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Maintenance Concept Remains Consistent With Prior Fiscal Year

STATEMENT OF WORK

SOW-06-PMM142-08953A-1/1

FOR THE REBUILD PROGRAM OF THE

M1A1 MAIN BATTLE TANK

NSN: 2350-01-087-1095

TAMCN: E1888

ID# 08953A

1 May 2003

"MPS ROTATION"

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Maintenance Concept Remains Consistent With Prior Fiscal Year

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Maintenance Concept Remains Consistent With Prior Fiscal Year

STATEMENT OF WORK (SOW)

For The Rebuild Program Of The M1A1 Main Battle Tank NSN 2350-01-087-1095

1.0 Scope. This Statement of Work (SOW), along with Depot Maintenance Work Requirements (DMWRs), establishes, sets forth tasks, and identifies the work efforts that shall be performed by the Contractor. For the purpose of this SOW, Contractor is defined as the commercial or government entity performing the rebuild effort of the M1A1 Main Battle Tank. This document contains requirements to restore the M1A1 Main Battle Tank to 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, including materiel with more than six months shelf-life remaining."

SUSTAINMENT GUARANTEE

The vehicle will be rebuilt to include a Sustainment Guarantee on the Engine, Transmission, Final Drives, any Engine Hang-Ons (excluding the starter and alternator), Sighting and Fire Control Instruments. This guarantee will be valid for 1000 hours on the engine, transmission, final drives, and engine hang-ons, (excluding starter and alternator). The sustainment guarantee includes 500 hours on the sighting and fire control instruments or 36 months, which ever comes first. The 36 months will constitute (at a minimum), one maintenance cycle (IAW MPS rotation schedule). During this MPS maintenance cycle, any or all data will be collected from any failures or tasks performed to determine time periods and cost for future sustainment issues. The Depot reserves the right to inspect, repair, or replace any covered component at the Depot's discretion. These inspections/repairs will be performed within the schedule time frame of the MPS maintenance cycle. The USMC shall provide adequate workspace and necessary support equipment to the Depot's contact team, should any repairs be required. Prior to and if repairs are necessary, the USMC will be responsible for the removal and re-installation of covered components. Any items or said components; to include suspected sighting and fire control instruments shall not be removed from the vehicle prior to the inspection by the Depot's of the unserviceable component or a Depot representative. Upon verification by agreed parties, this Sustainment Guarantee will not cover any battle damage, accidental damage, misuse/abuse, and failure to properly perform PMCS.

1.1 Background. Rebuild is defined as "That maintenance technique to restore an item to a standard as near as possible to original or new condition in appearance, performance, and life expectancy. This is accomplished through a maintenance technique or complete disassembly of elements using original manufacturing tolerances and/or specifications and subsequent reassembly of the items.

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 requirements.

2.1 Military Specifications

MIL-C-46168D	Coating, Aliphatic Polyurethane, Chemical Agent Resistant Interim Army WRCARC Type II, if unavailable use Type I
Mil - C-53039A	Coating, Aliphatic Polyurethane, single component, Chemical Agent Resistant
MIL-PRF-2104	Transmission and Final Drives and Hubs (Oil 15W40)
MIL-PRF-10924G	Grease, Automotive and Artillery (GAA)
MIL-PRF-23699	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Code Number 0-156

2.2 Military Standards

MIL-STD-129	DOD Standard Practice for Military Marking

2.3 Other Government Documents and Publications

ATPD 2240	Tank Combat, Full Tracked, M1 Series, Processing for Storage and Shipment
DoD 4000.25-1-M	Military Standard Requisitioning and Issue Procedures
MCO 4855.10B	Marine Corps PQDR Program
MI-08953A-25/1	Installation of Guard Assembly
MI-08953A-25/3	Installation of Position Location Reporting System
MI-08953A-25/5	Installation of The Two-Piece Fuel Nozzle Kit
MI-08953A-25/31	Install Bustle Rack Extension M1A1
MI-08953A-35/4	External Auxiliary Power Unit
MI-08953A-50/6	Upgrade Fire Control System (Armor Enhancement Initiative)
MI-08953A-35/2A	Installation of Sincgars Radio System
MI-08953A-35/8	Installation of Shield in Manual Hydraulic Pump Handle Assembly
MI-08953A-25/7	Replacement of Hydraulic Pump Pressure Hose
MI-08953A-35/9	Installation of Lubrication Fitting in The Inner Race Bearing Assembly
MI-08953A-35/10	Modify the Gunners Station
MI-08953A-35/11	Modify the Ammo Door Latch Mechanism
MI-08953A-35/12	Installation for the Automatic Fire Extinguisher System Wiring Harness Guard Kit
MI-08953A-35/13	Installation of the Battlefield Override System
MI-08953A-35/14	Installation of the Improved Drivers Periscope Retention

MI-08953A-35/15	Installation of the Smoke Generator Fuel Line
MI-08953A-35/16	Modify Drivers and Loaders Hatch Rim
MI-08953A-35/17	Installation of the Manual Blasting Machine Wiring Harness and Primer Diode Assembly
MI-08953A-35/18	Modify Drivers Hatch Lifting Mechanism
MI-08953A-35/19	Modify Commanders Weapon Station Hatch
MI-08953A-35/20	Improve Operation of the Hull Network Distribution Box
MI-08953A-35/21	Installation of the Pulse Jet Air System
MI-08953A-35/22	Replace Stub Case Catcher
MI-08953A-35/23	Modify Engine Component Fire Extinguisher System Dispersion Tube
MI-08953A-35/24	Install Filter Fire Modification
MI-08953A-35/25	Install Driver's Hatch Interlock System
MI-08953A-35/26	Retrofit External Auxiliary Power Unit
MI-08953A-35/27	Install Intercommunication Set Vehicular AN/VIV-3 (V)1
MI-08953A-35/28	Install AN/VAS-5A (V) 4 (DVE)
MI-08953A-25/29	M1 Series Tank, Case Drain Coupling Modification
MI-08953A-35/30	Install of Global Positioning System Receiver (PLGR)
MI-08953A-50/32	Modification of the Infinity Collimator (MRS)
TB 9-1300-278	Armor Depleted Uranium
TB 9-2350-320-14	120MM Ammunition
TB 9-2520-276-12	Warranty for the Transmission
TB 43-0001-39-5	Track Components & Solid Rubber Tires
TB 43-0242	CARC Spot Painting
TI-5820-25/22	Electromagnetic Environmental Effects (E3) Procedures for Installation of Communication Equipment on U.S. Marine Corps Platforms
TI-08953A-25/10	NBC Sponson Access Cover Spacers
TM-3080-12	Corrosion Prevention and Control for USMC Equipment
TM-3080-34	Corrosion Prevention and Control for Tactical Vehicles
TM-3080-50	Corrosion Control Procedures for Depot Maint. Activities
TM-4750-15/1	Painting Registration Markings
TM-4750-15/2	Camouflage Pattern
12260770B	M1A1 Tank Program Turret Test Station
TM 4700-15/1_	Ground Equipment Records Procedures

Military Handbooks (For Guidance)

MIL-HDBK-61	Configuration Management Guidance

2.4 Depot Maintenance Work Requirement (DMWR)

DMWR 9-1200-206-CEU	Computer Electronic Unit
DMWR 9-1200-206-GPS-1	Gunners Primary Sight
DMWR 9-1200-206-GPS-2	Gunners Primary Sight Azimuth Drive Assembly

DMWR 9-1200-206-GPS-3	Gunners Primary Sight Objective & Relay Assembly
DMWR 9-1200-206-GPSE	Commanders Gunners Primary Sight Extension
DMWR 9-1200-206-GTR	Gun Trunnion Resolver
DMWR 9-1200-206-LOS-EU	Line of Sight Electronic Units
DMWR 9-1200-206-LRF	Laser Range Finder
DMWR 9-1200-206-STDA	Servo Torque Drive Assembly
DMWR 9-1200-206-TEU	Thermal Electronic Unit
DMWR 9-1200-206-TIS	Thermal Image System
DMWR 9-1200-206-TPCU	Thermal Power Control Unit
DMWR 9-1200-206-TRU	Thermal Receiver Unit
DMWR 9-1200-206-GAS	Gunners Auxiliary Sight
DMWR 9-2350-255-3	Armor Repair
DMWR 9-2520-276 Vols1-3	Transmission Assembly W/Container
DMWR 9-2520-279	Final Drive
DMWR 9-2530-200-24	M1 Hull Track
DMWR 9-2350-264-2	Turret M1& M1A1
DMWR 9-2350-264-2-1	Traverse Servomechanism
DMWR 9-2350-264-2-2	Elevation Servomechanism
DMWR 9-2350-264-2-3	Turret Hydraulic Distribution Valve
DMWR 9-2350-264-2-4	Hull/Turret Slip Ring Assembly
DMWR 9-2350-264-2-5	Hydraulic Motor Assembly
DMWR 9-2350-555 Vols 1-6	Hull Power Plant Electronics Components
DMWR 9-2520-276-1 Vols 1-3	Transmission Assembly W/Container
DMWR 9-2550-526	Hydraulic Pump
DMWR 9-2835-255 Vols 1-5	Turbine Engine, Field Service Model AGT 1500 W/Container
DMWR 9-2910-231	Electro-Mechanical Fuel System
DMWR 9-2920-254	Generator (Westinghouse)
DMWR 9-2920-259	Generator (Bendix)
DMWR 9-2940-200	Rotary Pump Assembly
DMWR 9-4320-326	Hydraulic Pump (Vickers)
DMWR 9-4800-206	Nuclear, Biological, Chemical System

2.5 Stock List

SL-3-08953A	Tank, Combat, Full Tracked M1A1

2.6 Operators Manuals

TM 9-2350-264-10-1	Operator's Manual Vol 1
TM 9-2350-264-10-2	Operator's Manual Vol 2
TM 9-2350-264-12	Lube Order
TM 08953A-10/1-3	Boresighting & Zeroing M1A1 Tank

2.7 Technical Manuals for Hull

TM 9-2350-264-20-1-1	Unit Maintenance Manual Vol 1
TM 9-2350-264-20-1-2	Unit Maintenance Manual Vol 2
TM 9-2350-264-20-1-3	Unit Maintenance Manual Vol 3
TM 9-2350-264-20-1-4	Unit Maintenance Manual Vol 4
TM 9-2350-264-20-1-5	Unit Maintenance Manual Vol 5
TM 9-2350-264-24-1	Schematics
TM 9-2350-264-24P-1	Unit Direct and General Support Maintenance Repair Parts and Special Tools List
TM 9-2350-264-34-1-1 Vol 1	Unit Direct and General Support Maintenance
TM 9-2350-264-34-1-2 Vol 2	Unit Direct and General Support Maintenance

2.8 Technical Manuals for Turret

TM 9-2350-264-20-2-1	Unit Maintenance Manual Vol 1
TM 9-2350-264-20-2-2	Unit Maintenance Manual Vol 2
TM 9-2350-264-20-2-3	Unit Maintenance Manual Vol 3
TM 9-2350-264-20-2-4	Unit Maintenance Manual Vol 4
TM 9-2350-264-24-2	Schematics
TM 9-2350-264-24P-2	Unit Direct and General Support Maintenance Repair Parts and Special Tools List
TM 9-2350-264-34-2-1 Vol 1	Unit Direct and General Support Maintenance
TM 9-2350-264-34-2-2 Vol 2	Unit Direct and General Support Maintenance

2.9 Technical Manuals for Sight/Fire Control

TM 9-1200-206-34-1	Unit Direct and General Support Maintenance Vol 1
TM 9-1200-206-34-2	Unit Direct and General Support Maintenance Vol 2
TM 9-1200-206-34-3	Unit Direct and General Support Maintenance Vol 3
TM 9-1200-206-34P-1	Unit Direct and General Support Maintenance Repair Parts and Special Tools List Vol 1
TM 9-1200-206-34P-2	Unit Direct and General Support Maintenance Repair Parts and Special Tools List Vol 2

2.10 Technical Manuals General

TM 5-4210-218-13&P	Fire Bottles
TM 9-1000-202-14	Evaluation of Cannon Tubes
TM 9-2300-422-23&P	Oil Analysis Program
TB 9-2350-283-23-1	Configuration Matrix
TM 9-2520-276-34	Transmission Maintenance
TM 9-2520-276-34P	Transmission Repair Parts and Special Tool List

TM 9-2520-279-34P	Final Drive
TM 9-2835-255-34	Engine Maintenance
TM 9-2835-255-34&P	Engine Repair Parts and Special Tool List
TM 9-4910-573-14&P	Ground Hop Support Set
TM 9-4910-751-14&P	STE-M1
TM 9-4910-753-13&P	Powerpack Maintenance Stand
TM 9-4931-586-12-1&P	Test Set DSETS (Core)
TM 9-4931-586-12-2&P	Test Set DSETS (M1)
TM 9-4931-586-12-4&P	Test Set DSETS (TIS)
TM 9-4931-586-30&P	Test Set DSETS (DS/MAINT)
TM 9-4933-259-14&P	Muzzle Boresight
TM 9-2530-200-24	Track
TM 9-6115-24&P1	External Auxiliary Power Unit
TM 11-5855-311-12&P-1	Operators and Unit Maintenance Manual For Driver's Vision Enhancer (DVE)
TM 11-5865-309-2	Missile Countermeasure Device

2.11 Industry Standards.

ANSI/ISO/ASQC Q9001-2000	Quality Management Systems - Requirement
JESD625-A	Requirements for Handling Electrostatic-Discharge Sensitive (ESDS) Devices

Industry Standards (For Guidance)

ANSI/EIA-649	National Consensus Standard for Configuration Management

Copies of Military Specifications and Standards are available from 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 Contracts Department (Code 891), PO Drawer 43019, 814 Radford Blvd., Marine Corps Logistics Bases (MCLB), Albany Georgia 31704-3019, commercial telephone number (229) 639-6761 or DSN 567-6761. Copies of engineering drawings, if applicable, shall be obtained from the Supply Chain Management Center, Attn: Code 583-1, 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 Task. In fulfilling the specified requirements, the Depot shall:

a. Provide material, labor, facilities, missing parts and repair parts necessary to rebuild, diagnose, restore, and test the M1A1 Main Battle Tank. Upon completion of the Rebuild, vehicles shall be condition Code "A". The vehicle shall be rebuilt to include a Sustainment Guarantee as identified in Appendix A.

b. Special Instructions in Appendix "A" must be adhered to.

c. Monthly Status Report must be submitted.

d. Final on-site inspection using Appendix "B" shall be performed and witnessed by an MCSC, AFSS, PMM-142 Tanks, Marine Corps Logistics Bases, Albany, Georgia representative. Upon receipt of vehicle at the Blount Island Command (BIC), an acceptance inspection will be performed and any discrepancy identified a Product Quality Deficiency Report (PQDR) will be submitted, in accordance with MCO 4855.10B (PQDR Program).

3.2 Detail Tasks. The following tasks describe the different phases for the Rebuild of the M1A1, Main Battle Tank.

3.2.1 Phase I – Pre-Induction Inspection - Pre-Induction inspection analysis shall be performed for each M1A1, Main Battle Tank (with-in two weeks of receipt) to identify any missing and unserviceable components. These findings shall be annotated and provided to MCSC, AFSS, PMM-142 Tanks, MCLB, Albany, Ga. in accordance with Section 4.0 and the Special Instructions (Appendix A) of this SOW.

3.2.2 Phase II - REBUILD. After pre-induction inspection has been completed, this Statement of Work, shall be accomplished in accordance with the following documents/publications:

DMWR 9-1200-206-CEU	Computer Electronic Unit
DMWR 9-1200-206-GPS-1	Gunners Primary Sight
DMWR 9-1200-206-GPS-2	Gunners Primary Sight Azimuth Drive Assembly
DMWR 9-1200-206-GPS-3	Gunners Primary Sight Objective & Relay Assembly
DMWR 9-1200-206-GPSE	Commanders Gunners Primary Sight Extension
DMWR 9-1200-206-GTR	Gun Trunion Resolver
DMWR 9-1200-206-LOS-EU	Line of Sight Electronic Units
DMWR 9-1200-206-LRF	Laser Range finder
DMWR 9-1200-206-STDA	Servo Torque Drive Assembly
DMWR 9-1200-206-TEU	Thermal Electronic Unit
DMWR 9-1200-206-TIS	Thermal Image System
DMWR 9-1200-206-TPCU	Thermal Power Control Unit
DMWR 9-1200-206-TRU	Thermal Receiver Unit
DMWR 9-1200-206-GAS	Gunners Auxiliary Sight
DMWR 9-2350-255-3	Armor Repair
DMWR 9-2520-276 Vols1-3	Transmission Assembly W/Container
DMWR 9-2520-279	Final Drive

DMWR 9-2530-200-24	M1 Hull Track
DMWR 9-2350-264-2	Turret M1& M1A1
DMWR 9-2350-264-2-1	Traverse Servomechanism
DMWR 9-2350-264-2-2	Elevation Servomechanism
DMWR 9-2350-264-2-3	Turret Hydraulic Distribution Valve
DMWR 9-2350-264-2-4	Hull/Turret Slip ring Assembly
DMWR 9-2350-264-2-5	Hydraulic Motor Assembly
DMWR 9-2350-555 Vols 1-6	Hull Power Plant Electronics Components
DMWR 9-2520-276-1 Vols 1-3	Transmission Assembly W/Container
DMWR 9-2550-526	Hydraulic Pump
DMWR 9-2835-255 Vols 1-5	Turbine Engine, Field Service Model AGT 1500 W/Container
DMWR 9-2910-231	Electro-Mechanical Fuel System
DMWR 9-2920-254	Generator (Westinghouse)
DMWR 9-2920-259	Generator (Bendix)
DMWR 9-2940-200	Rotary Pump Assembly
DMWR 9-4320-326	Hydraulic Pump (Vickers)
DMWR 9-4800-206	Nuclear, Biological, Chemical System
MI-08953A-25/1	Installation of Guard Assembly
MI-08953A-25/3	Installation of Position Location Reporting System
MI-08953A-25/5	Installation of The Two-Piece Fuel Nozzle Kit
MI-08953A-35/4	External Auxiliary Power Unit
MI-08953A-50/6	Upgrade Fire Control System (Armor Enhancement Initiative)
MI-08953A-35/2A	Installation of Sincgars Radio System
MI-08953A-35/8	Installation of Shield in Manual Hydraulic Pump Handle Assembly
MI-08953A-25/7	Replacement of Hydraulic Pump Pressure Hose
MI-08953A-25/31	Install Bustle Rack Extension M1A1
MI-08953A-35/9	Installation of Lubrication Fitting in The Inner Race Bearing Assembly
MI-08953A-35/10	Modify the Gunners Station
MI-08953A-35/11	Modify the Ammo Door Latch Mechanism
MI-08953A-35/12	Installation for the Automatic Fire Extinguisher System Wiring Harness Guard Kit
MI-08953A-35/13	Installation of the Battlefield Override System
MI-08953A-35/14	Installation of the Improved Drivers Periscope Retention
MI-08953A-35/15	Installation of the Smoke Generator Fuel Line
MI-08953A-35/16	Modify Drivers and Loaders Hatch Rim
MI-08953A-35/17	Installation of the Manual Blasting Machine Wiring Harness and Primer Diode Assembly
MI-08953A-35/18	Modify Drivers Hatch Lifting Mechanism
MI-08953A-35/19	Modify Commanders Weapon Station Hatch
MI-08953A-35/20	Improve Operation of the Hull Network Distribution Box
MI-08953A-35/21	Installation of the Pulse Jet Air System

MI-08953A-35/22	Replace Stub Case Catcher
MI-08953A-35/23	Modify Engine Component Fire Extinguisher System Dispersion Tube
MI-08953A-35/24	Install Filter Fire Modification
MI-08953A-35/25	Install Driver's Hatch Interlock System
MI-08953A-35/26	Retrofit External Auxiliary Power Unit
MI-08953A-35/27	Install Intercom Set Vehicular AN/VIC-3 (V) 1
MI-08953A-35/28	Install AN/VAS-5A (V) 4 (DVE)
MI-08953A-25/29	M1 Series Tank, Case Drain Coupling Modification
MI-08953A-35/30	Installation of the Global Positioning Receiver System (PLGR)
MI-08953A-50/32	Modification of the Infinity Collimator (MRS)
SL-3-08953A	Tank, Combat, Full Tracked M1A1
TB 9-1300-278	Armor Depleted Uranium
TM 9-2350-264-12	Lube Order
TB 9-2350-320-14	120MM Ammunition
TB 9-2520-276-12	Warranty for the Transmission
TB 43-0001-39-5	Track Components & Solid Rubber Tires
TB 43-0242	CARC Spot Painting
TI-5820-25/22	Electromagnetic Environmental Effects (E3) Procedures for Installation of Communication Equipment on U.S. Marine Corps Platforms
TI-08953A-25/10	NBC Sponson Access Covers Spacers
TM-3080-12	Corrosion Prevention and Control for USMC Equipment
TM-3080-34	Corrosion Prevention and Control for Tactical Vehicles
TM-3080-50	Corrosion Control Procedures for Depot Maint. Activities
TM-4750-15/1	Painting Registration Markings
TM-4750-15/2	Camouflage Pattern
TM 9-2350-264-10-1	Operator's Manual Vol 1
TM 9-2350-264-10-2	Operator's Manual Vol 2
TM 9-2350-264-20-1-1	Unit Maintenance Manual Vol 1
TM 9-2350-264-20-1-2	Unit Maintenance Manual Vol 2
TM 9-2350-264-20-1-3	Unit Maintenance Manual Vol 3
TM 9-2350-264-20-1-4	Unit Maintenance Manual Vol 4
TM 9-2350-264-20-1-5	Unit Maintenance Manual Vol 5
TM 9-2350-264-24-1	Schematics
TM 9-2350-264-24P-1	Unit Direct and General Support Maintenance Repair Parts and Special Tools List
TM 9-2350-264-34-1-1	Unit Direct and General Support Maintenance Vol 1
TM 9-2350-264-34-1-2	Unit Direct and General Support Maintenance Vol 2
TM 9-2350-264-20-2-1	Unit Maintenance Manual Vol 1
TM 9-2350-264-20-2-2	Unit Maintenance Manual Vol 2
TM 9-2350-264-20-2-3	Unit Maintenance Manual Vol 3
TM 9-2350-264-20-2-4	Unit Maintenance Manual Vol 4
TM 9-2350-264-24-2	Schematics
TM 9- 2350-264-24P-2	Unit Direct and General Support Maintenance

	Repair Parts and Special Tools List
TM 9-2350-264-34-2-1	Unit Direct and General Support Maintenance Vol 1
TM 9-2350-264-34-2-2	Unit Direct and General Support Maintenance Vol 2
TM 9-1200-206-34-1	Unit Direct and General Support Maintenance Vol 1
TM 9-1200-206-34-2	Unit Direct and General Support Maintenance Vol 2
TM 9-1200-206-34-3	Unit Direct and General Support Maintenance Vol 3
TM 9-1200-206-34P-1	Unit Direct and General Support Maintenance Repair Parts and Special Tools List Vol 1
TM 9-1200-206-34P-2	Unit Direct and General Support Maintenance Repair Parts and Special Tools List Vol 2
TM 5-4210-218-13&P	Fire Bottles
TM 9-1000-202-14	Evaluation of Cannon Tubes
TM 9-2300-422-23&P	Oil Analysis Program
TB 9-2350-283-23-1	Configuration Matrix
TM 9-2520-276-34	Transmission Maintenance
TM 9-2520-276-34P	Transmission Repair Parts and Special Tool List
TM 9-2520-279-34P	Final Drive
TM 9-2835-255-34	Engine Maintenance
TM 9-2835-255-34&P	Engine Repair Parts and Special Tool List
TM 9-4910-573-14&P	Ground Hop Support Set
TM 9-4910-751-14&P	STE-M1
TM 9-4910-753-13&P	Power pack Maintenance Stand
TM 9-4931-586-12-1&P	Test Set DSETS (Core)
TM 9-4931-586-12-2&P	Test Set DSETS (M1)
TM 9-4931-586-12-4&P	Test Set DSETS (TIS)
TM 9-4931-586-30&P	Test Set DSETS (DS/MAINT)
TM 9-4933-259-14&P	Muzzle Boresight
TM 9-2530-200-24	Track
TM 9-6115-24&P1	External Auxiliary Power Unit
TM 11-5855-311-12&P-1	Operators and Unit Maintenance Manual For Driver's Vision Enhancer (DVE)
TM 11-5865-309-2	Missile Countermeasure Device
TM 08953A-10/1-3	Boresighting & Zeroing M1A1 Tank

Deficiencies noted on the Pre-Induction Inspection analysis shall be rebuilt/replaced. Rebuild requires the replacement of mandatory replacement parts.

a. Hardware

(1) Replace broken, unserviceable and/or missing hardware including nuts, bolts, screws, washers, turnlock fasteners, mandatory replacement items, safety and one-time use items, etc., in accordance with this SOW. Unserviceable would include any of the above that failed to function properly.

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

(3) Hardware normally supplied with commercial parts shall be used in accordance with applicable documents/publications and directives.

3.2.3 Phase III - Inspection, Testing and Final Acceptance

a. Inspection, Testing and Final Acceptance of the M1A1, Main Battle Tank shall be conducted in accordance with Appendix "A" and Appendix "B." These completed documents shall be provided to MCSC, AFSS, PMM-142 Tanks, in accordance with Section 4.0 of this SOW.

b. The Depot shall be responsible for the conducting of required tests and shall ensure all necessary personnel are available to complete the final acceptance. Final Acceptance Inspection and Testing shall be accomplished by the Depot and Marine Corps MCSC, AFSS, PMM-142 Tanks, personnel. MCSC, AFSS, PMM-142 Tanks, MCLB, Albany shall be given a minimum of two weeks notice prior to the beginning of final acceptance inspection and testing. The testing area shall be clear of all equipment parts, components, etc., not required for the final inspection/test.

c. The Depot shall be responsible for correcting any deficiencies identified during the final inspection/testing. MCSC, AFSS, PMM-142 Tanks, MCLB, Albany may require the Depot to repeat test portions thereof, if the original test fails to demonstrate compliance with this SOW.

d. Upon receipt of vehicle at Blount Island Command (BIC), an acceptance inspection will be performed and any discrepancy identified a Product Quality Deficiency Report (PQDR) will be submitted, in accordance with MCO 4855.10B (PQDR Program).

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

a. The Contractor shall be responsible for the preservation and packaging of item(s) being repaired/rebuilt under the terms of this statement of work. Items scheduled for long-term storage shall be in accordance with Level "A" requirements of the ATPD 2240. Items scheduled for shipment to all other destinations, with the exception of the Maritime Pre-Positioned Forces (MPF), shall be preserved to Level "B", Drive-on/Drive-off. Items scheduled for overseas destinations shall be Level "B" and have a label affixed which reads: "NOT FOR WEATHER DECK STOWAGE." Items scheduled for MPF shall be preserved to Level "B", MPF Modified Drive-away

b. Drive-on/Drive-off and Modified Drive-away are defined as follows:

(1) MPF Modified Drive-Away: Batteries shall be hot and connected to the vehicle electrical system. Fuel system shall be no more then ¼ full of JP5. Air intake system, exhaust system, brake system, drive train and gauges shall be depreserved. Fire extinguisher bracket and seats 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 rebuilt equipment. The Contractor shall be responsible for arranging for the shipment to the pre-designated site(s). The Marine Corps will be responsible for transportation cost associated with shipping the subject equipment to and from the Contractor.

3.3 Configuration Management

3.3.1 Configuration Status Accounting (CSA)

a. The Depot shall record and submit data on retrofit accomplished during Phase II. All approved Modification Instructions (MI's) shall be verified or applied during Phase II of the Rebuild Program.

b. The Depot shall determine the application status of approved configuration changes by visual inspection. MCSC, AFSS, PMM-142 Tanks will identify the configuration changes to be inspected by furnishing a Configuration Inspection Checklist to the Depot. The Depot shall use one checklist Appendix B per M1A1, Main Battle Tank to record their inspection findings along with other required data.

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

3.3.2 Configuration Management. The Depot shall apply configuration control procedures to established configuration items. The Depot shall not implement any changes to an item's documented performance or design characteristics without written authorization. If it is necessary to temporarily depart from the authorized configuration, the Depot shall prepare and submit a Request for Deviation. MIL-HDBK-61 and ANSI/EIA-649 provide guidance for preparing this configuration control document.

3.4 Government Furnished Equipment (GFE)/Government Furnished Materiel (GFM). The Management Control Activity (MCA/ Code 571-1) 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 asset. The Marine Corps will furnish all Modification Instruction (MI) Kits; (also known as Modification Work Order (MWO) Kits) that are not presently installed with notification after the Pre-Induction inspection. 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 DD 1348 to Materiel Management Department, Management Control Activity (Code 571-1), 814 Radford Blvd., STE 20320, Albany, GA 31704-0320 or faxing a copy to commercial telephone number (229) 639-5489 or DSN 567-5489.

3.5 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.

3.6 Electromagnetic Environmental Effects (E3) Procedures.

a. The Depot shall plan for the proper E3 control procedures during the Rebuild process and use TI-5820-25/22 in conjunction with the detailed requirements specified in this document.

b. Electrostatic Discharge (ESD) Control Program. The Depot shall establish, implement, and document an ESD control program following the guidelines provided in JESD625-A. ESD protective measures shall be used during manufacturing, handling, inspection, testing, marking, packaging, storing, and transporting ESD sensitive components.

3.7 Quality Assurance Provisions. The Depot shall provide and maintain a quality System that as a minimum adheres to the requirements of ANSI/ISO/ASQC Q9001-2000, Quality Management Systems - Requirement. The Depot work shall be subject to reviews and inspections for compliance with the procedures and standards by MCSC, AFSS, PMM-142 Tanks, MCLB, Albany during working hours. Inspection by MCSC, AFSS, PMM-142 Tanks, MCLB, Albany of test plans and materials furnished hereunder does not relieve the Depot from any responsibility regarding defects or other failures to meet contract requirements which may be disclosed prior to final acceptance. Failure of the Depot to promptly correct deficiencies discovered shall be reason for suspension of acceptance until corrective action has been accomplished. The Depot shall have in place documented procedures and standards for quality assurance and the Depot work shall be subject to reviews and inspections for compliance with the procedures and standards by MCSC, AFSS, PMM-142 Tanks, MCLB Albany. Noncompliance with procedures resulting in degraded quality of work may result in a stop-work order requiring action by the Depot to correct the work performed and to enforce compliance with quality assurance procedures or face contract termination. Notwithstanding such MCSC, AFSS, PMM-142 Tanks, MCLB, Albany, it shall be the Depot's responsibility to ensure that the entire system meets the performance requirements delineated and addressed in this SOW and applicable references. The Depot shall establish and maintain an Inspection System Requirement in compliance with ANSI/ISO/ASQC Q9001-2000 and in accordance with this SOW. The Depot shall provide an Inspection and Test Plan to MCSC, AFSS, PMM-142 Tanks, MCLB, Albany.

3.8 Rejection. Failure to comply with any of the specified requirements listed herein shall be reason for rejection by MCSC, AFSS, PMM-142 Tanks, MCLB, Albany. The Depot shall, at no additional cost to MCSC, AFSS, PMM-142 Tanks, MCLB, Albany, provide the following:

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

b. Upon approval of a documented approach, the Depot shall correct the discrepancies.

4.0 Reports. The following reports shall be delivered to the following address: MCSC, AFSS, PMM-142 Tanks, 814 Radford Blvd.
, STE 20343, Albany, Georgia 31704-0343.

4.1 Monthly Progress Report. The Depot shall provide Monthly Progress Reports, to MCSC, AFSS, PMM-142 Tanks, MCLB, Albany, Georgia 31704-0320, summarizing the progress and status of the Rebuild Program.

4.2 Pre-shop Analysis/Final Inspection Record/Acceptance Tests/Final Assembly and Testing/Final Performance Check. The rebuild facility shall complete a Pre-shop Analysis Checklist, Final Inspection Record, Acceptance Test, Final Assembly and Testing, and Final Performance Check for each M1A1, Main Battle Tank repaired. These documents shall be available during final acceptance inspection. One copy of each document shall be provided to MCSC, AFSS, PMM-142 Tanks, MCLB, Albany after final acceptance of the M1A1, Main Battle Tank. Upon receipt of vehicle at the Blount Island Command (BIC), an acceptance inspection will be performed and any discrepancy identified a Product Quality Deficiency Report (PQDR) will be submitted, in accordance with MCO 4855.10B (PQDR Program).

4.3 Dynamometer Run-In Schedules. The Depot shall complete a copy of the Dynamometer Run-In Schedules. These documents shall show dynamometer test results required on the M1A1 during the Rebuild Phase. These documents shall be available during final acceptance testing. One copy shall be provided MCSC, AFSS, PMM-142 Tanks, MCLB Albany after acceptance of the M1A1.

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Maintenance Concept Remains Consistent With Prior Fiscal Year

APPENDIX A
SPECIAL INSTRUCTIONS FOR THE REBUILD OF THE M1A1 TANK

1. The Depot will perform a joint Final Acceptance Inspection with Marine Corps representatives in accordance with Appendix "B".

2. The Depot shall conduct a visual inspection prior to induction to include all Modification Instructions/ Modification Work Orders (MI/ MWO's) application/ completeness of any vehicles into the Depot production facility for work identified within the SOW. Prior to the inspection, the Depot will notify MCSC, AFSS, PMM-142 Tanks that they are ready to proceed with their pre-induction inspection.

NOTE

All vehicles must be complete. A copy of the owning unit's Limited Technical Inspection (LTI) and Modification Instructions/ Modification Work Orders (MI/ MWO) verification Checklist must accompany the vehicle to the Depot in the Track Vehicle Logbook.

NOTE

The Depot shall submit a copy of all Product Quality Deficiency Reports (PQDR's) and Reports Of Discrepancy (ROD's) to MCSC, AFSS, PMM-142 Tanks no later than Ten (10) working days after the Pre-Induction Inspection is completed.

3. All vehicle lubricants will be replaced. New improved GAA Grease MIL-PRF-10924G will be used.

4. Remove power pack, steam clean engine compartment, remove all rust, corrosion and repaint.

5. Preservative will be added to engine turboshaft oil MIL-PRF-23699 to comply with MPF directives.

6. 15W40 Oil will be used in Transmission, Final Drives and Hubs. (MIL-PRF-2104).

7 All shocks and road arm housings will be removed 100%. Rotary Shocks will be replaced 100%.

8. All rear fuel cells will be removed, drained, cleaned and inspected In according with current directives. All forward fuel cells will be drained cleaned and inspected in according with current directives.

9. Only JP5 will be used in all MPS Marine Corps Tanks.

10. Smoke Generator electrical cable for all vehicles will be disconnected at smoke generator fuel pump prior to adding JP5. A ***Red*** Warning Tag will be attached to the

vehicle master panel stating that the smoke generator will not be used. (Tag should state: Fuel cells contain JP5)

11. All vehicle track, to include pads, will be serviceable Condition Code "A" T158LL/ T158 Track, in accordance with TB 43-0001-39-5. (At no time will T 156 Track be used or accepted) All serviceable track (C/C B) removed shall be reported to MCSC, AFSS, PMM-142 Tanks for disposition instructions.

12. All roadwheels will be serviceable Condition Code "A" In according with TB 43-0001-39-5. All serviceable roadwheels (C/C B) removed shall be reported to MCSC, AFSS, PMM-142 Tanks for disposition instructions.

13. All hulls will be disassembled, abrasively cleaned, inspected for cracks and repaired as required prior to repainting. Visual cracks shall be inspected using non-destructive testing (NDT).

14. All turrets will be disassembled, abrasively cleaned, inspected for cracks and repaired as required prior to repainting. Visual cracks shall be inspected using non-destructive testing (NDT).

15. M1A1 Tank Program Turret Test Station and Procedure 12260770B will be used. This procedure provides facilities to accurately test the Thermal/Optical Target Acquisition and Fire Control Systems.

16. Gun tubes shall have a minimum of 751 Rounds remaining life. Tubes removed will be bore scoped and inspected IAW the appropriate manuals to ensure serviceability, and disposition instructions for these tubes will be provided by MCSC, AFSS, PMM-142 Tanks upon identification.

17. Recoil mechanisms will be 100% disassembled/rebuilt in accordance with DMWR 9-2350-264-2 and prior to shipment of the vehicle; over three months must be remaining since last exercise of the recoil mechanism. Breech must have at a minimum of 1500 Rounds life left.

18. All "LRU" batteries will be replaced. (DECU, NSN: 2590-01-318-0762, CEU and EMRS)

19. Ammo compartments must be free of moisture, dirt, rust, and corrosion. Preserve ammo door rails with solid film lubricant and rust transformer. Fratricide Bar will be inspected.

20. All vision blocks will be Condition Code "A". (Only Laser Safe vision blocks are authorized).

21. Fire extinguishers shall have only MARROTTA or HTL type valves (NO CROWN).

22. All fire bottles will be hydrostatic tested and stenciled in one inch letters to reflect test date in a visible area as well as being stamped w/test date in according with CFR 29 and 49.

23. All petroleum, oil, and hydraulic leaks are unacceptable.

24. Replace brake accumulator Tee, Tube to Boss on all vehicles.

25. All Gas Particulate/Main NBC/Backup NBC filters will be replaced 100%. Only M48A1 Filters will be used. All new NBC Filters will remain boxed. (Use Old Filters for test and Installation purposes)

26. V Packs, Precleaner Seals, Exhaust Duct Seals, and all other seals shall be replaced 100%.

27. Serial Numbers D11270/L11270 and above will be of M1A1 Common Tank configuration.

28. During rebuild of the M1A1 Tanks, Radio systems/ Intercom systems will be operationally checked. PLRS is checked for voltage at the connectors and cables only.

29. Ensure all tanks are in compliance with E3Q Directives.

30. All main NBC components will be removed from the sponson box, disassembled, rebuilt and Tested as individual components on the applicable component test consoles prior to Reinstallation. The NBC seal shall be replaced. NBC components must be free of moisture, dust, rust and corrosion.

31. Inspect PJAS scavenge fan, blades, disk packs and universal joints and repair/replace.

32. Unless otherwise directed, the Depot shall paint the interior/exterior of the vehicle with Chemical Agent Resistant Coating (CARC) using either MIL-C-53039 or MIL-C-46168. Once MIL-C-64159 Type II becomes available it shall be used in place of MIL-C-53039 or MIL-C-46168. Spot paint the interior as indicated in TM 4750-15/1 and TM 4750-15/2. Should the coating not be available the Depot shall request a waiver from MCSC, AFSS, PMM-142 Tanks on a by system/vehicle basic.

33. Inspector will record a "B" in block 16 of the monthly page (NAVMC 10394). Block 17 Will state Bi-Annual Service Preventive Maintenance (BSPM) completed.

34. All engines will be separated and each module will be inspected for erosion, corrosion and Thermal damage. All engines and Transmissions will be 100% disassembled and rebuilt.

35. All engines and transmissions will be dynamometer tested prior to installation into vehicle.

36. Engine Performance: Tanks leaving the Depot must meet the current performance standard of 41.5 Miles Per Hour + or- 3.5 Miles Per Hour as determined by the use of a Radar Gun. Mission Capability Power (MCP) number will not exceed 3. Engines shall have sufficient power to achieve and maintain the required speed regardless of the time of day or temperature.

NOTE

Any exception would require a waiver from
MCSC, AFSS, PMM-142, Tanks.

Request for waiver shall contain the following:

a. Date of Test _____.
b. Temp at Time of Road Test _____.
c. DECU Percent of Power _____.
d. MCP# _____.
e. Day Power _____% TI V _____ PTS V _____ Table A and E 20-1-2
f. Altitude _____. Table G 20-1-2
g. Vehicle Location _____.
h. Engine and Vehicle Ser#'s _____ _____
i. Engine Components Replaced During Rework
_____
_____
____

37. Shallow Water Forwarding not less then 48 inches of water shall be accomplished In according with appropriate TM. (Less Turret)

38. The slip ring will be inspected/tested and rebuilt/replaced as required.

39. The race ring shall be disassembled, inspected, repaired or rebuilt.

40. The following meters will be zeroed out upon rebuild: odometer and hull network box time meter.

41. All electronics and optical components will be disassembled, cleaned, and checked for rust, corrosion, moisture and thermal damage. Any unserviceable components will be repaired or rebuilt or replaced.

42. All circuit cards and connections will be tested, cleaned on the LRU's and retested prior to reinstallation.

43. All wiring harnesses will be removed, cleaned and 100% tested utilizing electronic test equipment prior to reinstallation.

44. The Following items will be repaired to DS/GS Standards by Anniston Army Depot to an serviceable Standard:

Thermal Receiver Unit (TRU)
Image Control Unit (ICU)
Laser Range Finder (LRF)
Electronic Unit (EU)
Power Control Unit (PCU)

45. Frequency response and stabilization at the test track will be used in lieu of the 1800 Test.

46. Grenade Launcher's will be furnished with vehicle. Any unserviceable grenade launchers, mount or wiring harness is to be repaired /replaced. Caps will be replaced by Depot 100%.

47. The following action will be taken to improve the quality of preservation on the M1A1 Tank, in addition to requirements of ATPD 2240 dated 9 June 98.

a. Cover the air intake on the right side of the vehicle.

b. Cover the center vent located on the rear of the vehicle under the turret.

c. Cover the air access door on the right and left of the vehicle.

d. Disconnect negative buss bar. Seal battery box doors.

e. Remove the drain plugs on the bottom of the storage box.

f. Seal tank commander hatch.

g. Apply P-19 preservative to the inside turret bolts around the loaders hatch.

h. Apply P-11 (GAA) to all exposed non-painted bare metal on the interior of the tank.

i. Ensure all required areas in the interior of the vehicle are painted.

j. Tape up drivers and loaders hatches.

NOTE:
This operation will have to take place after the vehicle is placed on the rail car.

k. Seal the access hole for the wind sensor.

l. Cut a breather hole in the wind sensor preservation bag so the bag will not collect water or condensation.

m. Clean the paint off of the side panel pins and apply P-19 preservative to the surface.

n. Seal the gun tube elevation area on exterior of turret.

o. Cover the EAPU Exhaust Fan

48. For purposes of clarification and definition, throughput time shall be defined as that time the vehicle is received by the Depot till the time the vehicle is placed back into Condition Code "A".

49. MCSC, AFSS, PMM-142 Tanks reserves the right to request a Production Progress meeting when deemed appropriate to discuss issues of concern regarding throughput time. MCSC, AFSS, PMM-142 Tanks support objectives as they relate to throughput time are threshold of 90 Calendar days with an optimal objective of 75 Calendar days.

SUSTAINMENT GUARANTEE

The vehicle will be rebuilt to include a Sustainment Guarantee on the Engine, Transmission, Final Drives, any Engine Hang-Ons (excluding the starter and alternator), Sighting and Fire Control Instruments. This guarantee will be valid for 1000 hours on the engine, transmission, final drives, and engine hang-ons, (excluding starter and alternator). The sustainment guarantee includes 500 hours on the sighting and fire control instruments or 36 months, which ever comes first. The 36 months will constitute (at a minimum), one maintenance cycle (IAW MPS rotation schedule). During this MPS maintenance cycle, any or all data will be collected from any failures or tasks performed to determine time periods and cost for future sustainment issues. The Depot reserves the right to inspect, repair, or replace any covered component at the Depot's discretion. These inspections/repairs will be performed within the schedule time frame of the MPS maintenance cycle. The USMC shall provide adequate workspace and necessary support equipment to the Depot's contact team, should any repairs be required. Prior to and if repairs are necessary, the USMC will be responsible for the removal and re-installation of covered components. Any items or said components; to include suspected sighting and fire control instruments shall not be removed from the vehicle prior to the inspection by the Depot's of the unserviceable component or a Depot representative. Upon verification by agreed parties, this Sustainment Guarantee will not cover any battle damage, accidental damage, misuse/abuse, and failure to properly perform PMCS.

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Maintenance Concept Remains Consistent With Prior Fiscal Year

APPENDIX B

M1A1

Final Acceptance Inspection Checklist

HULL

ITEM	STANDARD	INSPECTOR
1. ROADTEST	Inspect vehicle condition and fluid levels prior to road test. Class I, II, III fuel leaks are unacceptable. Verify operation of all controls and suspension system components. Warning/caution lights must operate. Road test vehicle at least 5km. Perform Engine Health test and BIT on DECU prior to and after road test; If fault message appears on display, troubleshoot accordingly.	____
2. PERFORMANCE	Min. speed requirement shall be 41.5 mph +/- 3.5 mph as determined by the use of a Radar Gun. This is a Contractor requirement for this SOW.	____
3. SPEEDOMETER	Must be operational. Unusual movement of needle is unacceptable.	____
4. PANELS DIP, DMP, DAP□	a. Gages, lights and switches shall operate properly.	____
	b. All data shall be legible.	____
	c. Mounting.	____
5. SMOKE GENERATOR	Smoke generators shall be disconnected and red-tagged on steering column "DO NOT USE"	____
6. PARKING AND SERVICE	a. Apply parking brake, move shift control to "L" and run engine slightly above idle. (1000-1100 rpm). Tank should not move.	____
	b. Hydraulic pressure must remain between 1150 and 1700 PSI on parking brake gage. Leaks are unacceptable.	____

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Maintenance Concept Remains Consistent With Prior Fiscal Year

ITEM	STANDARD	INSPECTOR
7. DRIFTING	Drive tank with control centered. Unusual wondering or pulling is unacceptable. REQUIREMENTS: 3 feet drift maximum in 100 foot distance on smooth pavement.	____
8. SHIFT RANGE	a. Control shall operate properly, no binding.	____
	b. Transmission shall operate properly in all ranges.	____
9. TACTICAL IDLE	Must operate properly. REQUIREMENT is 1250 - 1350.	____
10. HULL	a. Damaged, missing parts, and leaks are unacceptable. All lines, fittings, hardware, and components shall be serviceable.	____
	b. All labels and decals must be affixed and legible	____
11. SKIRTS, HARDWARE	Must all be present and serviceable. Hinges and struts shall be serviceable with pins straight, secured with ring pins or roll pins. Cracks and damage are unacceptable.	____
12. FENDERS MUDGUARDS	Holes/cracks NTE 3/8", dents NTE 8" in length and 1/2" in depth. Shall be properly installed with torsion bar hold-down assemblies.	____
13. HULL ACCESS & GRILL DOORS	All doors and accesses shall be serviceable and in place with required hardware	____
14. EXTERIOR LIGHTS	All lights shall function properly, housing shall be serviceable, all mounting secure. Lenses shall not be cracked and shall not contain moisture.	____
15. PLENUM SEAL	Remove hull inspection plate on bottom of vehicle, inspect seal for sealing, cuts, rips, or holes. Insure seal clamp is flat and in place around flange. NOTE: No clamp required on new type seal.	____
16. DRAIN VALVES	Shall operate properly without binding.	____

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Maintenance Concept Remains Consistent With Prior Fiscal Year

ITEM	STANDARD	INSPECTOR
17. TRACK ADJUSTING LINK AND TRACK TENSION	Loose, missing, broken hardware and lube fittings, loose or missing lock bolt is unacceptable. Pressure relief valve must be capable of holding 2750 - 3200 PSI.	____
18. ROADWHEEL, COMP IDLER, SUPPORT ROLLERS	Must be serviceable to include the wearplates. Fifty percent factor in TM refers to width only. Chunking NTE 20 percent of entire area. Base separation NTE 3/4" on either side. Wear plate shall have a minimum of circumference of the wheel at the top of plate.	____
	Leakage Criteria: No grease leakage, however, lubrication leakage is normal at rear of Support Roller in seal adjacent to housing during lubricating.	
19. SHOCK ABSORBERS	a. After road test, check housings for temp cooler than others. Check with hand.	____
	b. The following conditions are unacceptable:	
	(1) Oil leaks.	____
	(2) Loose or damaged hardware, plugs, and fittings.	____
	(3) Cracked, painted, or distorted sight gage. (frosting is acceptable)	____
	(4) Contaminated.	____
	c. Leakage Criteria: No oil leakage around Shock Absorbers.	
20. BUMPER STOP BRACKETS	Missing/broken brackets are unacceptable. Required mounting hardware shall be tight at the 1, 2, and 7 positions.	____

ITEM	STANDARD	INSPECTOR
21. TORSION BARS	The following conditions are unacceptable:	
	(1) Arm lifted off track.	____
	(2) Number 2 thru 6 arms can be lifted with pry bar.	____
	(3) Tank is tilted or lifting of road wheel and track at the number 1, 2, and 7 positions	____
	(4) Broken, damaged, or missing caps.	____
22. ROADWHEEL	a. After road test, check hubs for one hotter (unusual temp) than others with hand.	____
	b. The following conditions are unacceptable:	
	(1) Improper oil level.	____
	(2) Loose hardware, plugs and fittings.	____
	(3) Cracked, painted, or distorted hub caps.	____
	(4) Missing or loose support roller retainer shaft retainer pin.	____
	(5) Contaminated	____
	c. Comp idler shall meet requirements of 1/8" clearance between end connector and skirt.	____
	d. Gap between the comp idler and retainer shall not exceed 1/4" (.250).	____
	e. Leakage Criteria: No evidence of oil leakage (weep) around Road wheel and Compensating Idler Hubs at fill plug and flange of hubcaps. At the rear of each hub in the seal area leakage not to exceed 1 drop of oil in 2 hours. At each Arm Upper Spindle in the seal area at positions 1, 2, and 7 leakage not to exceed 1 drop of oil in 2 hours. No grease leakage at seal areas at Upper Spindle at positions 3, 4, 5, and 6.	

23. SPROCKETS, HUBS, FINAL DRIVES

The following conditions are unacceptable:

(1) Missing or loose hardware. ____

(2) Cracks or sharp edged gouges at hub. ____

(3) Exceeds wear gauge limits. ____

(4) Excessive cupping ____

(5) If power pack is pulled, check trunions, bolt holes etc. ____

Leakage Criteria: No evidence of drip or droplet leakage except during and immediately after engine operation when a drip of 1 drop per 5 minutes is permissable at the Output Shaft Seal area.

24. TRACK

a. Inspect shoe assemblies for missing, bent, or broken center guides and loose or missing nuts and bolts. ____

b. Check for missing, cracked, or unserviceable end connectors. ____

c. End connector wedge bolts shall be tight and seated properly. ____

d. Check for cracked or broken end plates. ____

f. Inspect for dead (broken) track shoes. (A dead track shoe appears to be out of line.) ____

g. Check for exposed binocular tubes on road wheel path and or grouser surface. ____

25. FUEL FILLER NECKS, TANK, AND COVERS

Filler strainers shall be serviceable and clean. Neck cap, chain, grommet cover, and hardware shall be serviceable. Leaks are unacceptable ____

26. TOW PINTLE, TOW POINTS ON HULL

a. Locks, safety pins, and chains shall be installed and free of damage. ____

b. Tow pintle shall open and rotate properly, cracks and excessive play is unacceptable. ____

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Maintenance Concept Remains Consistent With Prior Fiscal Year

ITEM	STANDARD	INSPECTOR
27. BATTERIES	a. Must start engine; no corrosion present.	____
	b. Battery cables shall be tight and rubber covers serviceable and installed correctly.	____
	c. Fluid levels shall be correct.	____
	d. Battery compartment shall be clean.	____
	e. Access doors and hardware shall be serviceable.	____
28. PTS ACTUATOR	Visually inspect PTS actuator. Bottom elbow shall be parallel to the center line of the cylinder hose. Swaged end shall be toward the front of the engine. Swaged end of the top hose will be positioned at approximately the 6 - 7 o'clock position.	____
29. AIR INDUCTION SYSTEM	a. Access doors, grills, and mounting hardware shall be serviceable.	____
	b. Precleaner assembly shall be free of dents and cracks. Must seal on plenum box. Latches shall be serviceable.	____
	Damaged Vortex Tubes shall not exceed 9 unserviceable tubes.	____
	c. Air cleaner elements (VEE-Packs) shall be clean and serviceable.	____
	d. Plenum box shall be clean and free of cracks and broken welds.	____
	e. (Vehicles equipped with PJAS) Perform PJAS operational check, maintain 1550 RPM for 2 minutes. System shall complete cleaning cycle of 27 pulses.	
30. ENGINE OIL TANK/SYSTEM	Oil leaks are unacceptable. Damaged lines, components, and loose connections are unacceptable. Refer to Leakage Criteria.	____
31. FUEL SYSTEM	Fuel lines shall be free of damage. Fuel leaks are unacceptable. Fire sheathing shall be serviceable. Loose connections are unacceptable. NOTE: IGV/PTS components are part of the fuel system.	____

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Maintenance Concept Remains Consistent With Prior Fiscal Year

ITEM	STANDARD	INSPECTOR
32. AIR BLEED TUBE	Shall be free of cracks, breaks, holes, or tears. All mounting hardware and clamps shall be serviceable and tight.	____
33. AIR SCAVENGER TUBE	Cracks, breaks, holes, or tears are unacceptable. All mounting hardware and clamps must be serviceable and tight.	____
34. ELECTRICAL HARNESS	Cracks, breaks, bare wires, cracks in heat shrink material and protrusions, or wire braiding are unacceptable	____
35. SMOKE GENERATOR SYSTEM	Damaged, leaking, loose lines and hoses, fittings, clamps, and mounting hardware are unacceptable.	____
36. TRANSMI SSION	Transmission components shall be free of damage.	____
	Leakage Criteria: No drip except during and immediately after engine operation, when a drip of 1 drop per 5 minutes is allowed at the Output seal area.	
37. ENGINE AND TRANSMISSION OIL COOLING SYSTEM	a. Fan and coolers must be clean.	____
	b. Cracked, missing, or damaged hardware, tubes and fittings are unacceptable.	____
	c. Oil leaks are unacceptable.	____
38. OIL CROSS OVER TUBE	Damaged tube fittings and oil leaks are unacceptable. Tube shall not be laying on exhaust duct.	____
39. ENGINE EXHAUST DUCT	a. No exhaust leaks.	____
	b. Seals shall be free of dents, holes, cuts, burns, or damaged/missing hardware.	____

40. ENGINE COMPARTMENT	a. Dirty or damaged fire sensors are unacceptable.	____
	b. Any missing or damaged heat shields are unacceptable.	____
	c. All hoses, fittings, fluid lines, wiring harnesses, connections/connectors and hardware shall be tight and free of damage that shall be detrimental to operation.	____
	d. All components shall be mounted properly with serviceable hardware.	____
	e. Brake and steering controls shall be free from damage.	____
	f. Mounting pins shall be serviceable and chains shall be mounted.	____
	g. Electrical panel connectors shall be free of arcing Connectors shall lock tight to the panel.	____
	h. No more than 1 quart of oil consumption permitted in 1 hour.	____
	Leakage Criteria: (Engine/Transmission Mating Area) No more than 4 drops of fluid per minute. (Engine) A total of 3 drops, 9ccs, per minute is allowed at the Accessory Gearbox drains during engine running or up to 2 hours after shutdown. No evidence of oil at any of the 4 weep holes. (Output Shaft Seal, # 10) Shall not exceed 2 drops, 6ccs, per minute during engine running or up to 2 hours after shutdown. (All other areas) Shall exhibit no leakage greater than 2 drops, 0.1ccs, per hour.	
41. HEAT EXCHANGER HYDRAULIC	Must be clean, no oil leaks, and all components shall be serviceable	____

42. FIRE EXTINGUISHER	a. Check all fire bottle gages for proper pressure relative to ambient temperature. All labels shall be legible.	____
	b. Check for proper mounting, adjustment and serviceability of all hardware	____
	c. Verify bottles are tight, in mounting brackets, and torque properly.	____
	d. Insure safety pin and anti-recoil plug are present and serviceable.	____
	e. Hydrostatic Test Date **MUST** have three (3) years remaining; if not, fire extinguisher **MUST** be Hydrostatically tested and stamped with the correct date.	____
	NOTE: In addition, Hydrostatic Test Date shall be stenciled in 1-inch letters in a visible area on the fire bottle.	
43. HYDRAULIC SYSTEM RESERVOIR□	a. Filter indicators shall not be popped out.	____
	b. Safety pins shall be present.	____
	c. Filter and indicators shall be safety wired.	____
	d. Loose or damaged hardware and components are unacceptable.	____
	e. Fluid level shall be FULL at O pressure.	____
	f. Check Hull distribution manifold for leaks.	____
44. HULL AMMUNITION COMPARTMENT	a. Pins and door shall be serviceable and operate freely.	____
	b. Excessive looseness, broken rollers etc. that will cause door to bind on track is unacceptable.	____
	c. Mounting brackets and seals shall be free from distortion.	____
	d. Tubes shall be serviceable, plunger must move freely.	____
	e. Bent, broken or missing springs are unacceptable. Angle of spring shall be less than 90 degrees.	____
	f. Shall be clean and free of moisture.	____

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Maintenance Concept Remains Consistent With Prior Fiscal Year

ITEM	STANDARD	INSPECTOR
45. HULL ELECTRICAL	All cables shall be free of damage. Mounting hardware and connectors shall be serviceable.	____
46. STEERING BRAKE CONTROLS	Must be serviceable. No binding and function properly.	____
47. HULL ELECTRICAL NETWORKS BOX	Must be free from cracks, breaks, and loose connections. All circuit breakers shall operate properly and labeling legible.	____
48. PERSONNEL HEATER	a. Shall operate properly. Insure all indicator lamps function.	____
	b. Heater controls shall operate freely. No fuel or exhaust leaks are acceptable.	____
49. DRIVERS NIGHT VISION□	a. System shall be operational and checked with operational DNV. Mounting and storage device shall be serviceable.	____
	b. DNV shall operate properly.	____
50. DRIVER'S HATCH	a. Shall open, close, and lock into position freely.	____
	b. Seal shall be serviceable. Minor nicks and cuts that do not affect serviceability are acceptable.	____
	c. Periscopes shall be installed and serviceable. Wipers/ washer must be operational.	____
	d. Knobs shall operate freely. All hardware shall be present and serviceable.	____
51. DRIVER'S DOME LIGHT□	Must operate properly. Lenses shall not be cracked or broken. All mounting hardware shall be installed and serviceable. Red or blue lenses are acceptable.	____
52. DRIVER'S SEAT□	a. Shall be serviceable. All adjustments shall operate properly.	____
	b. Headrest shall be serviceable and lock into position.	____
	c. Cushion tears of 1 inch or less may be taped.	____
53. TURRET PUMP/GAGE	Check operation and component serviceability. Seal must hold 25 PSI for a minimum of 20 minutes.	____

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ITEM	STANDARD	INSPECTOR
54. BILGE PUMP	Must be serviceable with no unusual noise.	____
55. CLEANLINESS OF VEHICLE	Vehicle must be clean.□	____
56. NBC BACK-UP SYSTEM	a. Hose, connectors, and orifices shall be serviceable.	____
	b. Air flow must be evident at hose end with system operating. NOTE: At all crew stations (4)	____
57. MAIN NBC SYSTEM	a. Remove NBC sponson covers and insure box is clean and replace seal.	____
	b. With engine running at tactical idle; check that the NBC main mode light is lit. Feel for air escapage at all hoses and clamps in box.	____
	c. Turn air temp control knob to full warmer position and feel for warm air at bulk dump valve on the NBC filter manifold.	____
	d. While turning air control knob from full cooler position to full warmer position, have a crewmember observe the NBC exhaust output on the left side of the tank. A change in the NBC exhaust output should be noticed. If a noticeable change in the NBC exhaust does not occur, or there is no output at the NBC exhaust duct, the tank is non-mission capable (NMC).	____ ____
	e. Comply with all "Safety of Use Messages."	

58. LOGBOOK a. Check acceptance page to insure statement "Vehicle was Rebuilt _____ by ANAD" with Date.

b. Include all Modifications verified and applied _____

c. Check for"B" in block 16 of the Monthly page NAVMC 10394 and block 17 write Bi-Annual service Performed. _____

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Maintenance Concept Remains Consistent With Prior Fiscal Year

TURRET

ITEM	STANDARD	INSPECTOR
1. TURRET EXTERIOR	Storage boxes shall be complete and serviceable.	____
2. GUN MOUNT	a. Hydraulic leaks are not acceptable.	____
	b. Hose connections shall be secure.	____
	c. Mounting hardware for all components shall be secure and serviceable.	____
	d. Replenisher oil level shall be above minimum.	____
	e. Exercise gun if over 90 days has elapsed since last exercise.	____
	NOTE: recoil leak criteria applies after exercising/firing.	____
3. GUN TUBE	a. Shall be inspected in accordance with TM 9-1000-202-14.	____
	b. Must have 50% remaining gun tube life for MPS.Must have 20% remaining gun tube life for the FMF.	____
	c. Parts I & II of the Weapons Record Book shall be complete IAW TM 4700-15/1_.	____
	d. Shall be clean.	____
4. BORE EVACUATOR	a. Inspect for cracks, dents, and punctures. Ensure all mounting hardware is serviceable and complete.	____
	b. Shall be properly installed.	____
5. THERMAL SHROUDS	a. Shall be installed properly and free of damage.	____
	b. Cracks are not acceptable.	____

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ITEM	STANDARD	INSPECTOR
6. MUZZLE REFERENCE	a. Evidence of moisture inside is unacceptable.	____
	b. Cracks, breaks, and loose or missing hardware is unacceptable..	____
	c. Caution/instruction plate shall be installed and legible.	____
	NOTE: With MRS lever to the IN position, reticle must be clear and visible	
7. BREECH GROUP	a. Breech block and loaders tray shall operate without binding and be free of burrs and cracks.	____
	b. Chamber, block, breech ring, and extractors shall be free of corrosion/rust and excess wear.	____
	c. All components shall clean, lubricated, and function properly.	____
8. FIRING CIRCUIT BLASTING MACHINE□	a. Harnesses/wiring must be properly installed and in good condition.	____
	b. Safety switches and relays shall be properly installed and function properly.	____
	c. Firing at all stations shall be functional when checked with firing circuit tester.	____
	d. Must pass firing inhibit checks.	____
9. MAIN HYDRAULIC PUMP□	a. Pressure shall stay between 1500 - 1700 PSI with the engine running.	____
	b. Unusual noises in pump during operation as well as any hydraulic leaks are unacceptable.	____
10. AUXILIARY HYDRAULIC PUMP	a. Pressure shall stay between 1150 - 1700 PSI.	____
	b. Unusual noises during operation as well as any hydraulic leaks are unacceptable.	____

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Maintenance Concept Remains Consistent With Prior Fiscal Year

ITEM	STANDARD	INSPECTOR
11. MAIN ACCUMULATOR□	a. Nitrogen pressure must be between 600 - 800 PSI.	____
	b. All mounting hardware must be serviceable and installed correctly.	____
12. ELEVATION MECHANISM	a. Hydraulic leaks are unacceptable.	____
	b. All mounting hardware shall be serviceable and installed properly.	____
	c. Cylinder check valves shall be laced.	____
	d. Filter indicators should not be popped out.	____
13. LIGHT SWITCHES RHEOSTATS	a. Shall be properly installed and function properly	____
14. SMOKE GRENADE SYSTEM	a. Switches, wiring, and electrical components shall be properly installed and serviceable.	____
	b. All mounting brackets shall be free of cracks, broken welds etc. All hardware shall be installed and tight.	____
15. GUNNER'S PRIMARY SIGHT□	a. Must be complete. Ballistic doors must function properly.	____
	b. Must pass all functional tests and checks.	____
	c. All lights, switches, knobs, and levers must be complete and function properly.	____
	d. Leakage of water between Turret and GPS is not acceptable. If questionable, check with water from outside of Turret. No leakage is acceptable.	____
	e. Moisture and/or fungus present in sight is unacceptable.	____
16. GPS EXTENSION	a. Field of view must be equal to that of the GPS.	____
	b. Diopter setting shall be capable of +2 to -6.	____
	c. Moisture or fungus in sight is unacceptable.	____

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Maintenance Concept Remains Consistent With Prior Fiscal Year

ITEM	STANDARD	INSPECTOR
17. GUN/TURRET POWER CONTROL	a. Control handles must be capable of operation in elevation and azimuth. Commander's handle must override.	____
	b. Check for proper response and smoothness.	____
	c. Check azimuth deck clearance switch for proper operation.	____
18. GUN/TURRET MANUAL CONTROL	a. Must be capable of elevation/depression and azimuth movement of the turret and gun.	____
	b. Check for proper response and smoothness.	____
	c. Turret shall traverse in both speeds.	____
19. STABILIZA-TION	Must be capable of maintaining target acquisition regardless of hull movement.	____
20. LOADER'S PANEL	Must be installed properly. All switches and lights shall be functional.	____
21. COMMANDER'S PANEL	Must be installed properly. All switches and lights must be functional. All panel functions must be operational.	____
22. LOADER'S STATION□	a. Seat and platform must lock in all positions.	____
	b. Knee, toe, and shoulder guards must be installed and free of damage	____
	c. Cushions will have no padding missing. Tears exceeding 1 inch are not acceptable. Tears less than 1 inch must be taped.	____
23. LOADER'S HATCH	a. Hatch must be operational and lock in all positions.	____
	b. Seals must be serviceable.	____
	c. Periscope turntable must operate smoothly	____
24. LOADER'S MACHINE GUN MOUNT	a. Missing or damaged parts are unacceptable.	____
	b. Pintle mount, skate, and locks must be fully operational, without binding.	____

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Maintenance Concept Remains Consistent With Prior Fiscal Year

ITEM	STANDARD	INSPECTOR
25. GUN/TURRET LOCKS	Missing, bent, or damaged parts or welds are unacceptable. Must engage and disengage properly.	____
26. COMMANDER'S STATION□	a. Seat and platform must lock in all positions.	____
	b. Guards must be installed, operational and free from damage.	____
	c. Cushions will have no padding missing. Tears exceeding 1 inch are unacceptable. Tears of 1 inch or less will be taped.	____
27. COMMANDER'S HATCH	a. Must be serviceable and lock in all positions.	____
	b. Seal must be serviceable.	____
28. COMMANDER'S WEAPON STATION□	a. Must be capable of 360 degree traverse in both power and manual modes.	____
	b. Operation must be smooth during tracking.	____
	c. Commander's sight must be properly installed and the field of view shall follow the motion of the gun.	____
	d. Sight must be free of moisture and fungus.	____
29. GUNNER'S STATION□	a. Seat must be complete and must lock in all positions.	____
	b. All guards must be installed, free of damage and operate properly.	____
	c. Cushions will have no padding missing. Tears exceeding 1 inch are not acceptable. Tears of 1 inch or less shall be taped.	____
30. GUNNER'S AUXILIARY SIGHT	a. Check for proper function, i.e. reticle brightness, focusing ring, filter knob, and selector knobs.	____
	b. Moisture and/or fungus in sight is unacceptable.	____
31. TURRET DISTRIBUTION MANIFOLD	Check for leaks. Leakage is unacceptable.	____

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Maintenance Concept Remains Consistent With Prior Fiscal Year

ITEM	STANDARD	INSPECTOR
32. TURRET NETWORKS BOX	a. Check for proper installation of all components, wiring harnesses, circuit breakers, and connectors.	____
	b. Check all visible harness assemblies near the electronics rack and networks box for frayed insulation and broken wires.	____
	c. Check all visible ground points for cracks, broken lugs, or loose connections.	____
33. TRAVERSING MECHANISM	a. Must be properly installed and functional.	____
	b. Fluid must be at the proper level	____
	c. Manual drive mode light must come ON when manual palm handle is depressed.	____
	d. Filter indicators shall not be popped out.	____
34. WIRING HARNESS	a. Check for " F " symbol and fire control fault malfunction light.	____
	b. Check for cracks, breaks, cracks in heat shrink material, and protrusions of wire or abrading.	____
	c. All cables within the turret, especially those near the circuit breaker box and loader's position, should be dressed and tie wrapped.	____
35. AMMO STORAGE TURRET	a. Doors must be operational. Knee switch and door edge safety switches must be operational. All mounting hardware, hoses, pins, and latches must be serviceable and function properly.	____
	b. Seals and rails must be clean and free of cracks burrs, breaks and excessive wear.	____
	c. Caliber .50 and 7.62 ammo boxes must be serviceable and installed properly.	____

ITEM	STANDARD	INSPECTOR
36. CROSSWIND SENSOR	a. Must be installed properly. Mount should be free of cracks. Latch assemblies and strikes must be free from cracks, bends, breaks, loose or missing screws and must lock tightly in the upright position. Fraying of cable is unacceptable	____
	b. Sensor ports must be clean and free of cracks and dents	____
	c. Web strap must be serviceable. Fraying or missing strap components is unacceptable	____
	d. Cushioning pad must be serviceable and glued properly.	____
	e. Must function properly.	____
37. COMPUTER CONTROL PANEL	a. Computer must accept and store all inputs from the control panel and TCP.	____
	b. Must pass computer self test	____
38. BORESIGHT	Boresight main gun and fire control systems. Ensure system is capable of achieving and maintaining boresight information.	____
39. PURGING, CHARGING, SERVICING	a. GPS.	____
	b. GAS.	____
	c. Commander's Extension.	____
	d. CWS Sight.	____
	e. LRF.	____
	f. ICU	____
	NOTE: Moisture and/or fungus in sights is unacceptable.	
40. THERMAL IMAGING SYSTEM	a. Perform TIS checkout procedure.	____
	b. Insure all knobs and switches operate properly.	____

ITEM	STANDARD	INSPECTOR
41. LABELS DECALS□	a. All labels and decals must be affixed throughout the turret.	____
	b. All labels shall be legible and not obstructed by paint or grease.	____
42. PLRS	Ensure all mounting hardware is complete.	____
43. MCD	Ensure all mounting hardware is complete.	____
44. EAPU□	a. Unit must be installed properly and securely in the bustle rack.	____
	b. Class I, II, and III oil and fuel leaks are unacceptable.	____
	c. Battery box and cables shall be clean and tight. Fluid levels shall be correct.	____
	d. Check units' operation from all positions and voltage output.	____
45.COMMUNICA-TIONS□	a. Ensure intercom system is operational from all crew stations.	____
	b. Ensure "SINCGARS Installation Kit" is installed and complete.	____

APPENDIX C

LEAKAGE TERMINOLOGY IS DEFINED AS:

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 drip from the item being checked.

3. CLASS III: Leakage of fluid great enough to form drops that fall from the item being checked.

4. WEEP: Any non-recurring evidence of fluid beyond the seal or joint.

5. SEEP: Any recurring evidence of fluid beyond the seal or joint that does not result in an accumulation of more than .05 cc volume.

6. DROPLET: Any recurring evidence of fluid beyond the seal or joint that does not result in an accumulation of more than .05 cc that does not fall.

7. DROP: A volume of .05 cc.

8. DRIP: Any recurring evidence of fluid beyond the seal or joint where a droplet or more forms and falls.

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Maintenance Concept Remains Consistent With Prior Fiscal Year

APPENDIX D

M1A1 *MONTHLY* STATUS REPORT *(Example)*

				10%	20%	30%	35%	40%	50%	55%	60%	70%	80%	90%				95%		100%	
Prod. #	Job #	USMC#	Status	Tear Down	Steam	Hull Station	Turrret Station	Service Pack	Susp.	Install Pack	NBC	1600 Test	Road Test	1800 Test	Commo	Steam	Paint	CWC	P&P	Div Final	Remar
			In																		
			Out																		
			In																		
			Out																		
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