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AUTHORITY

OAG D/A LTR, 29 APR 1980

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DEPARTMENT OF THE ARMY  
OFFICE OF THE ADJUTANT GENERAL  
WASHINGTON, D.C. 20310

AD827666

IN REPLY REFER TO

AGAM-P (M) (6 Feb 68) FOR OT RD T674258 9 February 1968

**SUBJECT:** Operational Report - Lessons Learned, Headquarters, 1st  
Battalion, 63d Armor, Period Ending 31 October 1967

**TO:** SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation by USACDC in accordance with paragraph 6f, AR 1-19 and by USCONARC in accordance with paragraph 6c and d, AR 1-19. Evaluations and corrective actions should be reported to ACSFOR OT within 90 days of receipt of covering letter.

2. Information contained in this report is provided to insure appropriate benefits in the future from Lessons Learned during current operations, and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

KENNETH G. WICKHAM  
Major General, USA  
The Adjutant General

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as

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*office asst. chief of staff for  
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Wash. D.C. 20310*

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## FOR OFFICIAL USE ONLY

DEPARTMENT OF THE ARMY  
 HEADQUARTERS, 1ST BATTALION 63D ARMOR  
 Fort Riley, Kansas 66442

5 November 1967

SUBJECT: Operational Report - Lessons Learned RCS CSFOR-65

TO: Assistant Chief of Staff for Force Development  
 Department of the Army  
 Washington, D.C. 20310

## SECTION I: SIGNIFICANT ORGANIZATION OR UNIT ACTIVITIES.

1. References:

- a. AR 1-19.
- b. DA Message 805034 from ACSFOR dated 10 March 1967.

2. Reporting Period: This is the eighth report and covers the period 1 October to 31 October 1967.

3. Personnel: During the period the unit received 105 Personnel. Of this group 92 were in MOS's not authorized to this Table of Organization who are now attending the M551 Tank Crewman's Course at Fort Knox, 3 November - 2 December 1967. At the completion of training at Fort Knox, it is anticipated that these personnel will be awarded an 11E MOS. The unit will lose 105 (18% of TO&E) personnel in the next 90 days.

4. Intelligence and Security: When it becomes necessary to remove the gun tube and mantle, the tank is no longer a classified container. The unit has fabricated a metal shield bolted from the inside to alleviate this problem. A picture of the shield is included as Annex D.

5. Operation and Training:

a. During the period 1 October to 31 October 1967, the battalion conducted the following activities:

- (1) A Command Maintenance Management Assistance inspection by the Post CMMA team.
- (2) A dry run Tank Commanders Qualification Course (TCQC) run at company level.
- (3) A preliminary gunnery training and examination period.

(See Prepare to Fire Card, Annex C)

FOR OT RD  
 T674258

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5 November 1967

SUBJECT: Operational Report - Lessons Learned RCS CSFOR-65

- (4) Modified Tank Tables VI A and B.
- b. The Modified Tank Tables VI A and B were conducted as described in Annex B. Several innovations were made such as the use of flashing high-way safety lights to spot general target locations during night firing.
- c. In the month of November the battalion will:
  - (1) Send 102 personnel to the tank crewman's course at Fort Knox, Kentucky.
  - (2) Conduct limited field training for the personnel in leadership positions.
  - (3) Conduct instruction in the preliminaries of missile gunnery.
  - (4) Make maximum use of on and off post schools to further train battalion personnel.
- d. In January the unit will start an intensified Basic Unit Training program.

### 6. Logistics:

a. Supply: Four complete infra-red transmitter alignment sets-Guided Missile were received by this unit during the period.

#### b. Maintenance:

(1) Turret: Recoil seals - (3) failed after an average of forty (40) rounds fired during the May Gunnery Program. Improperly installed or defective seals are the probable causes. (EIR 027878 Submitted)

#### (2) Suspension:

(a) Sprocket seals: Excessive down time has been experienced due to the lack of sprocket seals in the supply system. Delays in replacement seals of up to 70 days have occurred. At the present time, there are 5 vehicles deadlined for 8 seals.

(b) Idler Assembly: See Annex E.

(3) Hull: Fuel Tanks Two vehicles have developed ruptured fuel tanks. In both cases the failure occurred at the front/weld of the right fuel tank. Suspected cause is quality control. (EIRO27879 submitted)

(4) Instruments: Six odometer/tachometers have gone out of calibration after relatively few miles of operation (200-500). (EIRW80715 submitted)

## SECTION II: COMMANDERS OBSERVATIONS AND RECOMMENDATIONS

1. Night firing and target acquisition: The techniques of engaging targets at night continue to be worked on. Methods currently found satisfactory include:

a. Use of the transmitter in conjunction with the XM44 and starlight scope described in paragraph 8 Lessons Learned Report dated 6 June 1967.

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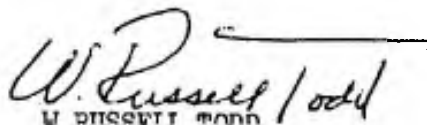
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5 November 1967

SUBJECT: Operational Report - Lessons Learned RCS GSFOR-65

b. A second method found effective without the use of the Transmitter is as follows. The tank commander and gunner observe in sector of responsibility with their respective night vision scopes. When the TC acquires a target and decides to shoot with the Caliber 50 machinegun, he issues an alert and fires. If he acquires a target and desires to engage it with the coax or main gun, he has the gunner traverse left or right until the main gun aligns itself in the same direction the 50 Caliber is pointing. Thereby bringing the gunner on target for deflection. The gunner then searches for the target in elevation. The tank commander can assist the gunner by estimating elevation and laying the gun for elevation with the override and using a white mark on the end of the gun tube that is visible to the TC at night. This system could be improved by providing a movable extension arm to the TC override control. At present the TC must take his eye from the starlight scope to reach the override control when laying the main gun.

2. This unit has submitted separately a request for main gun ammunition in excess of that provided by TA 23-100 with Change 1. The requested increase is considered essential because (a) limited experience of crew members in AIT program. (b) necessity for additional practice due to lack of range finders, the low probability of first round hits, and the difficulty of applying burst on target adjustment. It is requested that this unit be provided with the earliest dates of ammunition availability so that a realistic training program may be developed.

  
W RUSSELL TODD  
LTC, Armor  
Commanding

**ANNEXES**

- ~~A- List of Visitors~~ Withdrawn, Hqs, DA
- B- Expedient Illumination - Table VI
- C- "Prepare to Fire Instructions" Card
- D- Picture of Unit-Made Security Shield
- E- Broken Idler Arm

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- CG, 3d US Army for CG, 82d Abn Div
- CG, 5th Inf Div (Mech) Ft Carson, Colo

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ALRGT-P (5 Nov 67) 1st Ind  
SUBJECT: Operational Report - Lessons Learned RCS CSFOR-65

DA, HQ, FORT RILEY, Fort Riley, Kansas 66442 26 NOV 1967

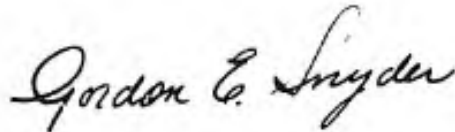
TO: Commanding General, Fifth U. S. Army, ATTN: ALFGC-TN,  
Fort Sheridan, Illinois 60037

This headquarters concurs with the contents of the basic communication, with the following additional comments and exceptions:

a. Personnel (paragraph 3, basic communication).  
Anticipated personnel losses have been placed on requisition.

b. Sprocket seals (paragraph 6b(2)(a), basic communication). Sprocket seals continue to be a short supply item; however, a sufficient quantity was obtained to satisfy the present requirement. Necessary seals were issued to the unit and repair action was started on 7 November. Additional stockage of seals has been requisitioned but not received.

FOR THE COMMANDER:



GORDON E. SNYDER  
2LT, AGC  
ASST AG

Copy furnished:  
CO, 1/63d Armor

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ALFGC-TN (5 Nov 67) 2d Ind MAJ Simms/6261  
SUBJECT: Operational Report - Lessons Learned, RCS CSFOR-65 (U)

HEADQUARTERS FIFTH UNITED STATES ARMY, Fort Sheridan, Illinois 60037 4 DEC 1967

TO: Commanding General, United States Continental Army Command, Fort  
Monroe, Virginia 23351

This headquarters concurs in the comments and recommendations provided by the unit commander and the installation commander with the following exceptions and additions:

1. Personnel. No additional comments.
2. Operations. No additional comments.
3. Training and Organization.

a. Reference section II, paragraph 2, basic report. The request for main gun ammunition in excess of that provided by TA 23-100 with change 1 is currently under study by this headquarters.

b. Reference Annex B, 3rd sentence, paragraph c should read "The reflection of lights on the targets gave the impression of hostile fire and facilitated the gunner in detecting targets with the XM44 Gunner's Night Vision Device and the Starlight Scope." These two vision devices cannot be detected as can other infrared equipment.

4. Logistics. Reference section I, paragraph 6b. Review of correspondence does not reflect any significant maintenance problems except for design failures for which Equipment Improvement Recommendations have been submitted.

5. Intelligence. No additional comments.

FOR THE COMMANDER:

*C. D. Waite*

C. D. WAITE  
2LT, AGC

Asst Adjutant General

3 Incl  
Operational Report - Lessons Learned RCS CSFOR-65

Cy furnished:  
CG, Ft Riley

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ATOPS-MGT(5 Nov 67) 3d Ind  
SUBJECT: Operational Report-Lessons Learned, RCS CSFOR-65(U)

Headquarters, United States Continental Army Command, Fort Monroe,  
Virginia 23351

6 JAN 1968

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D.C. 20310

This Headquarters agrees with the observations and recommendations in  
the basic correspondence as modified by the forwarding indorsements. The  
following additional information is furnished:

a. Personnel. Enlisted overstrength, as of 14 December 1967, and  
DA fill action on outstanding requisitions are expected to offset personnel  
losses referred to in paragraph 3 of the basic letter.

b. Logistics. It is recommended that the following items be  
considered for possible follow-up action by USA Materiel Command:

(1) Broken Idler Assembly - Section I, paragraph 6b(2)(b) of  
basic report and Annex E.

(2) Tank Commander's Gun Laying Override Control - Section II,  
paragraph 1b.

FOR THE COMMANDER:

*C. Thomas*  
C. AGC  
SINE, 6 AR

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nc

Cy furn:  
CG, Fifth USA

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DATE: [illegible]

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ANNEX B

5 November 1967

SUBJECT: Expedient Illumination - Tank Gunnery  
Table VI B

1. During the week of 23-28 October this unit conducted firing of Modified Table VI A and B. The requirement for illumination were met and solved in the following manner:

a. Searchlight Illumination - This unit has no organic searchlight capabilities nor were any searchlights available on Fort Riley.

b. Indirect Fire Illumination - Shortage of ammunition, high winds and dry vegetation in the area prevented the use of 4.2 inch mortar illumination.

c. Expedient Illumination - This unit made maximum use of the XM 44, gunner's night vision device, and the Starlight Scope to aid in location of targets 2, 3, and 5. The device, "Flashing Warning Light-Amber" commonly found on highways was also used. These lights were placed in front of the targets and protected by rocks and 8" x 8" wooden beams. The reflection of the lights on the targets gave the impression of hostile fire and provided a target deflection means for the passive vision devices. See Appendix 1 to Annex B for schematic layout of targets.

d. This unit plans to improve the protective measures for the lights. See Appendix 2 to Annex B for schematic drawing of new protective device.

### 2 APPENDIXES

1. Target Layout Diagram
2. Schematic Drawing Protective Device

B-2

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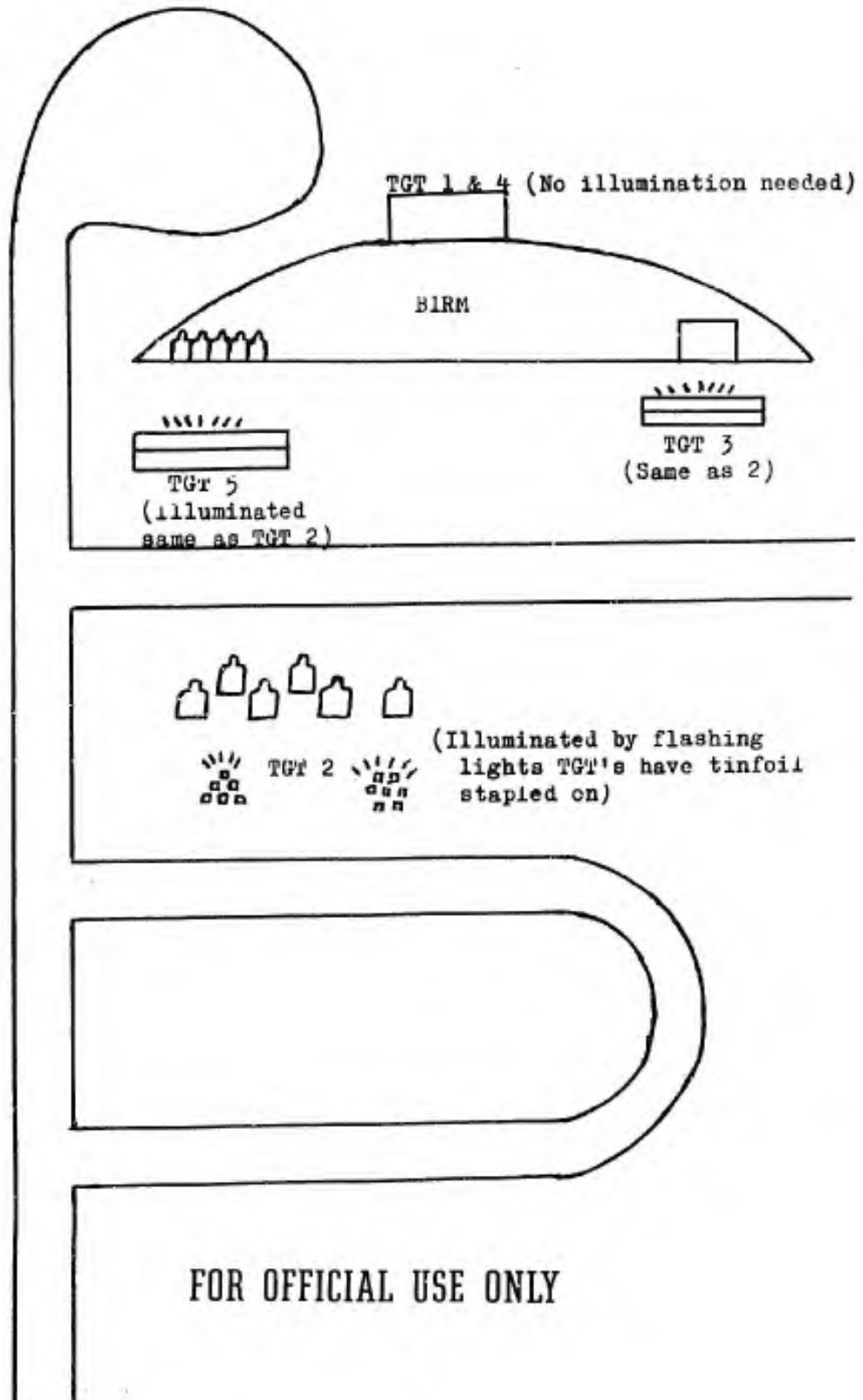
TARGET LAYOUT TABLE VIB

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TGT 6

(Mortar illumination when wind permits)



APPENDIX TO ANNEX B  
NUMBER 1

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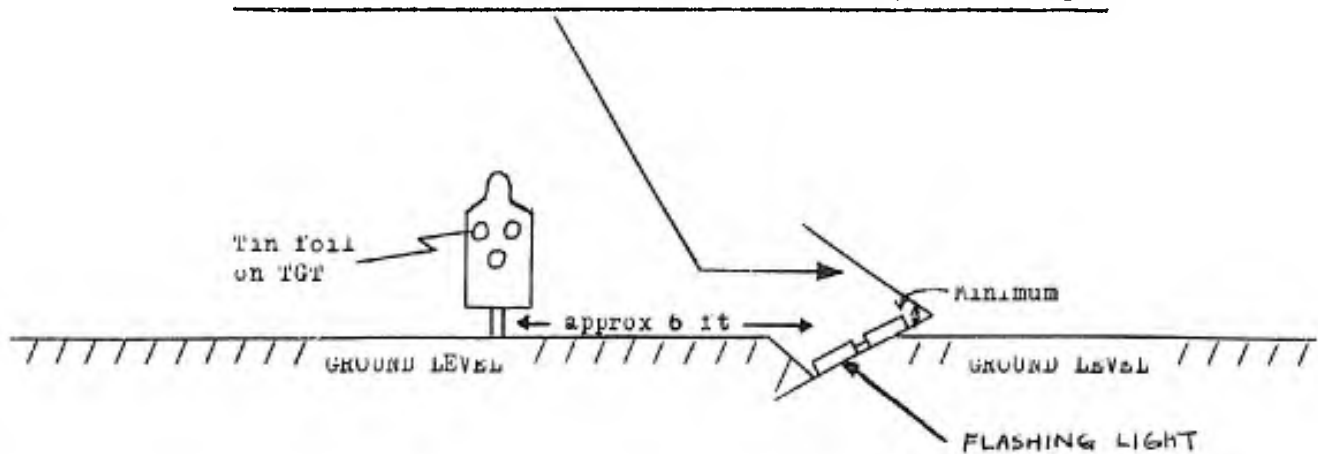
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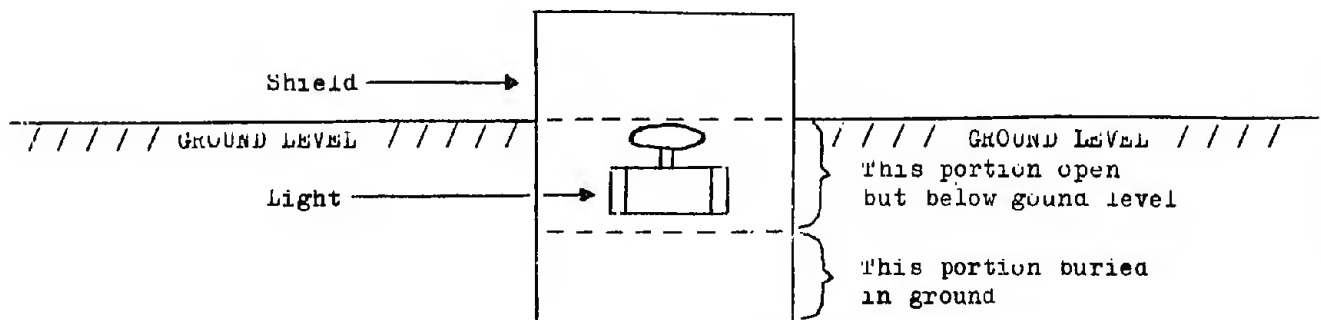
## IMPROVED PROTECTIVE DIAGRAM FOR TARGET NITE LITE DEVICE FOR SUBCALIBER RANGES

SIDE VIEW

Inner surface painted white or with light  
colored golss. Solid metal plate bent to approx 70° angle



FRONT VIEW



APPENDIX TO ANNEX D  
NUMBER 2

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PREPARE TO FIRE INSTRUCTIONS FOR XM9 GRENADE PROJECTOR (M551)

VEHICLE COMMANDER	GUNNER	DRIVER	LOADER	CREW MEMBERS
<p>Command "PREPARE TO FIRE". Inspect exterior lenses and vision blocks.</p> <p>Command "CHECK Firing SUBSYSTEM". Check firing trigger when main gun switch is on and when COAX machine gun switch is on. (Note: OCM item for checking firing trigger with main gun switch on is currently under development)</p> <p>Command "CHECK GUN CONTROLS". Check elevation and traverse with commander's override. Correct any drift using trim knobs. Check power operation of Comdrs cupola with interior control switch and caliber 50 - mounted control buttons. Check manual operation of Comdrs cupola.</p> <p>Command "CHECK GUN CONTROLS". Check caliber 50 machine gun and adjust headspace and timing. Check mount. Foresight night vision sight.</p>	<p>Set elevation quadrant at 265 and level bubble. Observe loader's actions in making check of oil level in reservoir and safe to fire indicator. Check instrument lights, and reticle lights. Check operation of XM-44 sight cover.</p> <p>Turn main gun switch on. Check firing trigger on manual elevating handle. (Note: OCM item for checking firing triggers with main gun switch on is currently under development)</p> <p>Turn COAX machine gun switch on and check firing triggers. Turn switch off.</p> <p>Check manual elevation and traverse. Turn turret power on and check elevation and traverse with power control handle. Correct drift with trim knobs. Check aimuth indicator for accuracy and slippage. Check elevation quadrant for accuracy.</p> <p>Bore-sight main gun and apply established zero. Bore-sight COAX machinegun.</p>	<p>Clean periscopes, close hatch and turn on master switch.</p> <p>Start engine.</p>	<p>Check oil level in oil reservoir. Check safe to fire indicator. Open breach manually and inspect chamber and tube. Inspect loading tray and firing probe. Inspect scavenger system. Inspect COAX machinegun and mount. Inspect solenoid cord. Inspect all ammo racks and turret stored ammo.</p> <p>Open and close main gun breach and place safety switch in ready position for each firing check. Check ready light. Cook COAX machinegun for each firing check. Check blasting machine for proper operation.</p> <p>Unlock turret. Check for obstruction to traverse.</p>	<p>Remove protective caps from solenoid firing pin housing. Check solenoid action each time firing switch is activated by the vehicle commander. Inspect all mounts for defects.</p>
<p>Command "GRENADE PROJECTOR CHECK" with vehicle master switch on, turn projector master switch on and check control box illumination. Select "Single Bank" and "Salvo" positions on control box selector dial, remove safety wire from firing switch housing, and activate firing switch after each selection. Note: Ensure firing switch safety pin is installed and control box master switch is wired in "off" position before loading.</p>	<p>Command "PREPARE TO FIRE INSTRUCTIONS FOR SHILLELAGH MISSILE SUBSYSTEM".</p> <p>Command "MISSILE CHECK". Energize missile subsystem. Perform loop and meter test, tracker alignment test, system self test, and transmitter test in order. Ejector jar mobile subsystem, unless going directly into a missile firing mission.</p>	<p>Command "VEHICLE CHECK".</p>	<p>Command "PREPARE TO FIRE INSTRUCTIONS FOR SHILLELAGH MISSILE SUBSYSTEM".</p> <p>Command "VEHICLE CHECK".</p>	<p>Remove protective caps from solenoid firing pin housing. Check solenoid action each time firing switch is activated by the vehicle commander. Inspect all mounts for defects.</p>

NOTE: When performing prepare to fire checks for a combat mission, all weapons will be loaded and placed on "READY" before the report.

NOTE: See annexes for prepare to fire checks for XM9 Grenade Projector and Shillelagh missile subsystems.

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NOTE: All other prepare to fire checks should be performed prior to checking the missile system.

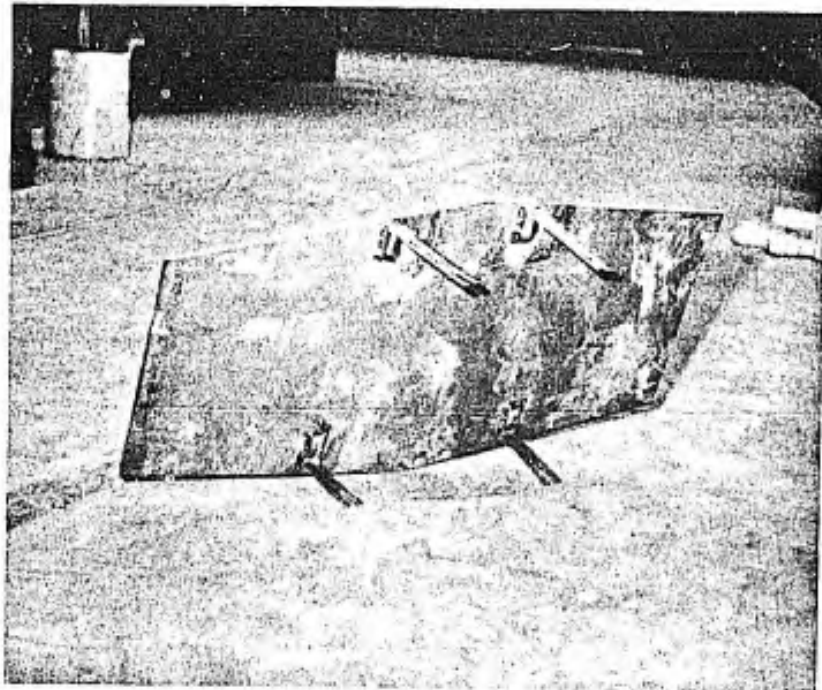
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ANNEX D

PICTURE OF UNIT-MADE SECURITY SHIELD

5 November 1967



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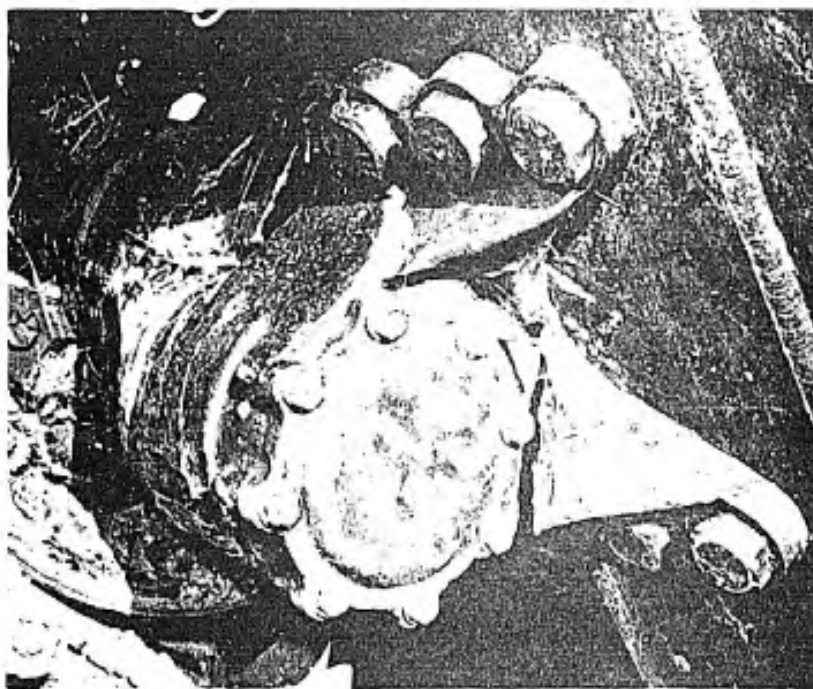
ANNEX E  
SUBJECT: BROKEN IDLER ASSEMBLY

5 November 1967

The first instance of a broken idler assembly occurred on 11 October 1967. At the time for the damage, the vehicle was traveling at approximately five (5) miles per hour, under conditions of darkness when the right track struck a stump.

In addition to the damage illustrated below there was a slight dent in the right side of the hull immediately to the rear of the Idler assembly. The corner of the hull under the assembly was also dented.

The broken Idler arm assembly was sent to the factory for analysis.



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