SOW CHANGE PROPOSAL

SOW-03-833-08953A-1/1 SCP 2 11 Feb 04
SOW-04-CBG-08953A-1/1 SCP 1
SOW-05-PMM142-08953A-1/1 SCP 1

STATEMENT OF WORK (SOW)
For the
REBUILD
Of the
M1A1 Main Battle Tank
NSN 2350-01-087-1095

Change Proposals for SOW-03-833-08953A-1/1 SCP 2, SOW-04-CBG-08953A-1/1 SCP 1, and SOW-05-PMM142-08953A-1/1 SCP 1

(1) Add the Following to Section 2 of the SOW:
TM 10249-14&P Halon Recovery and Recharge Unit

(2.) Remove Appendix "A" and replace with Enclosure 1.

(3.) Remove Appendix "B" and replace with Enclosure 2.

(4.) Paragraph 3.4:

Delete the following sentence: 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.

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 SCMC. Changes that do not have the potential to impact cost or schedule may not be reviewed by MD.

Change Submitted by: Wallace C Dawson 11 Feb 04
Equipment Specialist
MCSC PMM-142 Tanks Albany
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Change Approved by Chris L DuPonte 11 Feb 04
Logistics Management Specialist
MCSC PMM-142 Tanks Albany

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". **At Anniston Army Depot, Power Packs will be removed at the conclusion of the Limited Technical Inspection and Ground Hopped to check for leaks and serviceability. After reinstallation of the pack, the tank will be run again on the Test Track, "three" additional laps to determine serviceability.**

2. The Depot shall conduct a visual inspection prior to induction to include all Modification Instructions/ Modification Work Orders (MI/ Mao'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 turbo shaft oil MIL-PRF-23699 to comply with MPF directives.

6. 15W40 Oil will be used in Transmission, Final Drives and Hubs. (MIL-PRF-2104). **PE Oil (MIL-L-21260) is to be used in lieu of normal Lubrication Order requirements for which this oil can be substituted.**

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 T156 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 road wheels will be serviceable Condition Code "A" in accordance with TB 43-0001-39-5. All serviceable road wheels (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. Each vehicle will be inspected for corrosion in the enclosed sponson area forward of the NBC box. A bore scope will be used to inspect for corrosion. If any of the three tubes show evidence of holes, the sponson will be opened and necessary repairs will be made. If heavy flaking corrosion is present but the tubes appear to be intact a pressure test will be done. The Tubes will be pressurized to five (5) PSI for five minutes with no loss of pressure allowed.

15. 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).

16. 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.

17. 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.

18. 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.

19. All "LRU" batteries will be replaced. (DECU, NSN: 2590-01-318-0762, CEU and EMRS). **Hawker Vehicle batteries to be installed in all vehicles as GFE.**

20. 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.

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

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

23. 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. **All halon 1301 fire extinguishers shall have a White and Gray stripe, each 2 inches wide, encircling the circumference of the cylinder and located approximately one-fifth of the length of the cylinder down from the top of the neck. If the color-coded stripes are missing or damaged they must be replaced prior to placing the cylinder back in service. In accordance with TM 10249A-14&P.**

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

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

26. **Gas Particulate/Main NBC/Backup NBC filters will be replaced 100%. New main NBC M48A1 filters (NSN 4240-01-363-1311) shall be installed during assembly of the hull. These filters shall remain installed in the vehicle. Only M48A1 filters produced by Hunter Manufacturing Company (CAGE Code 92878) shall be installed. No extra filters are to be over-packed.**

27. V Packs, Precleaner Seals, Exhaust Duct Seals, and all other seals shall be replaced 100%. **The V-Pack cleaning wand adapter (NSN 4730-01-254-5383) shall be installed at the P3 port on the engine.**

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

29. 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.

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

31. 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. **100% inspection of the NBC sponsor drain hole ECP, which was previously applied to the vehicles. Any required repairs will be done by Anniston Army Depot personnel during the overhaul process.**

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

33. 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.

34. 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.

35. 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.

36. All engines and transmissions will be dynamometer tested prior to installation into vehicle. **The BFOR cable end shall be attached to the BFOR valve on the EMFS.**

37. 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

_____

_____

38. Shallow Water Fording not less then 48 inches of water shall be accomplished In accordance with appropriate TM. (Less Turret)

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

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

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

42. 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.

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

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

45. 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)

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

47. 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%.

48. 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

49. 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".

50. 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. **Anniston Army Depot will host quarterly Marine Corp Program IPR's or Teleconferences in order to brief program status.** 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.

LIMITED TECHNICAL INSPECTION
M1A1

SHIP NAME	TAM No	SERIAL No	LAST NAME (PRINT)

USMC #		LTI Start Time/Date	LTI Stop Time/Date
Oil Sample	Coolant Temp	Oil Temp	Year (of manufacture)
	Engine Serial No.	Transmission Serial No.	Fuel Level

Item /Location		Initial Inspection			Remarks	Final	
		Serv.	Unserv.	Missing	**Remarks** (Must be included if repair is required)	Final	QA Review
01-00	**HULL**						
01-01	**Road Test:** 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.						
01-02	**Performance:** Min. speed requirement will be 41.5 mph +/- 5 mph.						
01-03	**Speedometer:** Must be operational. Unusual movement of needle is unacceptable.						
01-04	**Panels DIP, DMP, DAP**						
01-04.1	Gages, lights and switches will operate properly						
01-04.2	All data will be legible.						
01-04.3	Mounting						
01-05	**Smoke Generator**						
01-05.1	Operate smoke generator. Ensure heavy smoke is visible. Rear fuel tank will be at least 1/8 full for smoke generator to operate properly.						
01-05.2	**NOTE:** Smoke generator is connected only if DF2 is being used. If JP5 is used, smoke generator will be disconnected and red-tagged on steering column **"DO NOT USE".**						

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		Serv.	Unserv.	Missing	**Remarks** (Must be included if repair is required)	Final	QA Review
01-06	**Parking and Service**						
01-06.1	Apply parking brake. Move shift control to "L" and run engine slightly above idle (1000-1100 rpm). Tank should not move.						
01-06.2	Hydraulic Pressure must remain between 1150 and 1700 PSI on parking brake gage. Leaks are unacceptable.						
01-07	**Drifting**						
01-07.1	Drive Tank w/ control centered. Unusual wondering or pulling is unacceptable. **REQUIREMENTS: 3 feet drift maximum in 100 foot distance on smooth pavement.**						
01-08	**Shift Range**						
01-08.1	Control will operate properly, no binding						
01-08.2	Transmission will operate properly in all ranges						
01-09	**Tactical Idle**						
01-09.1	Must operate properly. REQUIREMENT: 1250-1350 RPM						
01-10	**Hull**						
01-10.1	Damaged, missing parts, and leaks are unacceptable. All lines, fittings, hardware, and components will be serviceable.						
01-10.2	All labels and decals must be affixed and legible.						
01-11	**Skirts, Hardware**						
01-11.1	Must all be present and serviceable. Hinges and struts will be serviceable with pins straight, secured with ring pins or roll pins. Cracks and damage are unacceptable. Skirt pins will have a hole large enough to accept "new style click pins (NSN 5340-01-136-7646).						
01-12	**Fenders Mudguards**						
01-12.1	Holes/cracks Not to Exceed ((NTE) 3/8", dents NTE 8" in length and ½" in depth. Shall be properly installed with torsion bar hold down assemblies.						
01-13	**Hull Access & Grill Doors**						
01-13.1	All doors and accesses will be serviceable and in place with required hardware						
01-14	**Exterior Lights**						
01-14.1	All lights will function properly, housing will be serviceable, all mounting secure. Lenses will not be cracked and will not contain moisture.						

LIMITED TECHNICAL INSPECTION
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		Serv.	Unserv.	Missing	**Remarks** (Must be included if repair is required)	Final	QA Review
01-15	**Plenum Seal**						
01-15.1	Remove hull inspection plate on bottom of vehicle. Inspect seal for sealing, cut, rips, or holes. Ensure seal clamp is flat and in place around flange.						
01-15.2	**NOTE:** No clamp required on new type seal.						
01-16	**Drain Valves**						
01-16.1	Shall operate properly without binding.						
01-17	**Track Adjusting Link and Track Tension**						
01-17.1	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.						
01-18	**Roadwheel, Comp Idler, Support Rollers**						
01-18.1	Must be serviceable to include the wearplates. Fifty percent factor in TM refers to width only. Chunking NTE 20% of entire area. Base separation NTE ¾" on either side. Wearplate will have a minimum of circumference of the wheel at the top of plate.						
01-18.2	**Leakage Criteria:** No grease leakage: however, lubrication leakage is normal at rear of support roller in seal adjacent to housing during lubricating.						
01-19	**Shock Absorbers**						
01-19.1	After road test, check housings for temp cooler than others. Check with hand.						
	The following conditions are unacceptable:						
01-19.2	Oil Leaks						
01-19.3	Loose or damaged hardware, plugs, and fittings						
01-19.4	Cracked painted, or distorted sight gage. (Frosting is acceptable)						
01-19.5	Contaminated						
01-19.6	**Leakage Criteria**: No oil leakage around shock absorbers						
01-20	**Bumper Stop Brackets**						
01-20.1	Missing/broken brackets are unacceptable. Required mounting hardware will be tight at the 1, 2, and 7 positions.						
01-21	**Torsion Bars**						
01-21.1	Arm lifted off track						

		Serv.	Unserv.	Missing	**Remarks** (Must be included if repair is required)	Final	QA Review
01-21.2	Number 2 thru 6 arms can be lifted with pry bar.						
01-21.3	Tank is tilted or lifting of roadwheel and track at the number 1, 2, and 7 positions.						
01-21.4	Broken, damaged, or missing caps.						
01-22	**Roadwheel**						
01-22.1	After road test, check hubs for one hotter (unusual temp) than others with hand.						
	The following conditions are unacceptable						
01-22.2	Improper oil level						
01-22.3	Loose hardware, plugs, and fittings						
01-22.4	Cracked, painted, or distorted hubcaps.						
01-22.5	Missing or loose support roller retainer shaft retainer pin.						
01-22.6	Contaminated						
01-22.7	Comp idler will meet requirements of 1/8" clearance between end connector and skirt.						
01-22.8	Gap between the comp idler and retainer will not exceed ¼" (.250)						
01-22.9	**Leakage Criteria:** No evidence of oil leakage (weep) around roadwheel and compensating idler hubs at fill plug and flange of hubcaps. At the rear of each hub n 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						
01-23	**Sprockets, Hubs Final Drives**						
	The following conditions are unacceptable:						
01-23.1	Missing or loose hardware						
01-23-2	Cracks or sharp edged gouges at hub.						
01-23.3	Exceeds wear gauge limits.						
01-23.4	Excessive cupping						
01-23.5	If powerpack is pulled, check trunions, bolt holes, etc.						
01-23.6	**Leakage Criteri**a: No evidence of drip or droplet leakage except during and immediately after engine operation when a drip of 1 drop per 5 minutes is permissible at the output shaft seal area.						

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		Serv.	Unserv.	Missing	**Remarks** (Must be included if repair is required)	Final	QA Review
01-24	**Track**						
01-24.1	Inspect shoe assemblies for missing, bent, or broken center guides and loose or missing nuts and bolts.						
01-24.2	Check for missing, cracked, or unserviceable end connectors.						
01-24.3	End connector wedge bolts will be tight and seated properly.						
01-24.4	Check for cracked or broken end plates						
01-24.5	Inspect for dead (broken) track shoes. (A dead track shoe appears to be out of line.)						
01-24.6	Check for exposed binocular tubes on roadwheel path and or grouser surface IAW TM. Check rubber pad condition.						
01-25	**Fuel Filler Necks, Tank, and Covers**						
01-25.1	Filler strainers will be serviceable and clean. Neck cap, chain, grommet cover, and hardware will be serviceable. Leaks are unacceptable.						
01-26	**Tow Pintle, Tow Points on Hull**						
01-26.1	Locks, safety pins, and chains will be installed and free of damage.						
01-26.2	Tow pintle will be open and rotate properly, cracks and excessive play is unacceptable.						
01-27	**Batteries**						
01-27.1	Change batteries.						
01-27.2	Battery cables will be tight and rubber covers serviceable and installed correctly.						
01-27.3	Fluid levels will be correct.						
01-27.4	Battery compartment will be clean.						
01-27.5	Access doors and hardware will be serviceable.						
01-28	**PTS Actuator**						
01-28.1	Visually inspect PTS actuator. Bottom elbow will be parallel to the centerline of the cylinder hose. Swaged end will be toward the front of the engine. Swaged end of the top hose will be positioned at approximately the 6-7 o'clock position.						
01-29	**Air Induction System**						
01-29.1	Access doors, grills, and mounting hardware will be serviceable						
01-29.2	Precleaner assembly will be free of dents and cracks. Must seal on plenum box. Latches will be serviceable. Damaged vortex tubes will not exceed 9 unserviceable tubes.						

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		Serv.	Unserv.	Missing	**Remarks** (Must be included if repair is required)	Final	QA Review
01-29.3	Air cleaner elements (VEE-Packs) will be clean and serviceable.						
01-29.4	Plenum box will be clean and free of cracks and broken welds.						
01-29.5	(Vehicles equipped with PJAS) Perform PJAS operational check, maintain 1450 RPM for 2 minutes. System will complete cleaning cycle of 27 pulses.						
01-30	**Engine Oil Tank/System**						
01-30.1	Oil leaks are unacceptable. Damaged lines, components, and loose connections are unacceptable. TI 08953A-15/4 relates. Refer to leakage criteria.						
01-31	**Fuel System**						
01-31.1	Fuel lines will be free of damage. Fuel leaks are unacceptable. Fire sheathing will be serviceable. Loose connections are unacceptable						
01-31.2	**NOTE**: IGV/PTS components are part of the fuel system						
01-32	**Air Bleed Tube**						
01-32.1	Shall be free of cracks, breaks, holes, or tears. All mounting hardware and clamps will be serviceable and tight.						
01-33	**Air Scavenger Tube**						
01-33.1	Cracks, breaks, holes, or tears are unacceptable. All mounting hardware and clamps must be serviceable and tight.						
01-34	**Electrical Harness**						
01-34.1	Cracks, breaks, bare wires, cracks in heat shrink materiel and protrusions, or wire braiding are unacceptable.						
01-35	**Smoke Generator System**						
01-35.1	Damaged, leaking, loose lines and hoses, fittings, clamps, and mounting hardware are unacceptable.						
01-36	**Transmission**						
01-36.1	Transmission components will be free of damage.						
01-36.2	**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.						
01-37	**Engine and transmission Oil Cooling System**						
01-37.1	Fan and coolers must be clean						
01-37.2	Cracked, missing, or damaged hardware, tubes and fittings are unacceptable.						

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		Serv.	Unserv.	Missing	**Remarks** (Must be included if repair is required)	Final	QA Review
01-37.3	Oil leaks are unacceptable.						
01-38	**Oil Crossover Tube**						
01-38.1	Damaged tube fittings and oil leaks are unacceptable. Tube will not be laying on exhaust duct.						
01-39	**Engine Exhaust Duct**						
01-39.1	No exhaust leaks						
01-39.2	Seals will be free of dents, holes, cuts, burns, or damaged/missing hardware.						
01-40	**Engine Compartment**						
01-40.1	Dirty or damaged fire sensors are unacceptable.						
01-40.2	Any missing or damaged heat shields are unacceptable.						
01-40.3	All hoses, fittings, fluid lines, wiring harnesses, connections/connectors and hardware will be tight and free of damage that will be detrimental to operation.						
01-40.4	All components will be mounted properly with serviceable hardware.						
01-40.5	Brake and steering controls will be free from damage.						
01-40.6	Mounting pins will be serviceable and chains will be mounted.						
01-40.7	Electrical panel connectors will be free of arcing. Connectors will lock tight to the panel.						
01-40.8	No more than 1 quart of oil consumption permitted in 1 hour.						
01-40.9	**Leakage Criteria:** (Engine/Transmission Mating Area) No more than 4 drops of fluid per minute. (Engine) A total of 3 drops, 9 cc per minute is allowed at the accessory gearbox drain 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, 6 cc per minute during engine running or up to 2 hours after shutdown. (All other areas) Shall exhibit no leakage greater than 2 drops, 0.1 cc per 2 hours.						
01-41	**Heat Exchanger Hydraulic**						
01-41.1	Must be clean, no oil leaks, and all components will be serviceable.						

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		Serv.	Unserv.	Missing	**Remarks** (Must be included if repair is required)	Final	QA Review
01-42	**Fire Extinguisher**						
01-42.1	Check all fire bottle gages for proper pressure relative to ambient temperature. All labels will be legible.						
01-42.2	Check for proper mounting, adjustment, and serviceability of all hardware.						
01-42.3	Verify bottles are tight, in mounting brackets, and torqued properly.						
01-42.4	Ensure safety pin and anti-recoil plug are present and serviceable.						
01-42.5	Hydrostatic Test Date **MUST** have three (3) years remaining; if not, fire extinguisher **MUST** be Hydrostatically tested and stamped with the correct date.						
01-42.6	**NOTE**: IN addition, Hydrostatic Test Date will be stenciled in 1 inch letters in a visible area on the fire bottle.						
01-43	**Hydraulic System Reservoir**						
01-43.1	Filter indicators will not be popped out.						
01-43.2	Deleted						
01-43.3	Filter and indicators will be safety wired.						
01-43.4	Loose or damaged hardware and components are unacceptable.						
01-43.5	Fluid level will be FULL at 0 pressure						
01-43.6	Check hull distribution manifold for leaks.						
01-44	**Hull Ammunition Compartment**						
01-44.1	Pins and door will be serviceable and operate freely.						
01-44.2	Excessive looseness, broken rollers, etc. that will cause door to bind on track is unacceptable.						
01-44.3	Mounting brackets and seals will be free from distortion.						
01-44.4	Tubes will be serviceable, plunger must move freely.						
01-44.5	Bent, broken, or missing springs are unacceptable. Angle of spring will be less than 90 degrees.						
01-44.6	Shall be clean and free of moisture.						
01-45	**Hull Electrical**						
01-45.1	All cables will be free of damage. Mounting hardware and connectors will be serviceable.						

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		Serv.	Unserv.	Missing	**Remarks** (Must be included if repair is required)	Final	QA Review
01-46	**Steering Brake Controls**						
01-46.1	Must be serviceable. No binding and function properly.						
01-47	**Hull Electrical Networks Box**						
01-47.1	Must be free from cracks, breaks, and loose connections. All circuit breakers will operate properly and have legible labeling.						
01-48	**Personnel Heater**						
01-48.1	Shall operate properly. Ensure all indicator lamps function.						
01-48.2	Heater controls will operate freely. No fuel or exhaust leaks are acceptable.						
01-49	**Driver's Night Vision**						
01-49.1	System will be operational and checked with operational DNV. Mounting and storage device will be serviceable.						
01-49.2	DNV will operate properly.						
01-50	**Driver's Hatch**						
01-50.1	Shall open, close, and lock into position freely.						
01-50.2	Seal will be serviceable. Minor nicks and cuts that do not affect serviceability are acceptable.						
01-50.3	Periscopes will be installed and serviceable. Wipers/washer must be operational.						
01-50.4	Knobs will operate freely. All hardware will be present and serviceable						
01-51	**Driver's Dome Light**						
01-51.1	Must operate properly. Lenses will not be cracked or broken. All mounting hardware will be installed and serviceable. Red or blue lenses are acceptable.						
01-52	**Driver's Seat**						
01-52.1	Shall be serviceable. All adjustments will operate properly						
01-52.2	Headrest will be serviceable and lock into position.						
01-52.3	Cushion tears of 1 inch or less may be taped.						
01-53	**Turret Pump/Gage**						
01-53.1	Check operation and component serviceability. Seal must hold 25 PSI for a minimum of 20minutes.						

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		Serv.	Unserv.	Missing	**Remarks** (Must be included if repair is required)	Final	QA Review
01-54	**Bilge Pump**						
01-54.1	Must be serviceable with no unusual noise.						
01-55	**Cleanliness of Vehicle**						
01-55.1	Vehicle must be clean.						
01-56	**NBC Back-Up System**						
01-56.1	Hose, connectors, and orifices will be serviceable						
01-56.2	Airflow must be evident at hose end with system operating.						
01-56.3	**NOTE**: At all crew stations (4)						
01-57	**Main NBC System**						
01-57.1	Remove NBC sponson covers, ensure box is clean, and replace seal.						
01-57.2	With engine running at tactical idle, check that the NBC main mode light is lit. Feel for air leaks at all hoses and clamps in box.						
01-57.3	Turn air temp control knob to full warmer position. NBC exhaust output should decrease.						
01-57.3	Turn air temp control knob to full cooler position. NBC exhaust output should increase.						
01-57.4	Comply with all "Safety of Use Messages"						

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		Serv.	Unserv.	Missing	Remarks (Must be included if repair is required)	Final	QA Review
02-00	**TURRET**						
02-01	**Turret Exterior**						
02-01.1	Storage boxes will be complete and serviceable.						
02-02	**Gun Mount**						
02-02.1	Hydraulic leaks are not acceptable.						
02-02.2	Hose connections will be secure						
02-02.3	Mounting hardware for all components will be secure and serviceable.						
02-02.4	Replenisher oil level will be above minimum						
02-02.5	Exercise gun if over 90 days has elapsed since last exercise.						
02-02.6	**NOTE**: Recoil leak criteria applies after exercising/firing.						
02-03	**Gun Tube**						
02-03.1	Shall be inspected in accordance with (IAW) TM 9-1000-202-14.						
02-03.2	Must have 50% remaining gun tube life for MPS. Must have 20% remaining gun tube life for the FMF.						
02-03.3	Parts I & II of the Weapons Record Book will be complete IAW TM 4700-15/1						
02-03.4	Shall be clean.						
02-04	**Bore Evacuator**						
02-04.1	Inspect for cracks, dents, and punctures. Ensure all mounting hardware is serviceable and complete.						
02-04.2	Shall be properly installed.						
02-05	**Thermal Shrouds**						
02-05.1	Shall be installed properly and free of damage.						
02-05.2	Cracks are not acceptable.						
02-06	**Muzzle Reference**						
02-06.1	Evidence of moisture inside is unacceptable.						
02-06.2	Cracks, breaks, and loose or missing hardware are unacceptable.						
02-06.3	Caution/instruction plate will be installed and legible.						
02-06.4	**NOTE**: With MRS lever to the IN position, reticle must be clear and visible.						

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		Serv.	Unserv.	Missing	Remarks (Must be included if repair is required)	Final	QA Review
02-07	**Breech Group**						
02-07.1	Breech block and loaders tray will operate without binding and be free of burrs and cracks.						
02-07.2	Chamber, block, breech ring, and extractors will be free of corrosion/rust and excess wear.						
02-07.3	All components will be clean, lubricated, and function properly.						
02-08	**Firing Circuit Blasting Machine**						
02-08.1	Harnesses/wiring must be properly installed and in good condition.						
02-08.2	Safety switches and relays will be properly installed and function properly.						
02-08.3	Firing at all stations will be functional when checked with firing circuit tester.						
02-08.4	Must pass firing inhibit checks.						
02-09	**Main Hydraulic Pump**						
02-09.1	Pressure will stay between 1500-1700 PSI with the engine running.						
02-09.2	Unusual noises in pump during operation as well as any hydraulic leaks are unacceptable.						
02-10	**Auxiliary Hydraulic Pump**						
02-10.1	Pressure will stay between 1150-1700 PSI.						
02-10.2	Unusual noises during operation as well as any hydraulic leaks are unacceptable.						
02-11	**Main Accumulator**						
02-11.1	Nitrogen pressure must be between 600-800 PSI.						
02-11.2	All mounting hardware must be serviceable and installed correctly.						
02-12	**Elevation Mechanism**						
02-12.1	Hydraulic leaks are unacceptable						
02-12.2	All mounting hardware will be serviceable and installed properly.						
02-12.3	Cylinder check valves will be laced.						
02-12.4	Filter indicators should not be popped out.						
02-13	**Light Switches Rheostats**						
02-13.1	Shall be properly installed and function properly.						
02-14	**Smoke Grenade System**						

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		Serv.	Unserv.	Missing	Remarks (Must be included if repair is required)	Final	QA Review
02-14.1	Switches, wiring, and electrical components will be properly installed and serviceable.						
02-14.2	All mounting brackets will be free of cracks, broken welds, etc. All hardware will be installed and tight.						
02-15	**Gunner's Primary Sight**						
02-15.1	Must be complete. Ballistic doors must function properly.						
02-15.2	Must pass all functional test and checks.						
02-15.3	All lights, switches, knobs, and levers must be complete and function properly.						
02-15.4	Leakage of water between Turret and GPS is not acceptable. If questionable, check with water from outside of Turret. No leakage is acceptable.						
02-15.5	Moisture and/or fungus present in sight is unacceptable.						
02-16	**GPS Extension**						
02-16.1	Field of view must be equal to that of the GPS.						
02-16.2	Diopter setting will be capable of +2 to -6						
02-16.3	Moisture or fungus in sight is unacceptable.						
02-17	**Gun/Turret Power Control**						
02-17.1	Control handles must be capable of operation in elevation and azimuth. Commander's handle must override.						
02-17.2	Check for proper response and smoothness.						
02-17.3	Check azimuth deck clearance switch for proper operation.						
02-18	**Gun/Turret Manual Control**						
02-18.1	Must be capable of elevation/depression and azimuth movement of the turret and gun.						
02-18.2	Check for proper response and smoothness.						
02-18.3	Turret will traverse in both speeds						
02-19	**Stabilization**						
02-19.1	Must be capable of maintaining target acquisition regardless of hull movement.						
02-20	**Loader's Panel**						
02-20.1	Must be installed properly. All switches and lights will be functional						
02-21	**Commander's Panel**						

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		Serv.	Unserv.	Missing	Remarks (Must be included if repair is required)	Final	QA Review
02-21.1	Must be installed properly. All switches and lights must be functional. All panels' functions must be operational.						
02-22	**Loader's Station**						
02-22.1	Seat and platform must lock in all positions.						
02-22.2	Knee, toe, and shoulder guards must be installed and free of damage.						
02-22.3	Cushions will have no padding missing. Tears exceeding 1 inch are not acceptable. Tears less than 1 inch must be taped.						
02-23	**Loader's Hatch**						
02-23.1	Hatch must be operational and lock in all positions.						
02-23.2	Seals must be serviceable.						
02-23.3	Periscope turntable must operate smoothly.						
02-24	**Loader's Machine Gun Mount**						
02-24.1	Missing or damaged parts are unacceptable						
02-24.2	Pintle mount, skate, and locks must be fully operational without binding.						
02-25	**Gun/Turret Locks**						
02-25.1	Missing, bent, or damaged parts or welds are unacceptable. Must engage and disengage properly.						
02-26	**Commander's Station**						
02-26.1	Seat and platform must lock in all positions						
02-26.2	Guards must be installed, operational, and free from damage.						
02-26.3	Cushions will have no padding missing. Tears exceeding 1 inch are unacceptable. Tears of 1 inch or less will be taped						
02-27	**Commander's Hatch**						
02-27.1	Must be serviceable and lock in all positions.						
02-27.2	Seal must be serviceable.						
02-28	**Commander's Weapon Station**						
02-28.1	Must be capable of 360 degree traverse in both power and manual modes.						
02-28.2	Operation must be smooth during tracking.						
02-28.3	Commander's sight must be properly installed and field of view will follow the motion of the gun.						

		Serv.	Unserv.	Missing	Remarks (Must be included if repair is required)	Final	QA Review
02-28.4	Sight must be free of moisture and fungus.						
02-29	**Gunner's Station**						
02-29.1	Seat must be complete and must lock in all positions.						
02-29.2	All guards must be installed, free of damage, and operate properly.						
02-29.3	Cushions will have no padding missing. Tears exceeding 1 inch are not acceptable. Tears of 1 inch or less will be taped.						
02-30	**Gunner's Auxiliary Sight**						
02-30.1	Check for proper function, i.e. reticle brightness, focusing ring, filter knob, and selector knobs.						
02-30.2	Moisture and/or fungus in sight is unacceptable						
02-31	**Turret Distribution Manifold**						
02-31.1	Check for leaks. Leakage is unacceptable.						
02-32	**Turret Networks Box**						
02-32.1	Check for proper installation of all components, wiring harnesses, circuit breakers, and connectors.						
02-32.2	Check all visible harness assemblies near the electronics rack and networks box for frayed insulation and broken wires.						
02-32.3	Check all visible ground points for cracks, broken lugs, or loose connections.						
02-33	**Traversing Mechanism**						
02-33.1	Must be properly installed and functional.						
02-33.2	Fluid must be at the proper level.						
02-33.3	Manual drive mode light must come ON when manual palm handle is depressed.						
02-33.4	Filter indicators will not be popped out.						
02-34	**Wiring Harness**						
02-34.1	Check for "F" symbol and fire control fault malfunction light.						
02-34.2	Check for cracks, breaks, cracks in heat shrink material, and protrusions of wire or abrading.						
02-34.3	All cables within the turret, especially those near the circuit breaker box and loader's position, should be dressed and tie wrapped.						

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		Serv.	Unserv.	Missing	Remarks (Must be included if repair is required)	Final	QA Review
02-35	**Ammo Storage Turret**						
02-35.1	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.						
02-35.2	Seals and rails must be clean and free of cracks, burrs, breaks, and excessive wear.						
02-35.3	Caliber .50 and 7.62 ammo boxes must be serviceable and installed properly.						
02-36	**Crosswind Sensor**						
02-36.1	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.						
02-36.2	Sensor ports must be clean and free of cracks and dents.						
02-36.3	Web strap must be serviceable. Fraying or missing strap components is unacceptable.						
02-36.4	Cushioning pad must be serviceable and glued properly.						
02-36.5	Must function properly.						
02-37	**Computer Control Panel**						
02-37.1	Computer must accept and store all inputs from the control panel and TCP.						
02-37.2	Must pass computer self test.						
02-38	**Boresight**						
02-38.1	Boresight main gun and fire controls systems. Ensure system is capable of achieving and maintaining boresight information.						
02-39	**Purging, Charging, Servicing**						
02-39.1	GPS						
02-39.2	GAS						
02-39.3	Commander's Extension						
02-39.4	CWS Sight						
02-39.5	LRF						
02-39.6	ICU						
02-39.7	**NOTE:** Moisture and/or fungus in sights is unacceptable						

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		Serv.	Unserv.	Missing	Remarks (Must be included if repair is required)	Final	QA Review
02-40	**Thermal Imaging System**						
02-40.1	Perform TIS checkout procedure.						
02-40.2	Ensure all knobs and switches operate properly.						
02-41	**Labels, Decals**						
02-41.1	All labels and decals must be affixed throughout the turret						
02-41.2	All labels will be legible and not obstructed by paint or grease						
02-42	**PLRS**						
02-42.1	Ensure all mounting hardware is complete						
02-43	**MCD**						
02-43.1	Ensure all mounting hardware is complete						
02-44	**EAPU**						
02-44.1	Unit must be installed properly and securely in the bustle rack.						
02-44.2	Class I, II, III oil and fuel leaks are unacceptable.						
02-44.3	Battery Box and cables will be clean and tight. Fluid levels will be correct						
02-44.4	Check units' operation from all positions and voltage output						
02-45	**Communications**						
02-45.1	Ensure intercom system is operational from all crew stations.						
02-45.2	Ensure "SINCGARS Installation Kit" is installed and complete.						

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REMARKS

DATE	MECHANIC SIGNATURE	
ACTIVITY	DATE	MANAGER SIGNATURE