel (GFM). The Management Control Activity (MCA/Code 581-1B) will coordinate GFE/GFM requests and maintain a central control system on all government owned assets in the contractor's possession. The MCA will forward a GFE Accountability Agreement to the contractor for signature on an annual basis to establish a chain of custody and identify property responsibilities for Marine Corps assets. The contractor is to acknowledge receipt of GFM to the MCA within 15 days of receipt. This can be done by mailing a copy of the DD1348 to Materiel Management Department, Management Control Activity (Code 581-1B), 814 Radford Blvd., STE 20320, Albany, GA 31704-0320, or faxing a copy to commercial telephone number (229) 639-5498 or DSN 567-5498.

3.6 Contractor Furnished Materiel (CFM). The Contractor may requisition materiel as required in the performance of the SOW through the DoD Supply System. DoD 4000.25-1-M (MILSTRIP) Chapter 11 provides guidance to contractors on the requisitioning process. The contractor's decision to utilize CFM procured from the DoD Supply System shall be based upon cost effectiveness, availability of materiel and the required completion/delivery date.

3.7 Quality Assurance Provisions. The performances of the Contractor and the quality of work delivered, material provided and documents written shall be subject to in-process review and inspection by MCSC, Code PMM152, Albany, Georgia, during contract performance. Inspection may be accomplished at any work location. Authorized MCSC, Code PMM152,

Albany, Georgia, and/or their representatives shall be permitted to observe the work/task accomplishment or to conduct inspections at all reasonable hours within contractor's normal working hours. Acceptance tests shall be held in-plant. Inspection by MCSC, Code PMM152, Albany, Georgia, and/or their representatives of all acceptance tests plans, 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.

The commercial/government contractor will not be subject to surveillance if they hold a 2nd or 3rd party certification that they are either qualified or certified as ISO-9001-2000 compliant. The discovery of non-conforming product or service shall lead to the commercial/government oversight listed above until they are requalified or re-certified by a 2nd or 3rd party auditing service.

The Contractor shall provide and maintain a Quality System that, as a minimum, adheres to the requirements of ANSI/ISO/ASQC Q9001-2000 Quality Management Systems - Requirements. The Contractors work shall be subject to In-Process Reviews and Inspections for compliance with Quality Systems by MCSC, Code PMM152, Albany, Georgia, and/or their representatives. Noncompliance with procedures resulting in degraded quality of work may result in a stop-work order requiring action by the contractor to correct work performance and to enforce compliance with quality assurance procedures or face contract termination. Notwithstanding such MCSC, Code PMM152, Albany, Georgia, and/or their representative(s) inspection, it shall be the Contractor's responsibility to ensure that the system meets the performance requirements delineated and addressed in the M9 ACE TM-09599A-24/2, Volumes 1&2 and this SOW.

Quality assurance operations performed by the Contractor shall be subject to the M CSC, Code PMM152, Albany, Georgia, and/or their representative(s) verification at any time. The MCSC, Code PMM152, Albany, Georgia, and/or their representative(s) verification can include, but not limited in any matter, to the following:

a. Inspection of material, products, assemblies and documentation to assess compliance with quality standards.

b. Surveillance of operations to determine that quality assurance, practices, methods and procedures are being properly applied.

c. Inspections of deliverable products to assure compliance with all requirements of the M9 ACE, this SOW and applicable documents used herein.

d. Failure of the contractor facility to promptly correct deficiencies discovered, shall be a reason for suspension of acceptance until corrective action has been made.

3.8 Acceptance. The performance of the Contractor and the quality of work delivered, including all equipment furnished and documentation written or compiled, shall be subject to in process

review and inspection during performance. Inspection may be accomplished in plant or at any work site or location, and MCSC, Code PMM152, Albany, Georgia, and/or their representatives shall be permitted to observe the work or to conduct inspection during normal Contractor's working hours. Final inspection and acceptance testing shall be conducted at the Contractor's facility. Final acceptance shall be conducted on 100 percent of items to verify that the units meet all requirements. M9 ACEs IROANed under the provisions of this SOW shall be accomplished in accordance with TM-09599A-24/2, Volumes 1&2, and this SOW.

3.9 Rejection. Failure to comply with any of the specified requirements listed herein shall be reason for rejection by the MCSC, Code PMM152, Albany, Georgia, and/or their representatives. The Contractor, at no additional cost to the Marine Corps, shall provide the following:

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

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

4.0 REPORTS. The following reports shall be provided to the MCSC, Code PMM152, Albany, Georgia, and/or their representatives. Reports shall be forwarded to Marine Corps Systems Command, Code PMM152, Bldg 3700, Room 310W, 814 Radford Blvd., Suite 20343, Albany, GA 31704-0343.

1.1 4.1 Pre-Induction Checklist. The Contractor shall complete the Pre-Induction Checklist for each M 9 ACE IROANed. Contractor may use contractor owned reports however, these reports shall be modified, if necessary by MCSC, Code PMM152. The Pre-Induction Checklist shall contain, as a minimum, the vehicle National Stock Number (NSN), vehicle serial number, and address each element in paragraph 3.3.2 of this SOW. These documents shall be available during final acceptance testing. One copy of each document shall be provided to MCSC, Code PMM 152 after final acceptance of the M9 ACE, or upon request.

4.2 Final Inspection Checklist. The Contractor shall complete the Final Inspection Checklist (Appendix B) for each M9 ACE IROANed. Contractor may use contractor owned reports however, these reports shall be modified, if necessary by MCSC, Code PMM152. The Final Inspection Checklist shall contain, as a minimum, the vehicle National Stock Number (NSN), vehicle serial number, and address each element in paragraph 3.3.2 of this SOW. These documents shall be available during final acceptance testing. One copy of each document shall be provided to MCSC, Code PMM 152 after final acceptance of the M9 ACE, or upon request.

4.3 Configuration Checklist. The Contractor shall complete the Configuration Checklist (Appendix A) for each M9 ACE IROANed. This document shall be available during final acceptance testing. One copy of each document shall be provided to the MCS C, Code PMM152, Albany, Georgia, after final acceptance of the M9 ACE, or upon request.

CONFIGURATION INSPECTION CHECKLIST
ARMORED COMBAT EARTHMOVER (ACE) MODEL M9

VEHICLE:

Vehicle OEM Serial Number_____

Marine Corps Registration Number_____

OEM Model Number_____

Vehicle Hours At Pre-Induction _____

VEHICLE ENGINE:

Original Vehicle Engine Serial Number_____

Engine Required Replacement YES_____ NO_____

Replacement Engine Serial Number_____

VEHICLE TRANSMISSION:

Original Vehicle Transmission Serial Number _____

Transmission Required Replacement YES_____ NO_____

Replacement Transmission Serial Number _____

VEHICLE STEER UNIT:

Original Vehicle Steer Unit Serial Number_____

Steer Unit Required Replacement YES_____ NO_____

Replacement Steer Unit Serial Number_____

APPROVED CONFIGURATION CHANGES:

Approved Waivers/Deviations applies during IROAN:

Waivers: _____

Deviations: _____

ECPs generated by approved Waivers/Deviations: _____

Modification/Technical Instructions:

MI 09599A-35/* (Draft) Applied Prior IROAN _____, During IROAN _____

MI 09599A-45/* (Draft) Applied Prior IROAN _____, During IROAN _____
Actuator Mounting Ring Modification

MI 09599A-35/1 Applied Prior IROAN _____, During IROAN _____
Actuator Access Plate Modification

MI 09599A-25/* (Draft) Applied Prior IROAN _____, During IROAN _____

The three draft Modifications shall be installed during IROAN. Parts required by modifications will be provided to the contractor upon induction of the M9 ACE into the IROAN cycle.

CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0701-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to the above address. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP ____ TM ____ OTHER X

D. SYSTEM/ITEM	E. CONTRACT/PR NO.	F. CONTRACTOR
Armored Combat Earthmover (ACE)		

1. DATA ITEM NO.	2. TITLE OF DATA ITEM	3. SUBTITLE
	Request For Deviation	Configuration Management

4. AUTHORITY *(Data Acquisition Document No.)*	5. CONTRACT REFERENCE	6. REQUIRING OFFICE
DI-CMAN-80640C	SOW 3.4.2	MCLBA (566)

7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION
LT		ASREQ	See Blk 16

8. APP CODE	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION
A	A	

17. PRICE GROUP

18. ESTIMATED TOTAL PRICE

14. DISTRIBUTION

a. ADDRESSEE	b. COPIES Draft	Final Reg	Final Repro
MCLCA (566-1)	0	1	0
15. TOTAL →	0	1	0

16. REMARKS

Blk 4 - Contractor format submitted in MICROSOFT (.doc) or ADOBE (.pdf) format is authorized.

RFD text files shall be created using MICROSOFT (.doc) or ADOBE (.pdf) software products. RFD accompanying figures or graphics shall be created using MICORSOFT (.doc) or ADOBE (.pdf) software formatted with a minimum density of 600 dpi.

Blks 10 & 12 - RFDs shall be submitted to obtain authorization to deliver nonconforming material which does not meet prescribed configuration documentation.

RFDs will be reviewed and disposition determined within 20 working days upon receipt by the Government.

Block 14: RFDs shall be transmitted via E-Mail to the following addresses: mblogcomconfigmngmnt@logcom.usmc.mil

Distribution Statement A: Approved for Public Release; Distribution is Unlimited.

G. PREPARED BY	H. DATE	I. APPROVED BY	J. DATE
[signature]	12-5-03	[signature]	10 Dec 03

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