

EXECUTIVE SUMMARY
DAAE20-00-R-0218

1. Solicitation DAAE20-00-R-0218 is issued to procure M240B Machine Guns. It will result in an Indefinite Delivery, Indefinite Quantity (IDIQ) type contract with four Ordering Periods.
2. This solicitation is restricted to U.S. and Canada in accordance with a license agreement between FN Herstal and the U.S. Government. The technical data package will not be provided as part of this solicitation. To obtain a copy of the technical data package, a prospective offeror must sign a non-disclosure agreement. (See Section A of the solicitation.)
3. The quantity of 1,306 M240B Machine Guns is the minimum guaranteed quantity to be awarded under this solicitation. The minimum and maximum quantity ordering ranges as shown below and on the pricing chart of the solicitation (Attachment 006) are provided solely for the purpose of estimating reasonable ranges of quantities against which to provide prices and are NOT guaranteed buy quantities. The Government has no obligation to place orders beyond the minimum guaranteed quantity of 1,306.
4. The Government's projected buy quantities, by Ordering Period, as set forth below represent the best estimate of actual projected requirements based on a combination of order history, actual orders on hand and projected demand:

	Ordering Period	Most Likely Buy	Order Range	
			Min	Max
OP1	Award – 31 Dec 01	1,306	1,306	3,686
OP2	1 Jan 02 – 31 Dec 02	541	400	1,283
OP3	1 Jan 03 – 31 Dec 03	529	307	1,180
OP4	1 Jan 04 – 31 Dec 04	1,515	1,126	1,999

5. Evaluation of offers shall be in accordance with evaluation guidelines in Section M of the solicitation. Award will be based on an evaluation of price, performance risk assessment, and small business participation. Price is the most important factor with past performance slightly less important and small business participation substantially less important than either price or performance risk. In addition, price is slightly more important than performance risk and small business participation when combined. The Government reserves the right to award to a higher priced proposal that offers lower risk in performance and small business participation.
6. Section L provides specific instructions to offerors concerning preparation and submission of proposals. PLEASE READ THIS SECTION CAREFULLY!
7. Note that this solicitation contains a requirement for Initial Production Testing (IPT). The cost to the Government for conducting the IPT is \$1,040,000. For purposes of evaluation, the Government will add the cost of \$1,040,000 to any proposal that will require this test be conducted. If an offeror has not successfully manufactured an M240B Machine Gun to the Government technical data package in the last 12 months, the Government will be required to conduct an IPT on that offeror's product.
8. The Government will establish the monthly delivery rate in each delivery order. Delivery rates will be maintained at a steady rate for at least six months at a minimum of 75 guns per month and a maximum of 200 guns per month. The Government's intent is to maintain continuous production during the contract period. All delivery orders will be issued unilaterally by the Government with firm delivery dates.

PRODUCT REQUIREMENT
FOR
7.62MM M240B MACHINE GUN
2 AUGUST 2000

PRODUCT REQUIREMENTS FOR MACHINE GUN, 7.62MM: M240B

1.0 SCOPE

1.1 Scope: The product requirements presented in this section establish the performance, design, development, firing, packaging and quality assurance requirements for the M240B, a 7.62 millimeter (mm) gas operated, air cooled, link belt fed, machine gun. Each M240B machine gun is to be furnished with one spare interchangeable barrel assembly, a sling to carry the weapon, and an operator's manual.

2.0 APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and Standards. The following specifications and standards form a part of this product requirement to the extent specified herein. Unless otherwise specified, the issue of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

MILITARY

DOD-D-1000	-	Drawings, Engineering and Associated Lists
MIL-I-8574	-	Inhibitor, Corrosion, Volatile, Utilization of
MIL-W-13855	-	Weapon, Small Arms and Aircraft Armament
		Subsystems, General Specification for
MIL-I-45403	-	Link, Cartridge, Metallic Belt, 7.62MM, M13
MIL-C-46477	-	Cartridge, 7.62MM, NATO, Test, High Pressure, M60
MIL-C-46931	-	Cartridge, 7.62MM, NATO, Ball, M80
MIL-T-47500	-	Technical Data Package, General Specification For
MIL-T-60530	-	Technical Data Package for AMC Materiel
MIL-D-60573	-	Dummy, Cartridge, 7.62MM, Inert Loaded, M172
MIL-W-63150	-	Weapons and Support Material Standard Quality
		Assurance Provisions For
MIL-L-63460	-	Cleaner, Lubricant and Preservative (CLP)

STANDARDS

MILITARY

MIL-STD-100E	-	Engineering Drawing Practices
MIL-STD-1916	-	DOD Preferred Method For Acceptance of Product
MIL-STD-1235	-	Single and Multi-level Continuous Sampling
		Procedures and Tables for Inspection By Attributes
MIL-STD-1913	-	Dimensioning of Accessory Mounting Rail for Small
		Arms Weapons
MS9266-24	-	Bolt, Machine Hexagon Head
MS16562-122	-	Pin, Spring Release
MS35671-23	-	Pin, Grooved, Headless
MS39086-406	-	Pin, Spring, Tubular
MS39086-146	-	Pin, Spring, Tubular
MS39086-522	-	Pin, Spring, Tubular

2.1.2 Other government documents, drawings and publications. The following other Government documents, drawings, and publications form a part of this product requirement to the extent specified herein.

PRODUCT REQUIREMENTS FOR MACHINE GUN, 7.62MM: M240B

DRAWINGS

US ARMY ARMAMENT RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER

12976814 - Machine Gun, 7.62 MM, M240B

INSPECTION EQUIPMENT DRAWINGS

11826302 - Gage, Headspace, Minimum
 11826303 - Gage, Headspace, Maximum
 11826304 - Gage, Flush Pin, Firing Pin Protrusion
 11826305 - Gage, Plug, Extractor Engagement
 11826306 - Gage, Plug, Extractor Clearance
 11826322 - Gage, Functional (Max. Breech Bolt)
 11826373 - Gage, Functional (Max. Operating Rod)

PACKAGING DATA SHEETS

SPI I2976814 - Packaging Data Sheet, Machine Gun, 7.62mm
 M240B

PUBLICATIONS

Technical Manual

TM-9-1005-313-23P - Technical Manual, Unit and Direct Support Maintenance Manual
 (including Depot Maintenance Repair Parts) for,
 Machine Gun, 7.62mm, M240 (1005-01-025-8095)
 Machine Gun, 7.62mm, M240B (1005-01-412-3129)
 Machine Gun, 7.62mm, M240C (1005-01-085-4758)
 Machine Gun, 7.62mm, M240E1 (1005-01-252-4288)
 Machine Gun, 7.62mm, M240G (1005-01-359-2714)

(Copies of specifications, standards, drawings, and publications, required by the contractor in connection with this procurement should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other Publications. The following documents form a part of this product requirement to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

American Society Of Mechanical Engineers

ANSI-Y-14.5 - Geometric Positioning and Tolerancing
 ANSI Y14.36 - Surface Texture Symbols
 ANSI/ASTM E380 - Standard for Metric Practice

(Applications for copies should be addressed to the American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, N.Y. 10017).

Department of Defense
 DOD-STD-1476 - International System of Units (SE), metric

3.0 REQUIREMENTS

3.1 First Article. Requirements for submission of the First Article (see 4.3) shall be as specified in the contract. Unless otherwise specified, the first article shall include the pilot pack (see 5.2).

3.2 Materials and construction. Machine guns and parts shall conform to the materials, dimensions, conditions and construction requirements specified herein and on drawing 12976814 and drawings applicable thereto and shall be in accordance with the applicable material and construction provisions of MIL-W-13855.

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3.2.1 Packaging. Packaging data sheet SPI 12976814 (see 5.1) dimensions are in the Inch-Pound unit system.

3.2.1.1 Drawings. Dimensions of drawings 12976814 and drawings applicable thereto are in the Metric Unit system except for thread callouts which are in the English unit system.

3.2.1.1.1 Surface Roughness. Surface roughness (ANSI Y14.36) is stated in Micro-Meters Units on drawings in accordance with ANSI/ASTM E380.

3.2.2 Manufacturing. Unless otherwise specified, manufacturing processes stated on drawings are for guidance only.

3.2.2.1 Heat treatment. Hardness shall be as specified on the drawing.

3.3 Design. All drawings are presented in third angle projection.

3.3.1 Barrel Assembly. The barrel assembly with gas regulator (and front sight assembly) shall be so manufactured that when the machine gun is completely assembled, the requirements for accuracy, dispersion and targeting shall be met (see para 3.4.3.2 and 3.4.3.3). The barrel assembly shall accept the front sight assembly which shall be horizontally adjustable by movement of the two opposing front sight adjusting screws which give perceptible clicks when adjusted. The front sight blade shall be capable of being rotated vertically, up or down, for elevation adjustments. Both the horizontal and vertical adjustments shall be capable of being made through their full range of travel without binding. The front sight retaining strap shall positively and securely retain the front sight blade. The flash suppressor shall be securely retained on the barrel assembly without any perceptible movement. The heat shield assembly shall be securely and firmly retained on the barrel assembly without looseness or rotation.

3.3.1.1 Condition. The barrel assembly shall be free of cracks and seams. The bore and chamber shall be free of pits. The chromium plating shall be free of nodules, flaking, stripping, anode burns and evidence of etched steel. Mechanical methods for removal of chromium plating in the barrel bore shall not be permitted. Burrs and sharp edges shall be removed from chamber edges prior to chrome plating. Scratches and marks occurring in a chamber which otherwise meets the surface texture requirements, shall be permitted providing those scratches and marks do not cause marks on the case of a high pressure test cartridge fired in the chamber (see 3.4.2). Each barrel assembly shall be marked in accordance with the drawing after proof firing and magnetic particle inspection.

3.3.1.1.1 Gas Regulator Plug and Gas Regulator Collar. The gas regulator plug and the gas regulator collar shall assemble to and disassemble from the barrel without the use of tools so that the gas regulator may be readily positioned at either gas port setting #1, #2, or #3. Gas position #1 and #3 shall produce rates of fire consistent with paragraph 3.4.3.

3.3.1.1.2 Machine Gun Barrel and Barrel Adapter. The carrying handle assembly, barrel bracket catch, and barrel spring catch shall be assembled to the barrel with free movement between all three parts which shall be held in place by the barrel adapter. The barrel adapter shall be tightened against the barrel and then loosened until the barrel bracket catch fits into its notch. The barrel adapter, barrel bracket catch, barrel spring catch, and carrying handle assembly shall be held in place by a straight pin. The front sight protector shall be pressed onto the barrel and pinned in place by the self-locking, front sight screw.

3.3.1.1.3 **Heat Shield.** The heat shield shall be securely retained on the barrel assembly once installed. The spring appendages of the heat shield shall retain their spring action under manual depression and not be deformed under normal installation onto the barrel assembly.

3.3.2 **Complete Receiver Assembly.** Each receiver assembly shall operate smoothly and shall function in accordance with the following:

a) Each receiver assembly shall be capable of accepting a maximum sized bolt and operating rod assembly following the firing of a Government standard 7.62mm M60 High Pressure Test cartridge and the application of a protective finish.

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b) The driving spring rod assembly shall fit into the bolt and operating rod assembly and shall be locked in place in the rear end of the receiver assembly.

c) The barrel bracket catch shall function without binding. The barrel is locked in position when the assembly of the carrying handle assembly, barrel, barrel spring catch, machine gun barrel adapter, and the straight pin are engaged with the barrel bracket catch with 2 to 5 clicks.

d) The buffer assembly shall be locked and unlocked without the use of tools.

e) The infantry trigger assembly shall be assembled to the rear part of the receiver assembly and locked in position with the spring pin, assembly and disassembly being accomplished without the use of tools.

f) The cover assembly with the feed tray shall be assembled and disassembled without the use of tools by manually placing and removing the spring pin.

g) The cocking assembly with spring pin and headed straight pin shall be assembled to the receiver assembly and shall function freely.

h) The rear sight assembly shall be assembled to the receiver assembly and maintain its raised or folded position under action of the rear sight plunger and helical compression spring. The rear sight slide assembly shall assemble to the rear sight leaf and shall be retained from removal by its leaf sight, socket head cap screw, and maintain its setting after both the rear sight catches are depressed and the slide assembly is adjusted to the desired range elevation (200 meters to 1800 meters in 100 meter increments).

i) The bipod assembly shall assemble to the front gas cylinder tube by inserting the bipod head over the two lugs and rotating a quarter turn. The bipod assembly shall be retained on the gas cylinder tube by driving the tubular, slotted spring pin back toward the muzzle from the rear side of the yoke of the gas cylinder capturing the bipod head.

j) The bipod latch shall manually depress and return within the guideways of the receiver when assembled with the bipod latch spring and the spring pin. As the bipod legs are brought together and folded to stow under the receiver, the bipod latch shall automatically engage with the bipod legs. See paragraph 3.3.8.

k) The right leg assembly and left leg assembly shall assemble to and be retained on the bipod head hinge body by inserting the bipod leg axis pin from the front or muzzle side and securing it with the axis pin washer, axis pin leg nut, and axis pin leg ring. When deployed, the right and left bipod legs shall remain fully extended under the action of the leg spring. The bipod head shall attach to and swivel in the bipod head hinge body using the actuating cylinder, bipod retaining plunger, helical compression spring, and the retaining head plunger bushing.

l) The hand guard shall be firmly attached to the gas cylinder tube of the receiver assembly without any

lateral, longitudinal or rotational movement. Stowage and retention of the bipod legs shall not be restricted by the handguard assembly.

m) The ejection port cover shall be firmly attached to the bottom plate of the receiver by the hinge pin. Once installed the ejection port cover must swing freely under action of helical torsion spring, and deploy by action of the piston rod assembly during hand charging, and actual cycling of the machine gun during operation. The hinge pin shall remain retained in the bosses of the bottom plate of the receiver.

3.3.2.1 Bolt and Operating Rod Assembly. The bolt and operating rod assembly shall be assembled manually to the rear end of the receiver assembly prior to the assembly of the buttstock and buffer assembly. The bolt and operating rod assembly must readily move forward and backward in the guides in the receiver assembly. The bolt assembly and operating rod assembly shall consist of the firing pin, bolt assembly, spring pin, operating rod assembly, and spring pin. The firing pin shall move freely when assembled to the operating rod assembly. All surfaces which contact guide ways to shoulders shall be polished in accordance with the applicable drawings.

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3.3.2.2 Cartridge Extractor. The cartridge extractor shall be assembled into the bolt breech body. The spring assembly and the exterior of the extractor plunger shall be lubricated with CLP (MIL-L-63460) prior to being assembled into the bolt breech body. The clearance (see drawing 11826057) between the cartridge case seat and the inner face of the cartridge extractor shall be verified after movement of the cartridge extractor has been verified. The cartridge extractor engagement (see drawing 11826057) shall also be verified.

3.3.2.3 Cartridge Ejector. The cartridge ejector and helical spring shall be greased with CLP (MIL-L-63460) and then assembled into the bolt breech body. The cartridge ejector shall be oriented and compressed using the ejector removing tool and shall be secured with a spring pin.

3.3.2.4 Operating Rod Assembly. The piston rod shall be assembled to the piston rod extension and secured with a straight headless pin, and permanently riveted together per drawing 12976867. The piston rod must follow the minimum radius circle prescribed by drawing 12976867.

3.3.2.5 Firing Pin. The firing pin when assembled into the bolt and operating rod assembly shall function freely in the bolt breech body assembly.

3.3.2.6 Driving Spring Rod Assembly. The driving spring rod assembly shall be assembled manually into the bolt and operating rod assembly in the receiver assembly and locked into position by inserting its lower pin into the key hole slot in the rear end of the bottom of the receiver assembly. The driving spring rod assembly shall be disassembled from the bolt and operating rod assembly by manually disengaging the pin of the driving spring rod assembly from the rear of the receiver assembly.

3.3.2.7 Hand Guard Assembly. The lower handguard heat shield shall fully engage the notches (four each side) and be securely retained once installed inside the lower handguard body so that the handguard assembly does not exhibit looseness. The spring appendages of the lower handguard heat shield shall retain their spring action under manual depression and not be deformed under normal installation onto the gas cylinder tube of the receiver assembly.

3.3.3 Cover Assembly. The cover assembly contains the mechanism to feed cartridges linked with M13 links through the firing cycle. All rollers, links, pawls and cams shall operate smoothly and freely. When in the operating position the cover assembly shall be latched securely to the receiver assembly to hold both the cover assembly and the left hand feed tray in the operating position. The cover assembly shall be assembled to the feed tray and the receiver assembly with tray and cover axis pin. The cover assembly accessory mounting rail shall be in accordance with MIL-STD-1913.

3.3.4 Feed Tray. The feed tray and the cover assembly together shall be assembled to the receiver assembly. The feed tray shall move easily both with and independently of the cover assembly.

3.3.5 Cocking Assembly. The cocking assembly when assembled to the receiver assembly shall operate

freely and allow the bolt and operating rod assembly to move forward and backward as required. The cocking assembly shall engage the detent surfaces of the receiver assembly and remain detented until manually charged. The cocking assembly shall engage the bolt and operating rod assembly via the headed straight pin. The headed straight pin shall be secured to the cocking assembly by the spring pin.

3.3.6 Infantry Trigger Assembly. The infantry trigger assembly shall be held in position by the spring pin. The infantry trigger assembly component parts shall include the trigger frame, small arms safety, sear, helical spring, trigger assembly, two straight pins, a separate straight pin, headed trigger guard pin, trigger guard, right stock assembly, left stock assembly, and two stock screws.

3.3.7 Buttstock and Buffer Assembly. The buttstock and buffer assembly shall be assembled and disassembled, without the use of tools, in the grooves at the rear of the receiver assembly. The buttstock and buffer assembly shall be secured in position by the buffer block catch at the bottom of the buffer assembly under action of the helical compression latch spring and buffer catch detent plunger. The buttstock assembly shall be firmly retained to the buffer assembly under action of the buttstock securing screw. The buttplate shall be attached securely to the buttstock assembly by the two butt plate screws.

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3.3.7.1 Buffer Assembly. The components of the buffer assembly shall include the buffer housing, hydraulic buffer, the buffer block catch, buffer catch detent plunger, helical compression latch spring, spring pin, and straight, headed pin.

3.3.7.2 Buttstock Assembly. The buttstock assembly shall accept the buttstock bushing and retaining ring for further assembly to the buffer assembly under action of the buttstock securing screw.

3.3.8 Bipod Assembly and Sling Ring.

3.3.8.1 Bipod Assembly. The left leg assembly and right leg assembly of the bipod assembly shall engage their respective notches in the bipod body hinge head under spring action of the leg spring. Unless each bipod leg assembly (left-hand and right hand) is depressed against the spring, the bipod legs must be unable to fold. Once the left and right leg assemblies are manually folded, the leg assemblies shall easily fold rearward into engagement with their respective notches on the receiver assembly complete (3.3.2). The left and right hand leg assemblies shall be retained in their stowed position under action of the bipod latch.

3.3.8.2 Sling Ring. The sling ring shall be firmly attached to the gas cylinder (front). The spring pin for the sling ring shall retain both the sling ring and the bipod assembly.

3.3.8.3 Complete Receiver Assembly. The bipod assembly and the sling ring shall be firmly restrained on the front end of the gas cylinder by the spring pin. The bipod assembly shall rotate within the stops afforded by the gas cylinder. The left and right bipod leg assemblies shall easily rotate together, independently and fold under hand spring action into engagement with the notches on the receiver assembly. The bipod latch shall securely retain the bipod legs in their respective recesses of the receiver. The bipod latch shall operate under spring action to release the bipod. Once the bipod assembly is released, the legs shall automatically spring free into a fully deployed position ready for weapon emplacement.

3.3.9 Headspace. The headspace shall be as specified on drawing 12976815.

3.3.10 Firing Pin Protrusion. The firing pin protrusion shall be as specified on drawing 12976815.

3.4 Performance Characteristics.

3.4.1 Trigger Pull. The trigger pull shall not be less than 4 kilograms (8.8 lbs) and not more than 8.5 kilograms (18.75 lbs) force.

3.4.2 High Pressure Resistance. Each machine gun barrel, bolt breech body assembly, and receiver body assembly supplied as a repair part, spare part, or as an end item component will be subjected to a high pressure resistance test as specified on their respective drawings. Each of these components shall be capable of withstanding the firing of one standard 7.62mm M60 High Pressure Test Cartridge (MIL-C-46477). The receiver assembly shall be tested in the "white" condition, i.e., prior to final protective finish. After firing, all components proof tested shall be free of cracks, seams, and defects other than material inclusions found in the side plates (Dwg 11826079). Testing shall be as specified in 4.4.3.4.

3.4.3 Functioning. The machine gun shall operate without malfunctions or unserviceable parts. The cyclic rate of fire shall be 550 to 650 rounds per minute with the gas regulator plug in the position #1. The rate of fire shall not be less than 625 rounds per minute with the gas regulator plug set at position #3. Testing shall be as specified in 4.4.3.5.

3.4.3.1 Belt Pull. The machine gun, under normal operating conditions, shall be capable of pulling a belt weighing 4.5 kilograms without malfunction. Testing shall be demonstrated in accordance with 4.5.5

3.4.3.2 Accuracy and Dispersion.

3.4.3.2.1 Accuracy. Accuracy shall be measured at a firing distance of 100 meters. Testing shall be in accordance with 4.4.3.6.

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3.4.3.2.2 Dispersion. The extreme spread of a ten-round burst fired from the machine gun at position #1 of the plug, gas regulator shall not exceed 30 centimeters. This is required for both the assigned and spare barrels as determined from targeting the machine gun. Testing shall be in accordance with 4.4.3.6.

3.4.3.3 Targeting. When the machine gun is zeroed with both the assigned and spare barrels, the point of aim and the mean points of impact of a ten-round continuous burst from both the assigned and spare barrels shall lie within a 1.0 mil circle, (i.e., 10 centimeter diameter at 100 meters) from the point of aim. Testing shall be in accordance with 4.4.3.6.

3.4.3.4 Endurance. The machine gun with assigned and spare barrel shall be capable of firing a 15,000 round endurance test without incurring more than two immediately clearable stoppages. No unserviceable parts, uncontrolled fire, or stoppages which require disassembly of the machine gun and/ or an excess of one minute to correct, are allowed. A stoppage is defined as any unplanned cessation in firing or the inability to commence firing. Testing shall be in accordance with 4.4.3.7.

3.4.3.5 Reliability. The machine gun shall demonstrate a Mean Round Between Stoppage (MRBS) of 7,500 rounds and a Mean Round Between Failure (MRBF) of 25,000 rounds over a minimum receiver service life of 50,000 rounds. Barrel life shall be 15,000 rounds minimum. Testing shall be in accordance with 4.4.3.9.

3.4.3.5.1 Mean Round Between Stoppage (MRBS). MRBS is determined by dividing the total number of rounds fired by the total number of stoppages. A stoppage is defined as any unplanned cessation in firing or the inability to commence or cease firing attributable to the gun. All incidents shall be recorded and any considered as not chargeable to the machine gun shall be substantiated by the contractor.

3.4.3.5.2 Mean Round Between Failure (MRBF). MRBF is determined by dividing the total number of rounds fired by the total number of failures. A failure is defined as any stoppage (as described above) which involves part replacement or requires in excess of one minute to correct; or involves any failed or damaged part detected during scheduled preventive maintenance, the replacement of which is not authorized at the crew or organizational level of maintenance as prescribed by Source Maintenance Recoverability Code and TM-9-1005-313-23P. (Note: MRBF is a subset of MRBS). Only parts determined unserviceable may be replaced. Simultaneous replacement of unserviceable parts is treated as one chargeable failure. Incidents attributed to personnel, test equipment, or parts found broken at the conclusion of testing are not chargeable; however, they shall be recorded.

3.4.3.5.3 Unserviceable Barrel. A barrel is considered unserviceable when: (a) 20 percent of any burst exhibits yaw of 15 degrees or more, or (b) the mean velocity of a burst drops 200 feet per second below the mean of the velocity initially recorded at the start of the test. Barrels failing to most the minimum life criteria shall be considered failures for the MRBS/ MRBF computations. Testing shall be performed concurrently with the reliability test in accordance with 4.5.9

3.4.3.6 Interchangeability. Unless otherwise specified on the drawings, all parts are interchangeable. Testing shall be as specified in 4.4.3.8.

3.4.4 Marking. Marking shall be in accordance with the applicable drawings and MIL-W-13855. The bar code label shall be firmly affixed to the weapon receiver, the bar coding shall be clearly defined and the number on the label shall agree with the serial number stamped on the receiver.

3.4.5 Workmanship. Workmanship shall be in accordance with the workmanship requirements of MIL-W-13855. In addition, the machine gun shall be free of dust, grease, rust, corrosion products, and other foreign matter. The cleaning method used shall not be injurious to any parts nor shall the parts be contaminated by the cleaning agent. All markings and stampings shall be neat and clearly defined.

4.0 QUALITY ASSURANCE PROVISIONS (QAP)

4.1 Responsibility For Inspection. The supplier is responsible for the performance of all inspection requirements as specified herein. The contractor may use his own or any facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government.

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In addition, the Government reserves the right to perform any of the inspections set forth in the product requirement where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements. References shall be made to MIL-STD-1916 to define terms used herein. The provisions of MIL-W-13855 shall apply.

4.1.1 Responsibility For Compliance. All items shall meet the requirements of the applicable drawings, Quality Assurance Provisions, and Special Packaging Instructions. The absence of any inspection requirements shall not relieve the contractor of the responsibility of ensuring that all products submitted to the government for acceptance comply with all the contract requirements.

4.1.2 Requirements For Reporting Failures. Failure to meet any product requirement through inspection, testing or assembly shall require the filing of a failure analysis and proposed corrective action. The failure analysis and proposed corrective action shall be in contractor format and shall be provided to the government QAR for review and approval.

4.2 Classification Of Inspections. The following types of inspection shall be conducted on the product:

- a. First Article Inspection (FA)
- b. Quality Conformance Inspection (QCI)

4.3 First Article Inspection. The contractor is responsible for performance of the FA inspection. The FA shall be subjected to the QCI specified herein and QAP and SPI and other inspections as necessary to determine compliance with contract requirements. The requirement to conduct a reliability test as part of first article will be specified in the contract. The first article shall be representative of the manufacturing methods and processes to be used for quantity production. The first article or articles shall be selected, as specified in the contract, from articles produced prior to the beginning of quantity production.

4.3.1 First Article Submission. The first article shall consist of the following items in sample quantities as indicated:

Part Description	Drawing	Quantity
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4.3.2 Rejection. If any assembly, component, or test specimen fails to comply with any of the applicable requirements, the First Article sample shall be rejected. The Government reserves the right to terminate its inspection upon any failure of an assembly, component, or test specimen in the sample to comply with any of the stated requirements.

4.4 Quality Conformance Inspection.

4.4.1 Inspection Lot.

4.4.1.1 Machine Guns. The number of machine guns in an inspection lot shall be one month's production. Adjustments to lot size (see 4.4.3.7 and 4.4.3.8.1) shall be made only on an individual basis.

4.4.1.2 Parts. The number of parts in an inspection lot shall be determined in accordance with MIL-STD-1916.

4.4.2 Examination. The examination listed in the product requirement and QAPs shall be performed on inspection lots as defined in 4.4.1 of this product requirement.

a. Sampling Plans. Sampling plans are incorporated in this product requirement either by reference to appropriate military standards or by stipulating other specific acceptance criteria. In cases where sampling is specified in accordance with MIL-STD-1916, the contractor may request permission from the procuring activity to use an equivalent continuous sampling plan from MIL-STD-1235.

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4.4.2.1 Component Parts And Concurrent Repair Parts. Examination of component parts and concurrent repair parts shall be performed in accordance with criteria specified in the contract. Machine guns and concurrent repair parts consisting of more than one part shall be assembled with accepted parts.

4.4.2.2 Machine Guns. Examination of each machine gun shall be performed after completion of all testing and immediately prior to preservation and packaging. A visual inspection in accordance with MIL-W-13855 shall be performed on the machine gun and on component parts at each examination step below for the following characteristics.

- a. Cleaning, improper
- b. Specified protective coating missing
- c. Evidence of poor general quality
- d. Manufacturing operations incomplete
- e. Assembly improper
- f. Evidence of poor workmanship
- g. Parts damaged
- h. Finish incorrect
- i. Marking incorrect or illegible

Machine guns and component parts failing to meet the requirements shall be rejected.

4.4.2.2.1 Assembly Characteristics. Each machine gun shall be examined as specified below by assembly/disassembly into the following majors groups and/or assemblies. Ensure that the operating group is not on sear and the bolt fully home.

a. Barrel Assembly.

1. Manually disassemble the barrel assembly from the receiver assembly. Manually assemble to and manually disassemble the spare barrel assembly from the receiver assembly. Determine compliance

with 3.3.1.1.2 by examining the operation of the barrel bracket catch.

2. Visually examine both barrel assemblies to determine compliance with 3.3.1.1.

3. Examination of the high pressure test cartridge case to determine whether or not specified scratches and marks occurring in the chamber are permitted, shall be performed immediately following the firing of the designated test cartridge. Visually examine every barrel assembly for proof and magnetic particle inspection.

4. Visually examine the barrel and the gas hole bushing for compliance with 3.3.1.1.1.

5. Visually and manually examine the assembly of the parts to determine compliance with 3.3.1.1.2. Manually examine the assembly for free movement between all parts.

6. Visually and manually examine the assembly of the parts to the barrel to determine that the front sight retaining strap located in the front sight protector positively and securely retains the front sight blade to determine compliance with 3.3.1.

(a.) Manually unlatch the front sight-retaining strap and visually and manually determine that the front sight blade can be rotated for vertical adjustment of elevation during zeroing without any perceptible binding.

(b.) Visually and manually determine that the laterally opposed front sight adjustment screws can laterally move yet retain the front sight protector securely to the front sight collar.

(c.) Verify that adjustment of the front sight adjusting screws gives perceptible evidence of individual clicks for proper windage adjustment of the machine gun during zeroing.

b. Receiver Assembly. Visually and manually examine the following characteristics to determine compliance with 3.3.2.

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1. The receiver assembly operates smoothly and accepts Functional Gage (maximum operating rod) 11826373 and Functional Gage (maximum breech bolt) 11826322 after firing a high pressure test cartridge and the application of a protective finish.

2. The driving spring rod assembly fits into the bolt and operating rod assembly and is locked in place in the rear end of the receiver assembly.

3. The barrel bracket catch functions without binding and locks the barrel in position.

4. The buffer assembly locks to and unlocks from the receiver assembly without the use of tools.

5. The infantry trigger assembly assembles to and disassembles from the rear part of the receiver assembly and locks in position with the spring pin without the use of tools.

6. The cover assembly with the feed tray assembles to and disassembles from the receiver assembly by placing and removing the tray and cover axis pin without the use of tools.

7. The cocking assembly assembles to the receiver assembly and functions freely. Visually and manually examine the cocking assembly to determine compliance with 3.3.5.

8. The rear sight assembly is securely assembled to the receiver assembly, functions and maintains location and orientation. The rear sight slide assembly shall move freely when both rear sight catches are depressed and shall retain its elevation setting.

9. Manually examine the bipod assembly for secure retention by the gas cylinder. Ensure that the bipod assembly is free to rotate side to side within the limits of the stops. Ensure that the bipod latch is

easily depressed against spring action for securing the bipod leg assemblies. The bipod latch should also be easily able to be unlatched for bipod removal purposes.

10. Manually examine for secure fastening of the sling ring. The padded sling assembly must attach easily to the sling ring.

11. Ejection Port Opening Cover. Visually and manually examine the ejection port opening cover for compliance with 3.3.2.

c. Firing Mechanism Group. Ensure that the operating mechanism is not charged. Remove the rear trigger spring pin and withdraw the firing mechanism for examination. Visually and manually examine the infantry trigger assembly for compliance with 3.3.6.

d. Buffer And Buttstock Assembly.

(a.) Manually examine for secure fastening of the buffer and buttstock assembly by the buffer block catch.

(b.) Disassemble and assemble, without the use of tools, the buffer and buttstock assembly from and to the grooves at the rear of the receiver assembly.

e. Bolt And Operating Rod Assembly Group. Visually and manually examine and measure the following characteristics to determine compliance with 3.3.2.1, 3.3.2.2, and 3.3.2.3.

1. The component parts of the assembly are the operating rod assembly, the firing pin, the bolt assembly, spring pin, and spring pin.

2. All surfaces contacting the guide ways or shoulders are polished to their required finish (see paragraph 3.3.2.1).

3. The assembly readily moves forward and backward in the guides of the receiver assembly.

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4. The assembly manually assembles to and disassembles from the rear end of the receiver assembly.

5. Cartridge Extractor.

(a.) Visually examine the spring assembly and the exterior of the extractor plunger for the presence of lubrication.

(b.) Using gage number 11826306 measure and record the clearance between the cartridge case seat and the inner face of the cartridge extractor to insure compliance with the drawing requirement (see 3.3.2.2).

(c.) Using gage number 11826305 measure and record the engagement of the cartridge extractor to insure compliance with the drawing requirement (see 3.3.2.2).

6. Cartridge Ejector.

(a.) Visually examine the cartridge ejector for the presence of lubrication (see 3.3.2.3).

(b.) Visually and manually examine the cartridge ejector for proper orientation and the correct fastening with the spring pin (see 3.3.2.3).

7. Operating Rod Assembly. Visually and manually examine the following characteristics to

determine compliance with 3.3.2.4.

(a.) The firing pin is fastened to the assembly with a spring pin and moves freely.

(b.) The piston rod and piston extension rod is permanently riveted together.

(c.) Measure and record the circle described by the axis of the piston rod for conformance to drawing requirement (see paragraph 3.3.2.4).

8. Firing Pin. Using gage number 11826304 measure and record the firing pin protrusion to insure compliance with the drawing requirement (see 3.3.10).

9. Driving Spring Rod Assembly. Manually disassemble and assemble the driving spring rod assembly into the bolt and operating rod assembly in the receiver assembly to determine compliance with 3.3.2.6. Unlock and lock the driving spring rod assembly from and into position by disengaging and engaging a pin out of and into the key hole slot in the rear end of the bottom of the receiver assembly.

f. Feed Mechanism Group.

1. Cover Assembly. Visually and manually examine the following characteristics to determine compliance with 3.3.3.

(a.) Rollers, links, pawls and cams operate smoothly and freely.

(b.) The cover assembly is latched securely to the receiver assembly and holds both the cover assembly and the feed tray in operating position.

(c) Insure that the accessory mounting rail on the feed cover complies with the requirements of MIL-STD-1913.

2. Feed Tray. Visually and manually examine the cover assembly and the feed tray for compliance with 3.3.4.

g. Bipod Assembly and Sling Ring.

1. Manually examine for secure retention of the bipod assembly and sling ring.

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2. Compress both the left and right leg assemblies against the bipod hinge spring and fold and latch both leg assemblies into their respective notches on the receiver assembly complete. Ensure both legs are securely retained once stowed. Ensure that once deployed each leg assembly fully engages in their respective hinge notch.

3. Visually and manually ensure that the bipod hinge is free to rotate freely on the gas cylinder housing.

4.4.3 Testing. The conformance tests listed in this specification shall be performed on inspection lots as defined in 4.4.1. The sampling plans shall conform to the provisions of 4.4.2.a.

4.4.3.1 Headspace Testing. Each machine gun shall be tested for minimum and maximum headspace using the method specified in 4.5.1. Machine guns which fail to meet the requirements (see 3.3.9) shall be rejected. A failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2).

4.4.3.2 Trigger Pull Testing. Each machine gun shall be tested for trigger pull using the Methods of Inspection specified in 4.5.2. Failure of any machine gun to meet requirements (see 3.4.1) shall cause rejection of the machine gun. A failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2).

4.4.3.3 Firing Pin Protrusion. Each machine gun shall be tested for firing pin protrusion using the test methods specified in 4.5.3. Failure of any machine gun to meet requirements (see 3.3.10) shall cause rejection of the machine gun. A failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2).

4.4.3.4 High Pressure Resistance. Each machine gun barrel, bolt breech body assembly, and receiver body assembly for end item application shall be tested for high pressure resistance using the method in 4.5.4. All repair or spare parts shall be similarly tested. Failure to meet the requirements (see 3.4.2) shall cause rejection of the part. A failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2).

4.4.3.5 Functioning. Each machine gun shall be tested for function firing using the test method specified in 4.5.5. The cyclic firing rate for two positions of the gas regulator plug setting shall be measured for both the assigned and spare barrel. A machine gun shall be rejected if it does not achieve the cyclic rate requirements (see 3.4.3) or has a malfunction. A failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2). The belt pull requirement shall be demonstrated concurrently with the function firing. The contractor shall test five machine guns from each inspection lot for the functioning test with the M4 Bandoleer, using the test method specified in 4.5.5.1.

4.4.3.5.1 Rejected Machine Guns. Machine guns rejected because of malfunction or failure to meet cyclic rate during the test shall be corrected by the contractor. A failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2). The machine guns shall be retested by repeating the firing procedures of paragraph 4.5.5. The machine guns shall operate without malfunction and shall meet the cyclic rate requirements.

4.4.3.6 Accuracy, Dispersion and Targeting. Each machine gun with its assigned and spare barrel shall be tested for the accuracy and dispersion requirements of paragraph 3.4.3.2 and the targeting requirements of 3.4.3.3 using the test method specified in 4.5.6. Failure to meet requirements (see 3.4.3.2 and 3.4.3.3) shall be cause to reject the machine gun. A failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2).

4.4.3.6.1 Rejected Machine Guns. Machine guns rejected because of failure to meet either the accuracy, dispersion or targeting requirements shall be corrected by the contractor. A failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2). Corrected machine guns shall be retested by repeating the accuracy, dispersion and targeting test twice. The accuracy, dispersion, and targeting requirements shall be met for both tests. Machine guns failing retest shall be rejected.

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4.4.3.7 Endurance. One machine gun randomly selected by the Government from each inspection lot shall be tested for endurance in accordance with test method in 4.5.7. The first five endurance test lots shall consist of one month's production. When five successive lots meet the endurance requirements, as prescribed in 3.4.3.4, the frequency of testing shall be decreased to every other month's production. Under the decreased testing frequency, when five tested lots have met the endurance requirements, the frequency of testing shall be further decreased to one lot tested of each three lots produced. If rejection of a lot occurs at any time, a failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2), and the frequency of testing shall increase to the previous level successfully completed.

4.4.3.8 Interchangeability Testing.

4.4.3.8.1 Machine Guns. Ten machine guns, selected at random by the Government from each inspection lot shall be tested for interchangeability (see 3.4.3.6) using the test method specified in 4.5.8. Machine guns taken for interchangeability testing shall have been found satisfactory in all other examinations and tests. The first five interchange test lots shall each consist of one month's production. When five successive lots meet the interchange requirements the frequency of testing shall be decreased to every

other month's production. Under the decreased testing frequency, when five tested lots have met the interchange requirements, the frequency of testing shall be further decreased to one lot tested of each three lots produced. If rejection of a lot occurs at any time, a failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2), and the frequency of testing shall increase to the previous level successfully completed. After interchange of parts, the 10 machine guns shall be tested for the following:

- a. Firing Pin Protrusion per paragraph 3.3.10, measured in accordance with 4.5.3.
- b. Headspace per paragraph 3.3.9, measured in accordance with 4.5.1.
- c. Trigger Pull per paragraph 3.4.1, tested in accordance with 4.5.2.
- d. Extractor clearance and engagement verified/ measured in accordance with 3.3.2.2.
- e. Functioning per paragraph 3.4.3, tested in accordance with 4.5.5.
- f. Rate of Fire Position #1 per paragraph 3.4.3, tested in accordance with 4.5.5.
- g. Rate of Fire Position #3 per paragraph 3.4.3, tested in accordance with 4.5.5.
- h. Accuracy and Dispersion per paragraph 3.4.3.2, tested in accordance with 4.5.6.1.
- i. Targeting per para 3.4.3.3, tested in accordance with 4.5.6.2.
- j. Belt Pull per Para 3.4.3.1, tested in accordance with 4.5.5.

No failure shall be allowed. Failure of the interchangeability test shall cause retest or rejection of the represented lot. If rejection of a lot occurs at any time, a failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2). At the discretion of the Government, an interchangeability retest may be allowed without reconditioning the lot of machine guns. Failure in the retest shall cause rejection of the represented lot subject to reconditioning and the further test as a reconditioned lot. A sample of 20 machine guns from each retest or reconditioned lot shall be tested using the same procedure described above.

4.4.3.8.2 Concurrent Repair Parts. At least two parts from each inspection lot of concurrent repair parts shall be subjected to the interchangeability test specified in 4.5.8. Failure of any part to meet the requirements shall be cause for rejection of the represented lot subject to reconditioning. If rejection of a lot occurs at any time, a failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2), and further testing shall be as a reconditioned lot. A sample of double the number of parts used in the original test shall be tested from each reconditioned lot using the test method specified in 4.5.8.

4.4.3.9 Reliability. As specified in the contract three machine guns randomly selected by the Government shall be each tested to 50,000 rounds using the test method specified in 4.5.9. Failure of the machine guns to meet, collectively, the MRBS and MRBF requirements shall be cause for deferment of acceptance of product, both finished items and items in process. In addition the contractor shall provide corrective action to any items already delivered deemed applicable by the government QAR. A failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2). The contractor shall furnish the following spare and repair parts to support this reliability test:

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<u>PART NOMENCLATURE</u>	<u>PART NUMBER</u>	<u>QUANTITY</u>	<u>UNIT OF ISSUE</u>
PIN, SPRING ASSEMBLY	11826277	3	EACH
ROD ASSEMBLY, DRIVE SPRING	11826024	4	EACH
PIN, SPRING ASSEMBLY	11826160	4	EACH
BARREL, GUN	12976818	1	EACH
SCREW, FRONT SIGHT	12597043	6	EACH
ADAPTER, BARREL	11826001	2	EACH
CARRYING HANDLE ASSEMBLY	12976819	2	EACH
SPRING, BARREL BRACKET	12976827	2	EACH
CATCH, BARREL BRACKET	12976828	2	EACH
PLUG, GAS REGULATOR	11826003	2	EACH
BLADE, FRONT SIGHT	12597040-2	6	EACH
PIN, SPRING (BARREL ADAPTER)	12976829	2	EACH

HANDLE ASSEMBLY, COCKING	12976835	3	EACH
PIN, SPRING (BIPOD LATCH)	12976850	2	EACH
PIN, STRAIGHT HEADED	11826137	5	EACH
PIN, SPRING	MS16562-106	5	EACH
WASHER, SPRING TENSION	11826221	4	EACH
PIN, SPRING LOADED	11826054	2	EACH
PIN, FIRING	11826065	3	EACH
PIN, SPRING	11826068-1	4	EACH
ROD, OPERATING	12976867	1	EACH
BOLT, BREECH BODY	11826040	1	EACH
EXTRACTOR, CARTRIDGE	11826060	1	EACH
PLUNGER, EXTRACTOR	11826061	3	EACH
SPRING, EXTRACTOR ASSEMBLY	11826062	3	EACH
SPRING, EJECTOR	11826069	4	EACH
PIN, SPRING	11826068-3	4	EACH
PIN, PAWL RETAINING	11826205	4	EACH
RING, RETAINING	11826200	5	EACH
PAWL, FEED ASSEMBLY	11826177	1	EACH
SPRING, HELICAL	11826201	4	EACH
SPRING, HELICAL	11826189	4	EACH
SPRING, HELICAL	11826182	4	EACH
PIN, LOCK	11826202	4	EACH
CLIP, RETAINING	11826204	2	EACH
GUIDE, CARTRIDGE FRONT	11826207	2	EACH
GUIDE, CARTRIDGE REAR	11826208	1	EACH
SPRING, TORSION SEAR	11826254	3	EACH
SPRING, HELICAL	11826131	1	EACH
LATCH, BARREL LOCKING	11826124	1	EACH
PIN, GROOVED HEAD	11826130	1	EACH
PIN, SPRING	11826277	1	EACH

4.4.4 Inspection Equipment. The inspection equipment required to perform the examinations and tests prescribed herein is described in the applicable paragraphs. The contractor shall submit for approval inspection equipment designs in accordance with the terms of the contract.

4.5 Methods Of Inspection.

4.5.1 Headspace Test. Each machine gun with both its component barrel assembly and spare barrel assembly shall be gaged for minimum headspace and maximum headspace requirements (see 3.3.9) after proof firing, prior to acceptance, using gage number 11826302 for minimum and gage number 11826303 for maximum measurements.

4.5.2 Trigger Pull Test. Place the machine gun in an unloaded firing mode. Apply masses gradually to the center of the trigger bow in a rearward direction parallel to the barrel. For acceptance, applying the minimum mass will not fire the machine gun and applying the maximum mass will fire the machine gun.

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4.5.3 Firing Pin Protrusion Test. The firing pin protrusion shall be gaged for compliance using gage number 11826304.

4.5.4 High Pressure Resistance Test. Fire one M60 High Pressure Test Cartridge in each gun barrel, bolt assembly, and receiver assembly. After firing, apply magnetic particle inspection to these parts and examine these components for cracks, deformations and other evidence of damage. After firing, also examine cartridge cases from barrel assemblies for bulges, splits, rings, and other indications of defective barrels. Determine that specific scratches and marks, if present in the chamber which meets surface texture requirements, have not caused marks on the cartridge case.

4.5.5 Functioning Test. Testing for functioning and belt pull requirements of 3.4.3 and 3.4.3.1 shall be

accomplished on a government approved firing fixture. Each weapon shall be sequentially tested for rate of fire first, then accuracy, dispersion and targeting (para 4.5.6) and finally belt pull (4.5.5).

a) Firing for cyclic rate measurement shall be accomplished sequentially at gas regulator plug positions #3 and #1 for the assigned and spare barrel. Twenty round link belts are used to obtain cyclic rates. With the assigned barrel, fire a 20 round continuous burst at gas position #3 and determine the cyclic rate over the 20 rounds. Change from the assigned barrel to the spare barrel and repeat firing the machine gun at gas position #3 for cyclic rate. Set the gas regulator plug at position #1. Fire 20 rounds in one continuous burst and measure the cyclic rate. Repeat the cyclic rate firings with the assigned and spare barrel at gas position #1.

b) The weapon will then be tested for the accuracy and dispersion requirements of paragraph 3.4.3.2, and the targeting requirements of paragraph 3.4.3.3 using the method specified in paragraph 4.5.6.

c) The weapon will then be tested for belt pull. Five linked dummy rounds are attached to the end of one 20 round belt forming a 25 round belt. Mounted in a government approved firing fixture similar to that shown in FIGURE 1, the weapon is loaded with the 25 round belt. A 4.5 kg weight shall be attached to the end of the belt and be allowed to hang unsupported vertically. The gas regulator plug is set at position #1 and the 20 rounds (with 5 dummy rounds and weight attached) are fired in interrupted bursts with at least three interruptions. Visually examine the firing operation to determine that the weapon is controlled by the trigger and that every spent cartridge is properly ejected. Refire the cyclic rate of fire test at gas position #1 or #3 if the cyclic rate of fire requirement was not met. Refire the belt pull test if requirement was not met. Only one refire per requirement is allowed.

d) Failure to meet the cyclic rate requirements at gas position #1 or #3 or the occurrence of any malfunction during cyclic rate testing or at gas position #1 for belt pull shall be cause to reject the machine gun. Subsequent retests will then be performed in accordance with the procedure outlined. During retests, the accuracy test will not be repeated if the accuracy requirement was met by prior function firing.

4.5.5.1 M4 Bandoleer Firing. The function testing from paragraph 4.5.5 shall be accomplished with the M4 Bandoleer and ammunition adapter assembly attached, except for the belt pull testing. Belt pull testing may be accomplished without the bandoleer attached if it conflicts with the approved firing fixture.

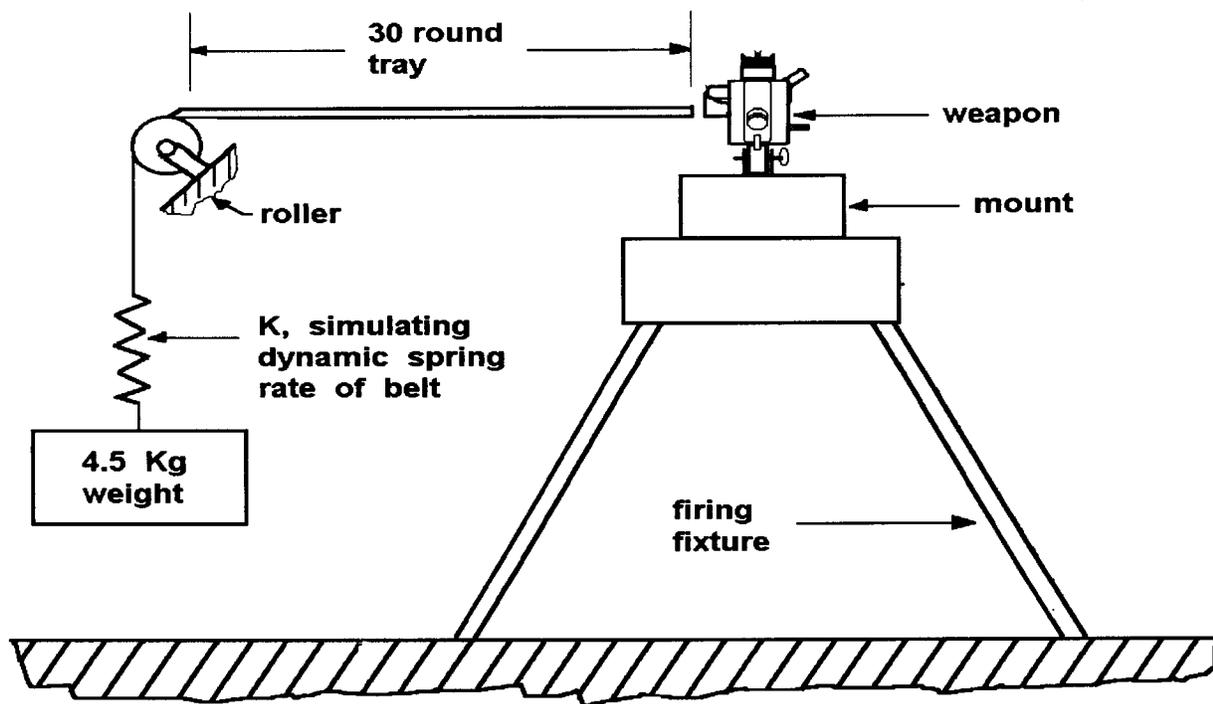


FIGURE 1. Firing Fixture For Testing

4.5.6 Accuracy, Dispersion and Targeting Test.

4.5.6.1 Accuracy and Dispersion Test. From a Government approved firing fixture (FIGURE 1), the machine gun, loaded with its assigned barrel with a 10 round link belt, is fired in one continuous burst at a fixed target 100 meters away. The target shall be checked to assure that the extreme spread of the 10 shot group does not exceed the requirement in paragraph 3.4.3.2. Location of the shot hole shall be determined by its center. Without adjustment to the weapon or fixture, the assigned barrel is replaced by the spare barrel and a second 10 round continuous burst is fired at a target at 100 meters. The extreme spread of the second 10 shot group shall not exceed the requirement. In addition the mean points of impact of both barrels shall be within requirement. A maximum of three warming shots are allowed per barrel prior to firing for record. All firing shall be performed with the gas regulator plug set at the #1 position. Prior to firing, the weapon with assigned barrel shall be aligned with the 100 meter point of aim by visually bore sighting the machine gun or use of a bore-sighting device.

4.5.6.2 Targeting Test. Targeting of this machine gun shall be done in conjunction with the 100 meter precision test. With the rear sight of the machine gun set at minimum elevation (200 meters), the front sight blade set at the low point of elevation and midpoint of windage, and the sights aligned at 6 o'clock on the sighting image (33 centimeter bull) (see FIGURE 2), three (3) sighting shots shall be fired and the front sight adjusted to bring the mean point of impact of a ten (10) round burst from the assigned barrel to approximately the theoretical point of impact 10 centimeters above the actual point of aim. The assigned barrel assembly will then be replaced by the spare barrel assembly and with a 6 o'clock hold on the sighting image, the three (3) sighting shots shall be fired and the front sight adjusted to bring the two barrels within the targeting requirements with the same rear sight setting. The ten round continuous burst shall be fired and extreme spread and mean point of impact determined for comparison to the requirements for both barrels. Starting with a No. 1 blade, adjustment of the front sight blade and protector may be made using the front sight combination tool to meet the targeting requirement (3.4.3.3). If the required elevation correction can not be obtained with the No. 1 blade screwed to the maximum elevation, it must be replaced with the blade marked No. 2 (see TABLE I). The No. 2 blade must be screwed fully home, then raised by two complete turns to reach approximately the same mean point of impact as the No. 1 blade. If either blade is at its maximum, the base of the blade is flush with the flat part of the front sight protector. Adjustment of the front sight shall not cause overhang of the front sight protector over the front sight collar beyond 1.5 mm (See TABLE II).

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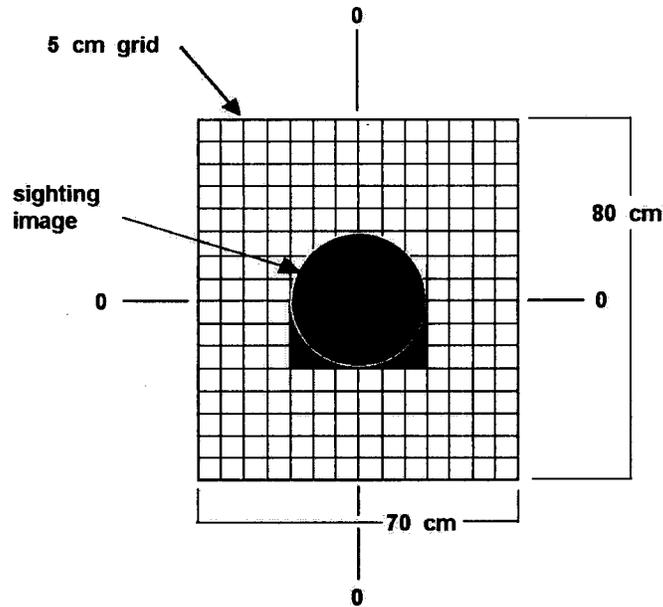


FIGURE 2. Targeting Diagram

TABLE I - Elevation adjustment of front sight blade (No. 1 or 2), in centimeters (cm)

Turns	50 meters	100 meters	200 meters
1/2 turn	2.7 cm	5.4 cm	10.8 cm
1 turn	5.4 cm	10.8 cm	21.6 cm

TABLE II - Windage Adjustment Of Front Sight In Centimeters (cm)

Number Of Clicks	50 Meters	100 Meters	200 Meters
1	0.5 cm	1.0 cm	2.0 cm
2	1.0 cm	2.0 cm	4.0 cm
4 or 1/2 turn	2.0 cm	4.0 cm	8.0 cm
8 or 1 turn	4.0 cm	8.0 cm	16.0 cm

4.5.7 Endurance Test. The machine gun shall be fired 15,000 rounds in 200 round complements, alternating between assigned and spare barrel. Barrels may be compressed air cooled to ambient temperature after each complement. Each complement should be fired in short bursts (10-12) at a rate of one burst every 6-8 seconds. The gas regulator plug shall be set at position #1. The machine guns are lubricated every 2,000 rounds and completely cleaned, inspected, and lubricated after every 4,000 rounds. Firing is from a Government approved firing fixture. If the endurance requirements are not met, the represented lot shall be rejected subject to retest or reconditioning and further test as a reconditioned lot. An endurance retest of two other machine guns from the same lot shall be made without reconditioning the represented lot, unless in the opinion of the Government representative the failure indicates serious defects in the item, in which case retest shall be made only when authorized by the procuring agency. Failure of either machine gun in the retest to meet the requirements shall cause rejection of the represented lot subject to reconditioning and further testing as a reconditioned lot. Prior to submission of a lot of machine guns as a reconditioned lot, a failure analysis shall be performed and the proposed corrective action shall be submitted to the government QAR for review and approval (See 4.1.2). Sample size and test methods for reconditioned lots shall be the same as for retest.

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4.5.8 Interchange Of Parts.

4.5.8.1 Machine Guns. Machine guns shall be tested by disassembling and then reassembling parts using the parts and prearranged system prescribed below in TABLE III. Interchange of parts shall be accomplished by dividing the parts of each machine gun into 10 groups of nonmating parts as shown below and distributing the groups into 10 different trays until each tray contains a complete machine gun. Groups of nonmating parts from machine gun number 1 shall be taken in order and placed in trays 1 through 10; groups of parts from machine gun number 2 shall be taken in order and placed in trays 2 through 10 to 1; groups of parts from machine gun number 3 shall be taken in order in and placed in trays 3 through 10 to 2; etc. Commercial parts such as screws, nuts, washers, and pins shall be placed in the same tray as their mating or associated part. Any commercial part rendered unserviceable by disassembly shall be replaced without penalty to the interchangeability test. The machine gun shall be reassembled using only those parts which are in the same tray.

4.5.8.2 Concurrent repair parts. Concurrent repair parts shall be tested by disassembling two machine guns, previously tested in 4.4.3.8, as necessary and then reassembling them using concurrent repair parts. The machine guns shall operate and function properly. This test may be performed independently of the machine gun interchangeability test specified in 4.4.3.8, and at more frequent intervals using accepted machine guns taken from production.

4.5.9 Reliability test.

4.5.9.1 Sample. A sample of five weapons shall be test fired for a total of 7500 rounds each. At that point, the reliability will be calculated (point estimate of MRBS) for each weapon. The samples with the lowest and highest MRBS for each type will be set aside and testing will continue with the three remaining samples. The remaining sample of three will be fired for a total of 50,000 rounds each.

4.5.9.2 Firing schedules. Unless otherwise specified, the firing will be conducted in 200 round complements, alternating between firing schedules No.1 and 2 each for a complete complement of 200 rounds. With the weapon mounted on the tripod, the belts will feed from an ammunition can positioned below the weapon. For bipod use, the ammunition will feed from the ammunition adaptor assembly secured to the weapon.

4.5.9.2.1 Schedule No.1. 10 round burst at a rate of one burst every 6 seconds for 200 rounds.

4.5.9.2.2 Schedule No.2. 25 round burst at a rate of one burst every 15 seconds for 200 rounds.

4.5.9.3 Maintenance. The weapons will be cleaned, inspected and lubricated at 4000 round intervals and relubricated at 2000 round intervals. Two barrel assemblies will be used, alternately, in 200 round cycles. The barrels will be forced-air cooled after each 200 rounds and the receiver will be forced-air cooled after each 400 rounds.

4.5.9.4 Mounts. Throughout the test, a variety of mounts or firing positions will be utilized. Unless otherwise noted, the first 20,000 rounds will be fired from the M122A1 Tripod followed by 10,000 rounds on the integral weapon bipod, and then followed by a repeat of the same sequence. The tripod will be the standard M122A1 Tripod. The tripod will be seated in a sandbox and secured with sandbags. The bipod will be the integral bipod assembled to the weapon. The bipod legs will be seated in a sandbox, unsecured. The sandbox will contain a sand/dirt mixture compacted to 150 + 50 psi, as measured with a cone penetrometer.

4.5.9.5 Barrel life. Each barrel shall be fired for a total of 15,000 rounds (see requirements of 3.4.3.5) and then replaced. If the barrel is still serviceable at 15,000 rounds, firing may continue at a later date, with serviceability checks at 2,000 round intervals, until failure. At the start of the test and during the last 50 rounds of each of the final 200 round complements for each barrel, cyclic rate (gas port setting # 1 & # 3), dispersion, and projectile velocity will be measured and evidence of yaw or keyholing determined. The cyclic rate-of-fire will be recorded over a 20 round burst. The dispersion, projectile velocity and yaw will be

measured from the firing of a 10 round burst. The dispersion target will be placed 100 meters from the muzzle. Projectile velocities will be measured at a point 5 meters forward of the muzzle. The yaw or keyholing will be recorded on a target 25 meters from the muzzle. Firing will be from a test stand adapted for the weapon.

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PRODUCT REQUIREMENTS FOR MACHINE GUN, 7.62MM: M240B

P/N 12976815, 7.62MM M240B MACHINE GUN
Table III – PARTS INTERCHANGE TABLE

GROUP I

1.	BARREL GUN, W/FLASH HIDER MOUNTED	12597036 12976830 (MOUNTED)
2.	PIN, SPRING, TUBULAR, SLOTTED	12976829
3.	COVER, FRAME WITH ROLLERS	12977102
4.	PIN, SPRING	MS16562-105
5.	PIN, STRAIGHT, HEADLESS	11826250
6.	ROD ASSEMBLY, DRIVING SPRING	11826024
7.	PIN, STRAIGHT, HEADLESS	12597052
8.	RING, SLING, WITH PIN SPRING	12976847
9.	PIN SPRING	MS39036-205(REPLACE)
10.	COVER, EJECTION PORT, ASSEMBLY	12976843
11.	CATCH, RETAINING BIPOD	12976848
12.	WASHER, PIN, AXIS LEGS	12976908
13.	PIN SPRING	12976904

GROUP II

1.	LATCH, BARREL	12976828
2.	PIN, STRAIGHT, HEADED	11826216
3.	PIN, STRAIGHT CATCH STOP	MS171475
4.	PLUNGER, DETENT BUFFER CATCH	11826215
5.	TRAY, FEED	11826006
6.	PIN, STRAIGHT HEADED	11826137
7.	PROTECTOR, FRONT SIGHT	12597039
8.	BUTTSTOCK ASSEMBLY	12976852

9.	LEG, RIGHT, COMPLETE	12976884
10.	NUT, PIN AXIS, LEGS, BIPOD	12976907

PRODUCT REQUIREMENTS FOR MACHINE GUN, 7.62MM: M240B

**P/N 12976815, 7.62MM M240B MACHINE GUN
Table III – PARTS INTERCHANGE TABLE**

GROUP III

1.	BRACKET CARRYING HANDLE	12976823
2.	BUFFER ASSEMBLY	12988984
3.	PIN, AXIS, TRAY AND COVER	11826277
4.	PIN, SPRING, TRIGGER	11826160
5.	ROD ASSEMBLY, OPERATING	12976867
6.	GUIDE, CARTRIDGE, REAR	11826207
7.	PLUNGER, DETENT	11826156
8.	BLADE, FRONT SIGHT	12597040
9.	PLUNGER, REAR SIGHT	12597055
10.	HEAD, BIPOD	12976900
11.	LEG, LEFT, COMPLETE	12976894
12.	SPRING, PLUNGER, BIPOD	12976899

GROUP IV

1.	SPRING, HELICAL COMPRESSION	11826214
2.	GRIP, MACHINE GUN, LEFT	12976881
3.	SEAR	12976882
4.	SLIDE, CHARGER	12976835
5.	ADAPTER, BARREL	11826001
6.	STRAP, RETAINING, FRONT SIGHT	12597041
7.	SPRING, HINGE PIN, EJECTION PORT	12976844
8.	HEAD, HINGE BODY, BIPOD	12976902
9.	SPRING, LEGS, BIPOD	12976805

PRODUCT REQUIREMENTS FOR MACHINE GUN, 7.62MM: M240B**P/N 12976815, 7.62MM M240B MACHINE GUN
Table III – PARTS INTERCHANGE TABLE****GROUP V**

1.	PIN, SPRING LOADED	11826054
2.	PIN, FIRING	11826065
3.	PIN, PAWL RETAINING	11826205
4.	GUIDE, CARTRIDGE FRONT	11826208
5.	CLIP, RETAINING	11826204
6.	GRIP, MACHINE GUN RIGHT	12976879
7.	SPRING, HELICAL, TORSION, SEAR	11826254
8.	LATCH, BARREL LOCKING	11826124
9.	SPRING, ADJUSTING, FRONT SIGHT	12597042
10.	LEAF, REAR SIGHT	12597047
11.	PIN, NUT RETAINING, HANDLE	MS 9226-04
12.	PIN, AXIS, LEGS, BIPOD	12976897

GROUP VI

1.	PIN, SPRING	11826068-1
2.	BOLT, BREECH BODY	11826040
3.	TRIGGER ASSEMBLY	12976870
4.	PAWL, FEED ASSEMBLY	11826177
5.	CLIP, SPRING TENSION, FEED LEVER	11826202
6.	CLIP, RETAINING CATCH	11826203
7.	LATCH, BACK PLATE	12976861

8.	SCREW, ADJUSTING, FRONT SIGHT	12597043
9.	SCREW, STOP, REAR SIGHT LEAF	12597053
10.	PIN, HINGE, EJECTION PORT	12976843
11.	HANDLE, CARRYING	12976820
12.	CYLINDER, ACTUATING, BIPOD	12976903

PRODUCT REQUIREMENTS FOR MACHINE GUN, 7.62MM: M240B

P/N 12976815, 7.62MM M240B MACHINE GUN
Table III – PARTS INTERCHANGE TABLE

GROUP VII

1.	HOUSING, TRIGGER	12976876
2.	RING, RETAINING	11826200
3.	LATCH, COVER	11826206
4.	LEVER, FEED (L.H. OR R.H.)	11826209
5.	BOLT, MACHINE, HEX HD, SCR STOCK	12976880
6.	SPRING, HELICAL, COMPRESSION DETENT PLUNGER	11826158
7.	EJECTOR, CARTRIDGE	11826067
8.	SPRING, HELICAL, COMPRESSION	11826201
9.	SPRING HELICAL, COMPRESSION	12597054
10.	SPRING, BIPOD, RETAINER, CATCH	12976849
11.	PLUNGER, RETAINING, BIPOD	12976901
12.	SCREW, SECURING BUTTSTOCK	12988985

GROUP VIII

1.	COVER, ACCESS FRONT	11826122
2.	PIN, GROOVED HEAD	11826130
3.	PIN, SPRING PLUNGER	11826068-2
4.	PLUNGER, EXTRACTOR	11826061
5.	EXTRACTOR, CARTRIDGE	11826060

6.	PLUG, GAS REGULATOR	11826003
7.	CATCH, REAR SIGHT	12597050
8.	GUARD, TRIGGER	12976875
9.	PIN, SPRING, BIPOD RETAINER	12976850
10.	PLUNGER, CATCH, EJECTION PORT	12976845

PRODUCT REQUIREMENTS FOR MACHINE GUN, 7.62MM: M240B

P/N 12976815, 7.62MM M240B MACHINE GUN

Table III – PARTS INTERCHANGE TABLE

GROUP IX

1.	SPRING, HELICAL COMP, BARREL LATCH	11826131
2.	SPRING, EXTRACTOR ASSEMBLY	11826062
3.	SPRING, HELICAL, COMP, EJECTOR	11826069
4.	SPRING, CATCH, REAR SIGHT	12597051
5.	PIN, STRAIGHT, HEADLESS	12597056
6.	PIN, HEADED, TRIGGER GUARD	12976874
7.	BUSHING, RETAINING HEAD, PLUNGER	12976898
8.	ADAPTER ASSEMBLY, AMMUNITION	12976909
9.	HANDGUARD ASSEMBLY	12976840

GROUP X

1.	RECEIVER ASSEMBLY	11826080
2.	SAFETY, SMALL ARMS	11826258
3.	COLLAR, GAS REGULATOR	11825992
4.	PIN, SPRING, STEEL, PHOSPHATE FINISH	11826068-3
5.	PIN, STRAIGHT, HEADLESS	11826255
6.	SLIDE, REAR SIGHT	12597049
7.	NUT, RETAINING HANDLE	12976821

8.	PLATE, BUTTSTOCK W/SCREWS	12976863
9.	HEATSHIELD ASSEMBLY	12976831
10.	RING, AXIS PIN LEG	12976906

PRODUCT REQUIREMENTS FOR MACHINE GUN, 7.62MM: M240B

4.5.9.6 Serviceability. A barrel is considered unserviceable when: (1) 20 percent of any burst exhibits yaw of 15 degrees or more, or (2) the mean projectile velocity of a burst drops 200 feet per second (ft/s) below the mean of the velocity initially recorded at the start of the test. Barrels failing to meet the minimum life criteria will be considered failures for the reliability computations.

4.5.9.7 Nondestructive Testing. The nondestructive testing (NDT) inspections for discontinuities indicative of cracks or other defects will be repeated on the key components, at intervals of 28,000 and 50,000 rounds on the weapons. Key components will include, but will not be limited to, the receiver, barrels, bolt, and operating rod.

4.5.9.8 Test Data.

4.5.9.8.1 The following test data are required:

- a. Weapon type and ammunition lot number.
- b. All test incidents, categorized by class.
- c. Velocity and dispersion data for each 10,000 round gun cycle.
- d. Part life by round count, weapon number, weapon life, and part succession.
- e. NDT results.
- f. Cyclic rate of fire (gas ports # 1 & # 3), headspace, trigger pull, and firing pin indent measurements for each 10,000 round gun cycle.

4.5.9.8.2 Data Analysis/ Procedure. Using standard statistical procedures, the point estimate and lower 80 and 90 percent confidence level of MRBS and MRBF will be defined for each incident class and the total incident count.

4.6 Testing Stipulations.

4.6.1 Mounts. All firing tests shall be accomplished with the machine guns affixed to a Government approved mount, or with the integral bipod, or using the M122A1 Tripod mount depending on the testing conducted.

4.6.2 Ammunition. All firing tests shall use cartridge, 7.62mm Ball: M80, per MIL-C-46931 except the high pressure test which shall use cartridge, 7.62mm, Test, High Pressure: M60, per MIL-C-46477. Dummy Cartridge, 7.62mm, Inert Loaded: M172 shall be used in the belt pull testing and any other test requiring separation of live ammunition from the machine gun. All firing tests requiring linked ammunition shall be linked with Link, Cartridge, Metallic Belt, 7.62mm: M13 per MIL-L-45403.

5.0 PACKAGING

5.1 Preservation. Preservation, packaging, packing and marking shall be in accordance with Special Packaging Instruction SPI 12976814.

5.1.1 Volatile Corrosion Inhibitors. Volatile corrosion inhibitors shall be in accordance with MIL-I-8574.

5.2 Pilot pack. Pilot pack is required for production quantities.

DOCUMENT SUMMARY LIST

Item: M240B MACHINE GUN
 NSN: 1005-01-412-3129
 Control Number/PRON: M109701A

Identifies all first tier documents (cited in SOW) (applicable DIDs). Also included are all referenced documents (2nd, (includes DID block 10 references), 3rd and lower tier) which have been tailored.

DOCUMENT CATEGORY:

CATEGORY 0 - Unless otherwise specified in the solicitation, contract, or contract modifications, all documents are for guidance and information only.

CATEGORY 1 - The requirements contained in the directly cited document are contractually applicable to the extent specified. All referenced documents are for guidance and information only.

CATEGORY 2 - The requirements contained in the directly cited document and the reference documents identified in the directly cited document are contractually applicable to the extent specified. All subsequently referenced documents are for guidance and information only.

CATEGORY 3 - Unless otherwise specified in the solicitation, contract or contract modification, all requirements contained in the directly cited document and all reference and subsequently referenced documents are contractually applicable to the extent specified.

Document Number (Contract Reference) Applicable Tailoring	Document Title	Document Date/ Document Category
1a. MIL-STD-2549 Table DIP 4-1	Configuration Management Data Interface	30 Jun 97 Cat 2
1b. DI-CMAN-81554 (seq A001)	Configuration Change Control Data Information Packet	30 Jun 97 Cat 2
2. ANSI/ISO/ASQC Q9002 or equivalent	Model for Quality Assurance in Production, Installation & Servicing	18 Jul 94
3a. NCSL Z540-1 (ES7010)	General Requirements for Calibration Laboratories and Measuring and Test Equipment OR	30 Aug 94
ISO 10012-1 (ES7010)	Quality Assurance Requirements for Measuring Equipment, Part 1: Metrological Confirmation System	1992
3b. DI-QCIC-81006 (DD Form 1423)	Special Inspection Equipment Descriptive Documentation	11 Sep 89 Cat 1
4a. DOD-P-16232F INT Amd 1 (TDPL) MIL-DTL-16232G	Phosphate Coating Heavy Manganese or Zinc Base	09 Sep 92 Cat 2

(for Ferrous Metal)

4b. DI-NDTI-80603 (DD Form 1423)	Test Procedure	01 Jun 88 Cat 1
5. FAR PART 45 ACTBY INST, para 1,9	Federal Acquisition Regulation	1 Apr 1984 Cat 2
6a. N/A ACTBY INST, para 4a(1)	Statement of Work	N/A Cat 2
6b. DI-MGMT-80544A (DD Form 1423)	Transportation Discrepancy Report	08 Nov 1990 Cat 1
7a. N/A ACTBY INST, para 4a(2)	Statement of Work	N/A Cat 2
7b. DI-MGMT-80503 (DD Form 1423)	Report of Shipping (Item) and Packaging Discrepancy	30 Dec 1987 Cat 1
8a. N/A ACTBY INST, para 5	Statement of Work	N/A Cat 2
8b. DI-MGMT-80408B (DD Form 1423)	Request for Government Furnished Materiel	15 May 1998 Cat 1
9a. N/A ACTBY INST, para 6	Statement of Work	N/A Cat 2
9b. DI-MGMT-80438B (DD Form 1423)	Government Furnished Materiel (GFM) Consumption Report	15 May 1998 Cat 1

LIST OF ADDRESSES

Commander
U.S. Army Industrial Operations Command
ATTN: AMSIO-_____ (see block 14 of DD Form 1423 for symbols that apply)
Rock Island, IL 61299-6000

Commander
U.S. Army Tank-automotive and Armament Command
ATTN: AMSTA-_____ (see block 14 of DD Form 1423 for symbols that apply)
Rock Island, IL 61299-8630

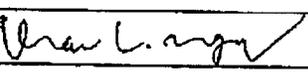
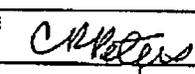
Director
U.S. Army, Armament, Research, Development & Engineering Center
ATTN: AMSTA-AR-_____*(R) (see block 14 of DD Form 1423 for symbols that apply)
Rock Island, IL 61299-7300

Commander
U.S. Army, Armament, Research, Development & Engineering Center
ATTN: AMSTA-AR-_____*(D) (see block 14 of DD Form 1423 for symbols that apply)
Picatinny Arsenal, NJ 07806-5000

*When letter in parentheses at end of office symbol is a (R), use Rock Island address;
when it is a (D), use Picatinny Arsenal address.

EMAIL addresses:

AMSTA-AR-QAA(D)	aie-qaa@pica.army.mil
AMSTA-AR-QAC(D)	aie-qac@pica.army.mil
AMSTA-AR-QAT(D)	aie-qat@pica.army.mil
AMSTA-AR-QA__(R)	amsta-ar-qa-cdrl@ria.army.mil

HAZARDOUS COMPONENT SAFETY DATA STATEMENT (HCSDS)		1. DATE PREPARED	REPORT CONTROL SYMBOL
2. MATERIAL / COMPONENT / ASSEMBLY Cartridge, 7.62mm, NATO, Ball, M80		98 Nov 04	MIL (AR) 1687
5. APPLICABLE FEDERAL ACQUISITION/REGULATION (FAR) SAFETY CLAUSE 28.7102		3. NUMBER 10132	4. REVISION E
PART I - SENSITIVITY (Apparatus and Comparison Values)			
6. FRICTION TEST NA	7. IMPACT TEST NA	8. ELECTROSTATIC DISCHARGE TEST NA	
PART II - HAZARDS			
9. FIRE Low	10. AUTO IGNITION TEMP NA	11. FLASH POINT NA	12. DECOMPOSITION PRODUCTS Toxic, Avoid Inhalation and Ingestion
13. FLAMMABLE AND/OR EXPLOSIVE LIMITS		14. EXPLOSION	15. EXPLOSIVE TEMP. (5 Sec.) NA
a. LOWER PERCENT NA	b. UPPER PERCENT NA	Low	16. DUSTS NA
17. HEALTH HAZARD INFORMATION (Toxicity) Not Toxic		18. UNPACKED (In-Process) HAZARD CLASS (Specify Quantities Involved) Class 1.4	
19. SPECIAL REQUIREMENTS (If additional space is needed, use plain bond paper) Ref-Dwg: 10521998 and Spec: MIL-C-46931 Approved Packaging Drawings (See Attached Sheet) *** (See Attached Sheet)			
PART III - SHIPPING / STORAGE CLASSIFICATION OF ITEM WHEN PACKED IN ACCORDANCE WITH APPROVED PACKING DRAWINGS			
20. DOD HAZARD CLASSIFICATION 1.4	21. DOD STORAGE COMPATIBILITY GROUP S	22. DOT HAZARD CLASSIFICATION 1.4S	23. DOT CONTAINER MARKING ***
24. PREPARED BY (Initials)			
a. TYPED OR PRINTED NAME R. W. BATSON	b. SIGNATURE 	c. ORGANIZATION Safety Office, ARDEC	
25. CONCORRED IN BY			
a. TYPED OR PRINTED NAME C. L. NGUYEN	b. SIGNATURE 	c. ORGANIZATION Safety Office, ARDEC	
26. SAFETY CHIEF OR AUTHORIZED REPRESENTATIVE			
a. TYPED OR PRINTED NAME C. R. PETERS, P.E.	b. SIGNATURE 	c. ORGANIZATION Safety Office, ARDEC	
The information relating to safety (herein referred to as "safety data") contained in this document is limited to those instances when the document is provided as a part of a procurement/production package which involves the development, testing, storage, manufacture, modification, renovation, demilitarization, packaging, transportation, handling, disposal, inspection, repair or any other use of the item, (material/component/assembly) which is specified in the contract. The safety data contained herein are examples which shall be used by the contractor to alert contractor personnel as well as other personnel of hazards associated with the		procurement/production of the item. No representation is made that compliance with the information provided will prevent any accidents to persons or property or that additional warnings may not be appropriate. Neither the foregoing nor any act or failure to act by the Government in regard to alerting personnel to the hazards of the item shall affect or relieve the contractor of responsibility for the safety of contractor personnel or property and for the safety of the general public in connection with the performance of the contract, or impose or add to any liability of the Government for such safety.	

10132
E
04 Nov 98

Cartridge, 7.62mm, NATO, Ball,
M80

Spec: MIL-C-46931
HCSDS: 10132
Dwg: 10521998, Rev-W

Primer, No. 34

Spec: MIL-P-46610

HCSDS: 10062

Dwg: 10522621

Propellant, WC-846

HCSDS: 10117

Dwg: 10534784

(46 grains)

Bullet

Dwg: 8595669
10522590

Special requirements:

1. In accordance with applicable parts of 49CFR for proper description, packaging, marking and classification, the following Hazard Classification is assigned to the subject item:

DOD Hazard Class/Div/SCG: 1.4S
DOT Hazard Class: 1.4S
(Section 173, Subpart C, Section 173.52)
DOT Label: Explosive 1.4S
(Section 172, Subpart E (172.411 (c) & (d))
DOT Proper Shipping Name (PSN): Cartridges, Small Arms
(Section 172, Subpart B and Section 172.101)
UN Serial Number: 0012
DOT Container Marking: Cartridges, Small Arms
UN: 0012
NSN: (as applicable)
DOT Authorization: (as applicable)
(Section 172, Subpart D, Section 172.301(a) and
172.320(a))
Packaging Method: PI-130

2. The M80 Cartridge is either packaged singularly or in multiple packages in combination with other cartridges. National Stock Numbers (NSN) are as follows:

a. Cartridge, 7.62mm, NATO, Ball, M80:

<u>NSN</u>	<u>DODIC</u>	<u>UN Ident</u>	<u>DOT File No. (EX)</u>	<u>New QD .lbs (kgs)</u>
1305-00-542-1968	A128	0012	8807793	.0067000 (.003039)
1305-00-147-2989	A130	0012	8804262	.0065700 (.002980)
1305-00-231-4630	A130	0012	8804270	.0065700 (.002980)
1305-00-542-1219	A130	0012	8804311	.0065700 (.002980)
1305-00-892-2330	A143	0012	8807844	.0067000 (.003039)
1305-00-935-9247	A164	0012	8807874	.0067000 (.003039)
1305-00-752-8837	A130	0012	8807816	.0067000 (.003039)
1305-00-892-4152	A119	0012	8812520	.0066600 (.003021)
1305-00-914-4675	A130	0012	8807853	.0065700 (.002980)
1305-00-914-4676	A122	0012	8812528	.0066500 (.003016)
1305-00-935-9247	A164	0012	8807874	.0067000 (.003039)
1305-00-965-0601	A648	0012	8807879	.0068000 (.003084)
1305-00-965-0812	A648	0012	8804366	.0068000 (.003084)

10132
E
04 Nov 98

b. Cartridge, 7.62mm, NATO, Ball, M80 and Tracer, M62:

<u>NSN</u>	<u>DODIC</u>	<u>UN Ident</u>	<u>DOT File No. (EX)</u>	<u>New QD .lbs (kgs)</u>
1305-00-542-1196	A127	0012	8807792	.0067000 (.003039)
1305-00-449-8055	A131	0012	8812440	.0078700 (.003570)
1305-00-449-8068	A131	0012	8812441	.0078700 (.003570)
1305-00-892-2150	A131	0012	8807842	.0067000 (.003039)
1305-00-892-2169	A151	0012	8807841	.0067000 (.003039)
1305-00-926-3942	A165	0012	8807857	.0067000 (.003039)
1305-00-152-3292	A168	0012	8912139	.0067000 (.003039)
1305-00-005-8007	A131	0012	8805987	.0070000 (.003175)
1305-00-143-7163	A131	0012	8712695	.0079300 (.003597)
1305-00-159-8593	A131	0012	8804265	.0070000 (.003175)

c. Cartridge, 7.62mm, NATO, Ball, M80 and Ball, M59:

<u>NSN</u>	<u>DODIC</u>	<u>UN Ident</u>	<u>DOT File No. (EX)</u>	<u>New QD .lbs (kgs)</u>
1305-00-257-1089	A143	0012	8812398	.0066600 (.003021)
1305-00-892-6155	A122	0012	8812527	.0066500 (.003016)

3. Approved Packaging Drawings:

840 Cartridges - 5 RD Clips: 10521635, 9362607

800 Cartridges - M13 Linked: 10522350, 12960962
(NSN: 1305-00-892-2150 DODIC: A131)

920 Cartridges: 10522712, 9362607
(NSN: 1305-00-892-4152 DODIC: A119)

800 Cartridges - M13 Linked: 10524006, 12960962
(NSN: 1305-00-892-2330 DODIC: A143)

1500 Cartridges - M13 Linked: 10535782, 1053780, 1053781
(NSN: 1305-00-926-3942 DODIC: A165)

840 Cartridges - 5 RD Clips: 10522676, 9362607

864 Cartridges - 8 RD Clips: 10534929, 9362607

10132
E
04 Nov 98

Approved Packaging Drawings (Cont'd)

800 Cartridges - M13 Linked: 10535461, 12960962
960 Cartridges: 10542324, 12960962
840 Cartridges - 5 RD Clips: 10542456, 10542454, 10542453,
8594724, 8594722
600 Cartridges - M13 Linked: 10542462, 10542461, 10542460,
10534012, 10534024
600 Cartridges - M13 Linked: 10542465, 10542461, 10543460,
10534012, 10534024
1500 Cartridges - M13 Linked: 10542498, 10535781, 10535780
600 Cartridges - M13 Linked: 10542688, 10542678, 10542677,
10534012, 10534024
600 Cartridges - M13 Linked: 10542689, 9362607
1500 Cartridges - M13 Linked: 11743959, 10535781, 10535780

HAZARDOUS COMPONENT SAFETY DATA STATEMENT			DATE	
1 MATERIAL/COMPONENT/ASSEMBLY Cartridge, 7.62mm, NATO, Test, High Pressure, M60			2 NUMBER 10123	3 REVISION B
4 APPLICABLE SAFETY CLAUSE FAR 28.7102				
SENSITIVITY (Apparatus and Comparison Values)				
5 FRICTION TEST NA		6. IMPACT TEST NA		7 ELECTROSTATIC DISCHARGE TEST NA
HAZARDS				
8. FIRE Low		9. AUTO IGNITION TEMP NA		10. FLASH POINT NA
11 DECOMPOSITION PRODUCTS Toxic, Avoid Inhalation and Ingestion			12 FLAMMABLE AND/OR EXPLOSIVE LIMITS	
13. EXPLOSION Low		14. EXPLOSIVE TEMP(S Sec) NA		15. DUSTS NA
16 HEALTH HAZARD INFORMATION (Toxicity) Not Toxic		17. UNPACKED (In-Process) HAZARD CLASS (Specify Quantities Involved) Class 1.4		
18. SPECIAL REQUIREMENTS (Continuation on plain paper authorized) Ref Dwg: 7553703 and Spec: MIL-C-46477 Approved Packaging Drawings: (See Attached Sheet)				
SHIPPING/STORAGE CLASSIFICATION OF ITEM WHEN PACKED IN ACCORDANCE WITH APPROVED PACKING DRAWINGS				
19. DOD HAZARD CLASS/DIV 1.4		20. DOD COMPAT GROUP S		21. DOT HAZARD CLASS Class C Explosive
22. DOT CONTAINER MARKING Small Arms Ammunition			23. PREPARED BY (Name, Signature, Organization) R. W. BATSON <i>R.W. Snook</i>	
24. CONCURRED IN BY (Name, Signature, Organization) R. W. SNOOK <i>R.W. Snook</i>			25. SAFETY OFFICE (Name, Signature, Organization) <i>Peters</i> C. PETERS	
<p>The information relating to safety (herein referred to as "safety data") contained in this document is limited to those instances when the document is provided as a part of a procurement/production package which involves the development, testing, storage, manufacture, modification, renovation, demilitarization, packaging, transportation, handling, disposal, inspection, repair or any other use of the item, (material/component/assembly) which is specified in the contract. The safety data contained herein are examples which shall be used by the contractor to alert contractor personnel as well as other personnel of hazards associated with the procurement/production of the item. No representation is made that compliance with the information provided will prevent any accident to persons or property or that additional warnings may not be appropriate. Neither the foregoing nor any act or failure to act by the Government in regard to alerting personnel to the hazards of the item shall affect or relieve the contractor of responsibility for the safety of contractor personnel or property and for the safety of the general public in connection with the performance of the contract, or impose or add to any liability of the Government for such safety.</p> <p style="text-align: right;">Sheet 1 of 3</p>				

Cartridge, 7.62mm, NATO, Test,
High Pressure, M60

Spec: MIL-C-46477
HCSDS: 10123
Dwg: 7553703, Rev-K

10123
B
20 Jun 85

Primer, No. 34

HCSDS: 10062
Dwg: 10522621

Propellant, IMR-4475

HCSDS: 10010
Dwg: 10534786

(42 Grain)

Bullet

Dwg: 6016309

Special Requirements (Cont):

1. Classifications* are for shipment and storage when item is packaged in accordance with packaging drawings or sections of 49 CFR as follows:

DEFINITION: Section 173.100(b)

PACKAGING: Section 173.101

MARKING: Section 172 Subpart D and Section 173.101(c) & (f)

LABELING: Excepted from the Label prescribed in Section 172.411. Outside of each package to be plainly marked "Small Arms Ammunition".

2. Approved Packaging Drawings:

960 Cartridges - Unlinked: 10542414 - 8595430 - 8595429 - 8595428
7553710

920 Cartridges - Unlinked: 10542420 - 8595398 - 8595396 - 8595397
7553710

**Note: The offeror shall fill in only the unit price blocks and price for First Article and IPT costs.
All other spaces are for Government evaluation Purposes Only.**

**DAAE20-00-R-0218
M240B Machine Gun
Price Evaluation Sheet**

**NSN: 1005-01-412-3129
P/N: 12976814
M240B Machine Gun**

Ordering Period 1			Ordering Period 2			Ordering Period 3			Ordering Period 4			Total Amount
Range	Unit Price	Wgt.	Range	Unit Price	Wgt.	Range	Unit Price	Wgt.	Range	Unit Price	Wgt.	
1000 - 1499		60%	100 - 249		10%	100 - 249		10%	250 - 499		10%	
1500 - 2499		30%	250 - 499		30%	250 - 499		60%	500 - 999		30%	
2500 - 3500		10%	500 - 1300		60%	500 - 1200		30%	1000 - 1700		60%	
Weighted Unit Price		100%			100%			100%			100%	
Most Likely Quantity	1,306		541			529			1,515			
Weighted Total Price												

First Article Costs

Contractor Costs Initial Production Test (IPT)

Government Costs (IPT)

Total Evaluated Price

Note: An amount of \$1,040,000 will be added for government costs associated with Initial Production Testing (IPT), if required.

EXHIBIT A

**NON-DISCLOSURE AND NON-USE AGREEMENT
(Special License Rights)**

1. The United States Government solicitation _____ for the procurement of _____ includes proprietary technical data and confidential information (hereinafter collectively referred to as "data") of FN Herstal, S.A., located at Voie de Liège 33, B-4040 Herstal, Belgium (hereinafter referred to as "FNH")

2. The undersigned, as an authorized representative of _____ (insert company name) (hereinafter "the recipient"), in consideration of being furnished with FNH's data related to the _____ (insert M240 medium machine gun configuration) Weapon, hereby agrees that the recipient will only use the said data for the purpose of responding to a Government solicitation or performing a resultant Government contract.

3. Prior to receipt of the referenced solicitation containing FNH's data, the recipient shall sign and provide an original copy of this Non-Disclosure and Non-Use Agreement to the United States Government contracting officer/office responsible for the solicitation. The United States Government shall provide to FNH a copy of the present agreement after award (or cancellation) of the referenced solicitation.

4. The recipient shall not, without prior written permission of FNH, provide or disclose any of such data to any other company, person, or entity, except recipient's subcontractors and vendors. The recipient agrees that providing or disclosing such data to any such subcontractor or vendor shall be accomplished only for the purpose stated herein, to respond to a Government solicitation or perform a resultant Government contract, and shall not occur until such subcontractor or vendor has first executed a like Non-Disclosure and Non-Use Agreement as this agreement.

5. The recipient acknowledges that this agreement grants it no rights to commercial uses of any such data received pursuant to this agreement.

6. The recipient agrees to adopt operating procedures and physical security measures designed to protect the data from disclosure or release to unauthorized third parties.

7. The recipient agrees to promptly destroy all of FNH's data received under the referenced solicitation (and any copies made of such data) when the purpose of this agreement is fulfilled. The recipient further agrees to certify in writing, in the form of the attached Certificate of Destruction, to the Government as to the destruction of the data. Included with the return of this Certificate of Destruction, the recipient shall provide the contracting officer responsible for issuance of this Non-Disclosure and Non-Use Agreement, a list of the names and addresses of subcontractors and vendors which received a copy of the technical data package or part of the technical data package provided with the solicitation referenced herein. Nothing herein shall be interpreted to authorize the Government to release to FNH any information that is proprietary to the recipient.

8. The recipient agrees to indemnify the United States Government, and its agents and employees, from all liability arising out of, or in any way related to, the misuse or unauthorized disclosure by the recipient, its employees or agents, of any such data it receives. The recipient will hold the United States Government, and its agents and employees, harmless against every such claim or liability, including attorney fees, costs, and expenses, arising out of the misuse or unauthorized disclosure of any such data supplied to the recipient hereunder.

9. Execution of this Non-Disclosure and Non-Use Agreement by the recipient or any of its authorized subcontractors or vendors is for the benefit of FNH, which is a third party beneficiary of this Non-Disclosure and Non-Use Agreement, and FNH shall have the right to direct action against the recipient to enforce such agreement or to ask for damages which may result from any material breach of this agreement.

10. The requirements contained in this agreement shall be effective only for so long as such data remain unpublished, as the term unpublished is defined by FNH or specified by a contract between FNH and the United States Government, or as shown in a legend appearing on such data, whichever of the above events shall occur first.

11. Notwithstanding the foregoing, any obligation of confidentiality by this agreement shall not extend to proprietary information:

(i) Which is legally and without restriction in the possession of recipient, the Government, or its employees or contractors prior to the date of receipt hereunder from the United States Government or from FNH;

(ii) Which enters the public domain at any time through no fault of the recipient, the Government, or its employees, agents or contractors; or

f c

(iii) Which is disclosed by a third party without restriction or without breach of this agreement and without inducement by the recipient or the Government of such party to breach any agreement or obligation of confidentiality.

12. Signature:

Name of Recipient

Signature

Typed name

Title

Date

Address of Recipient

Solicitation Number

49

ACCOUNTABILITY INSTRUCTIONS

1. Transfer of Accountability. Government furnished material (GFM) for consumption/incorporation: Accountability for this material is transferred the Contractor under provisions of the FAR. The Contractor shall maintain the official proper, property records in accordance with Part 45. Cited da item descriptions provide transaction reporting necessary for accurate physical and fiscal accounting for material in the possession of defense contractors.

2. Point of contact for accountability.

Associate Deputy, Commodity
Business Operations
Rock Island Site Manager
ATTN: AMSTA-LC-CIAI
Rock Island IL 61299-7630
Commercial Phone: (309) 782-5291

3. All Data/Reports to be submitted electronically utilizing E-Mail with attachments of MSWORD, MICROSOFT EXCEL, or Flat Text file software packages If unable to E-Mail, reports are to be submitted on 3 ½ 1.44M floppy disks.

4. Materiel Receipt by Contractor.

a. Discrepancy Reporting: Discrepancies shall be distinguished and reported as one of the following:

(1) Transportation type discrepancy: This discrepancy is evident when materiel received disagrees with the condition, quantity, or type from that property described on the bill of lading or other transportation document. See DI-MGMT-80544A.

(2) Shipping type discrepancy: This discrepancy is evident when freight is opened and the contents do not agree with the supply shipping documents. See DI-MGMT-80503, Report of Shipping (Item) and Packaging Discrepancy.

5. MILSTRIP Requisitioning.

a. MILSTRIP requisition authority is granted for items identified by NSN and quantities (not to be exceeded) in this contract. MILSTRIP requisitions will be submitted in accordance with DD Form 1423,

DI-MGMT-80408B.

b. Requisitions submitted under this contract shall contain the following data:

- (1) Routing Identifier Code (CC 4-6): A84
- (2) Media and Status Code (CC 7): S
- (3) Supplementary Address (CC 45-50): Blank
- (4) Signal Code (CC 51): TBD
- (5) Fund Code (CC 52-53): TBD
- (6) Distribution Code (CC 54): S
- (7) Project Code (CC 57-59): BLANK
- (8) Priority (CC 60-61):
 - 03 Work Stoppage
 - 06 Anticipated Work Stoppage
 - 13 Routine
- (9) Advice (CC 65-66): 2J

6. Consumption of GFM. Consumption of GFM shall be reported in accordance with DD Form 1423. See DI-MGMT-80438B.

7. Excess GFM.

a. Inventory: In accordance with the FAR, subpart 45.508-1, immediately upon termination or completion of a contract, the Contractor shall perform and cause each subcontractor to perform a physical inventory, adequate for disposal purposes, of all GFM applicable to the contract.

b. Reporting: In accordance with the FAR, subpart 45.608, the Plant Clearance Office will determine the categories of screening required and initiate screening action.

c. Purchase or Retention: The FAR, subpart 45.604 and applicable Government restrictions apply.

Proposal Submission
Small Business Participation

All offerors, both Small and Large Business, are required to submit Small Business Participation Proposals as follows:

Offeror's Name _____
Company Size: _____ **Small Business (SB)** _____ **Large Business (LB)**
Company Status: (IF): _____ **SB,** _____ **Historically Underutilized**
Business Zone Small Business (HUBZone SB) , _____ **Small Disadvantaged**
Business (SDB) _____ **Woman-Owned Small Business (WOSB)** _____ **Historically**
Black College and University/Minority Institution (HBCU/MI) _____ **Veteran**
Owned Small Business (VOSB) or _____ **Service Disabled Veteran Owned Small**
Business (SDVOSB)

Total Estimated Value of Proposed Contract: \$ _____
Total Estimated Value of Subcontracts: \$ _____

Dollar Value of Subcontracts planned for all:

SBs: \$ _____
Company name(s) _____
HUBZone SBs: \$ _____
Company name(s) _____
SDBs: \$ _____
Company name(s) _____
WOSBs: \$ _____
Company name(s) _____
HBCU/MIs: \$ _____
Institution name(s) _____
VOSBs: \$ _____
Company name(s) _____
SDVOSBs \$ _____
Company name(s) _____

Percentages of Contract Value subcontracted for all:

SB: % _____
HUBZone SB: % _____
SDB: % _____
WOSB: % _____
HBCU/MI: % _____
VOSB % _____
SDVOSB% _____

For SBs, HUBZone SBs, SDBs, WOSBs , VOSB, or SDVOSB – Offeror’s percentage of contract value you will perform at the prime contract level:
% _____

Principle supplies/services to be subcontracted to:

SB: _____

HUBZone SB: _____

SDB: _____

WOSB: _____

HBCU/MI: _____

VOSB: _____

SDVOSB: _____

Principle supplies/services you will be providing at the prime contractor level (in house): _____

During the *past three calendar years*, provide the following:

Description of your methods employed to promote the use of SBs, HUBZone SBs, SDBs, WOSBs, HBCU/MI’s, VOSBs, and SDVOSBs:

Description of the internal methods used to monitor your utilization of the above (database mgmt, reports, etc.):

NOTE: The percent of contract value for the small business subcontracting/participation shall be based on the minimum guaranteed quantity only.

IF OFFEROR IS A LARGE BUSINESS, AN ADDITIONAL EVALUATION OF PAST PERFORMANCE OVER THE PAST THREE CALENDAR YEARS IN COMPLYING WITH THE REQUIREMENTS OF FAR 52.219-9, SMALL BUSINESS SUBCONTRACTING PLAN, WILL BE MADE. INCLUDE DOCUMENTATION OF ACCOMPLISHMENTS AGAINST GOALS ESTABLISHED UNDER SUBCONTRACTING PLANS OF PRIOR CONTRACTS.

PAST PERFORMANCE INFORMATION

(This page is intended as an aid for proposal submission. Please see Section L for instructions on proposal submission. If this form is used and more room is required, you may use the space at the bottom of the second page or continue on a separate sheet. Please note the limit on pages of proposal submission in Section L.)

CONTRACT NUMBER _____ Award Date _____

Contracting Activity: (Government or Commercial) _____
(Address) _____

Contract Dollar Value: \$ _____

Points of Contact:

- 1. Procuring Contracting Officer (name) _____
(email) _____
(phone) _____
- 2. Current Admin Contracting Officer (name) _____
(email) _____
(phone) _____
- 3. Gov't Quality Assurance Rep (QAR) (name) _____
(email) _____
(phone) _____

Was the contract terminated or cancelled (in whole or part)? YES or NO If yes, why? _____

Description of Item:

- 1. Item: _____
- 2. Part Number: _____
- 3. NSN: _____

Explanation of relevance to solicitation effort: _____

Were there any instances where technical or schedule requirements were not met? If so, please explain. If not, please state "none". _____

Original Delivery Schedule: _____

Revised Delivery Schedule: (If there were no changes to schedule - please state "none") _____

Were there any quality problems encountered in performance of the contract that negatively impacted the customer? If so, please describe. Include a description of corrective actions implemented as a result of the problem encountered. _____

Technical Innovations and engineering changes that improved the quality of performance aspects of the delivered product _____

DOCUMENT SUMMARY LIST

Item:
NSN:
Control Number/PRON:

Identifies all first tier documents (cited in SOW) (applicable DIDs). Also included are all referenced documents (2nd, (includes DID block 10 references), 3rd and lower tier) which have been tailored.

DOCUMENT CATEGORY:

CATEGORY 0 - Unless otherwise specified in the solicitation, contract, or contract modifications, all documents are for guidance and information only.

CATEGORY 1 - The requirements contained in the directly cited document are contractually applicable to the extent specified. All referenced documents are for guidance and information only.

CATEGORY 2 - The requirements contained in the directly cited document and the reference documents identified in the directly cited document are contractually applicable to the extent specified. All subsequently referenced documents are for guidance and information only.

CATEGORY 3 - Unless otherwise specified in the solicitation, contract or contract modification, all requirements contained in the directly cited document and all reference and subsequently referenced documents are contractually applicable to the extent specified.

Document Number (Contract Reference) Applicable Tailoring	Document Title	Document Date/ Document Category
1a. N/A	Section C titled: Configuration Management Documentation	N/A Cat 2
1b. DI-CMAN-81589 (seq A001)	Engineering Change Proposal (ECP) – Army Materiel Command (AMC)	05 Oct 00 Cat 1
1c. DI-CMAN-81590 (seq A002)	Request for Deviation(RFD) Army Materiel Command (AMC)	05 Oct 00 Cat 1
1d. DI-CMAN-81591 (seq A003)	Notice of Revision (NOR) Army Materiel Command (AMC)	05 Oct 00 Cat 1

ADDRESS CODE DISTRIBUTION
FOR ECP/RFD/VECP

1. Concurrent distribution of Value Engineering Change Proposals (VECPs), Engineering Change Proposals (ECPs), Request for Deviations (RFDs) shall be submitted by the Contractors as follows:

2. The preferred method of transmission is electronically to ECP-INPUT@RIA.ARMY.MIL (must be under 7MG), (electronic forms are available for your use at <http://web1.whs.osd.mil/icdhome/ddforms.htm>) if hardcopies are submitted, the contractor shall submit copies as required and as identified below to: Director, U.S. Army Armament Research, Development and Engineering Center, ATTN: AMSTA-AR-QAW (ECPs), Rock Island, IL 61299-7300 except for Chemical items (see note below).

- a. VECPs - original plus 3 copies
original plus 3 copies (Tools & Equipment)
original plus 3 copies (Navy or Air Force)
- b. ECPs - original plus 2 copies
original plus 2 copies (Tools & Equipment)
original plus 2 copies (Navy or Air Force)
- c. RFDs- original plus 2 copies
original plus 2 copies (Tools & Equipment)
original plus 2 copies (Navy or Air Force)

****NOTE - All Chemical items shall be submitted to: Commander, CBDCOM, ATTN: SCBRD-EN(RI), Rock Island, IL 61299-7410.****

- a. VECPs - original plus 3 copies
- b. ECPs - original plus 2 copies
- c. RFDs/RFWs - original plus 1 copy

3. Provide one copy designated 'Advance Copy' to:

- a. Contracting Officer: Director, Armament and Chemical Acquisition, and Logistics Activity, Rock Island, IL 61299-8630 (TACOM-RI items) or Commander, Operations Support Command, Rock Island, IL 61299-6000 (OSC items).
- b. Administrative Contracting Officer.

4. For VECPs only, provide one copy designated 'Advance Copy' to the Value Engineering Division: Commander, U.S. Army Operations Support Command, ATTN: AMSOS-RMV, Rock Island, IL 61299-6000.

5. When ECPs, NORs, RFDs are determined to be Urgent, Critical and/or Schedule impacting, an action copy shall be provided to AMSTA-AR-QAW via data facsimile (FAX) to 309-782-6450. This transmission is to be immediately followed with the usual hard copy mailing.

DATA ITEM DESCRIPTION**Title:** NOTICE OF REVISION (NOR) – Army Materiel Command (AMC)**Number:** DI-CMAN-81591**Approval Date:** 5 October 2000**AMSC Number:** A7406**Limitation:** None**DTIC Applicable:** No**GIDEP Applicable:** No**Office of Primary Responsibility:** AM**Applicable Forms:** N/A**Use, Relationships:** A Notice of Revision (NOR) describes a proposed change to a technical document.

An approved NOR is issued to direct the custodian of each technical document to make the required changes.

This Data Item Description (DID) contains the content and preparation instructions for the data product resulting from the work task specified in the contract. This DID is used in conjunction with an Engineering Change Proposal (ECP) – Army Materiel Command, DI-CMAN-81589. A requirement for ECPs should be contractually imposed in conjunction with this DID. This DID may also be used with Specification Change Notices (SCNs), DI-CMAN-80643C. Where NORs are required for changes to paper specifications, a requirement for SCNs may be contractually imposed in conjunction with this DID.

Requirements:

1. Reference documents. The applicable issue of any documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract.
2. Format and content. The NOR shall be prepared in contractor format. The NOR content shall be in accordance the contractor's processes and procedures, or as specified in the contract.
3. Distribution statement. The appropriate distribution statement shall be affixed to the NOR in accordance with the requirements of the contract.
4. Date. Provide the submittal date of the NOR. Normally this date will be identical to the ECP submittal date.
5. DODAAC. Provide the DODAAC of the procuring activity.
6. Procuring Activity Number (PAN). Provide the PAN of the procuring activity, if known (Army only).
7. Originator name and address. Provide the name and address of the contractor submitting the proposed NOR (inclusion of submitting individual's name is optional).

8. CAGE code. Provide the CAGE code of the originator of the ECP.
9. NOR number. Unless the use of a Government assigned number is prescribed, the originator shall either assign a number or enter the document number and new revision letter as the NOR number. When the requirement in the contract identifies the NOR by ECP number, the originator shall attach a dash number (i.e., xxx-1).
10. CAGE Code. Provide the CAGE Code of the original design activity that appears on the document to which the revision applies. If the original design activity is not the current design activity, also enter the CAGE code of the current design activity.
11. Document number. Provide the number of the drawing, standard, specification, list or other document to be revised.
12. Title of document. Provide the title of the document to which the NOR applies.
13. Revision letter. Show the existing revision of the document for which the NOR is prepared.
14. Outstanding NORs. Provide the NOR number of all approved unincorporated NORs for the affected document.
15. ECP number. Provide the number of the ECP describing the engineering change which necessitates the document revision covered by the NOR.
16. Configuration item (or system) to which ECP applies. Provide Government assigned system designation (if any); otherwise, enter the name and type designation of the Configuration Item to which the ECP applies.
17. Description of change. Describe the change in detail, giving the exact wording of sentences or paragraphs that are to be added, or that are to replace designated sentences or paragraphs of the current document. State the dimensions, tolerances and other quantitative requirements that are to replace current requirements. Attach a marked print when necessary to clearly explain the desired revision. Use a "From - To" format in the description of the change.

END OF DI-CMAN-81591

DATA ITEM DESCRIPTION

Title: REQUEST FOR DEVIATION (RFD) – Army Materiel Command (AMC)

Number: DI-CMAN-81590

Approval Date: 5 October 2000

AMSC Number: A7405

Limitation: None

DTIC Applicable: No

GIDEP Applicable: No

Office of Primary Responsibility: AM

Applicable Forms: N/A

Use, Relationships: A Request for Deviation describes a proposed departure from (a non-conformance with) the contractually-specified configuration documentation for a specific number of units or for a specified period of time.

A Request for Deviation enables the Government to determine the impact on performance, operational readiness, logistics support or other affected areas.

This Data Item Description (DID) contains the content and preparation instructions for the data product resulting from the work task specified in the contract.

Requirements:

1. Reference documents. The applicable issue of any documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract.
2. Format and content. The Request for Deviation shall be prepared in contractor format. The RFD content shall be in accordance with the contractor's processes and procedures, or as specified in the contract.
3. Distribution statement. The appropriate distribution statement shall be affixed to the RFD in accordance with the requirements of the contract.
4. Date. Provide the submittal date of the deviation.
5. DODAAC. Provide the DODAAC of the procuring activity, if known.
6. Procuring Activity Number (PAN). Provide the PAN of the procuring activity, if known (Army only).
7. Originator name and address. Provide the name and address of the contractor submitting the request (inclusion of submitting individual's name is optional)
8. Classification. The deviation shall be designated minor, major, or critical in accordance with the following criteria:
 - a. Minor. A deviation shall be designated as minor when:

- (1) The deviation consists of a departure which does not involve any of the factors listed in 8b or 8c or
 - (2) When the configuration documentation defining the requirements for the item classifies defects in requirements and the deviations consist of a departure from a requirement classified as minor.
 - b. Major. A deviation shall be designated as major when:
 - (1) The deviation consists of a departure involving:
 - (a) health
 - (b) performance
 - (c) interchangeability, reliability, survivability, maintainability, or durability of the item or its repair parts
 - (d) effective use or operation;
 - (e) weight and size; or
 - (f) appearance (when a factor) or
 - (2) When the configuration documentation defining the requirements for the item classifies defects in requirements and the deviations consist of a departure from a requirement classified as major.
 - c. Critical. A deviation shall be designated as critical when:
 - (1) The deviation consists of a departure involving safety or
 - (2) When the configuration documentation defining the requirements for the item classifies defects in requirements and the deviations consist of a departure from a requirement classified as critical.
9. Designation for deviation.
- a. Model/Type. Provide the model or type designation of the CI for which the request is being submitted. For CSCIs provide the CSCI identification.
 - b. CAGE Code. Provide the CAGE Code for the activity originating the deviation.
 - c. System designation. The system or top level CI designation or nomenclature assigned by the Government shall be entered, if known.
10. Deviation number. Deviation identification numbers shall be unique for each CAGE Code identified activity. Once a number is assigned, that number shall be retained for all subsequent submissions. Unless otherwise authorized by the Government, deviations shall be separately and consecutively numbered commencing with number one. As an alternative, numbers may be assigned from a separate series for each system that the contractor is producing. The number of characters in the deviation number, dash number, and type identification shall not exceed 32.
11. Configuration baseline affected. Indicate the affected baseline (See MIL-HDBK-61).
12. Are other system/configuration items affected? If yes, provide summary.

13. Title of deviation. Provide a brief descriptive title of the deviation.
14. Contract number and line item. Provide the number(s) of all currently active contract(s) and the affected contract line item number(s) that are affected by the deviation.
15. Procuring contracting officer. Enter the procuring contracting officer's name, office symbol/code, and telephone number applicable to the CI shown in paragraph 18.
16. Configuration item nomenclature. Provide the Government assigned name and type designation, if applicable, or authorized name and number of the CI to which the deviation will apply.
17. Classification of defect (CD).
 - a. CD number. If either a Government or contractor's CD applies, enter the number assigned.
 - b. Defect number. If a CD applies, enter the defect number(s) which correspond(s) with the characteristic(s) from which an authorized deviation is desired.
 - c. Defect classification. If a CD applies state the proper classification of the defect number(s) entered in paragraph 17b.
18. Name of lowest part/assembly affected. An appropriate descriptive name of the part(s) shall be given here without resorting to such terms as "Numerous bits and pieces".
19. Part number or type designation. Enter the part number(s) of the part(s) named in paragraph 18 or type designation/nomenclature if applicable.
20. Effectivity. Define the effectivity of the proposed RFD by entering, as applicable, the quantity of items affected, the serial numbers of the items affected, or the lot number(s) applicable to the lot(s) affected by the deviation being requested.
21. Recurring Deviation. If this is a recurring deviation, reference the previous correspondence, the request number, and corrective action to be taken in paragraph 27. In addition provide rationale why recurrence was not prevented by previous corrective action and/or accomplished design change.
22. Effect on cost/price. Provide the estimated reduction or price adjustment. If no change in price, cost, or fee, so state with rationale. The request for deviation shall include the specific consideration that will be provided to the Government if this "non-conforming" unit(s) (See FAR Part 46.407) is accepted by the Government.
23. Effect on delivery schedule. State the effects on the contract delivery schedule that will result from both approval and disapproval of the request for deviation.

24. Effect on integrated logistics support, interface, or software. If there is no effect on logistics support or the interface, provide a statement to that effect. If the deviation will have an impact on logistics support or the interface, describe such effects.
25. Description of deviation. Describe the nature of the proposed departure from the technical requirements of the configuration documentation. The deviation or waiver shall be analyzed to determine whether it affects any of the factors listed below. Describe any effect on each of these factors (marked drawings should be included when necessary to provide a better understanding of the deviation):
- a. Effect on Product Configuration Documentation or Contract.
 - (1) Performance
 - (2) Weight-balance-stability (aircraft)
 - (3) Weight-Moment (other equipment)
 - (4) Technical Data
 - (5) Nomenclature
 - b. Effect on Operational Employment
 - (1) Safety
 - (2) Survivability
 - (3) Reliability
 - (4) Maintainability
 - (5) Service Life
 - (6) Operating Procedures
 - (7) Electromagnetic Interference
 - (8) Activation Schedule
 - (9) Critical Single Point Failure Items
 - (10) Interoperability
 - c. Other Considerations
 - (1) Interface
 - (2) Other Affected Equipment/Government Furnished Equipment (GFE)/Government Furnished Parts (GFP)
 - (3) Physical Constraints
 - (4) Computer Programs and Resources
 - (5) Rework of other equipment
 - (6) System Test Procedures
 - (7) Warranty/Guarantee
 - (8) Parts Control
 - (9) Life Cycle Costs
26. Need for deviation. Explain why it is impossible or unreasonable to comply with the configuration documentation within the specified delivery schedule. Also explain why a deviation is proposed in lieu of a permanent design change.

27. Corrective action taken. Describe action being taken to correct non-conformance to prevent a future recurrence.
28. Signature. The RFD shall be signed by an authorized official representing the contractor submitting the RFD.

END OF DI-CMAN-81590

DATA ITEM DESCRIPTION

Title: ENGINEERING CHANGE PROPOSAL (ECP) – Army Materiel Command (AMC)

Number: DI-CMAN-81589

Approval Date: 5 October 2000

AMSC Number: A7404

Limitation: None

DTIC Applicable: No

GIDEP Applicable: No

Office of Primary Responsibility: AM

Applicable Forms: N/A

Use, Relationships: An Engineering Change Proposal (ECP) provides the documentation in which the engineering change is described. It includes change impacts to systems, configuration items and associated configuration documentation that are affected by the proposed change. In addition, it typically describes how the proposed change will be implemented along with providing estimated schedules and associated costs.

This Data Item Description (DID) contains the content and preparation instructions for the data product resulting from the work task specified in the contract. This DID is used in conjunction with a Notice of Revision (NOR). A requirement for NORs, as applicable, should be contractually imposed in conjunction with this DID.

Requirements:

1. **Reference documents.** The applicable issue of any documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract.
2. **Format and content.** The Engineering Change Proposal shall be prepared in contractor format. The ECP content shall be in accordance with the contractor's processes and procedures.
3. **Supporting data.** In addition to the information required below, the ECP shall include supporting data. Formal ECPs shall be supported by drawings and other data (e.g., LSA data, detailed cost proposal data, test data and analyses) as specified in the contract to justify and describe the change and to determine its total impact including assessments of changes to system operational employment characteristics. When a life cycle cost and/or operation and support cost model has been included in the contract, the ECP shall also include the costs expected to result from the implementation of the change into all future production and spare items projected to be procured for the program. Also for all projected operation and support costs for operation of the total inventory of items by the Government. A summary of any testing done to validate concepts or new technology to be employed in the proposed engineering change shall be presented in the supporting data. Details of such test data shall be provided if it is vital to the decision regarding acceptance of the change.
4. **Distribution statement.** The appropriate distribution statement shall be affixed to the ECP in accordance with the requirements of the contract.
5. **Date.** Provide the submittal date of the ECP or of the revision to the ECP.
6. **Procuring Activity Number (PAN):** Provide the PAN of the procuring activity, if known (Army only).
7. **DODAAC.** Provide the DODAAC of the procuring activity, if known.
8. **Originator name and address.** Provide the name and address of the contractor submitting the ECP.
9. **Designate as either Class I or II.** Proposed changes that do not meet the criteria for Class I shall be designated as Class II. The engineering change shall be Class I if:
 - a. The Functional Configuration Documentation (FCD) or Allocated Configuration Documentation (ACD) is affected to the extent that any of the following requirements would be outside specified limits or specified tolerances:
 - (1) Performance.
 - (2) Reliability, maintainability or survivability.
 - (3) Weight, balance, moment of inertia.

- (4) Interface characteristics.
- (5) Electromagnetic characteristics.
- (6) Other technical requirements in the specifications.

NOTE: Minor clarifications and corrections to FCD or ACD shall be made only as an incidental part of the next Class I ECP NOR, unless otherwise directed by the Government.

- b. A change to the Product Configuration Documentation (PCD) will affect the FCD or ACD as described in paragraph 9a or will impact one or more of the following:
 - (1) Government Furnished Equipment (GFE).
 - (2) Safety.
 - (3) Compatibility or specified interoperability with interfacing CIs, support equipment or support software, spares, trainers or training devices/ equipment/software.
 - (4) Configuration to the extent that retrofit action is required.
 - (5) Delivered operation and maintenance manuals for which adequate change/revision funding is not provided in existing contracts.
 - (6) Preset adjustments or schedules affecting operating limits or performance to such extent as to require assignment of a new identification number.
 - (7) Interchangeability, substitutability, or replaceability as applied to CIs, and to all subassemblies and parts except the pieces and parts of non-reparable subassemblies.
 - (8) Sources of CIs or repairable items at any level defined by source-control drawings.
 - (9) Skills, manning, training, biomedical factors or human-engineering design.
 - c. Any of the following contractual factors are affected:
 - (1) Cost to the Government including incentives and fees.
 - (2) Guarantees or warranties.
 - (3) Deliveries.
 - (4) Scheduled milestones.
10. Justification code. Provide a justification code that is applicable to a proposed Class I engineering change. The justification code is not required for Class II ECPs. If more than one of the following codes are applicable, the one which is the most descriptive or significant shall be assigned to the ECP.
- a. Interface. Code B shall be assigned to an engineering change proposal for correction of a deficiency which will eliminate interference or incompatibility at an interface between CIs.
 - b. Compatibility. Code C shall be assigned to an engineering change to correct a deficiency with the following characteristics:
 - (1) The need for the change has been discovered during the system or item functional checks or during installation and checkout and is necessary to make the system or item work.
 - (2) By assigning the compatibility code the contractor is declaring that the effort required to accomplish the change is considered to be within the scope of the existing contract except for changes caused by the Government.
 - (3) Contractual coverage completing the formal documentation of the engineering change will not reflect an increase in contract price for the corrective action in production and to delivered items in-warranty or otherwise stipulated in the contract.
 - c. Correction of deficiency. Code D shall be assigned to an engineering change which is required to eliminate a deficiency, unless a more descriptive separate code applies. Such separate codes are used to identify deficiencies of the nature of safety, interface, or compatibility.
 - d. Operational or logistics support. Code O shall be assigned to an engineering change which will make a significant effectiveness change in operational capabilities or logistics support.
 - e. Production stoppage. Code P shall be assigned to an engineering change which is required to prevent slippage in an approved production schedule. This code applies when production to the current configuration documentation either is impracticable or cannot be accomplished without delay.

- f. Cost reduction. Code R shall be assigned to an engineering change which will provide a net total life cycle cost savings to the Government, but which is not being submitted pursuant to the Value Engineering clause of the contract. The savings in life cycle cost should include all effects on cost and price for the effort and requirements covered by the contract(s) currently in effect for this contractor, plus the costs resulting from necessary associated changes in delivered items, and logistics support.
 - g. Safety. Code S shall be assigned to an engineering change for correction of a deficiency which is required primarily to eliminate a hazardous condition. When this code is assigned, a system hazard analysis shall be included with the ECP. (See MIL-STD-882)
 - h. Value engineering (VE). Code V shall be assigned to an engineering change that will effect a net life cycle cost reduction and which is submitted pursuant to the VE clause of the contract.
11. Priority. A priority shall be assigned to each Class I ECP based upon the following definitions. Class II ECPs do not require a priority assignment. The proposed priority is assigned by the originator and will stand unless the Government has a valid reason for changing the priority.
- a. Emergency (E). Shall be assigned to an engineering change proposed for any of the following reasons:
 - (1) To effect a change in operational characteristics which, if not accomplished without delay, may seriously compromise national security;
 - (2) To correct a hazardous condition which may result in fatal or serious injury to personnel or in extensive damage or destruction of equipment. (A hazardous condition usually will require withdrawing the item from service temporarily, or suspension of the item operation, or discontinuance of further testing or development pending resolution of the condition.); or
 - (3) To correct a system halt (abnormal termination) in the production environment such that CSCI mission accomplishment is prohibited.
 - b. Urgent (U). Shall be assigned to an engineering change proposed for any of the following reasons:
 - (1) To effect a change which, if not accomplished expeditiously, may seriously compromise the mission effectiveness of deployed equipment, software, or forces; or
 - (2) To correct a potentially hazardous condition, the uncorrected existence of which could result in injury to personnel or damage to equipment. (A potentially hazardous condition compromises safety and embodies risk, but within reasonable limits, permits continued use of the affected item provided the operator has been informed of the hazard and appropriate precautions have been defined and distributed to the user.); or
 - (3) To meet significant contractual requirements (e.g., when lead time will necessitate slipping approved production or deployment schedules if the change was not incorporated); or
 - (4) To effect an interface change which, if delayed, would cause a schedule slippage or increase cost; or
 - (5) To effect a significant net life cycle cost savings to the Government, as defined in the contract, through value engineering or through other cost reduction efforts where expedited processing of the change will be a major factor in realizing lower costs.
 - (6) To correct unusable output critical to mission accomplishment;
 - (7) To correct critical CI files that are being degraded; or
 - (8) To effect a change in operational characteristics to implement a new or changed regulatory requirement with stringent completion date requirements issued by an authority higher than that of the functional proponent.
 - c. Routine (R). Shall be assigned to a proposed engineering change when emergency or urgent is not applicable.
12. ECP designation.
- a. Model/Type. Provide model or type designation of the CI for which this proposal is being submitted. For Computer Software Configuration Items (CSCI), enter the CSCI identification number.
 - b. CAGE code. Enter the CAGE code for the activity originating the ECP.
 - c. System designation. The system or top-level CI designation or nomenclature assigned shall be entered, if known.

13. ECP number. Provide an ECP number. Once an ECP number is assigned to the first submission of a change proposal, that number shall be retained for all subsequent submissions of a change proposal. One of the following methods of assigning ECP numbers may be used unless otherwise stated in the contract:
- ECP numbers shall run consecutively commencing with number 1, for each CAGE Code identified activity, or ECP numbers may be assigned in a separate series for each system that the contractor is producing
 - When an ECP is split into a basic ECP and related ECPs, the basic ECP shall be identified with the number prescribed above and each related ECP shall be identified by the basic number plus a separate dash number. The number of characters in the ECP number, dash number, type, and revision identification shall not exceed 32.
 - Other systems may be used provided the ECP number is unique for any CAGE Code identified activity, and the 32 character limitation is not exceeded.
14. Type. For Class I ECPs, indicate either a "P" for preliminary, or "F" for formal. A Class I ECP shall be preliminary if it meets the criteria below.
- A preliminary change proposal is one that is submitted to the Government for review prior to the availability of the information necessary to support a formal ECP. It shall include a summary of the proposed change, its impact on related areas, and a justification. Examples are to furnish the Government with available information in order to permit:
 - A preliminary evaluation relative to the merits of the proposed change (e.g. installation of a proposed change for the purpose of evaluation and testing prior to making a final decision to proceed with a proposed change); or,
 - A determination regarding the desirability of continuing expenditures required to further develop the proposal.
 - To provide alternative proposals; or
 - To supplement a message relative to an emergency or urgent priority ECP when it is impracticable to submit a formal ECP within 30 calendar days; or
 - To obtain Government approval to proceed with software engineering development prior to the development of the actual coding changes.
 - A formal ECP is the type, which provides the engineering information and other data in sufficient detail to support formal change approval/contractual implementation.
15. Revision. If an ECP is being revised, enter the proper identification of the revision, i.e., R1 for the first revision; R2, R3, etc. for subsequent revisions. (The date submitted (paragraph 5) shall be the date of the revised ECP.)
16. Baseline affected. Indicate the baseline(s) affected (see MIL-HDBK-61).
17. Other systems/configuration items affected. If other systems/configuration items are affected indicate whether the effect on other systems or CIs requires the submittal of related Class I ECPs. Supply details in paragraphs 33a and c.
18. Specifications affected. If specifications cited in the contract are affected by the ECP, their identity by the CAGE code of the design activity, document number, revision letter, and the NOR number of the NOR being submitted with the ECP, shall be provided.
19. Drawings affected. If drawings are affected by the ECP, their identity by the CAGE code of the design activity, document number, revision letter, and the NOR number of the NOR being submitted with the ECP, shall be provided.
20. Title of change. Provide a brief title to identify the component or system affected by the ECP. For example: F-18 Aircraft Air Turbine Start Connector Backshell Replacement; AN/AYK-14(v) CP-1502/CP-1503 Reconfiguration to CP-1799; (CSCI name) Block Update.
21. Contract number(s) and line item(s). Provide the number(s) of all currently active contract(s), and the affected contract line item number(s), at the originating CAGE-coded activity that are affected by the engineering change.

22. Procuring contracting officer. Provide the procuring contracting officer's name, office symbol/code, and telephone number applicable to the CI shown in paragraph 21.
23. Configuration item nomenclature. Provide the assigned name and type designation the CSCI name and number, if applicable, or authorized name and number of the CI(s) affected by the ECP.
24. Is the CI in production? If "yes", provide information as to whether deliveries have been completed on the contract(s). This data is not always applicable to software. If not applicable, so indicate.
25. All lower level items affected.
 - a. For hardware, an appropriate, complete descriptive name of the part(s) shall be provided as well as the quantity of the part(s). Additionally, applicable NSNs shall be provided.
 - b. For CSCI's, provide the name and identifier of each lower level CI and computer software unit affected.
26. Description of change. The description of the proposed change shall include the purpose and shall be given in sufficient detail to adequately describe what is to be accomplished. It shall be phrased in definitive language such that, if it is repeated in the contractual document authorizing the change, it will provide the authorization desired. Supporting data may be provided to the extent necessary to clearly portray the proposed change. If the proposed change is an interim solution, it shall be so stated.
27. Need for change. Provide an explanation of the need for the change to include specifically identifying the benefit of the change to the Government. The nature of the defect, failure, incident, malfunction, etc. substantiating the need for the change shall be described in detail. Full utilization shall be made of available failure data. If a new capability is to be provided, improvements in range, speed, performance, endurance, striking power, defensive or offensive capabilities, etc. shall be described in quantitative terms. Correspondence establishing requirements for the change and any testing accomplished prior to the submission shall be identified and summarized. If the ECP is needed to correct maintenance/logistics problems, that fact will be included with sufficient detail to identify the issues. If the ECP is being submitted as a response to a request for ECP or Government direction, cite that authority herein.
28. Production effectivity by serial number.
 - a. For hardware, provide the estimated production effectivity point for the production items including serial number, or other item identification (e.g., block or lot number) as approved by the Government. In determining the effectivity point for the proposed change, consider, in addition to the time factors, the availability of all support elements affected and the most economical point of introduction consistent with all the salient factors involved. The earliest production incorporation is not necessarily the singular or most important factor in the establishment of a proposed change effectivity point. The effectivity point shall be based on concurrent availability of all logistics support elements and materials affected by the change to the item.
 - b. For CSCI's, identify the CSCI version number, if known, into which the change will be incorporated. Where applicable, the effectivity of the end item CI and vehicle (aircraft, tank, ship, etc.) into which the capability represented by the new version of the software is proposed to be incorporated, shall also be provided. If the impact of the ECP merits the release of a new software version include a recommendation to this effect. Serial numbers may be used in lieu of version numbers if approved by the Government.
29. Effect on production delivery schedule. State the estimated delivery schedule of items incorporating the change, either in terms of days after contractual approval, or by specific dates contingent upon contractual approval by a specified date. If there will be no effect on the delivery schedule, so state.
30. Retrofit.
 - a. Recommended item effectivity. When the contractor recommends that the engineering change be accomplished in accepted items by retrofit, the quantities and serial (or lot) numbers of accepted items in which the change is

proposed to be incorporated by retrofit shall be provided. Such statement regarding items currently in production shall be based upon the estimated approval date of the ECP.

- b. Ship/vehicle class affected. When the delivered CI is installed in one or more ship/vehicle classes, enter the identification of such classes.
- c. Estimated kit delivery schedule. State estimated kit delivery schedule by quantity and date. When special tooling for retrofit is required for Government use, provide the dates of availability of tools, jigs, and test equipment required in conjunction with the kits to accomplish the change.
- d. Locations or ship/vehicle numbers affected. State the location(s) where retrofit is to be accomplished. If retrofit is to be accomplished in ships (or in vehicles for which the serial numbers are not shown in paragraph 30b), enter the ship hull numbers or vehicle numbers.

NOTE: The appropriate information shall be provided for CSCI changes that are to be incorporated as part of a hardware or equipment change; and implemented per a hardware retrofit schedule, or where the fielded version of the software is to be replaced.

- 31. Estimated costs/savings under contract. Provide the total estimated costs/savings impact of the ECP on the contract for the subject CI. Savings shall be shown in parentheses.
- 32. Estimated net total costs/savings. Provide the total estimated costs/savings impact of the basic and all related ECPs, including other costs/savings to the Government. Savings shall be shown in parentheses.
- 33. Effects on Functional/Allocated Configuration Identification. This information is to be provided only if the proposed change affects the system specification or the item development specification(s). If a separate product function specification is used, effects on such specification of changes proposed after the Product Baseline has been established shall be described as required.
 - a. Other systems affected. Provide only if other systems/configuration items are affected as indicated in paragraph 17.
 - b. Other contractors/activities affected. Identify other contractors or Government activities that will be affected by this engineering change.
 - c. Configuration items affected. Enter the names and numbers of all CIs, maintenance and operator training equipment, and support equipment affected.
 - d. Effects on performance allocations and interfaces in system specification. Describe the changes in performance allocations and in the functional/physical interfaces defined in the system specification.
 - e. Effects on employment, integrated logistic support, training, operational effectiveness, or software.
 - (1) For hardware, describe the effects of the proposed change on employment, deployment, logistics, and/or personnel and training requirements which have been specified in the approved system and/or CI specifications, including any changes or effects on the operability of the system. In particular, there shall be an entry detailing any effect on interoperability.
 - (2) For CSCIs, the following information shall be entered as applicable to the degree of design development of the CSCI at the time of ECP submission:
 - (a) Identify any required changes to the data base parameters or values, or to data base management procedures;
 - (b) Identify and explain any anticipated effects of the proposed change on acceptable computer operating time and cycle-time utilization;
 - (c) Provide an estimate of the net effect on computer software storage; and,
 - (d) Identify and explain any other relevant impact of the proposed change on utilization of the system.
- 34. Effects on configuration item specifications. The effect of the proposed change on performance shall be described in quantitative terms as it relates to the parameters contained in the CI development specifications. (See MIL-STD-961)

35. Developmental requirements and status.
- a. For hardware, when the proposed engineering change requires a major revision of the development program (e.g., new prototypes, additional design review activity, tests to be reaccomplished), the nature of the new development program shall be described in detail, including the status of programs already begun.
 - b. For CSCIs, identify the scheduled sequence of computer software design and test activities which will be required. ECPs initiated after preliminary design which affect the FBL and/or the ABL shall identify, as appropriate, significant requirements for computer software redesign, recoding, repetition of testing, changes to the software engineering/test environments, special installation, adaptation, checkout, and live environment testing. In addition, the specific impact of these factors on approved schedules shall be identified. The impact of the software change on the hardware design and input/output cabling shall also be detailed.
36. Date by which contractual authority is needed. Provide the date contractual authority is required in order to maintain the established schedule for:
- a. Production
 - b. Retrofit
37. Effects on product configuration documentation, logistics and operations. Certain information required may have been supplied in paragraphs above or does not apply to computer software. When this information has already been supplied, a cross-reference to such information will be adequate.
- a. For hardware, if any specific logistic interoperability factors are affected, provide information detailing the possible impact on the operational configuration.
 - b. For CSCIs, the software engineering and test environments are usually not affected by changes in the product configuration of a CSCI. Provide information about the status of the software redesign and retesting effort. There shall also be a review of the intent to document CSCI impacts in these areas.
38. Effect on product configuration documentation or contract. The effects on the approved CI product specifications shall be described by reference to the NORs or other enclosure(s) which cover such proposed text changes in detail. The effects on drawings, when not covered previously shall be described in general terms. Address nomenclature change when applicable. The effects on performance, weight-balance-stability, weight-moment, shall also be provided when applicable.
39. Effect on acquisition logistics support (ALS) elements. The effects of the engineering change on logistic support of the item shall be provided. These effects shall be explained in detail. The information required shall indicate the method to be used to determine the integrated logistic support plans and items which will be required for the support of the new configuration as well as retrofitting previously delivered items to the same configuration. The following shall be covered as applicable:
- a. Effects on schedule and content of the ALS plan.
 - b. Effect on maintenance concept and plans for the levels of maintenance and procedures.
 - c. System and/or CI logistics support analysis (LSA) tasks to be accomplished and LSA data requiring update wherever it exists in the contract. (MIL-PRF-49506)
 - d. Extension/revision of the interim support plan.
 - e. Spares and repair parts that are changed, modified, obsoleted or added, including detailed supply data for interim support spares. NOTE: Failure to include detailed supply data will delay ECP processing.
 - f. Revised or new technical manuals.
 - g. Revised or new facilities requirements and site activation plan.
 - h. New, revised, obsoleted or additional support equipment (SE), test procedures and software. For items of SE and trainers which require change, furnish a cross reference to the related ECPs, and for any related ECP not furnished with the basic ECP, furnish a brief description of the proposed change(s) in SE and trainers.

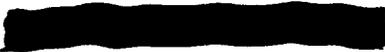
- i. Qualitative and quantitative personnel requirements data which identify additions or deletions to operator or maintenance manpower in terms of personnel skill levels, knowledge and numbers required to support the CI as modified by the change.
 - j. New operator and maintenance training requirements in terms of training equipment, trainers and training software for operator and maintenance courses. This information should include identification of specific courses, equipment, technical manuals, personnel, etc. required to set up the course at either the contractor or Government facility.
 - k. Any effect on contract maintenance that increases the scope or dollar limitation established in the contract.
 - l. Effects on packaging, handling, storage, and transportability resulting from changes in materials, dimensions, fragility, inherent environmental or operating conditions.
40. Effect on operational employment. The effects of the engineering change of CI utilization shall be provided. Quantitative values shall be used whenever practicable and are required when reliability and service life are impacted. Survivability includes nuclear survivability. The effects of the change proposal on safety, maintainability, operating procedures, electromagnetic interference, activation schedule critical single point failure items, and interoperability shall also be provided, if applicable.
41. Other considerations. The effects of the proposed engineering change on the following shall be identified:
- a. Interfaces having an effect on adjacent or related items, (output, input, size, mating connections, etc.).
 - b. GFE or Government Furnished Data (GFD) changed, modified or obsoleted.
 - c. Physical constraints. Removal or repositioning of items, structural rework, increase or decrease in overall dimensions.
 - d. Software (other than operational, maintenance, and training software) requiring a change to existing code and/or, resources or addition of new software.
 - e. Rework required on other equipment not included previously which will effect the existing operational configuration.
 - f. Additional or modified system test procedures required.
 - g. Any new or additional changes having an effect on existing warranties or guarantees.
 - h. Changes or updates to the parts control program.
 - i. Effects on life cycle cost projections for the configuration item or program, including projections of operation and support costs/savings for the item(s) affected over the contractually defined life and projections of the costs/savings to be realized in planned future production and spares buys of the item(s) affected.
42. Alternate solutions. When applicable, provide a summary of the various alternative solutions considered, including the use of revised operation or maintenance procedures, revised inspection or servicing requirements, or revised part replacement schedules. The contractor shall provide an analysis of the alternatives, identify the advantages and disadvantages inherent in each feasible alternative approach, and show the reasons for adopting the alternative solution proposed by the ECP. When contractor's analysis addresses new concepts or new technology, supporting data shall be presented with the proposal to authenticate the trade-off analysis.
43. Developmental status. When applicable, make recommendations as to the additional tests, trials, installations, prototypes, fit checks, etc., which will be required to substantiate the proposed engineering change. These recommendations shall include the test objective and test vehicle(s) to be used. Indicate the development status of the major items of GFE which will be used in conjunction with the change and the availability of the equipment in terms of the estimated production incorporation point.
44. Recommendations for retrofit. When applicable, make recommendations for retrofit of the engineering change into accepted items with substantiating data, any implications thereto, and a brief description of the action required. Where retrofit is not recommended, an explanation of this determination shall be provided.
- a. Work-hours per unit to install retrofit kits. Show the amount of work which must be programmed for various activities to install retrofit kits. Estimate work-hours to install retrofit kits when weapon system is undergoing overhaul.
 - b. Work-hours to conduct system tests after retrofit. Provide the work-hours required to test the system or the item following installation of the retrofit kit.

- c. This change must be accomplished. Where previously approved engineering changes must be incorporated in a specific order in relation to the proposed change, such order should be specified.
 - d. Is contractor field service engineering required? If "yes" attach proposed program for contractor participation.
 - e. Out of service time. Estimate the total time period from removal of the equipment from operational service until equipment will be returned to operational status after being retrofitted.
45. Effect of this ECP and previously approved ECPs on item. Summarize the cumulative effect upon performance, weight, electrical load, etc., of this ECP and previously approved ECPs when design limitations are being approached or exceeded. Provide consequences of ECP disapproval.
 46. Production impact costs. Estimated costs/savings applicable to production of the item resulting from the change. Includes the costs of Redesign of the CIs or Components thereof, of Factory Test Equipment, of Special Factory Tooling, of Scrap, of Engineering Design, of Engineering Data Revision, of Revision of Test Procedures, and of Testing and Verification of Performance of New Items.
 47. Retrofit impact costs: Estimated costs applicable to retrofit of the item including installation and testing costs. Includes Retrofit-specific Engineering Data Revision, Prototype Testing, Kit Proof Testing, Purchase of Retrofit Kits for Operational Systems, Preparation of Modification Instructions, Design and Manufacture of Special Tooling for Retrofit, Installation of Kits by contractor personnel, Installation of Kits by government personnel, Testing after Retrofit and Modification, and Testing and Verification of Performance of Government Furnished Equipment/Property (GFE/GFP).
 48. Logistics support impact costs: Estimated costs/savings of the various elements of logistics support applicable to the item. Includes Spares/Repair Parts Rework, New Spares and Repair Parts, Supply/Provisioning Data, Support Equipment, Retrofit Kit for Spares, Operator Training Courses, Maintenance Training Courses, Revision of Technical Manuals, New Technical Manuals, Training/Trainers, Interim Support, Maintenance Manpower, and Computer Programs/Documentation.
 49. Other costs/savings: Includes estimated costs of interface changes accomplished by other contractor activities. (Do not include costs if the changes are covered by related ECPs by other contractors. Also includes estimated costs of interface changes accomplished by the Government for changes which must be accomplished in previously delivered items (aircraft, ships, facilities, etc.), other interfacing products, and/or retrofit of GFE/GFP, to the extent that such costs are not covered under production, retrofit, or logistics support.
 50. Estimated costs/savings summary, related ECPs. Provide a summary of the estimated net total cost impact of both the ECP and any related ECPs and other associated new requirements which are needed to support the modified items broken out by categories described in paragraphs 47 through 50 above.
 - a. Prime contractor. The prime contractor shall summarize the costs/savings of all related ECPs for which the contractor is responsible. If there is no system integrating contractor, the prime contractor submitting the basic ECP shall include the costs of related ECPs being submitted by other affected contractors to the extent such information is available.
 - b. System integrating contractor. When a system integrating contractor (or coordinating contractor) has contractual responsibility for ECP coordination, the contractor shall summarize the costs of related ECPs of the several primes involved in an interface or interrelated ECP.
 51. Milestones. Provide milestones that show the time phasing of the various deliveries of items, support equipment, training equipment, and documentation incorporating the basic and related ECPs. Enter symbols and notations to show the initiation or termination of significant actions. Base all dates upon months after contractual approval of the basic ECP.
 52. Signature. An authorized official representing the contractor submitting the ECP shall sign the ECP.

END OF DI-CMAN-81589

ONLY EVIDENCE OF PRIOR APPROVALS.
 email: (1)aie-qac@pica.army.mil (2)amsta-ar-qa-cdrl@ria-emh2.army.mil
 Text:Microsoft Office 97
 Drawings:AutoCAD-Release 14(Expressed mailed hard copies will be accepted)
 Files may be compressed using ZIP program.
 WARNING: Large packages may cause delays in delivery using mail internet.
 Email subject line must contain end item nomenclature.

1. A003		14.	
		PROCUREMENT	/ /
2. TEST PROCEDURE/ PHOSPHATE COATING PRE-		CONTRACTING	/ /
3. PRODUCTION PROCEDURE		OFFICER	/ 1/
4. DI-NDTI-80603*			

 MIL-DTL-16232G

6. AMSTA-AR-ESM	7. XX	8. A	9. N/A	
10. ONE/R	11. N/A			15. TOTAL 0/ 1/ 0
12. 60 DAC		13. N/A		

16. REMARKS
 *PARA'S 10.2.2.2 & 10.2.2.3 ONLY APPLY. BLOCK 8 CONT.-PRIOR TO PRODUCTION, APPROVAL THROUGH THE CONTRACTING OFFICER IS REQUIRED WITHIN 60 DAYS AFTER CONTRACT AWARD.A DD FORM 250 IS NOT REQUIRED FOR PHOSPHATE COATING PROCEDURE APPROVAL. CONTRACTOR FORMAT ACCEPTABLE. SHALL BE SUBMITTED ON AN IBM COMPATIBLE 3-1/2" DISKETTE IN RICH TEXT FORMAT (RTF).

1. A004		14.	
		AMSTA-LC-CIAT	/ 1/
2. TRANSPORTATION DISCREPANCY REPORT			
3.			
4. DI-MGMT-80544A			
5. SOW, ACTBY INST,para 3a(1)			
6. AMSTA-LC-CIA	7. NO	8.	9. N/A
10. ASREQ	11. ASREQ		
		15. TOTAL	0/ 1/ 0
12. *		13.	

16. REMARKS
 *SUBMISSION REQUIRED UPON DISCOVERY OF TRANSPORTATION DISCREPANCY WHEN MATERIEL IS RECEIVED AT CONTRACTOR'S FACILITY.
 E-MAIL: mosleya@tacom.army.mil

1. A005		14.	
		AMSTA-LC-CIAC	/ 1/
2. REPORT OF SHIPPING (ITEM) AND			
3. PACKAGING DISCREPANCY			
4. DI-MGMT-80503			
5. SOW,ACTBY INST,para 4a(2)			
6. AMSTA-LC-CIA	7. NO	8.	9. N/A
10. ASREQ	11. ASREQ		
		15. TOTAL	0/ 1/ 0

12. * 13.

16. REMARKS

*SUBMISSION REQUIRED UPON DISCOVERY OF SHIPPING DISCREPANCY WHEN MATERIEL IS RECEIVED AT CONTRACTOR'S FACILITY. REPORT SHALL BE SUBMITTED WITHIN 3 DAYS OF DISCOVERY.

E-MAIL: rods@ria.army.mil

1. A006			14.	
			AMSTA-LC-CIAT	/ 1/
2. REQUEST FOR GOVERNMENT FURNISHED				
3. MATERIEL (GFM)				
4. DI-MGMT-80408B				
5. SOW, ACTBY INST,para 5				
6. AMSTA-LC-CIA	7. NO	8.	9.N/A	
10. ASREQ	11. ASREQ		15. TOTAL	0/ 1/ 0

12. * 13.

16. REMARKS

*SUBMISSION REQUIRED TO RECEIVE GFM

E-MAIL: mosleya@tacom.army.mil

1. A007			14.	
			AMSTA-LC-CIAT	/ 1/
2. GOVERNMENT FURNISHED MATERIEL (GFM)				
3. CONSUMPTION REPORT				
4. DI-MGMT-80438B				
5. SOW, ACTBY INST,para 6				
6. AMSTA-LC-CIA	7. NO	8.	9. N/A	
10. MTHLY	11. 0 TIME		15. TOTAL	0/ 1/ 0

12. 40 DAC 13.

16. REMARKS

SUBMISSION REQUIRED TO REFLECT GFM CONSUMED DURING REPORT PERIOD-NEGATIVE REPORT REQUIRED.BLK 10:10TH DAY OF MONTH FOLLOWING REPORT MONTH.

E-MAIL: mosleya@tacom.army.mil

APPROVED BY: STEPHEN J HANSEN, SDMO, AMSTA-AR-QAD

DATE: 04/12/2000

CONTRACT DATA REQUIREMENTS LIST

CATEGORY: MISC SYSTEM/ITEM: CM Actions
 TO CONTRACT/PR: N/A

- | | | | |
|----------------------------|-----------------------------------|------------------|--------------------------|
| 1. SEQUENCE NUMBER | | 14. DISTRIBUTION | DRFT/REG/REPRO
COPIES |
| 2. TITLE OF DATA ITEM | | | |
| 3. SUBTITLE | | | |
| 4. DATA ITEM NUMBER | | | |
| 5. CONTRACT REFERENCE | | | |
| 6. TECHNICAL OFFICE | 7. DD | 8. APP | 9. DIST STATEMENT |
| | 250 | CODE | REQUIRED |
| 10. FREQUENCY | 11. AS OF DATE | | |
| 12. DATE OF 1ST SUBMISSION | 13. DATE OF SUBSEQUENT SUBMISSION | | |

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- | | | | |
|--|-----------|----------------------|---------|
| 1. A001 | | 14. SEE ADDRESS CODE | / / |
| 2. ENGINEERING CHANGE PROPOSAL (ECP) - | | DIST. ATTCHED** | / / |
| 3. ARMY MATERIEL COMMAND (AMC) | | | |
| 4. DI-CMAN-81589 | | | |
| 5. SECTION C | | | |
| 6. AMSTA-AR-QAW | 7. LT | 8. | 9. * |
| 10. ASREQ | 11. ---- | 15. TOTAL | 0/ 0/ 0 |
| 12. ASREQ | 13. ASREQ | | |

16. REMARKS
 *DISTRIBUTION STATEMENT WILL BE ASSIGNED AND IMPLEMENTED BY THE DOD CONFIGURATION MANAGER. CONTRACTOR FORMAT IS ACCEPTABLE HOWEVER DATA MUST BE IN GOVT COMPATIBLE SOFTWARE. **SUBMIT ELECTRONICALLY TO ECP-INPUT@RIA.ARMY.MIL. ELECTRONIC FILES MUST BE LESS THAN 7MG.
 FORMS ARE AVAILABLE FOR USE IN SUBMISSION OF THIS DATA ITEM AT
[HTTP://WEB1.WHS.OSD.MIL/ICDHOME/DDEFORMS.HTM](http://WEB1.WHS.OSD.MIL/ICDHOME/DDEFORMS.HTM).

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- | | | | |
|---------------------------------------|-----------|----------------------|---------|
| 1. A002 | | 14. SEE ADDRESS CODE | / / |
| 2. REQUEST FOR DEVIATION (RFD) - ARMY | | DIST. ATTCHED** | / / |
| 3. MATERIEL COMMAND (AMC) | | | |
| 4. DI-CMAN-81590*** | | | |
| 5. SECTION C | | | |
| 6. AMSTA-AR-QAW | 7. LT | 8. | 9. * |
| 10. ASREQ | 11. --- | 15. TOTAL | 0/ 0/ 0 |
| 12. ASREQ | 13. ASREQ | | |

16. REMARKS

*DISTRIBUTION STATEMENT WILL BE ASSIGNED AND IMPLEMENTED BY THE DOD CONFIGURATION MANAGER. CONTRACTOR FORMAT IS ACCEPTABLE HOWEVER DATA MUST BE SUBMITTED IN GOVT COMPATIBLE SOFTWARE. **SUBMIT ELECTRONICALLY TO ECP-INPUT@RIA.ARMY.MIL. ELECTRONIC FILES MUST BE LESS THAN 7MG. ***ADEQUATE DATA/ANALYSIS/TESTING TO SUPPORT POSITION RELATIVE TO PARAGRAPHS 24 AND 25 SHALL BE INCLUDED. FORMS ARE AVAILABE AT THE FOLLOWING WEB SITE MAY BE USED FOR SUBMISSION OF DATA ITEM [HTTP://WEB1.WHS.OSD.MIL/ICDHOME/DDEFORMS.HTM](http://WEB1.WHS.OSD.MIL/ICDHOME/DDEFORMS.HTM).

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|------------------------------------|---------|------------------|-----------|---------|
| 1. A003 | | 14. | | |
| | | SEE ADDRESS CODE | / | / |
| 2. NOTICE OF REVISION (NOR) - ARMY | | DIST. ATTCHED** | / | / |
| 3. MATERIEL COMMAND (AMC) | | | | |
| 4. DI-CMAN-81591 | | | | |
| 5. SECTION C | | | | |
| 6. AMSTA-AR-QAW | 7. LT | 8. | 9. * | |
| 10. ASREQ | 11. --- | | 15. TOTAL | 0/ 0/ 0 |
| 12. ASREQ | | 13. ASREQ | | |

16. REMARKS

*DISTRIBUTION STATEMENT WILL BE ASSIGNED AND IMPLEMENTED BY THE DOD CONFIGURATION MANAGER. CONTRACTOR FORMAT IS ACCEPTABLE HOWEVER DATA MUST BE IN GOVT COMPATIBLE SOFTWARE. **SUBMIT ELECTRONICALLY TO ECP-INPUT@RIA.ARMY.MIL. ELECTRONIC FILES MUST BE LESS THAN 7MG. FORMS ARE AVAILABLE AT THE FOLLOWING WEB SITE FOR SUBMISSION OF THIS DATA ITEM [HTTP://WEB1.WHS.OSD.MIL/ICDHOME/DDEFORMS.HTM](http://WEB1.WHS.OSD.MIL/ICDHOME/DDEFORMS.HTM).

APPROVED BY: SHELLEY SCHABILION, SDMO, AMSTA-AR-QAD

DATE: 02/28/2001