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AUTHORITY

Assistant Chief of Staff for Force Development [Army] ltr dtd 13 Sep 1973

AVHGC-DST (22 Oct 69) 1st Ind
SUBJECT: M72A1E1 Improved Light Antitank Weapon

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT, APO 96558

1. The attached final letter report is forwarded for review and transmittal to Department of the Army. Request one copy of the CINCUSARPAC forwarding indorsement be furnished to Commanding General, US Army, Vietnam, ATTN: AVHGC-DST and Commanding Officer, Army Concept Team in Vietnam (ACTIV).

2. MUCOM message, DTG 251812Z Jul 69, states the difficulty with the trigger squeeze was corrected by the addition of lubricant to the trigger mechanism. The noise level of the improved LAW is not considered to be a significant problem.

3. This Headquarters concurs in the conclusion that the improved LAW is suitable for use in RVN and recommends the M72A1E1 be type classified Standard A.

FOR THE COMMANDER:

1 Incl
as

JOHN A. O'BRIEN
Colonel, AGC
Adjutant General

STATEMENT #2 UNCLASSIFIED

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DEPARTMENT OF THE ARMY
ARMY CONCEPT TEAM IN VIETNAM
APO San Francisco 96384

AVIB-GCD

SUBJECT: Final Letter Report - M72A1E1 Improved Light Antitank Weapon (ACG-13/69I)

Commanding General
United States Army, Vietnam
ATTN: AVHGC-DST
APO 96375

1. REFERENCES

a. Message, 46290 AVHGC-DST, Headquarters, US Army, Vietnam, 22 April 1968, subject: M72E1 LAW With Improved Warhead (ENSURE)(U), Confidential.

b. Message, 890450 DA, Department of the Army, 12 December 1968, subject: ENSURE 241-M72A1E1 LAW (U).

c. Message, 903654 DA, Department of the Army, 3 April 1969, subject: M72A1E1 LAW (ENSURE 241)(U).

2. PURPOSE

The purpose of this evaluation was to determine the suitability of the M72A1E1 Light Antitank Weapon (improved LAW) for use by US Army units in the Republic of Vietnam (RVN).

3. OBJECTIVES

a. Objective 1. To evaluate the capabilities of the improved LAW.

b. Objective 2. To evaluate the operational characteristics of the improved LAW.

c. Objective 3. To determine user acceptability of the improved LAW.

AVIB-GCD
SUBJECT: Final Letter Report - M72A1E1 Improved Light Antitank Weapon (ACG-13/69I)

4. BACKGROUND

In February 1968 the US Army, Vietnam (USARV) conducted an evaluation of 61 M72 LAWs. Because of the defects and limitations found in the M72, USARV submitted an Expedited Non-Standard Urgent Requirement for Equipment (ENSURE) request for an improved LAW in April 1968. The M72A1E1 LAW was the result of this request. The first shipment of improved LAWs arrived in RVN during March 1969.

5. SCOPE

The improved LAWs were used by the evaluating units in combat operations.

6. DESCRIPTION

The improved LAW is a 66mm light antitank weapon system. It consists of a lightweight, shoulder fired rocket launcher (see Figure 1) and a high explosive antitank (HEAT) rocket (see Figure 2) which contains a high explosive shaped charge primarily intended for penetration of armored targets. It may also be used effectively against bunkers and other light field fortifications and gun emplacements. The compact, portable weapon is issued as a preloaded single shot, disposable launcher with a HEAT rocket.

7. APPROACH

Initially, 500 improved LAWs were made available to the 4th, 9th, and 25th Infantry Divisions. During June 1969, an additional 1000 improved LAWs were made available to each of these units. A 90-day field evaluation period, 1 April to 4 July 1969, was used for collecting data.

8. ENVIRONMENT

The areas of operation for the three evaluating units were as follows:

4th Infantry Division	-	Western Plateau
9th Infantry Division	-	Mekong Delta
25th Infantry Division	-	Mekong Terrace.

During the evaluation period all three regions experienced heavy rainfall (14.32 to 22.2 inches). Temperatures ranged from 57° to 90° in the Western Plateau, and from 73° to 100° in the Mekong Delta and Terrace.

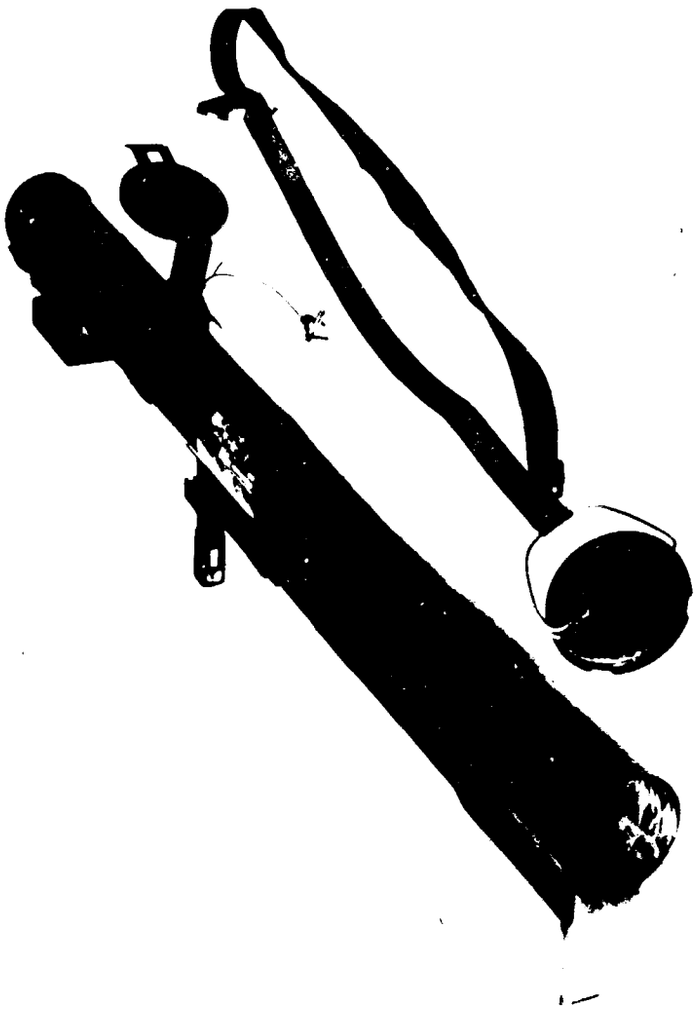

FIGURE 1. Improved LAW.

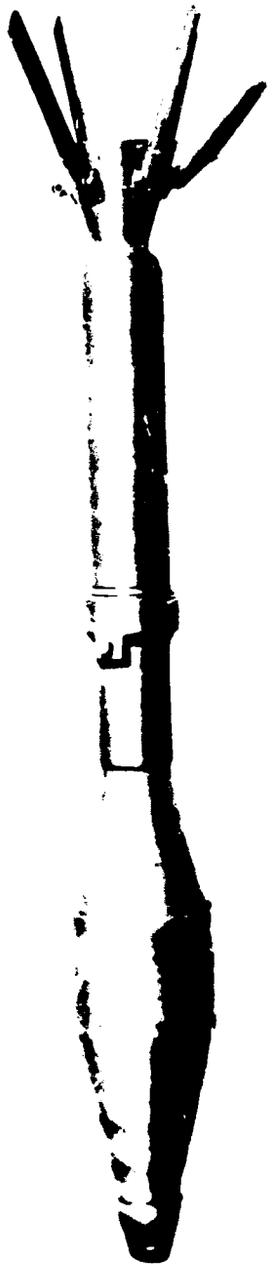

FIGURE 2. HEAT Rocket.

9. DATA COLLECTION AND ANALYSIS

Three operational factors and their performance variables were investigated:

a. Weapon Capabilities

(1) Type of targets engaged

(2) Effect on target

b. Operational Characteristics

(1) Configuration

(2) Malfunctions

(3) Disposal.

c. User Acceptability

(1) Training requirements

(2) Basic ammunition load.

Information for measuring these factors was obtained from responses to questionnaires by personnel who had employed the improved LAW on combat operations. Three ACTIV evaluators, one for each evaluating division, conducted structured interviews with the respondents and other personnel concerned with employment of the improved LAW. The term respondent as used in this report refers to those personnel who completed the questionnaires.

10. TRAINING AND DEMONSTRATIONS

a. A New Equipment Training Team (NETT) conducted informal training and briefings at Long Binh Post, RVN, for the ACTIV project officer and three evaluators from 18 to 23 March 1969. This training included familiarization firing and tests of the effectiveness of the improved LAW against simulated bunkers and an armored personnel carrier (APC). The NETT, accompanied by the ACTIV project officer and the three evaluators, gave similar instruction and demonstrations to the three participating divisions.

b. Since there was no data on the capabilities of the improved LAW to destroy field fortifications, three simulated bunkers were constructed at Long Binh. The improved LAW was fired against these targets to familiarize the evaluators with the weapon and to determine the weapon's effect on various bunker configurations.

(1) One of the simulated bunkers was constructed of six feet of compacted laterite-filled sandbags, backed by a 3/4-inch sheet of plywood. A second sheet of 3/4-inch plywood was erected at a standoff distance of six feet behind the bunker. Twelve feet in front of the bunker was a ten-gauge chain link fence (see Figure 3). The first improved LAW was fired from a distance of 160 meters, penetrated the fence and bunker, but failed to pass completely through the standoff sheet of plywood. Seven subsequent rounds passed through the fence, bunker, and both sheets of plywood. A circular pattern (three feet in diameter) was etched on the standoff sheet. This spall pattern was caused by fragments from the rocket's copper cone and elements of the laterite-filled sandbags.

(2) The second simulated target was constructed similar to the first, but contained four feet of compacted laterite-filled sandbags. Nine rounds easily penetrated the fence and bunker and produced the same type spalling effect as noted on the first bunker's standoff sheet.

(3) A third bunker was constructed with 3/4-inch sheets of plywood and filled with loose laterite soil. There was a chain link fence 12 feet in front, and a standoff sheet of 3/4-inch plywood in the rear (see Figure 4). Three rounds were fired from a distance of 160 meters. Although the rounds failed to pass completely through the standoff sheet, the bunker was demolished.

c. During the demonstration at Long Binh one improved LAW round was fired into a salvaged APC. From a distance of 160 meters, the warhead made a 1 3/4-inch entry hole and passed through both sides of the vehicle. Metal spall from the warhead and the vehicle's armor plate caused damage to the interior of the APC and started a small fire in the engine compartment.

11. COMBAT EMPLOYMENT

Information was collected on 110 tactical firings of the improved LAW. Figure 5 shows the number of firings by mission and by type of target. In this report, reconnaissance by fire is used to denote a type of target rather than a method of employment.

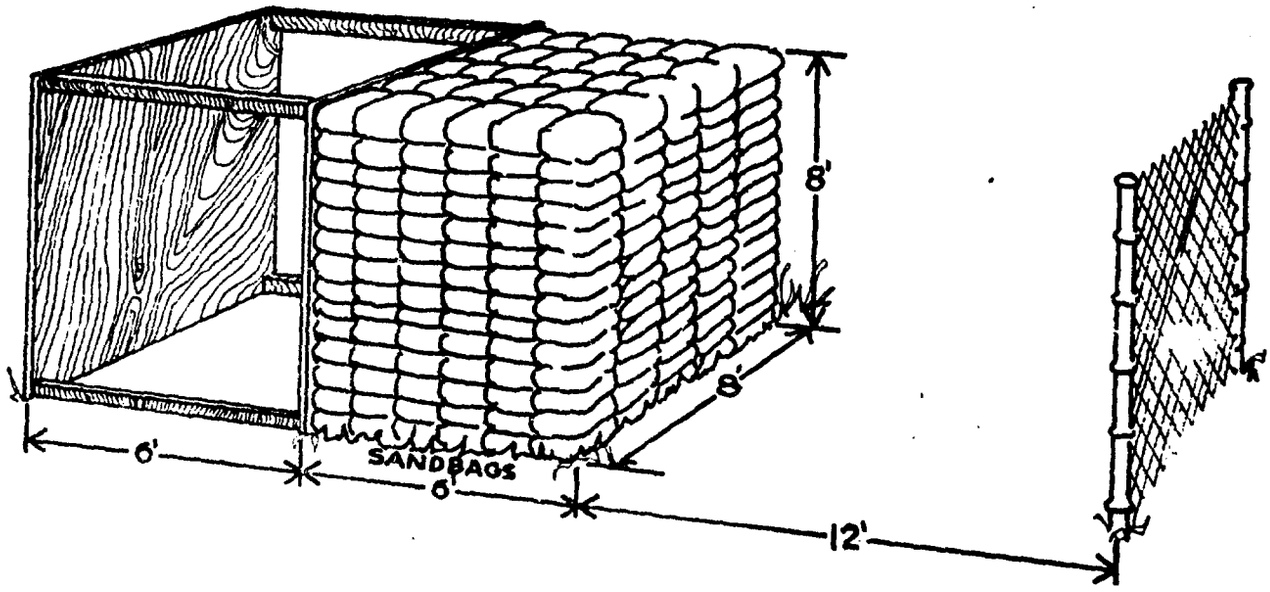

FIGURE 3. Bunker With Six Sandbags.

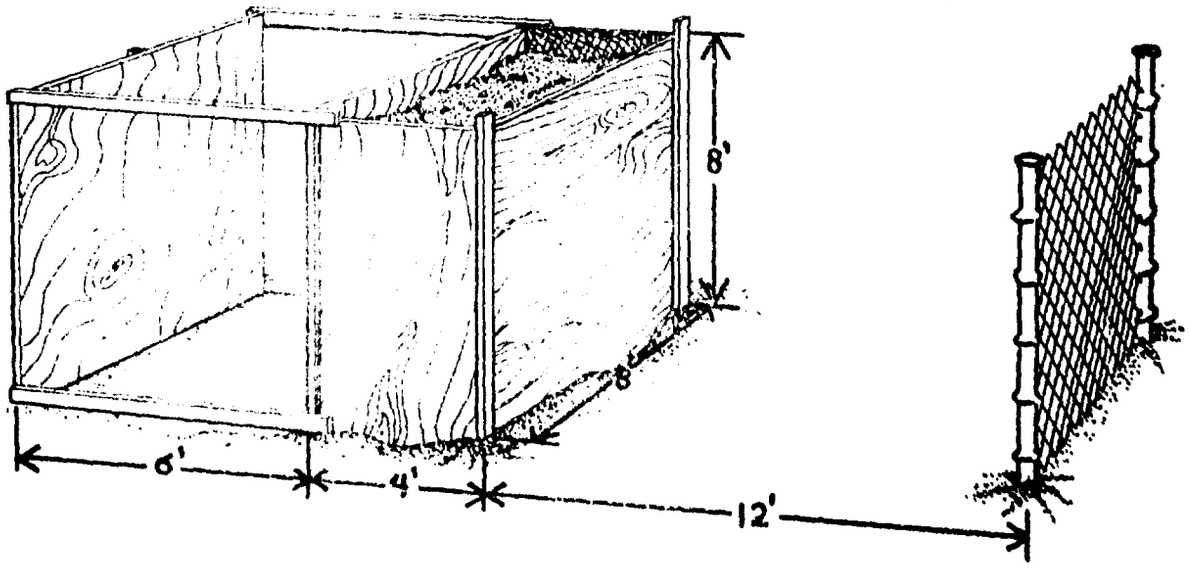

FIGURE 4. Bunker Filled With Loose Laterite.

TYPE MISSION	TYPE TARGET				
	Building	Bunker	Personnel	Reconnaissance by Fire	Total
Reconnaissance in Force	28	29	11	18	86
Perimeter Defense	3	0	5	1	9
Long Range Patrol	2	2	4	0	8
Ambush Patrol	2	2	2	1	7
Total	35	33	22	20	110

FIGURE 5. Employment Data by Type Mission and Type Target.

a. Buildings

The improved LAW was used against buildings whose walls were constructed of mud and stone, and whose roofs were made of tile, thatch, or tin. A round hitting the side of a building often caused its entire wall and part of the roof to fall. When a tile roof was struck by a warhead, the roof normally caved in and pieces of tile slid off the supporting framework. Thatch roofs sometimes caught fire after being penetrated by the round. When a round struck a tin roof, several sheets would normally fly from the roof. A hole was always made at the point of impact.

b. Bunkers

Enemy bunkers were normally constructed of packed dirt (ten inches to three feet thick) with logs and packed dirt as overhead cover (three to four feet thick). In 12 reported cases, the firers who engaged bunkers achieved first-round hits. Sometimes the destructive force of the round would completely demolish the bunker as well as blowing off the overhead cover. In other instances, the roof of the bunker would collapse, entombing its occupants. In almost all instances, firing from enemy machinegun and RPG bunkers ceased after they were engaged by an improved LAW round.

c. Personnel

There were five instances in which the improved LAW was used to repel enemy forces during night attacks. The effectiveness of the weapon could not be determined during these attacks because helicopter gunships and artillery were employed simultaneously. Additionally, the

bodies of the enemy troops were so badly mangled that the cause of death could not be ascertained.

d. Reconnaissance by Fire

The improved LAW was also used effectively in a reconnaissance by fire role. In 1 instance, 3 rounds were fired into a bamboo hedgerow (3 to 5 feet thick) at a range of 200 meters. The warheads cleared a path through the bamboo trees (one to three inches in diameter) and caused two secondary explosions. When thicker hedgerows were encountered, four rounds would normally clear the desired path. By using this technique, booby traps were detonated and concealed enemy gunners were probably discouraged from firing.

12. OPERATIONAL CHARACTERISTICS

a. Accuracy

The improved LAW was more accurate than the M72 because of the improved front and rear sights and the higher velocity of the round.

b. Misfires

There were only two reported cases of misfire. Both resulted when the safety would not stay in the off (forward) position.

c. Trigger

Respondents had difficulty squeezing the trigger. This situation caused the firer to pull the weapon slightly off target, sometimes resulting in the round being fired short of the target.

d. Noise Level

There were numerous complaints about the weapon being too loud during demonstration and practice firings, but none during combat operations.

e. Disposal

No difficulties were encountered in disposing of the launcher after use.

13. USER ACCEPTABILITY

a. One of the principal reasons why respondents liked the improved LAW was its simplicity. Untrained personnel could read the instructional decal on the side of the launcher, prepare the weapon for firing, and achieve first-round hits. During the evaluation period it was subjected to varying weather and transport conditions. The improved LAW was reliable and able to withstand rough handling.

b. Two improved LAWs were normally carried by a rifle squad, while APCs carried at least three when they were available. One platoon leader always carried five to nine LAWs when he dismounted from his APC to engage enemy bunkers.

14. FINDINGS

a. The improved LAW was used effectively to destroy buildings, bunkers, booby traps, and enemy personnel.

b. The trigger of the improved LAW was difficult to squeeze and the weapon made too loud a noise when fired.

c. Respondents liked the improved LAW because it was reliable, withstood rough handling, and was simple to use.

15. CONCLUSION

The improved LAW is suitable for use by US Army units in RVN.

16. RECOMMENDATION

It is recommended that the US Army Materiel Command:

a. Take action to reduce the amount of force required to squeeze the trigger of the improved LAW.

b. Lower the noise level of the improved LAW, if practical.

JOHN E. REID
Colonel, Infantry
Commanding

1 Incl
Distribution

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13. ABSTRACT

The Army Concept Team in Vietnam evaluated the M72A1E1 Light Antitank Weapon (improved LAW) to determine its suitability for use by US Army units in the Republic of Vietnam. The weapon was evaluated by the 4th, 9th, and 25th Infantry Divisions from 1 April to 4 July 1969 in regular combat operations. During the evaluation, the improved LAW was used primarily against enemy bunkers, buildings, and personnel, and in a reconnaissance-by-fire role. The findings of the evaluation were:

1. The improved LAW was used effectively to destroy buildings, bunkers, booby traps, and enemy personnel.

2. The trigger of the improved LAW was difficult to squeeze and the weapon made too loud a noise when fired.

3. Users liked the improved LAW because it was reliable, withstood rough handling, and was simple to use.

It was concluded that the improved LAW is suitable for use by US Army units in RVN. It was recommended that the US Army Materiel Command take action to lower the noise level and reduce the amount of force required to squeeze the trigger of the improved LAW.

DD FORM 1 NOV 68 1473 REPLACES DD FORM 1473, 1 JAN 64, WHICH IS OBSOLETE FOR ARMY USE.

UNCLASSIFIED

Security Classification

14. KEY WORDS	LINK A		LINK B		LINK C	
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LAW						
IMPROVED LAW						