

**EQUIPMENT SERVICEABILITY CRITERIA**  
**FOR ARMAMENT SUBSYSTEM,**  
**HELICOPTER, 7.62 MILLIMETER MACHINE GUN: HIGH RATE, XM27E1**  
**(USED ON OH-6A AND OH-58A HELICOPTERS)**

Headquarters. Department of the Army, Washington, D. C., 12 December 1970

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**Section I. INSTRUCTIONS**

**1. Purpose.** This manual furnishes the user with a procedure for evaluating the readiness condition of the equipment to perform satisfactorily its primary mission for 90 days with normal maintenance support.

**NOTE**

**Application of this procedure, however, does not eliminate or reduce the requirement for prescribed maintenance service on the equipment and does not authorize replacement of components.**

**2. Definitions.** *a. Equipment Category GREEN.* Equipment free of conditions that would limit the reliable performance of its primary mission for a period of 90 days of operation.

*b. Equipment Category AMBER.* Operationally ready equipment that possesses a limiting factor(s) which may curtail a reliable performance of its primary mission for a period of 90 days of operation.

\* This manual supersedes TM 9-1005-298-ESC, 1 May 1969

c. *Equipment Category RED.* Equipment unable to perform its primary mission immediately or possessing an unacceptable reliability for sustained performance (90 days) of its primary mission.

d. *Color Rating.* When color ratings are designated for an item, the scoring is determined by **AMBER** being lower than **GREEN** and **RED** being the lowest rating.

e. *Multiple-Aspect Equipment.* An item of issue which is composed of subsystems and/or components which are the responsibility of more than one logistics manager.

**3. General Instructions.** a. This evaluation will be performed by the crew.

b. This technical manual will be filed with the equipment log.

c. This evaluation will be performed on the item(s) actually being rated.

d. Authorized subsystems and components of multiple-aspect equipment requiring evaluation which are not available at the organization shall be given the lowest color rating designated for that item.

e. Equipment covered in this manual requiring serviceability checks but not authorized to the evaluating organization shall not be rated.

f. This equipment is rated on the basis of capability for immediate operation and amount of wear life remaining on limited life components. The rating is not meaningful unless each check is made with the utmost care and accuracy.

g. Record the evaluation results on DA Form 2404, Equipment

Inspection and Maintenance Worksheet. The blocks will be completed as shown below:

(1) *Block 1.* Insert the organizational designation of the unit performing the evaluation.

(2) *Block 2.* Identify system, end item, component, or subsystem and enter its name and model, Armament Subsystem, Helicopter, 7.62 Millimeter Gun: High Rate, XM27E1.

(3) *Block 3.* Insert the registration, serial, or Federal stock number, as appropriate. Do not use more than one type of number.

(4) *Block 4.* Insert the rounds fired as of the date of the evaluation.

(5) *Block 5.* Insert a six digit calendar date on which ESC evaluation is performed (example: 3 Jan 1969 would be 690103).

(6) *Block 6.* Insert the letters "ESC."

(7) *Block 7.* Insert the ESC technical manual number and its date of issue.

(8) *Column a.* Insert the ESC checkpoint item number.

(9) *Column b.* Place each obtained color rating opposite the item to which it applied. (Insert "**GREEN**," "**AMBER**," or "**RED**," as applicable.)

(10) *Column c.* Briefly describe each test or check performed.

(11) *Block 8.* Signature of senior individual performing evaluation.

(12) *Block 9.* Maintenance supervisor's signature.

(13) *Block 10.* Make the color rating for the subsystem the lowest color rating determined for all subsystem check points. Insert the subsystem color categorization.

(14) The color category will not be any higher than the lowest rated component. Indicate this classification at the bottom of the basic evaluation sheet thusly: SUBSYSTEM EVALUATION: (Insert **GREEN**, **AMBER**, or **RED**).

(15) Staple all forms applying to the same system together, placing the basic system forms on top.

*h.* If an URGENT modification work order has not been applied to any authorized equipment, the equipment and the system will be rated "**RED**."

*i.* Subsystems and components will be separately color rated.

*j.* A color rating will be assigned for the overall system.

**WARNING**

**Dummy ammunition to be cycled through the machine gun group during the evaluation will be given 100% visual inspection to insure that no live rounds are commingled with the dummy rounds.**

**4. Special Instructions.** *a.* Evaluate the armament subsystem when the helicopter is evaluated. Make the evaluation with armament subsystem installed. Items are sequenced to provide a direct and efficient method for evaluation of the armament subsystem.

*b.* Two persons are required for the evaluation, one in the

cockpit operating armament subsystems controls. The second on the ground observing armament subsystems responses to control movements and making visual checks of armament subsystem parts.

**WARNING**

**Starting of aircraft engine will be accomplished by authorized personnel only.**

*c.* Provide full electrical power to the armament subsystem when making functional checks. This is best accomplished by connecting external electrical power units to the power receptacles on the aircraft. The external electrical power unit should deliver 28-VDC. However, electrical power may be supplied directly from the aircraft by turning on the master switch and starting the aircraft engine.

*d.* The eight items of armament subsystem evaluation listed in Section II include brief inspection procedures, criteria conditions, and the color rating assigned each condition.

*e.* During armament subsystem evaluation, operate the armament subsystem and components sufficiently to obtain definite data required to complete the evaluation.

**5. Reporting of Errors.** Report errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, Recommended Changes to Publications, and forwarded direct to: Commanding General, Headquarters, U. S. Army Weapons Command, ATTN: AMSWE-SMM-P, Rock Island, Ill. 61201.

**Section II. EVALUATION REQUIREMENTS AND PROCEDURES**

**WARNING**

**Clear gun, delinking feeder, ammunition chutes, and container assembly before proceeding. Dummy cartridges to be cycled through the machine gun group during evaluation will be given 100% visual inspection to insure that no live rounds are commingled with the dummy.**

**7. Evaluation Procedure.** *a. Information to Be Determined by Inspection and Operation.* Evaluate each item listed and record the proper color rating. Use DA Form 2404 as described in Section I.

**NOTE**

**Evaluate machine gun, electric drive assembly and the delinking feeder as a group.**

**6. Evaluation Requirements.** Function of the armament subsystem will be accomplished by utilizing the cockpit controls.

**CAUTION**

**Cycle dummy ammunition through the machine gun group during the evaluation. Do not use fluted case dummy cartridges.**

**CAUTION**

**Do not prolong dry firing of the gun, damage to bolt assemblies and firing pins can result.**

**ITEM 1. MWO's.**

Determine whether URGENT MWO's have been applied.

<b>Condition</b>	All URGENT MWO'S applied.	URGENT MWO's not applied.
<b>Rating</b>	<b>GREEN</b>	<b>RED</b>

**ITEM 2. Cable Assemblies.**

Inspect gun cleared sensor, gun drive, sight, and control box cable assemblies for damaged or loose connectors and frayed or broken wires.

<b>Condition</b>	Connectors are securely attached to mating receptacles. Cable assemblies not frayed or broken.	Cable assemblies frayed.	Connectors cannot be attached to mating receptacles; cable assemblies broken.
<b>Rating</b>	<b>GREEN</b>	<b>AMBER</b>	<b>RED</b>

**ITEM 3. Ammunition Container and Ammunition Chutes.**

Inspect leveler assemblies for freedom of action. Inspect container and chute for dents, bulges, or other deformations which

prevent free flow of ammunition. Inspect rollers in container and chute for freedom of movement. Inspect for defective latches and missing components.

<b>Condition</b>	No visible damage; serviceable condition.	Minor repairs necessary.	Damaged or missing components; unserviceable condition restricting flow of ammunition.
<b>Rating</b>	<b>GREEN</b>	<b>AMBER</b>	<b>RED</b>

**ITEM 4. Control Panel.**

In the cockpit, from pilot's seat, place SYSTEM MODE switch in either FIRE TO CLEAR or FIRE NORMAL position and ARMED-SAFE switch in ARMED position. Press LIGHT TEST switch at upper center of instrument panel. Observe that all warning lights on control panel illuminate. Release switch.

<b>Condition</b>	Operating control components on face of panel in good condition, intact, and secure; ARMED and AMMO LOW indicator lights illuminate.	ARMED and AMMO LOW light inoperative; control panel still functional.	GUN NOT CLEAR light inoperative. Operating control components damaged or missing; control panel inoperative.
<b>Rating</b>	<b>GREEN</b>	<b>AMBER</b>	<b>RED</b>

**ITEM 5. Machine Gun, Drive Assembly, and Delinking Feeder.**

<b>Condition</b>	Gun, drive assembly, and feeder, operates satisfactorily at both speeds, and are intact and secure.	Missing, loose, or damaged nonfunctional components.	Gun, drive assembly, and feeder will not function properly due to missing, damaged, or incorrect assembly of functional components.
<b>Rating</b>	<b>GREEN</b>	<b>AMBER</b>	<b>RED</b>

**ITEM 6. Reflex Sight.**

Move sight into operating position; adjust to convenient height; adjust lamp intensity. Inspect control linkage for wear, looseness, or damage; beam splitter for cracked or broken glass.

<b>Condition</b>	Reticle image clean; elevation knob operates smoothly and evenly; scale and index easy to read; lamp illuminates reticle in both switch positions; no loose or defective parts; sight holds in stowed and operating positions.	Irregular knob movement loose or damaged non-functional components. Sight shows signs of wear or looseness in control linkage. One filament of reticle lamp burned out. Glass components cracked; scale and Index difficult to read.	Elevation knob does not operate; lamp does not illuminate reticle in either switch position, scale and index cannot be read: loose or defective functional parts preventing operation: sight does not hold in stowed or operating positions.
<b>Rating</b>	<b>GREEN</b>	<b>AMBER</b>	<b>RED</b>

**ITEM 7. Housing and Tube Assembly and Sight Control.**

Inspect three mounting points of the housing and tube assembly. Operate elevation depression switch on cyclic stick grip assembly. Observe tube assembly and sight movement in elevation and depression. Check to be sure position stop is in position.

<b>Condition</b>	Elevation/depression movements are smooth and synchronized with sight; all components properly connected and in serviceable condition.	Elevation / depression movements are restricted; no visible exterior damage to components.	Gun fails to move in elevation or depression or sight does not follow gun. Missing, loose or damaged functional components. Positive stop not in position.
<b>Rating</b>	<b>GREEN</b>	<b>AMBER</b>	<b>RED</b>

**ITEM 8. Ram Air Duct Assembly.**

Inspect fasteners and cable to insure that ram air duct assembly is secure.

<b>Condition</b>	Ram air duct assembly in place and secure.	Cable broken or missing; fastener missing, cannot secure ram air duct assembly.
<b>Rating</b>	<b>GREEN</b>	<b>RED</b>

*b. Rating for Armament Subsystem.*

- (1) Determine if any Amber ratings were recorded.
- (2) Determine if any Red ratings were recorded.
- (3) The color rating will be the lowest rating recorded (above).

**By Order of the Secretary of the Army:**

Official:

KENNETH G. WICKHAM,  
*Major General, United States Army,  
The Adjutant General.*

W.C. WESTM.ORELAND,  
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To be distributed in accordance with DA Form 12-31 (qty rqr block #127) operator and crew requirements for Armament Subsystem XM27E1.

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