

**Operational Report  
Lessons Learned  
Headquarters 6/27th Artillery  
Period Ending 30 Apr 1966**

27TH ARTILLERY, 6TH AVN OLC 30 APR 1966

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AUTHORITY  
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DEPARTMENT OF THE ARMY  
HEADQUARTERS  
6TH DIVISION, 27TH ARTILLERY  
APO San Francisco 96307

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9 May 1966

SUBJECT: Operational Report on Lessons Learned (HCS CSGPO-28 (RI) ) (U)

30 APR 66

THRU: Commanding Officer  
23rd Artillery Group  
ATTN: S-3  
APO U.S. Forces 96289

Commanding General  
II Field Force Vietnam Artillery  
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✓ Commanding General  
United States Army Vietnam  
ATTN: AVC  
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Commander-in-Chief  
United States Army Pacific  
ATTN: GPOP-MH  
APO U.S. Forces 96558

TO: Assistant Chief of Staff for Force Development  
Department of the Army  
Washington D.C. 20316

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1. (C) Section I, Significant Headquarters or Unit Activities

a. (U) Personnel

(1) The physical separation of the Battalion Headquarters and its Personnel Section (approximately thirty miles) made it necessary to devise an abbreviated casualty report form. Basic information, immediately available at battery level, is required on the abbreviated form. The balance of the data, available in the individuals 201 file, is inserted by the personnel section. This procedure has resulted in timely and accurate casualty reports.

(2) The replacement of officer and enlisted personnel has been particularly effective. Replacements have been received, or are scheduled to arrive, as requested. This is especially noteworthy when considering the personnel turbulence during this reporting period.

(3) A high state of morale exists within the unit. This condition can be largely attributed to maximum participation in the S&R program, three day pass arrangements, and to the availability of Special Service equipment and shows. These programs have produced the desired result, high morale.

b. (C) Intelligence

(1) Establishment of an Order of Battle card file and Activity Overlay has enhanced the ability of S-2 personnel to rapidly evaluate and correlate intelligence information.

(2) The development of a countermortar and flak suppression program has provided this unit with a rapid means of retaliation. This program supplements the countermortar program of the reinforced direct support battalions. A target list of suspect anti-aircraft sites, located by serial observers, has been prepared. To date, flak suppressive fires have not been necessary.

(3) One STARLIGHT scope was issued to this unit in February 1966. Incorporation of this instrument into the night aerial surveillance program has improved target acquisition significantly. Air observers are now able to readily detect Viet Cong vehicular and personnel activity during the hours of darkness which otherwise could not be observed.

c. (U) Training

(1) An intensive and continuous training program for fire direction and firing battery personnel has been implemented. The tactical situation requires that artillery be able to fire in any direction on short notice. Fire direction personnel must be able to rapidly compute firing data for targets appearing in any direction. It is not unusual for the firing batteries to relay their weapons on a new azimuth prior to each mission. A high order of accuracy and speed is mandatory.

(2) All TOE aviators have been qualified for night surveillance flights conducted under adverse conditions. The tactical situation precludes

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the use of the aircraft landing lights. Battery operated runway lights can not be used without exposing ground personnel to sniper fire. Departures are usually instrument take-offs. Landings are accomplished using moonlight, or flare illumination fired by mortars on order of the pilot.

d. (C) Operations

(1) 6th Battalion, 27th Artillery (-) continued the mission of General Support/Reinforcing the 1st Battalion, 5th Artillery. 4/6/27 was in General Support/Reinforcing the 3rd Battalion, 319th Artillery. On two operations 4/6/27 was attached to 1st Battalion, 7th Artillery. During the period 1 January through 30 April 1966, the battalion fired 12,269 8" rounds and 5,090 175mm rounds.

(2) Seven resupply convoys and sixteen tactical operations other than resupply were supported. Two operations are significant:

(a) Operation ROLLING STONES produced the first major contact between the 1st Brigade, 1st Infantry Division and Viet Cong forces. Three confirmed and possibly five battalions of VC attempted to overrun the Brigade field position. The attack was launched at 0230 hours. 6/27 Arty (-) fired numerous countermortar and defensive fires at locations furnished by the 1/5 Artillery countermortar radar. These fires effectively silenced the mortars and assisted in repulsing the VC forces. A body count in excess of 140 was made at daybreak. Many of these casualties were caused by artillery.

(b) Operation SILVER CITY was a joint operation involving the 173d Airborne Brigade and the 1st Brigade, 1st Infantry Division. The artillery organization for combat was, in part:

6/27 Arty (+) GS, priority of fires to 173d.

D/8/6 Arty (8") attached 6/27 Arty.

B/2/32 Arty (175mm) reinforce 6/27 Arty.

The 6th Battalion, 27th Artillery, acting as the general support headquarters, was able to effectively control the fires of five widely separated heavy artillery batteries. Control was exercised throughout the operation by FM/AM radios and by sole-use and common-use VHF circuits. During this operation heavy artillery was massed on a VC force that had nearly surrounded two battalions of the 173d Airborne Brigade. The resultant fire fight, supported by artillery and air, netted a body count of over three hundred and fifty.

(3) The battalion, with its mission of general support, furnished artillery to several Special Forces "A" teams. These advisor teams are between 24 and 29 kilometers from the 175mm gun positions. Liaison has been established. A forward observer party has been stationed at a newly established camp and will remain there until the camp is fully developed. Defensive



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concentrations have been fired in, and on occasion called for within 800 meters of the camp. Essentially, 175mm guns have been used in direct support of these forces.

(4) The addition of one observation aircraft (O-1D) and one aviator has greatly increased the target acquisition and intelligence collection capabilities of this unit. Prior to the augmentation, an average of 125 hours of aerial surveillance were flown per month. Since that time the average has increased to 190 hours. These figures do not include the 40-60 hours required each month for administrative support.

(5) During one two-hour flight conducted in the OH-139, three widely separated VC base camps were located in dense jungle. The helicopter was flown at an altitude of one hundred feet above the jungle canopy at a speed of forty knots. Using this technique the observer and pilot were able to see down through the vegetation. This method is effective but also extremely hazardous. Flying at this altitude and airspeed the helicopter and crew are highly vulnerable to small arms and automatic weapons fire.

e. (U) Logistics/Administration

This unit, by active participation in the "Self-help program", has built three 2000 square feet mess halls, numerous shower facilities and permanent latrines. All construction was accomplished by troop labor with technical assistance from Engineer units. Building materials are obtained through supply channels, after the project is approved by the area self-help board. All structures were built in accordance with plans designed for this theater.

f. (U) Civic Action/ Psychological Operations

(1) Civic actions conducted by this unit have in general been limited to two areas:

(a) Supporting the Phuoc Vinh Popular Elementary School with troop labor, and obtaining athletic equipment and building supplies. Repairs to the well, pump, cistern, and roof were accomplished using voluntary troop labor. The Battalion 3-5 arranged for the hiring of a janitor for the school. The janitor is paid on a daily basis from indigenous labor funds allocated to the Area Commander.

(b) The Battalion Surgeon has held sick call each week at the civilian dispensary. The response to his services has been most gratifying. Between fifty and seventy-five patients are seen each visit. In conjunction with providing medical treatment, one bar of soap is given to each patient. This soap has been donated by relatives of members of the battalion. To date, more than 1000 bars of soap have been given to civilians.

(2) Arrangements were made for an exchange of letters between

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the students of the Phuoc Vinh school and students attending the Rustice Elementary School, Rustice, Florida. This exchange will undoubtedly assist in developing a closer understanding between children of two countries.

g. (U) Problem areas.

(1) The voluminous amount of required administration is excessive for the number of administrative personnel authorized. The physical separation of the Battalion headquarters and the personnel section makes it necessary to conduct much of the routine administrative business by correspondence. In addition to the reports required by our higher headquarters, there are many administrative requirements set forth by the area commander.

(2) It has been difficult for this unit to obtain timely intelligence from external sources. The majority of intelligence reports received contain information that is one to five days old. Artillery units can react decisively and neutralize targets if the target location is forwarded promptly. Intelligence reports must be passed directly to action agencies rather than through normal channels. Rapid dissemination is important, not only for immediate firing, but to provide intelligence officers with a basis for evaluating future targets.

(3) A major problem facing the heavy artillery unit commander is the construction of adequate firing pads for his weapons. Several materials have been evaluated and each has had certain disadvantages. Crushed rock has damaged the road wheels and caused tracks to be thrown. Concrete slabs do not provide a sufficient amount of cushioning. The chassis is subjected to forces that apparently exceed the design characteristics. The existing firing pads are constructed of laterite which has been compacted and graded into a circular mound. This type of pad has proven to be satisfactory during the dry season. Based upon our experience after several moderate rains, it is anticipated that these pads will be untenable during the monsoon. Any movement of the weapon creates a quagmire.

(4) Serious problems have been encountered with the 175mm gun. Numerous parts have failed during operation. The recoil and resultant forces developed have damaged the elevating and traversing gear trains. The housings containing these gears are cast aluminum and have cracked on numerous occasions. Hydraulic leakage and failure is common even though the lines are constantly checked and fittings tightened. Numerous seals have been replaced in the hydraulic cylinders. Micro-switches used to control the hydraulic movement have failed. Most of these difficulties may be the result of designing this weapon so that it is air-transportable. Many parts are constructed of light-weight alloys. Weight saving measures such as hollow gear shafts have probably contributed to the difficulty. RIR's have been submitted on all material failures. The 175mm gun has proven to be a highly accurate and valuable artillery weapon; therefore justifying the efforts required to correct these deficiencies.

(5) The continuous lack of repair parts, supplies, and essential items continues to plague this unit. There has been some improvement during

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the last six weeks but in general the situation remains critical. The TOE Meteorological Section arrived in country with a sixty day supply of expendable items. Numerous requisitions have been submitted for radiosondes, balloons, calcium hydride, and like items. Despite aggressive follow-up action, not one of these requisitions has been filled. The section has been able to operate only intermittently by borrowing supplies from other units. Repair parts for major items of equipment are obtained with difficulty and usually after a lengthy waiting period. Vehicles have been deadlined for tube patches and for similar low value repair parts. The supply of relatively simple but necessary items such as paper, note pads, brooms, field range generators, stencil ink, and light bulbs is practically non-existent. Repair parts for radios, particularly the AN/GRC-46, are in short supply. The AN/GRC-46 radio must be kept operational. It is frequently the only reliable means this battalion has for communicating with one of its firing batteries. Most classified information between this and higher headquarters is sent by AN/GRC-46.

2. (C) Section II, Lessons Learned

a. Overages in enlisted grade structure

(1) Units should deploy from COMUS without overages in their enlisted grade structure. This battalion departed COMUS with an excess of five E-6's. This situation developed when an augmentation of six forward observer sections, each authorized one Recon Sergeant (E-5), were filled with E-6's. The excess in grade has created a bottleneck in the promotion system and a deterrent to morale.

(2) It would be more desirable to fill vacancies with individuals one grade below that authorized by the TOS, rather than to permit exceptions in the upward direction.

b. Requisitioning of blank forms and publications

(1) Units must anticipate their requirements for blank forms and publications by at least three months. The delay encountered from the time of submitting a requisition until receipt of these items appears to be excessive, when compared to the situation in COMUS.

(2) Undue difficulties arise when blank forms and publications are not readily available.

c. Order of Battle file and Activity Overlay

(1) An Order of Battle file and Activity Overlay provides a compact method of storing information over a long period of time. The intelligence officer is able to keep only the most recent information on the OB overlay, yet have information from previous months readily available. The card file provides a basis for determining the location of base camps through correlation of recurring reports in certain areas. The activity overlay indicates the areas where enemy movement and activity are prevalent. In addition, the

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overlay assists in eliminating duplication of reports.

(2) Increased unit effectiveness results from the use of an Order of Battle file and Activity overlay.

d. Artillery countermortar program

(1) The concept of a countermortar program as developed by this unit is not new. The noteworthy feature of this program is obtaining clearance to fire in advance on suspect areas. This allows the unit to retaliate immediately when attacked by mortars.

(2) Artillery fires should be planned for all previously determined or suspect mortar positions, and fired without delay when a mortar attack is initiated.

e. Night aerial surveillance flights

(1) Night aerial surveillance flights have proven to be the most consistent and reliable source of information. This battalion is located in an area through which a large number of VC units and supplies are moved. This movement occurs primarily during the hours of darkness. During daylight, observers may occasionally see two or three persons or receive ground fire. In general, most day flights yield only indications that activity has occurred within the area of operation. These indicators are fresh trails, new tracks and ruts on existing roads, recently repaired bridges, and the establishment of new fortifications. It can be logically assumed that this activity was accomplished under cover of darkness. In terms of live targets sighted, night surveillance flights have been far more productive than daylight flights. For example, observers have never sighted a moving truck in known VC territory during daylight. However, observers located fifty-three moving vehicles at night during the last four months.

(2) Surveillance flights conducted during the hours of darkness be continued, and their frequency increased.

f. STARLIGHT scope in aerial surveillance

(1) The STARLIGHT Scope, a hand-held or weapon-mounted instrument used to amplify available light, has proven to be an invaluable tool for the aerial observer. Its use has made it possible for targets to be acquired at night without alerting enemy forces. Flights are conducted at an altitude of 2000 feet above the terrain. The observer is able to search all clearings, roads, and rivers. Once a target is located the observer must maintain visual contact while the pilot requests and adjusts artillery fire. This is a variation to the usual procedure where the observer does the adjusting. This variation is caused by the frequent inability of the observer to reacquire the target if visual contact is lost. This is in turn caused by the inadequate resolution present in the scope when used in an aircraft. It is not practical



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to use the STARLIGHT scope while flying below 1000 feet above the terrain. The relative motion is such that the observer becomes nauseated. An additional limitation is that the scope can only be used when the background light is augmented by the moon. Starlight does not provide sufficient illumination. Even with the limitations mentioned, the STARLIGHT Scope has been of significant value.

(2) STARLIGHT instruments should be issued to all units authorized observation aircraft.

g. Observer training

(1) The length of time required to train effective aerial observers is longer than had been anticipated. The most proficient student observer needs about forty hours of training while the slowest individual requires seventy. This can be primarily attributed to the following reasons:

(a) The difficulty in correlating features on the ground with a map. Approximately sixty percent of the area is jungle. There are relatively few key terrain features. Clearings indicated on maps usually are overgrown. Initially, observers are fortunate if they can determine the coordinates of a point within 2000 meters.

(b) The observer must become so familiar with the terrain that he is able to detect subtle day to day changes. This can only be accomplished by many flights conducted in all conditions of weather, both day and night.

(c) The difficulty the observer has in visualizing the gun-target line. Many targets fired upon are at ranges greater than 20 kilometers from the guns. At these ranges the observer can not see the firing battery and is therefore required to "sense" the gun-target line.

(2) The aerial observer program of instruction should be increased from 20 hours to 30 hours.

b. Night tactical training for aviators

(1) Additional training in night tactical flying is required for all aviators. Routine administrative flights between point "A" and "B" do not present any unusual problems. The difficulties arise when low level surveillance flights are conducted at night over unpopulated areas. There are very few, and in some cases, no visual reference points other than an indistinct horizon. A pseudo-instrument flight is required with the pilot devoting approximately fifty percent of his attention outside the aircraft to assist the observer in locating VC activity. The most productive flights in terms of detected activity, are those made when weather conditions are worst. Aviators must become proficient in making landings and take-offs from tactical airfields which are unlighted. The use of the landing light is not recommended since to do so will invite enemy fire. The alternate solution is to use aircraft flares.

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or mortar flares fired on the command of the pilot. This method has been frequently used and is reliable and safe.

(2) All aviators must be fully qualified in night tactical operations.

1. Omi-directional Artillery fires

(1) It may be generally stated that, within this theater of operation, the conventional concept of the line of contact being forward of the artillery is no longer true. A circular line of contact, with the artillery located within the circular area, is the normal situation. Artillery units can effectively operate within this "6400 mil environment". Modifications to fire direction and firing battery procedures are required.

Oversize charts and chart tables must be constructed. For 8" and 175mm use, tables 58" square have proven satisfactory. The 8" howitzer is plotted on a scale of 1:25000. Due to the greater range of the 175mm gun, it is plotted on a scale of 1:50000. One chart can be used for both weapons. Grid lines for the 8" are numbered in the normal manner in black. A second set of numbers in red is used for the 175mm gun with each grid square representing 2000 meters. Permanent indices are established at 800 mil intervals.

Chart operators must learn to plot using two different scales on the same chart. This has been accomplished without undue difficulty. Deflections determined by the chart operator are prefixed with the azimuth index used. The computer then applies corrections to this deflection before announcing it to the firing battery. For example, assume that one piece is layed on azimuth 700. A deflection to a target of 3034, is determined using the 800 mil index. The computer applies this 100 mil difference and announces a deflection of 2934 to the firing battery.

To prevent cluttering the chart with numerous adjusted deflection indices, the computer records the deflection corrections on the graphical firing tables (GFT's). This requires that four sets of GFT's, each labelled for a different direction of fire, be maintained. The drift blocks are covered with transparent tape to prevent damage caused by the frequent changes in deflection corrections. The system also requires the computer to maintain an accurate record of the azimuth each piece is layed on. It is not unusual to have each weapon in a battery pointing in a different direction. This is done to decrease the time required to fire the initial and subsequent rounds during adjustment.

The major change required in the firing battery is to have two aiming circles set up. One instrument is located at each end of the orienting line. With this procedure, a piece can be rapidly relayed regardless of the direction of fire. Blind areas are eliminated.

(2) The procedure outlined above is complex, and requires close supervision by the Fire Direction Officer and chief computer. It is an effective and rapid means of determining firing data.

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(1) 6th Battalion, 27th Artillery is authorized two fixed-wing and one rotary wing aircraft. The O-1 has proven to be far superior to the OH-13 for observation and adjustment of artillery fire. The inherent stability of the airplane, when compared to the helicopter, makes this type of aircraft highly desirable for these purposes. Crew fatigue, during flights of equal length, is approximately fifty percent less in the O-1 than in the OH-13. The O-1 is able to remain aloft for 4 hours while the maximum time the OH-13 can fly without refueling is 2.5 hours. The O-1 is fully instrumented and can be flown during poor weather and at night without difficulty. It is impractical, if not impossible, to fly the OH-13 at night over areas where there are no lights or other reference points. A significantly larger area can be covered when the fixed wing aircraft is used for surveillance. The helicopter has proven to be invaluable when used for reconnaissance by the commander and his staff. It is the only means of transportation readily available that will permit him to effectively control his subordinate units. Transportation by vehicle is impossible. The distances involved are too great and most routes are not secure.

(2) Deletion of either type of aircraft from the TOE would decrease the overall effectiveness of this unit. There is a definite and proven need for all artillery battalions in this theater to have an organic aviation section with both types of aircraft assigned.

**k. Vehicle overload**

(1) This unit has learned by experience that the allowable 100 % overload for combat vehicles should apply only when they are driven on hard, smooth-surfaced roads. When operating on secondary roads, cargo trucks, loaded above rated capacity, will sustain damage to the frame, springs, and steering linkage. Vehicles used to transport ammunition are of specific concern. Most types of ammunition will overload a vehicle before the volumetric capacity is reached.

(2) The necessity of taking all precautionary measures to prevent overloading can not be overemphasized.

**l. Civic action**

(1) Civic action programs sponsored by battalion size units are best conducted on a person to person basis. Several small programs are more effective than one grandiose project. A closer, more harmonious relationship is developed between the civilians and the military when continuous assistance is provided.

(2) All units can participate in civic activities. The scope of these activities should be in relationship to the size of the sponsoring unit, bearing in mind the ease with which a unit can become overcommitted in this area.



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AVC-DH (9 May 66)

SUBJECT: Operational Report on Lessons Learned (ORL) OF 60-28 (22) (U)

HEADQUARTERS, UNITED STATES ARMY, APO San Francisco 96307 12 JUN 1966

FROM: Commander in Chief, United States Army, Pacific, AFHQ GPOF-MH, APO 96558

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

1. (U) The 6/27 Artillery's Operational Report on Lessons Learned is adequate.

2. (U) Concur with the comments of the Battalion Commander and with the 3d Indorsement.

3. (U) Reference paragraph 2g, Observer Training: Concur with comment 5 in 1st Ind concerning the length of time necessary to qualify observers. Twenty hours of formal instruction normally should be sufficient. If not, additional time may be given in specific cases. AR 95-51 establishes minimum training of aerial observers at twenty hours. It does not limit the training to twenty hours. Additional training to properly qualify individuals as aerial observers in a particular environment should be prescribed as necessary by unit commanders.

FOR THE COMMANDER:

HENRY I DENNEY  
CWO USA  
Assistant Adjutant General

MFR: The 6/27 Arty ORL was staffed with G1 (Col Corey), G2 (Col Dickerson), G3-A34 (Col Williams), G4 (Col Sasse), and Avn Officer. Action Officer: Maj Copeland.

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3. (U) Section III, Commanders Recommendations

a. That all gunnery courses conducted at the Artillery School include sufficient instruction to qualify officer and enlisted personnel in 6400 mil firing procedures.

b. That Field Artillery annual training tests be revised so as to include an evaluation of a unit's ability to operate in a 6400 mil environment.

c. That COMARMC modify the program of instruction for student pilots to include night tactical flights.

d. That all units authorized fixed-wing observation aircraft be required, as part of their annual training test, to conduct night surveillance flights.

ROBERT J. MC KAY  
Lt Col, Arty  
Commanding

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