

INCH-POUND

MIL-T-45379D(AT)
 AMENDMENT 2
3 January 1990
 SUPERSEDING
 AMENDMENT 1
 10 March 1989

MILITARY SPECIFICATION

TANK, COMBAT, FULL-TRACKED,
 105 MM GUN, M60A3-TTS

This amendment forms a part of MIL-T-45379D(AT), dated 28 April 1986, and is approved for use by the US Army Tank-Automotive Command, Department of the Army and is available for use by all Departments and Agencies of the Department of Defense.

* The attached insertable replacement pages listed below are replacements for stipulated pages. When the new pages have been entered in the document, insert the amendment as the cover sheet to the specification.

Replacement page	Page replaced
37	Reprinted without change
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Add the following paragraph:

“6.8 Subject term (key word) listing.

Cupola Weapon Control
Fording
Hatches
Hull
M60A3 Tank
Speeds”

NOTE: The margins of this amendment are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

Custodian:
Army - AT

Preparing activity:
Army - AT

(Project 2350-A413)

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4.4 First article inspection. First article inspections shall be performed on preproduction or initial production samples as specified herein. Approval of the first article sample by the Government shall not relieve the contractor of the obligation to supply vehicles that are fully representative of those inspected as a first article sample. Any change or deviation of the production units from the first article sample shall be subject to the approval of the contracting officer.

4.4.1 Preproduction inspection. When specified (see 6.2), a preproduction vehicle (see 3.1.1), shall be inspected as specified in table XIX to ascertain vehicle conformance with the requirements of this specification. Inspection shall be performed at a location approved by the Government.

4.4.1.1 Preproduction failure. Failure of a preproduction model to comply with any of the requirements specified shall be cause for refusal by the Government to conduct a retest until corrective measures satisfactory to the Government have been taken.

4.4.2 Initial production inspection. Unless otherwise specified (see 6.2), initial production inspection shall consist of Manufacturer's Inspection and Government Proving Ground Vehicle Test.

4.4.2.1 Manufacturer's inspection.

4.4.2.1.1 Special processes and in-process inspections. A special processes and in-process inspection will be conducted by Government representatives during fabrication of the first production vehicle to evaluate conformance of materials, processes and workmanship. As a minimum, inspection shall cover the following:

- a. Materials, welding, surface hardening, heat treating, protective finishes, etc. shall be reviewed and evaluated for records, processing procedures and plan of quality control.
- b. The hull and turret shall be inspected individually prior to covering the weldments with paint or other pertinent components or assemblies to verify welding processes and fixture adequacy.
- c. Hull assembly, turret assembly and break-in stations shall be reviewed and evaluated for records, procedures and test equipment required by applicable quality assurance requirements.

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TABLE XIX. Classification of inspections.

Title	Requirement	Inspection	First article	Quality Conformance	
				Acceptance	Control Comparison
Materials	3.2	4.6.1	X	X	X
Design and construction	3.3	4.6.2	X	X	X
Hatch seals	3.3.1.1	4.6.2.1.1	X	X	X
Vision device/receptacle seals	3.3.1.2	4.6.2.1.2	X	X	X
Hydraulic lines	3.3.2	4.6.2.2	X	X	X
Ventilation system	3.3.3	4.6.2.3.1	X	X	X
Controls	3.3.4	4.6.2.4	X	X	X
Adjustment mechanisms	3.3.5	4.6.2.5	X	X	X
Vision devices/receptacles	3.3.6	4.6.2.6	X	X	X
Air flow	3.3.7.1	4.6.2.7.1	X	X	X
Air heater	3.3.7.2	4.6.2.7.2	X	X	X
Stowed equipment	3.3.8	4.6.2.8	X	X	X
Electromagnetic characteristics	3.3.9	4.6.2.9	X	X	X
Radiated emissions	3.3.9.1	4.6.2.9	X	X	X
Radiated susceptibility	3.3.9.2	4.6.2.9	X	X	X
Electromagnetic compatibility	3.3.9.3	4.6.2.9	X	X	X
Noise hazard	3.3.10	4.6.2.10	X	X	X
Continuous noise level	3.3.10.1	4.6.2.10	X	X	X
Operator's protection	3.3.10.2	4.6.2.10	X	X	X
Hull	3.3.11	4.6.2.11	X	X	X
Cooling system	3.3.11.1	4.6.2.11.1	X	X	X
Fuel system	3.3.12	4.6.2.12	X	X	X
Fuel tanks, and lines cleanliness	3.3.12.1	4.6.2.12.1	X	X	X
Heater fuel feed	3.3.12.2	4.6.2.12.2	X	X	X
Fuel shutoff valve	3.3.12.3	4.6.2.12.3	X	X	X
Fuel system (slope)	3.3.12.4	4.6.2.12.4	X	X	X
Fuel tank (rapid fill)	3.3.12.5	4.6.2.12.5	X	X	X
Hatches	3.3.13	4.6.2.13	X	X	X
Driver's hatch	3.3.13.1	4.6.2.13.1	X	X	X
Driver's escape hatch	3.3.13.2	4.6.2.13.2	X	X	X

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TABLE XIX. Classification of inspections - Continued.

Title	Requirement	Inspection	First article	Quality Conformance		
				Acceptance	Control	Comparison
Loader's and commander's hatches	3.3.13.3	4.6.2.13.3	X		X	X
Seats	3.3.14	4.6.2.14	X		X	X
Driver's seat	3.3.14.1	4.6.2.14.1	X		X	X
Gunner's seat	3.3.14.2	4.6.2.14.2		X		
Commander's platform seat and upper swing seat	3.3.14.3	4.6.2.14.3	X		X	X
Loader's seat	3.3.14.4	4.6.2.14.4	X		X	X
Fire extinguisher	3.3.15	4.6.2.15	X		X	X
Battery access door	3.3.16	4.6.2.16	X		X	X
Electrical system	3.3.17	4.6.2.17	X		X	X
Power plant electrical	3.3.17.1	4.6.2.17.1	X		X	X
Lights	3.3.17.2	4.6.2.17.2	X		X	X
Interior lighting	3.3.17.3	4.6.2.17.3	X		X	X
Hull-to-turret slipring	3.3.17.4	4.6.2.17.4	X		X	X
Cupola slipring	3.3.17.5	4.6.2.17.5	X		X	X
Alternator voltage	3.3.17.6	4.6.2.17.6	X		X	X
Driver's night viewer power circuit	3.3.17.7	4.6.2.17.7	X		X	X
Air cleaner blower motors	3.3.17.8	4.6.2.17.8	X		X	X
Engine manifold heater	3.3.17.9	4.6.2.17.9	X		X	X
Auxiliary outlet	3.3.17.10	4.6.2.17.10	X		X	X
Personnel heater	3.3.17.11	4.6.2.17.11	X		X	X
Engine smoke generator	3.3.17.12	4.6.2.17.12	X		X	X
Communications system	3.3.18	4.6.2.18	X		X	X
Break-in run	3.4	4.6.3	X	X	X	X
8-mile road test	3.4.1	4.6.3.1	X	X	X	X
Performance	3.5	4.6.4				
Power plant and power train	3.5.2	4.6.4.2	X		X	X
Speeds	3.5.3	4.6.4.3				
Level road speeds	3.5.3.1	4.6.4.3.1	X		X	X
Grade speeds	3.5.3.2	4.6.4.3.2	X		X	X
Level road drift	3.5.3.3	4.6.4.3.3	X		X	X
Acceleration	3.5.3.4	4.6.4.3.4	X		X	X
Climbing	3.5.3.5	4.6.4.3.5	X		X	X
Engine starting on grades and slopes	3.5.3.6	4.6.4.3.6	X		X	X

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TABLE XIX. Classification of inspections - Continued.

Title	Requirement	Inspection	First article	Quality Conformance	
				Acceptance	Control
Braking and drift	3.5.4	4.6.4.4	X		X
Stopping	3.5.4.1	4.6.4.4.1	X		X
Holding	3.5.4.2	4.6.4.4.2	X		X
Turning	3.5.5	4.6.4.5	X		X
Fording	3.5.6	4.6.4.6	X		X
Shallow water	3.5.6.1	4.6.4.6.1	X		X
Deep water	3.5.6.2	4.6.4.6.2	X		X
Engine starting in shallow water	3.5.6.3	4.6.4.6.3	X		X
Shallow water contamination	3.5.6.4	4.6.4.6.4	X	X	X
Inflatable seal and pump	3.5.6.5	4.6.4.6.5	X	X	X
Drain valves	3.5.6.6	4.6.4.6.6	X	X	X
Trench crossing	3.5.7	4.6.4.7	X		X
Vertical obstacles	3.5.8	4.6.4.8	X		X
Turret/cupola	3.5.9	4.6.4.9	X	X	X
Nylon ballistic shield	3.5.9.1	4.6.4.9.1	X	X	X
System backlash	3.5.9.2	4.6.4.9.2	X		X
Turret and gun control system	3.5.9.3	4.6.4.9.3	X		X
Gun elevation speeds	3.5.9.3.1	4.6.4.9.3.1	X		X
Turret traversing speeds	3.5.9.3.2	4.6.4.9.3.2	X		X
Gun laying on stationary target, vehicle stationary	3.5.9.3.3	4.6.4.9.3.3	X	X	X
Gun laying on moving target and tracking accuracy	3.5.9.3.4	4.6.4.9.3.4	X		X
Operation on slopes	3.5.9.3.5	4.6.4.9.3.5	X		X
Stability of operation, vehicle stationary	3.5.9.3.6	4.6.4.9.3.6	X		X
Non-stabilized mode	3.5.9.3.6.1	4.6.4.9.3.6.1	X		X
Gun stability, non-stabilized mode	3.5.9.3.6.1	4.6.4.9.3.6.1.1	X		X
Stabilized mode	3.5.9.3.6.2	4.6.4.9.3.6.2	X	X	X
Traverse and elevation limits	3.5.9.3.7	4.6.4.9.3.7	X		X
Override control	3.5.9.3.8	4.6.4.9.3.8	X		X

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TABLE IX. Classification of inspections - Continued.

Title	Requirement	Inspection	First article	Quality Conformance	
				Acceptance	Control Comparison
Hydraulic pressure limit switch	3.5.9.3.9	4.6.4.9.3.9	X	X	X
Turret traverse brake	3.5.9.3.10	4.6.4.9.3.10	X	X	X
Elevation shut-off valve	3.5.9.3.11	4.6.4.9.3.11	X	X	X
Travel locks	3.5.9.3.12	4.6.4.9.3.12	X	X	X
Azimuth	3.5.9.3.13.1	4.6.4.9.3.13.1	X	X	X
Elevation	3.5.9.3.13.2	4.6.4.9.3.13.2	X	X	X
Control system deadspot	3.5.9.3.14	4.6.4.9.3.14	X	X	X
105mm gun manual control	3.5.9.3.15	4.6.4.9.3.15	X	X	X
Traverse effort	3.5.9.3.15.1	4.6.4.9.3.15.1	X	X	X
Elevation effort	3.5.9.3.15.2	4.6.4.9.3.15.2	X	X	X
Elevation response rate	3.5.9.3.15.3	4.6.4.9.3.15.3	X	X	X
Power and manual control	3.5.9.3.16	4.6.4.9.3.16	X	X	X
Superelevation actuator	3.5.9.3.17	4.6.4.9.3.17	X	X	X
Accuracy	3.5.9.3.17.1	4.6.4.9.3.17.1	X	X	X
Gun motion	3.5.9.3.17.2	4.6.4.9.3.17.2	X	X	X
Stabilized mode	3.5.9.3.17.3	4.6.4.9.3.17.3	X	X	X
Hydraulic fluid	3.5.9.3.18	4.6.4.9.3.18	X	X	X
Cleanliness	3.5.9.3.18.1	4.6.4.9.3.18.1	X	X	X
Leakage	3.5.9.3.18.2	4.6.4.9.3.18.2	X	X	X
Cupola weapon control	3.5.9.4	4.6.4.9.4	X	X	X
Traverse effort	3.5.9.4.1	4.6.4.9.4.1	X	X	X
Elevation effort	3.5.9.4.2	4.6.4.9.4.2	X	X	X
Elevation limits	3.5.9.4.3	4.6.4.9.4.3	X	X	X
Fire control system	3.5.9.5	4.6.4.9.5	X	X	X
105mm gun sighting system	3.5.9.5.1	4.6.4.9.5.1	X	X	X
Synchronization	3.5.9.5.1.1	4.6.4.9.5.1.1	X	X	X
Elevation backlash	3.5.9.5.1.2	4.6.4.9.5.1.2	X	X	X
Boresight knob travel	3.5.9.5.1.3	4.6.4.9.5.1.3	X	X	X
Thermal vision channel	3.5.9.5.1.4	4.6.4.9.5.1.4	X	X	X
Unity sight knob travel	3.5.9.5.1.5	4.6.4.9.5.1.5	X	X	X
Boresight retention	3.5.9.5.1.6	4.6.4.9.5.1.6	X	X	X
Laser range finder	3.5.9.5.2	4.6.4.9.5.2	X	X	X
LRF system power turn on	3.5.9.5.2.1	4.6.4.9.5.2.1	X	X	X
Mode control switch	3.5.9.5.2.2	4.6.4.9.5.2.2	X	X	X
RANGE switch	3.5.9.5.2.3	4.6.4.9.5.2.3	X	X	X

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TABLE XIX. Classification of inspections - Continued.

Title	Requirement	Inspection	First article	Quality Conformance	
				Acceptance	Control
RESET switch	3.5.9.5.2.4	4.6.4.9.5.2.4	X	X	X
Range return selector switches	3.5.9.5.2.5	4.6.4.9.5.2.5	X	X	X
Remote range reset switch	3.5.9.5.2.6	4.6.4.9.5.2.6	X	X	X
Malfunction light	3.5.9.5.2.7	4.6.4.9.5.2.7	X	X	X
GO light	3.5.9.5.2.8	4.6.4.9.5.2.8	X	X	X
SELECT light	3.5.9.5.2.9	4.6.4.9.5.2.9	X	X	X
FEED switch	3.5.9.5.2.10	4.6.4.9.5.2.10	X	X	X
LIGHT rheostat	3.5.9.5.2.11	4.6.4.9.5.2.11	X	X	X
Emergency power switch	3.5.9.5.2.12	4.6.4.9.5.2.12	X	X	X
Battle range switch	3.5.9.5.2.13	4.6.4.9.5.2.13	X	X	X
Laser self test	3.5.9.5.2.14	4.6.4.9.5.2.14	X	X	X
Laser system lasting	3.5.9.5.2.15	4.6.4.9.5.2.15	X	X	X
Computer system	3.5.9.6	4.6.4.9.6	X	X	X
Computer self test	3.5.9.6.1	4.6.4.9.6.1	X	X	X
Common zero and zeroing	3.5.9.6.2	4.6.4.9.6.2	X	X	X
Ballistics solutions	3.5.9.6.3	4.6.4.9.6.3	X	X	X
Ammo select	3.5.9.6.4	4.6.4.9.6.4	X	X	X
Indirect fire control	3.5.9.7	4.6.4.9.7	X	X	X
Elevation quadrants	3.5.9.7.1	4.6.4.9.7.1	X	X	X
Azimuth indicator backlash	3.5.9.7.2	4.6.4.9.7.2	X	X	X
Leveling devices	3.5.9.7.3	4.6.4.9.7.3	X	X	X
Cupola weapon sighting system	3.5.9.8	4.6.4.9.8	X	X	X
Synchronization	3.5.9.8.1	4.6.4.9.8.1	X	X	X
Elevation backlash	3.5.9.8.2	4.6.4.9.8.2	X	X	X
Boresight knob travel	3.5.9.8.3	4.6.4.9.8.3	X	X	X
Boresight retention	3.5.9.8.4	4.6.4.9.8.4	X	X	X
Interlock assembly location	3.5.9.8.5	4.6.4.9.8.5	X	X	X
Night vision	3.5.9.8.6	4.6.4.9.8.6	X	X	X
Electrical system	3.5.10	4.6.4.10	X	X	X
105mm gun firing circuits	3.5.10.1	4.6.4.10.1	X	X	X
Emergency mode firing	3.5.10.2	4.6.4.10.2	X	X	X
Coaxial and cupola machine gun firing circuits	3.5.10.3	4.6.4.10.3	X	X	X

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TABLE XIX. Classification of inspections - Continued.

Title	Requirement	Inspection	First article	Quality Conformance	
				Acceptance	Control Comparison
105mm gun and machine gun circuit controls	3.5.10.4	4.6.4.10.4	X	X	X
Smoke grenade discharger circuits	3.5.10.5	4.6.4.10.5	X	X	X
Arming	3.5.10.5.1	4.6.4.10.5.1	X	X	X
Circuit voltage	3.5.10.5.2	4.6.4.10.5.2	X	X	X
Reliability operation	3.5.11	4.6.4.11	X	X	X
Environmental	3.6	4.7	X	X	X
Welding repairs	3.7	4.8	X	X	X
Painting	3.8	4.9	X	X	X
Identification data plates	3.9	4.10	X	X	X
Marking	3.10	4.11	X	X	X
Workmanship	3.11	4.12	X	X	X

X/ Perform prior to final inspection.

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4.4.2.1.2 Government proving ground vehicle test. After completion of Manufacturer's Inspection on the first completed vehicle, a second vehicle, or vehicles, shall be selected (see 6.2) from the first ten vehicle produced and shall be subjected to inspections specified in table XIX. Subsequent to these tests, the selected vehicle(s) shall be subjected to the 4000 mile test specified in table XX at a site selected by the Government. This test will be performed by the Government and will establish the baseline for subsequent Inspection Comparison Tests (ICT) during the life of the contract.

TABLE XX. 4000 mile Government proving ground test.

Course	Mileage and speeds
Hard surface roads	1000 miles at varying speeds up to maximum
Gravel or dirt roads	1000 miles at varying speeds up to maximum
Level, cross-country terrain	1000 miles at varying speeds up to maximum
Hilly, cross-country terrain	1000 miles at varying speeds up to maximum

4.4.2.1.3 Initial production failure. Failure of an initial production vehicle because of any deficiency of a workmanship or materials nature during or as the result of initial production inspection and/or test shall be cause for rejection of the vehicle. Further, the Government may refuse to continue acceptance of production vehicles until evidence has been produced by the contractor that corrective action has been taken to eliminate the deficiency. Any deficiency found, during or as a result of the 4000-mile test, shall be evidence that all vehicles already accepted prior to completion of the 4000-mile test are similarly deficient unless evidence satisfactory to the contracting officer is furnished by the contractor that they are not similarly deficient.

4.5 Quality conformance inspections.

4.5.1 Preparation for acceptance tests. Before submitting a vehicle for acceptance tests (see 4.5.2), the contractor shall have performed the following in-process inspections:

- a. Parts, components, and assembly inspections in accordance with applicable drawings and specifications.
- b. Hull and turret installation (see 4.4.2.1.1).
- c. Break-in run (see 3.4).
- d. 8-mile road test (see 3.4.1).
- e. Welding repairs (see 3.7).
- f. Fuel tank and line cleanliness (see 3.3.12.1).
- g. Heater fuel feed (see 3.3.12.2).
- h. Engine and transmission pre-installation check.
- i. 105mm gun balance (see 3.5.9.3.17.2).
- j. Hydraulic line cleanliness (see 3.3.2).