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

IN REPLY REFER TO

AGDA (M) (8 May 70)

FOR OT UT 701161

19 May 1970

SUBJECT: Operational Report - Lessons Learned, Headquarters, 1st Cavalry
Division Artillery, Period Ending 31 January 1970 (U)

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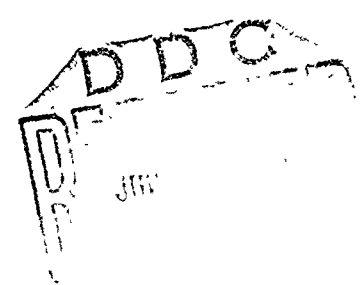
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DEPARTMENT OF THE ARMY
HEADQUARTERS 1ST CAVALRY DIVISION ARTILLERY (AIRMOBILE)
APO San Francisco 96490

AVDAAR-T

8 February 1970

SUBJECT: Operational Report - Lessons Learned 1st CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970, RCS CSFOR-65 (R2)

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1. (C) Operations: Significant Activities.

a. General: This report covers the period 1 November 1969 through 31 January 1970. During this period the Division Artillery supported maneuver forces in 1st Cavalry Division (AM) Operation Kentucky Cougar. The operation continues in effect at the end of the reporting period.

(1) Mission. The 1st Cavalry Division Artillery and supporting fire units provide fire support to 1st Cavalry Division (AM) maneuver forces within the division's assigned TAOI and take necessary action to enhance the GVN pacification effort, and to improve the effectiveness of all RVNAF elements.

(2) Special Mission: The 1st Cavalry Division Artillery (AM) continues to act as the maneuver headquarters for AO Chief and control the defenses of the 1st Cavalry Division (AM) base camp at Phuoc Vinh, RVN.

(3) Task Organization (see Inclosure 1).

(4) Artillery moves (see Inclosure 2).

(5) Commanders and Principle Staff (see Inclosure 3).

(6) Aerial Rocket Artillery Mass Fires (see Inclosure 4).

b. Intelligence:

(1) Area of Operations

(a) War Zone "C": Enemy activity in War Zone "C" in November increased sharply over the September and October period. A decrease was noted in December and a gradual buildup seen again in January. Interdiction of infiltration routes and cache systems throughout the AO greatly weakened the enemy's replacement and resupply system.

A high point of enemy activity took place early in the period with an attack on FSB Iko on 4 November.

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This attack, along with follow-up contacts initiated by Allied forces on 5 November, resulted in 96 enemy killed. The attacking forces were identified as the 2nd Battalion, 271st Regiment, the 228 Sapper Battalion and the 222d Artillery Battalion (all subordinate to the 9th VC Division). The 271st was also identified in an attack on Fire Support Base Vicky on 19 November which resulted in 20 enemy dead. Identification of the 95C Regiment as a new subordinate to the 9th VC Division took place during November. The 272nd Regiment spent the month generally out of contact in base area 353.

During December the 271st Regiment relocated to the north-eastern portion of War Zone "C". Two significant contacts were made during their move east, as southeast of Fire Support Base Vicky on the 5th they lost 24 killed and on the 7th northwest of Jamie they lost 44 killed. The 95C Regiment remained in central War Zone "C" while the 272nd Regiment operated along the western edge of the AO.

In January the enemy primarily resorted to stand-off attacks as he launched nearly 100 in the 31 day period. His effectiveness was poor however, as less than 10 per cent hit inside the fire support bases. Two significant contacts took place during the month. Northeast of Fire Support Base Ike 73 enemy kills were counted on the 5th and 6th which inflicted a heavy loss on the 2nd Battalion, 95C Regiment. Northwest of Fire Support Base Jamie on 10 January the 271st Regiment lost a total of 61 individuals.

(b) Bing Long Province: Enemy activity remained light throughout the period as the majority of main force elements remained in their base areas or avoided contact.

During November the 141st and 165th Regiments, 7th NVA Division moved into Phuoc Long Province and the 209th Regiment remained in base area 352, west of Loc Ninh.

In December the 141st Regiment returned to the northern part of the province and on the 27th air assets caught what appeared to be one of their battalions in the open north-northeast of Loc Ninh. Artillery, ARA, air strikes and a Light Fire Team accounted for 76 kills while ground troops raised the total to 80. Captured documents identified a reconnaissance company, engineer company and the 1st Battalion, 141st Regiment.

Response to ground to air firings north of Quan Loi and east of Fire Support Base Marge resulted in an additional 43 enemy killed. A number of stand-off attacks were launched against Quan Loi Base Camp, Fire Support Base Shirley and several Night Defensive Positions throughout the Area of Operations.

The month of January was relatively quiet in the Province as there were few attacks by fire. On 21 January NW of FSB Alice contact was made with the 141st Regiment resulting in 35 KIA.

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(c) Phuoc Long Province: Enemy activity overall remained light with several heavy, sporadic contacts during the period.

November 4th saw both Fire Support Base Buttons and Fire Support Base Ellen come under heavy attack. The 2d Battalion, 141st Regiment lost 35 KIA at Fire Support Base Ellen and the 5th Battalion, 16th Armor Office lost 63 at Fire Support Base Buttons. Enemy dispositions around the Bu Dop area included portions of the 141st Regiment, the 165th Regiment and the 209th Regiment as well as the Headquarters and supporting elements of the 7th NVA Division. The 208th Artillery Regiment was also identified in the Bu Dop area. A number of significant ground to air firings resulted in heavy enemy losses in November as 28 were killed south of Bo Duc on the 18th, and 36 were killed on the 24th north of Bu Dop. Other responses resulted in 80 killed north-northeast of Fire Support Base Judie on the 16th and 17th as well as 96 killed on the 28th and 29th southeast of Fire Support Base Mary.

In December the 209th Regiment continued to operate in the Bu Dop area while the 165th returned to sanctuary in Cambodia. The 275th Regiment, 5th VC Division were identified several times during the month in the Song Be area.

January saw enemy activity located generally north of the Song Be - Duc Phong area. Contacts in this area identified both the 174th and 275th Regiments as both elements stood and fought on several occasions suffering heavy casualties.

(d) AO Chief: Enemy activity in AO Chief for the quarter consisted of resupply activity, stand-off attacks, and some local guerrilla actions directed against Allied Forces.

Six attacks, all with 122mm rockets, occurred in November while the number of attacks jumped to 12 in December. For the first time since the 1st Cavalry Division occupied the base camp, over a year ago, 120mm mortars were employed against the post on the night of 19 December. In January a second new weapon was introduced to the AO as the enemy used 75mm Recoilless Rifles to launch 5 attacks on the nights of the 3d and 20th.

Ground operations in AO resulted in 68 enemy killed, 73 Hoi Chans, and 3 Prisoners of War taken during the period.

Activity in the Northern part of AO Chief consisted of Rear Service elements of the Dong Nai Regiment and the 81st Rear Service group, moving supplies southwest and southeast. Small groups of individuals were intercepted on a number of occasions as these supply routes were closed off by friendly forces. In the same area, psychological operations against the nomadic VC village of Phuoc Sang in early December resulted in the entire population (63 individuals) rallying to free world forces.

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In the south, activity consisted primarily of local force actions by the Vinh Hoa guerrilla's. They conducted ambushes, spread propaganda information and participated in resupply missions while avoiding contact with friendly forces. Operations by adjacent units on the east and west kept pressure on enemy units and as a result, no contacts were made within the AO in these areas.

No main force enemy elements were identified during the period within the AO, although the H12 Rocket Company of SR5 was thought to be responsible for the majority of rocket attacks on Camp Gorvad. The units with 75mm Recoilless Rifles and 120mm mortars remain unidentified at the close of the period.

(e) AO Apache: Located to the east of AO Chief where enemy forces identified as elements of the Headquarters of SR-5, the 81st Rear Service Group, and portions of the 274th Regiment. 3rd Mobile Strike Force Operations commenced in this AO on 18 January and by the close of the period several large caches of enemy weapons and munitions had been uncovered. Enemy contact was extremely light and the major enemy threat was the numerous booby traps placed throughout the cache sites.

(2) Survey: The First Team Division Artillery Survey Section continued to provide fourth-order survey data to firing elements within the Division AO. Survey control was brought into seven new fire support bases, including a 48 kilometer closed overland survey from the Quan Loi Base Camp to Fire Support Base Jako. Numerous Fire Support Bases had survey data updated during the reporting period. In addition, the Division Artillery Survey Section calibrated 13 US firing batteries and 3 ARVN batteries. They also provided an "on-call" Crater Analysis/Shell reporting team which responded quickly to incoming attacks on Camp Gorvad. This resulted in the placing of timely and accurate Artillery fire on the locations determined from back azimuth and angle of fall information.

(3) Radar:

(a) Headquarters and Headquarters Battery, Division Artillery and each of the three Direct Support Artillery Battalions operated an AM/MPQ-4A Counter Mortar Radar during the period. In addition II Field Force Artillery had four Q-4s operating in the First Cavalry Division's AO at Fire Support Bases St. Barbara and Marge as well as the Bo Duc and Bu Dop District Headquarters. The radars were extremely effective throughout the AO as they repeatedly picked up enemy mortar locations. They also performed their secondary missions of radar registrations on a daily basis which assisted in providing accurate and updated firing data.

(b) Division Artillery had two AM/TPS-25 Ground Surveillance Radar Detachments assigned until late December when one was placed OPCON to IV corps. This detachment, the 268th, was reassigned to II Field Force Artillery on 15 January 1970.

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The AN/TPS-25's proved to be a valuable asset as they acquired 185 hostile targets during the reporting period. Their use in conjunction with Nighthawk, IR, SLAR and sensor devices proved to be not only a means of rapid and accurate target detection, but was a reliable method of verifying intelligence information.

(c) Division Artillery was also responsible for the control and management of the Division's 19 AN/PPS-5 and 13 AN/PPS-4 Ground Surveillance Radars. These radars were used in the defensive role on all fire support bases but the period saw an increase in offensive type operations as Radar/Sniper hunter killer teams, used in night ambushes, became a standard part of the infantry battalions tactics. Nonoperational radars were picked up by the Division Artillery from the Fire Support Bases, both day and night, delivered to maintenance, exchanged and returned to the unit generally in less than 4 hours. As a result of the high priority placed on "Radar Express" missions the First Team's bases had continuous radar coverage.

c. Operations:

(1) Plans: During the period 1 November 1969 through 31 January 1970, the 1st Cavalry Division (AM) participated in Operation Kentucky Cougar.

(2) Operation Kentucky Cougar

(a) Concept of Operations:

Artillery Support for maneuver battalion operations consisted of Direct Support, General Support, and General Support Reinforcing (Modified) plus additional support, as required from the 23rd Artillery Group and heavy artillery support from II Field Force Artillery. Direct Support artillery was provided by the artillery battery habitually associated with the maneuver battalion. Assigned medium artillery was employed in the General Support Reinforcing role to be responsive to the calls for additional fires by the Direct Support battalion. Aerial Rocket Artillery is assigned a General Support Reinforcing (Modified) role to permit the Direct Support Battalion to commit up to two sections under specific circumstances. Heavy artillery support is provided by the 6th Battalion, 27th Artillery and A Btry, 2nd Battalion, 32nd Artillery.

ADA automatic weapons are also employed for fire support base/base camp defense, convoy security, and support of Special Forces/CIDG and ARVN elements.

(b) Execution:

(1) Organization for Combat:

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2nd Bn, 19th Arty: DS 1st Bde, 1ACD

1st Bn, 77th Arty: DS 2nd Bde, 1ACD

1st Bn, 21st Arty: DS 3rd Bde, 1ACD

1st Bn, 30th Arty: GSR, 1ACD

2nd Bn, 20th Arty: GSR (Mod), 1ACD

2. Areas of Operation

The three brigades of the 1st Air Cavalry Division and the 11th Armored Cavalry Regiment operate in the following areas. The 1st Brigade AO is generally north and northeast of Tay Ninh to the Cambodian border. The 2nd Brigade operates north from Song Be to Cambodia to south of Dong Xoai and west to the boundary with II Corps Tactical Zone. The 3rd Brigade operates north and northeast from Quan Loi to the Cambodian border, east to the 2nd Brigade and south to an area just north of Dong Xoai & Chi Linh. The 11th Armored Cavalry Regiment area of operation extends south from the Cambodian border to just north of Chon Thanh along QL 13, west to Cambodia near the "fishhook".

Division Artillery continues operations in AO Chief centered around Phuoc Vinh extending to north of QL 13 from Chi Linh to Dong Xoai and south to the Song Be River.

3. Operational Summary

During the period the 1st Cavalry Division continued operations throughout the Tactical Area of operations to interdict enemy infiltration routes, locate and destroy enemy units, their base areas and supply points. Throughout the period Division Artillery assisted by using all available intelligence sources to locate, develop and attack enemy forces and installations.

The month of November was characterized by increased enemy activity with the main effort being ground attacks by fire and sapper attacks against Fire Support Bases. During the month, five Fire Support Bases came under attack. On 4 Nov Fire Support Bases Ellen, Buttons, and Iko received ground attacks.

On 18 Nov Fire Support Base Jackie was the target for an attack and on 19 Nov an attack was conducted on Fire Support Base Vickie. The 1st Cavalry Division Artillery supported US/ARVN Battalions as the enemy attacks were decisively countered.

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Enemy activity decreased during the month of December and was characterized by a redistribution of forces and reaction to operations by US/ARVN units. No ground attacks were conducted against Fire Support Bases, however, numerous stand-off attacks occurred.

During January, increased enemy activity took place in the 1st and 2nd Brigade areas and activity greatly decreased in the 3rd Brigade area. On 2 January, Fire Support Base Diana received a ground attack of estimated company size and on 15 January Fire Support Base Carolyn was the target for a platoon size sapper attack, both attacks were unsuccessful with the attacking forces suffering heavy losses. Numerous stand-off attacks were received. In the 2nd Brigade area Fire Support Base Buttons received 5 stand-off attacks during the month.

(3) The 1st Cavalry Division Artillery continue to support CVN Pacification and Development Plan. On numerous occasions, Division Artillery units fired in support of the defense of friendly villages.

(4) Ammunition Expenditures - HE (1 Nov 69 - 31 Jan 70)

UNIT	CALIBER	AMOUNT
2nd Bn, 19th Arty	105mm	115,438
1st Bn, 77th Arty	105mm	79,321
1st Bn, 21st Arty	105mm	<u>67,149</u>
	Total 105mm	261,908
1st Bn, 30th Arty	155mm	75,431
2nd Bn, 20th Arty	2.75 FFAR	106,520
2nd Bn, 20th Arty	7.62mm	498,237
2nd Bn, 20th Arty	40mm	30,367

(5) Artillery Moves 1 Nov 69 - 31 Jan 70 (See Incl 2 for details).

	<u>Nov 69</u>	<u>Dec 69</u>	<u>Jan 69</u>	<u>Rot Period</u>
2nd Bn, 19th Arty	5	5	11	21
1st Bn, 77th Arty	4	3	9	16
1st Bn, 21st Arty	2	3	4	9
1st Bn, 30th Arty	6	1	1	8
Total	17	12	25	54

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(6) 2nd Battalion, 20th Artillery (ARA) Employment Statistics (1 Nov 69 - 31 Jan 70)

Total Hours Flown	8756.15 Hrs
Sections - Fire Mission	860
Sections - GAPS	823
Sections - Employed on Special Missions	366
Sortie - Mortar Patrol	609
Aircraft - Hunter/Killer	311

(7) Tube Artillery and ARA kills for the period

UNIT	NOVEMBER		DECEMBER		JANUARY	
	Tube Arty	ARA	Tube Arty	ARA	Tube Arty	ARA
1st Bde	48	15	66	28	65	17
2nd Bde	69	18	39	--	39	15
3rd Bde	38	49	51	02	08	--
Chief	--	--	01	--	--	15
11th ACR	--	--	05	--	05	--
Total	155	82	162	30	117	47

(8) The month of January showed a significant increase in ground to air fire throughout the 1st Cavalry Division AO. To combat this increase of fire, a concept in ARA called "Hellfires" was employed. The fires consisted of massing sections of ARA on known weapons positions. The sections attack the target simultaneously using the Time on Target (TOT) principle. The fires have proven highly effective in placing a large amount of ordnance in a concentrated area. The use of "Hellfires" technique has resulted in 2 - .51 cal weapons destroyed & 2 - .51 cal positions destroyed. In addition, there has been no instance of repeat fire from a position hit by a "Hellfire" attack. See Incl 4 details concerning the "Hellfire" attack technique.

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d. Training:

(1) General: In addition to the normal recurring training required by the 1st Cav Div Reg 350-1, the 1st Cav Div Arty conducted 3 training/demonstrations programs: Forward Observer School, FSC Demonstration, and training/assistance to ARVN Artillery through the Dong Tien (Forward Together) Plan. In addition, Div Arty Bn LNO's & FO's conduct informal artillery training for supported US/ARVN units on a continuing basis.

(2) Forward Observer School. Formal training is conducted at Division Artillery level for all newly arrived or assigned personnel who will be assigned as part of a FO team. The purpose of the instruction is to familiarize FO personnel with the artillery adjustment techniques used in Viet Nam operations. The course of instruction consists of 2 days of classroom instruction and one day of actual adjustment of both tube artillery & ARA. During the period 1 Nov 69 - 31 Jan 70, four classes were conducted graduating 38 students.

(3) Fire Support Coordination Seminar

During the period four Fire Support Coordination Seminars were conducted. The purpose of the seminars was to discuss and illustrate how the artillery liaison officer can effectively coordinate fire support means. Each seminar consisted of a discussion of the requirements for fire support coordination followed by a live fire demonstration. During the demonstration, a multiple target area was simultaneously engaged with tube artillery, aerial artillery and tactical air. Tube artillery, being the most responsive fire support means, was employed initially. When aerial rocket artillery came on station the artillery liaison officer shifted the tube artillery to permit the aerial rocket artillery to attack a portion of the target complex. Again, when tactical air became available the artillery liaison officer shifted the tube artillery to permit the employment of tactical air.

While the target area was being hit by tube and aerial rocket artillery a medical evacuation helicopter entered the area through a corridor opened by the liaison officer, without checking any supporting fires. The artillery liaison officer coordinated the simultaneous attack, shifting tube artillery only as required to permit the employment of other fire support means. The seminars were attended by key individuals representing all agencies involved in the use and delivery of fire support.

(4) Artillery Assistance/Training:

During the reporting period, Division Artillery continued to follow an active program of assistance to ARVN Artillery units. All tube artillery battalions of Division Artillery are involved with the Dong Tien Plan and continued progress is being made.

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e. Logistics:

During the reported period, the S-4 section continued the logistics Supervision program through constant visits by representatives to all forward Fire Bases where Division Artillery units are located. The purpose of these visits was to continually evaluate and monitor, Class I, IV, and V stockage and resupply. Additionally the Division Artillery Food Service section makes visits to advise and assist each unit in all phases of Food Service operations. The command maintenance program has expanded with the Division Artillery Maintenance Officer making recurring visits to Fire Bases and Base Camps. During these visits assistance is given each unit in establishing and maintaining and performing operator and organizational maintenance on automotive and engineer equipment.

f. ORGANIZATION:

(1) Strength. Authorized and assigned strength as of end of reporting period were as follows:

(a) AUTHORIZED:	<u>UNIT</u>	<u>OFF</u>	<u>WO</u>	<u>EM</u>	<u>AGG</u>
	* HHD	24	3/1	135/9	162/10
	** E/82	21/1	18/1	94/38	133/40
	1/21	43	2	391	436
	1/77	43	2	391	436
	2/19	43	2	391	436
	** 2/20	53/3	52/3	313/156	418/162
	1/30	37	6	555	598
(b) ASSIGNED:	* HHD	31	3/1	155/9	189/10
	** E/82	21/1	17/1	108/29	146/31
	1/21	40	1	358	399
	1/77	40	2	322	364
	2/19	43	2	366	411
	** 2/20	50/2	45/2	316/136	411/140
	1/30	35	5	486	526

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NOTE: * Figures below diagonal is the attached 273rd Radar Team (TPS-25)

** Figures below diagonal are the KD teams attached. (Aircraft maintenance Teams)

(2) Casualties:

UNIT	November			December			January		
	KIA	WIA	MIA	KIA	WIA	MIA	KIA	WIA	MIA
HHB	0	0	0	0	0	0	1*	0	0
E/82	0	0	0	0	1	0	0	1*	0
1/21	0	11	0	0	4*	0	0	0	0
1/77	1	41	0	1	15	0	0	16	0
2/19	0	1	0	0	3	0	0	2	0
2/20	1	1	0	2	4	0	0	0	0
1/30	0	11	0	0	1/1*	0	1*	9/2*	0

NOTE: * Indicates Non-Hostile.

(3) Awards and Decorations for period 1 November 1969 - 31 January 1970.

DFC	SS	IM	BS"V"	BS	AM"V"	AM	ACM"V"	ACM	PH	RVN TO US
22	24	2	148	81	12	181	192	133	116	25

The above figures indicate both those approved and pending.

g. Other:

(1) E Btry, 82nd Artillery (Aviation)

(a) Aircraft Status

1 During the reporting period E Btry turned in 1 UH-1H aircraft. The replacement aircraft gained were 1 OH-6A and 1 UH-1H. The total remained 5 UH-1's and 15 OH-6A's.

2 There was no change in fixed wing aircraft with the total remaining 3U-6A's & 6)-1's.

3 Aviation Safety Summary

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Major Accidents	1
Minor Accidents	0
Incidents	4
Precautionary Landings	4

(b) Operations

1 During the reporting period the unit gained 3 additional missions: Division courier, Flare ship & 1 additional Scout team.

The courier enables all brigades to receive distribution in a timely manner. The flare ship provided additional illumination for the Camp Gorvad green line. The scout team provided additional intelligence information.

2 Each artillery Battalion of Division Artillery retains 2 LOH's in direct support however, the Bn's have not had frequent use of the O-1's due to other commitments.

(c) Aircraft Utilization Summary

1 The battery flew a total of 5824 hours during the period.

2 Type mission breakdown is as follows:

Administration (Including Radar Missions)	3780 hrs
Logistics	390 hrs
Arty Adjustment	124 hrs
Command & Control	140 hrs
Visual Recon	920 hrs
Maintenance	350 hrs
Training	120 hrs

3 During the period the unit flew a total of 12,520 sorties averaging 45 minutes per sortie.

(d) Summary of A/C Maintenance for Reporting Period

Percent OR - 81%

Percent MR - 81%

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(2) Chaplain

(a) During the last quarter, 1 November 1969 - 31 January 1970, the Division Artillery Chaplain Section was comprised of one chaplain and one chaplain assistant. In mid-January the Chaplain Section was expanded to two chaplains and two chaplains assistants. One chaplain and one assistant live and work out of Quan Loi. The Chaplain Section functioned as follows:

1 Coordinated for religious coverage of all units assigned or attached to Headquarters, Division Artillery, including denominational coverage. Provided a program of pastoral care and counseling as applicable.

2 Conducted 174 Protestant Worship Services with a total attendance of 4,155. Some of these services for Infantry battalions operating in AO Chief were area coverage services.

3 Daily visits were made to Artillerymen located at Camp Gorvad and portions of seven days a week were spent visiting the forward fire support bases.

4 Evening counseling opportunities were provided on an area coverage basis. Two week-day discussion groups and a Friday-evening choir rehearsal were conducted. Formal character guidance classes were started in January.

5 Visits to hospitals and the stockade were made on a regular basis.

(3) Signal

In the last quarter, 1st Cavalry Division Artillery communications problems were minor. Power failures, radio problems, antenna problems, and frequency problems were kept at a minimum through preplanning and heavy emphasis on maintenance of equipment. The basic structure of telephone and radio networks was unchanged.

Two important programs were initiated during the quarter. First, under the Nestor Program, Command F, radio nets of Division Artillery Headquarters were secured. Artillery FM radio communications in the 1st Cavalry Division are now secure down to battery level. The only exception is the 155mm General Support Battalion which is unable to secure to the battery level because of limitations in the availability of equipment.

The second program initiated and still underway is upgrading the radio discipline on all artillery nets including communications security and radio procedure. Command emphasis is helping this program to be a success as well as active monitoring of all nets by Div Arty communications personnel.

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8 February 1970

SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970 RCS CSFOR-65 (R2)

(4) Medical

(a) The overall health, sanitation, and immunization of the Div Arty during the period was good. Malaria and diarrhea continue to be the main health problem areas.

(b) Sanitation inspections were conducted during this period on all Division Artillery Fire Support Base positions. No major problem areas were found.

(c) A total of 211 Medcaps were conducted during the period treating a total of 6,330 individuals.

(d) There are no critical shortages of medical personnel.

2. (C) Lessons Learned: Commander's Observations, Evaluations and Recommendations.

a. Personnel.

(1) 11B Replacements for 13A Personnel.

(a) OBSERVATION: 11B replacement personnel have been received by 1st Cavalry Division Artillery units in lieu of 13A replacements.

(b) EVALUATION: It has been found that 11B personnel received in lieu of 13A personnel make excellent replacements for reconnaissance party personnel. Their prior infantry training frequently helps them to evaluate combat situations and to assist infantryman in manipulation of fire support.

(c) RECOMMENDATION: Artillery units receiving 11B replacements in lieu of 13A personnel should look into the possibility of assigning them to reconnaissance parties.

(2) Food Handlers Certificates.

(a) OBSERVATION: Mess personnel 94A, 94B newly assigned to each unit are required to have Food Handlers Certificates.

(b) EVALUATION: The amount of time required for mess personnel to complete necessary medical tests is a minimum of 3 days.

(c) RECOMMENDATION: That personnel in MOS 94A, 94B receive tests and Food Handlers Certificates as a part of inprocessing and be completely processed prior to assignment to a unit.

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SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
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b. Intelligence.

(1) Attack of Intelligence Targets.

(a) OBSERVATION: The brigade S-2 and the Direct Support Battalions S-2 must achieve close coordination in order to deliver timely and accurate fires on intelligence targets. Often a duplication of effort has resulted in wasted time in the delivery of fires on intelligence targets.

(b) EVALUATION: A Target Analysis Section has been formed by the Brigade and the Battalion S-2. A Sergeant (E-5) is in charge of compiling all intelligence information. All targets are logged in a folder. Each folder contains all available intelligence on each block of 100 grid squares. All potential targets are also plotted on a map. By plotting and logging all available intelligence, patterns, trends and enemy intentions become more evident. As soon as a target is acquired it is evaluated as to significance, validity and method of fire. In this way the artillery can place accurate and timely fires on intelligence targets and the Brigade S-2 is aware of how and when these targets are attacked. This method has eliminated much of the delay in processing vital intelligence information. Also, the Brigade and Battalion S-2 now work closer together and have achieved better results as evidenced by the increase in the number of "killed by artillery" on intelligence type targets.

(c) RECOMMENDATION: That all direct support battalions give consideration to forming a joint target analysis section with the supported Brigade S-2.

c. Operations.

(1) Location & Identification of Direct Fire Targets.

(a) OBSERVATION: Problems frequently occur in the identification and location of direct fire targets. A system has been used which has proven very effective in solving this problem.

(b) EVALUATION: As soon as possible after arriving on a new Fire Support Base, the Artillery LNO assigns a sector of responsibility to the battery. This sector is divided into five (5) overlapping sectors for each one of the perimeter guns. Each gun is then adjusted on three or four targets using Killer Jr. The targets are numbered in order and the target number, deflection, QE, and the time settings are painted on the parapet wall, so that anyone can fire the targets in the event of a ground attack. As the targets are fired in, the azimuth from the infantry TOC to the burst is measured and given to the Artillery LNO. Thus, when movement is detected on a certain azimuth by the infantry, the LNO can quickly place accurate fire on the target.

(c) RECOMMENDATION: It is recommended that this refined method of firing in direct fire targets be considered for use by the other artillery units.

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SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
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(2) Artillery Pioneer Platoon.

(a) OBSERVATION: When a firing battery moves to a new fire base there is a tremendous work load not only in preparing parapets but also in hardening the battery area and preparing positions capable of withstanding not only ground attack but also indirect fire attacks.

(b) EVALUATION: It is impossible for battery personnel to complete these tasks in one day even with assistance. The occupation can be greatly enhanced and facilitated, however, by the assistance of a 20 man pioneer team drawn from the resources of the battalion's Headquarters, Headquarters & Service Battery. This pioneer team is under the command of the Fire Support Base Btry Cndr and should be utilized to perform the time consuming jobs as filling sandbags and ammunition boxes for parapet and bunker construction thereby freeing firing battery personnel for the actual construction of parapets and service of the piece. The pioneer team also breaks out ammunition for the howitzer sections. In short, the pioneer party frees the howitzer section from "non-skilled" tasks in order that the entire section can assist in the technical work of construction of the battery area. The pioneer team should not remain overnight at the firebase since they would require additional overhead protection.

(c) RECOMMENDATION: That this method of rapidly preparing a new fire base be considered by all units.

(3) Response to Stand Off Attacks.

(a) OBSERVATION: When a stand-off attack is launched against an operational base the artillery must be capable of rapidly responding with counter-mortar/counter-rocket suppressive fires without endangering friendly aircraft in the area. A plan has been developed which permits the artillery to rapidly fire counter-mortar/counter-rocket targets while minimizing checkfires and also permits mortar-rocket patrol aircraft to rapidly engage targets.

(b) EVALUATION: A solution to the problem was formed by establishing zones of primary responsibility for the artillery and the mortar-rocket patrol aircraft during the critical period 1630-2100. During this time two zones are established, one in which the mortar-rocket patrol aircraft operates and one for artillery fires. The zones and the times are changes daily to avoid setting a pattern. In the event of a stand-off attack the following procedures are followed.

1 If the patrol aircraft makes visual sightings of enemy firing positions the aircraft will engage, the artillery will shift fire until the aircraft has expended.

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SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970 RCS CSFOR-65 (R2)

2 If no sighting is made from the air, aircraft will clear the area immediately to permit artillery to fire the counter-mortar/counter-rocket program.

3 In all cases the mortar/rocket aircraft will monitor the Base Defense Artillery frequency and will report when clear of the area. This system has resulted in closer coordination between the artillery and aircraft flying mortar-rocket patrol and has resulted in a more responsive suppression program.

(c) RECOMMENDATION: It is recommended that this plan be considered for use by other units as a means of increasing the effectiveness of the counter-mortar/counter-rocket suppression program.

(4) Battery Center Location.

(a) OBSERVATION: Due to incomplete maps and lack of prominent terrain features it is sometimes very difficult to accurately map spot the battery center location.

(b) EVALUATION: An error in Battery location can normally be detected by observing the deflection corrections obtained from firing a precision registration. It has been learned that an accurate Battery Center can be computed with FADAC by conducting a resection by firing. The following procedures are followed: Select 2 prominent terrain features for registration points. They should be at the same range from the weapon. The difference in chart deflection from RP1 to RP2 should not be less than 150 mils. Enter the latest computer met and propellant temperature in FADAC. Conduct a precision registration on RP1. Prior to giving end of mission request the XO to measure adjusted azimuth.* Conduct a precision registration on RP2 again request XO to measure adjusted azimuth. Enter map inspected grid and altitude of RP1 as observer O1 and RP2 as observer O2. Recall O1 and O2. Enter adjusted azimuth plus or minus 3200 mils for O1 (RP1) and O2 (RP2). Perform an orientation type survey with FADAC. FADAC will compute and display coordinates and altitude. This data is considered to be the grid and altitude of the base piece. The only inaccuracies involved will be the error in map coordinates of registration points and met not being the actual weather conditions at the time of firing.

(c) RECOMMENDATION: That this procedure be considered by other units experiencing difficulty in accurately locating battery centers.

(5) Fire Support Control.

(a) OBSERVATION: With the added importance of utilizing all available fire support means to simultaneously attack targets, the Artillery LNO must be able to effectively control and direct the various support assets.

*NOTE: See 2d Ind, HQ II FFORCE, Page 22

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(b) EVALUATION: The use of a "Simultaneous Engagement Board" has increased the efficiency of LNO's in controlling the many and varied fire support means. Mounted on a board is a target grid with azimuths graduated every 100 mils and quadrants I, II, III, IV labeled. To the right of this circle is space for entry of the following information: UNIT (IN CONTACT), SUPPORTING ARTY, SUPPORTING FIRES, BLOCKING FIRES, ORGANICS, ARA, FAC, TAC AIR, GUNSHIPS, SPOOKY, SHADOW, NIGHT HAWK, LIFT SHIPS, MEDEVAC, NGF, OTHER. When engaging the enemy the center of the target grid represents the target. Essential information on the various fire support means (call signs, armament, etc) is quickly jotted to the right of the circle. The LNO then uses the target grid and labeled quadrants (I, II, and IV) along with the azimuths to sketch in friendly locations, direction(s) of attack, orbit area(s), no-fire corridor(s), gun-target line, and any other graphic aids which assist him in effectively coordinating the simultaneous engagement of the target by all available fire support means. An added advantage of this board is that it serves as a constant reminder to the LNO to use all available assets in attacking a target.

(c) RECOMMENDATION: That direct support battalions employ a "Simultaneous Engagement Board" to assist LNO's in engaging targets more effectively.

d. Organization.

(1) Consolidated Supply Section.

(a) OBSERVATION: The tactical situation in Vietnam usually requires the battery supply section to be separated from the remainder of the battery and results in a logistical operation which is most difficult for the battery commander to control. In addition there exists a shortage of trained personnel to fill the battery supply slots.

(b) EVALUATION: One solution to the battery supply problem is to consolidate the battery supply sections within the Battalion S-4 section. The battalion S-4 can direct the overall logistical operation thereby insuring better support for the batteries. The consolidation also makes it possible for the battery S-4 section to become more proficient in their duties due to the closer association with the more experienced personnel found in the battalion S-4 section.

(c) RECOMMENDATION: It is recommended that this organizational technique be considered by other Artillery battalions as a means of providing more effective utilization of battery supply personnel.

e. (U) Training.

(1) Battery FDC Training.

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SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970 RCS CSFOR-65 (R2)

(a) OBSERVATION: The rapid change of personnel in the firing batteries results in a constant retraining problem for FDC personnel. A technique which permits the battery FDC personnel to receive the benefits of training with the more experienced personnel in the battalion FDC and at the same time permit the battery FDC to carry out normal daily functions has been employed.

(b) EVALUATION: Periodically one of the chief computers of the battalion FDC will go to the firing battery on the day the battery is to register. While at the battery the chief computer can observe the battery FDC and assist in the training of the FDC. During the one day visit subjects covered may include precision registration (with or without FADAC), concurrent met, eight octant met and the use of FADAC in various type missions.

(c) RECOMMENDATION: It is recommended that this training technique be considered for use by other battalions.

f. Logistics.

(1) Availability of Sling Out Equipment.

(a) OBSERVATION: The short life expectancy and lack of new sling-out equipment tends to decrease the efficiency of logistical resupply in the battalion.

(b) EVALUATION: A Direct Support battalion is involved in a large amount of resupply of Class IV and Class V materials to firing batteries involving a large number of slings, nets, etc. When this equipment is declared unserviceable it must be requisitioned from 15th Supply and Service Battalion. However, the time involved in receiving the new equipment is usually 1 month to 2 months.

(c) RECOMMENDATION: That each FSSE carry a stockage of sling-out equipment to be used in a program of direct exchange of unserviceable equipment for new equipment. All units would then have an adequate supply of sling-out equipment readily available.

g. Communications.

(1) Installation of Power.

(a) OBSERVATION: It has been noted that various procedures and systems exist for connecting power to electronic equipment in firing battery FDC's. Often this phase of establishing a FDC is hastily performed and not improved at a later time. Improper installation of power can lead to dangerous electrical shock, damaged equipment and inefficient operation of equipment.

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SUBJECT: Operational Report - Lessons Learned for the Period Ending
31 January 1970 (RCS CSFOR-65 (R2))

(b) **EVALUATION:** Care must be taken in the initial installation of power for electronic equipment to insure that all cables are serviceable and do not have cuts or other damage which could cause shorts. Power cables should be laid along the shortest route to the FDC; all excess cable should be inside the FDC where it is less exposed to damage. It has been found that a most effective way to distribute power to equipment is through a central terminal. A terminal strip such as TM 184 can be used as a power terminal for both AC and DC and eliminates splicing several pairs of power cable to the main power cable. It should be mounted in a central stationary place in the FDC where it can be easily serviced. Radio power cables and emergency DC lights can be tied into the terminal without splicing.

(c) **RECOMMENDATION:** That a central power terminal be used in distributing power in the field locations to eliminate splicing and simplify power hook up.

h. Material - None

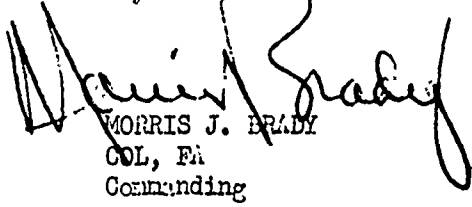
i. Other

(1) Injury to Loader - 105 Howitzer

(a) **OBSERVATION:** A number of loaders have cut their fingers and hands while extracting the spent 105mm cannister, resulting in unnecessary loss of man-hours.

(b) **EVALUATION:** The edges of the cannister are sharp and present a hazard to the loader due to his constant handling of spent cannisters. Each loader in the battalion is now required to wear a standard lineman's glove while performing his duties. Since the policy was established there have been no instances of cut fingers or hands as a result of handling spent cannisters.

(c) **RECOMMENDATION:** It is recommended that this technique be considered for use by other artillery battalions.


MORRIS J. BRADY
COL, FA
Commanding

4 Incl
as
Incl 2 and 3 wd HQ, DA

DISTRIBUTION:

CG, 1st Cav Div (AM) 50
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CO, 1/30th Arty 10
CO, 1/77th Arty 10
CO, E/82d Arty 2
File 2

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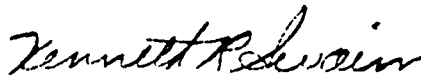
AVDAGF-DT (8 Feb 70) 1st Ind
SUBJECT: Operational Report - Lessons Learned 1st CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970, RCS CSFOR-65 (R2)

DA, Headquarters, 1st Cavalry Division (Airmobile), APO San Francisco
96490 3 March 1970

TO: Commanding General, II Field Force, ATTN: AVFBS-RE-H, APO San
Francisco 96266

This headquarters has reviewed and concurs with the Operational Report -
Lessons Learned for the quarterly period ending 31 January 1970 from Head-
quarters, 1st Cavalry Division Artillery (AM). The observation and recom-
mendation concerning food handlers' certificates (ref para 2a (2) (page 14))
has been considered for application during in-processing at The FIRST TEAM
Academy. This course of action is not deemed feasible, however, because
of the limited medical facilities at Bien Hoa.

FOR THE COMMANDER:



KENNETH R. SWAIM
CPT, AGC
Asst AG

AVFBC-~~HE~~-H (8 Feb 70) 2d Ind
SUBJECT: Operational Report - Lessons Learned 1st Cavalry Division Artillery
(AM), Period Ending 31 January 1970, RCS CSFOR - 65 (R2) (U)

DA, HQ II FFORCEV, APO San Francisco 96266

THRU: Commanding General, US Army Vietnam, ATTN: AVH&C(LST), APO 96375
Commander-In-Chief, US Army Pacific, ATTN: GPOP-DT, APO 96558

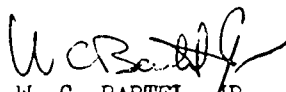
TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D.C. 20310

This headquarters has reviewed and concurs with the Operational Report -
Lessons Learned of the 1st Cavalry Division Artillery (AM) for the period
ending 31 January 1970, as indorsed, with the following comments:

a. Reference para 2c(4)(b), line 11 through 18 should be deleted and
the following added: ...again request XO to measure adjusted azimuth.
At this time solve the MET and determine the MET deflection correction
for each registration point. These MET deflection corrections are then
applied to the azimuths reported by the XO. If they are left corrections,
the azimuth is increased by the same number of mils; if right corrections,
azimuths are corrected by a decrease by the same number of mils. Next
enter the map inspected grid and altitude of RP 1 as observer O1 and RP 2
as observer O2. Recall O1 and O2. Enter the corrected azimuth plus or
minus 3200 for O1 and O2, and a vertical angle of plus 0 for O1, or an
estimated vertical angle if known. Perform an orientation type survey
with FADAC. FADAC will compute and display grid coordinates and an al-
titude. The grid is considered to be the grid of the base piece. The
altitude of the base piece is determined by plotting the grid and obtaining
the altitude from a map. The only inaccuracies involved will be the error
in map coordinates of registration points, error in position area direc-
tional control and the MET not being the actual weather conditions at the
time of firing.

b. Reference para 2c(4)(b), the first word in line 7 should be "The",
not "Two".

FOR THE COMMANDER:


W. C. BARTEL, JR.
CPT, AGC
Asst AG

Copy furnished:
1st Cav Div Arty
II FFV Arty

AVHGC-DST (8 Feb 70) 3d Ind
SUBJECT: Operational Report - Lessons Learned 1st CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970, RCS CSFOR-65 (k2)

Headquarters, United States Army, Vietnam, APO San Francisco 96375

30 MAR 1970

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

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 January 1970 from Headquarters, 1st Cavalry Division Artillery (AM) and concurs with the comments of indorsing headquarters.


2. Comments follow:

a. Reference item concerning "Radar", page 4, paragraph 1b(3). Item has been extracted for consideration for inclusion in the next issue of USARV Combat Intelligence Lessons.

b. Reference item concerning "Food Handlers Certificate", page 14, paragraph a(2): nonconcur. Food handlers examination for 94A and 94B personnel consist of an inspection by the unit Medical Officer to determine if the individual has infectious lesions of the skin, sore throat or diarrheal disease. The only part of the examination requiring more than 15 minutes is taking, processing and reading the X-ray. This may delay final clearance for 24 hours. If the individual has had an X-ray examination of the lungs in the previous 12 month period, this examination is not required. The responsibility for food handler examination and certification should remain at the unit level where proper emphasis will be placed on inspection of facilities and food handlers to include KPs. No action by DA or USARPAC is recommended.

c. Reference item concerning "Attack of Intelligence Targets", page 15, paragraph 2b(1): concur. Any method that can facilitate timely combat response to intelligence targets is encouraged. Joint intelligence/fire support sections have been created and employed in other units with great success (Reference USARV Combat Intelligence Lessons, 10 January 1970, pages 27 and 28, "Target Information Center" (25th Inf Div) and "Target Destruction Section" (1st Inf Div Arty)). This item also has been extracted for inclusion in the next issue of USARV Combat Intelligence Lessons. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:


L. D. MURRAY
CPT, AGC
Assistant Adjutant General

Cy furn:
II FFORCEV
1st Cav Div Arty

GPOP-DT (8 Feb 70) 4th Ind (U)

SUBJECT: Operational Report of HQ, 1st Cavalry Division Artillery
for Period Ending 31 January 1970, RCS CSFOR-65 (R2)

HQ, US Army, Pacific, APO San Francisco 96558 3 APR 1970

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

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

D.D. Cline

D.D. CLINE
2LT, AGC
Asst AG

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AVD/LR-T

8 February 1970

SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970 RCS CSFOR-65 (R2)

Field Artillery Organization for Combat as of 31 January 1970:

1. 1st Cavalry Division Artillery

2nd Battalion, 19th Artillery (105): DS 1st Bde

B 2/19

C 2/19

B 1/77 OPCON

1st Battalion, 77th Artillery (105): DS 2nd Bde

A 1/77

C 1/77

1st Battalion, 21st Artillery (105): DS 3rd Bde

A 1/21

B 1/21

C 1/21

1st Battalion, 30th Artillery (155): GS 1st Cav Div Arty and control
the fires of the DS Artillery
Battery in Div Arty's AO Chief

A 1/30: GSR 2nd Bn, 19th Arty

B 1/30: GSR 1st Bn, 77th Arty

C 1/30: GSR 1st Bn, 21st Arty

A 2/19: DS AO Apache (OPCON)

2nd Battalion, 20th Artillery (ARA): GS 1st Cav Div Arty

A 2/20: GSR (Modified) 2nd Bn, 19th Arty

B 2/20: GSR (Modified) 1st Bn, 77th Arty

C 2/20: GSR (Modified) 1st Bn, 21st Arty

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**DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
DOD DIR 5200.10**

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AVD/LAR-T

8 February 1970

SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970 RCS CSFOR (R2)

Battery E, 82nd Artillery (Aviation): GS 1st Cav Div Arty

Attachments:

Task Force North 5th Bn, 2nd Arty (AW) (SP): GS 1st Cav Div Arty

2. Supporting Artillery

II FFV Artillery

6th Battalion, 27th Artillery (8"/175): GS II FFV and control
the fires of DS Arti-
llery of the 11th ACR

1st Howitzer Battery, 11th ACR (155SP): DS 1st Squadron, 11th ACR

2nd Howitzer Battery, 11th ACR (155 SP): DS 2nd Squadron, 11th ACR

3rd Howitzer Battery, 11th ACR (155 SP): DS 3rd Squadron, 11th ACR

2nd Bn, 12th Arty (155): GSR 1st Cav Div Arty

Btry C, 2nd Bn, 13th Arty (105): GSR 1st Cav Div Arty

Btry A, 2nd Battalion, 32nd Artillery (8"/175): GS II FFV

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8 February 1970

SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970 RCS CSFOR-65 (R2)

AERIAL ROCKET ARTILLERY (ARA) MASS FIRES

1. In Jan 70, the 2nd Battalion, 20th Artillery was directed to develop the capability of massing ARA fires. Initially each battery was given the opportunity to develop and experiment with different methods of control and then a standard procedure was established.

On 24 Jan 70, 19 aircraft operated on several mass-fire TOT's. Only minor difficulties were encountered. Since 24 Jan, the ARA - mass fire technique has been employed on 21 occasions.

2. Requests for an Artillery Rocket Attack Time On Target are submitted through the general support channels. When the mission is received at the Battalion operations, a net call is initiated over the Battalion CF net using the format as contained at tab 1. Mission planning is normally accomplished enroute to the rendezvous point. The checklist as shown at tab 2 is used by the mission commander in planning the operation and briefing all participating sections.

3. The operation is conducted as follows, once the target is determined, an orbit point is selected along each desired attack axis. When possible, three ARA sections are used with three directions of attack. Each section leader computes attack heading and the flight time from orbit to rocket release point (approximately 1500 meters from target). The mission commander begins countdown using longest computed time to target (i.e., H-5 min). Each section starts inbound in accordance with the computed time.

4. On some missions, an artillery marking round is used to mark center of target. When used, the time of flight is determined from the supporting artillery unit. A command to fire is initiated so that the marking round provides benefits. First, it provides a nav-aid for the critical portion of the operation. Second, it insures clearance from friendly troops. One mistake with an operation of this size could be drastic especially when using six aircraft loaded with up to seventy-six flechette rockets per ship (1,003,200 flechettes). Third, it provides an aiming point about which the flechette patterns can be most effectively employed to achieve best possible coverage. By having the marking round on the ground at H-15 seconds, the element of surprise is not considered to be comprised.

5. Mass-fires are most effective when using the flechette rocket. The use of this warhead requires precise accuracy in regard to engagement altitudes, slant range and angle of dive. The flechette is considered effective only within the range envelop of 200 to 4500 feet slant range.

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SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970 RCS CSFOR-65 (R2)

Due to numerous large caliber anti-aircraft weapons within this area of operations, the engagement at maximum effective slant range is considered best. To utilize the maximum effective range of 4500 feet and still maintain a relatively safe altitude, the aircraft should begin firing 2250 feet altitude with a dive angle of 30 degrees and results in slant range of 4500 feet. The flechette pattern on the ground will be approximately 1000 feet by 465 feet for each rocket. The firing of 28 rockets at a single point assures a minimum of one hit per standing man within the previously stated pattern.

6. Although in most instances ARA mass-fire are employed against active .51 cal anti-aircraft positions, this program has considerable application against intelligence targets and targets of opportunity.

7. Tab 3 contains a listing of all targets engaged by mass ARA fires through 5 February 1970.

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8 February 1970

SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970 RCS CSFOR-65 (R2)

ARA "HELLFIRE" MISSION FORMAT

1. Time/date rec'd _____
2. Codeword _____ (all stations acknowledge)
3. Con Nr _____
4. Location of target _____ (Shackle)
5. Nature of target _____
6. TOT _____
7. Controller _____
8. Responsibilities:
 - a. A Btry send _____ aircraft
 - b. B Btry send _____ aircraft
 - c. C Btry send _____ aircraft
9. Armament configuration _____
10. Contact and Frequency
 - a. FM
 - (1) Contact _____
 - (2) Frequency _____
 - b. UHF
 - (1) Contact _____
 - (2) Frequency _____
 - c. VHF
 - (1) Contact _____
 - (2) Frequency _____
11. Rendezvous
 - a. Location _____ (Shackle)
 - b. Time _____

Tab 1 to Incl 4

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8 February 1970

SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970 RCS CSFOR-65 (R2)

TOT COMMANDER'S CHECKLIST

1. FRIENDLY SITUATION
2. ENEMY SITUATION/GAF
3. NATURE OF TGT
4. RELEASE POINTS (ORBIT AREA)
5. DIRECTION OF ATTACK
6. AIR DATA FOR ARTY MARKING ROUND (IF APPLICABLE)
7. SECTION FORMATION
8. DIRECTION OF BREAK
9. % EXPENDITURE AND SEQUENCE
10. ADDITIONAL INFO

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Tab 2 to Incl 4

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AVDAAR-T

8 February 1970

SUBJECT: Operational Report - Lessons Learned 1ST CAVALRY DIVISION
ARTILLERY (AM), Period Ending 31 January 1970 RGS CSFOR-65 (R2)

ARA TOT STATISTICS 24 Jan - 5 Feb 70

<u>DATE</u>	<u>NO</u> <u>SECTIONS</u>	<u>REQ</u> <u>MSN</u> <u>TIME</u>	<u>TIME</u> <u>ON</u> <u>TGT</u>	<u>TOTAL</u> <u>FLECHETTE</u> <u>EXPEND</u> <u>ITURES</u>	<u>TOTAL</u> <u>ROCKET</u> <u>EXPEND</u> <u>ITURES</u>	<u>TARGET</u> <u>LOCATION</u>	<u>SURVEILL-</u> <u>ANCE</u>
24 Jan	3	1050	1050	0	245	XT226794	2.51 cal pos
24 Jan	4	1136	1155	0	398	XT226794	
24 Jan	3	1220	1220	0	302	X1196800	
24 Jan	1	1755	1800	0	122	XT425766	
26 Jan	2	1430	1430	78	113	XT404697	1.51 cal
27 Jan	2	1859	1905	60	84	XT266827	
28 Jan	1	1535	1645	34	88	XT213794	
28 Jan	2	1237	1240	118	149	XT330805	
28 Jan	3	1440	1455	0	236	YU546030	
29 Jan	2 $\frac{1}{2}$	1205	1225	0	133	XT462832	
29 Jan	2 $\frac{3}{4}$	1345	1355	134	264	XT220800	1.51 cal
30 Jan	2 $\frac{3}{4}$	1446	1515	0	0	XU809095	
31 Jan	3	1212	1220	148	336	XT470750	
31 Jan	3	1600	1650	0	0	YT230870	
31 Jan	2	1050	115	130	130	XU880210	
1 Feb	2	0910	0910	0	190	XT473733	
1 Feb	3	1035	1105	113	280	XU870210	9CKIA
1 Feb	2	1320	1425	47	186	XU918248	
2 Feb	2	0900	0900	0	145	XT917704	
2 Feb	2	1013	1025	104	195	XU902213	4CKIA
2 Feb	1	1555	1615	73	112	XT231874	

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