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

IN REPLY REFER TO

AGAM-P (M) (5 Aug 68) FOR OT RD 682260 21 August 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, II Field
Force Vietnam Artillery, Period Ending 30 April 1968 (U)

SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation in accordance with paragraph 5b, AR 525-15. Evaluations and corrective actions should be reported to ACSFOR OT RD, Operational Reports Branch, within 90 days of receipt of covering letter.
2. Information contained in this report is provided to insure that the Army realizes current benefits from lessons learned during recent operations.
3. To insure that the information provided through the Lessons Learned Program is readily available on a continuous basis, a cumulative Lessons Learned Index containing alphabetical listings of items appearing in the reports is compiled and distributed periodically. Recipients of the attached report are encouraged to recommend items from it for inclusion in the Index by completing and returning the self-addressed form provided at the end of this report.

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Kenneth G. Wickham
KENNETH G. WICKHAM
Major General, USA
The Adjutant General

SEP 10 1968

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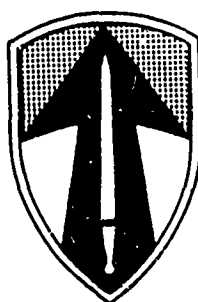
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**DEPARTMENT OF THE ARMY
HEADQUARTERS II FIELD FORCE VIETNAM ARMY
APO SAN FRANCISCO 96266**



**OPERATIONAL REPORT-LESSONS LEARNED
QUARTERLY FOR PERIOD ENDING 30 APRIL 1968**

(RCS CSFOR 65) (U) DDC CONTROL
NO. 82606

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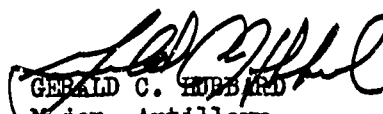
SUBJECT: Operational Report - Lessons Learned for Quarterly Period
Ending 30 April 1968 (RCS CSFOR-65) (UIC W-DHI-HS) (U)

THRU: Commanding General
II Field Force Vietnam
APO 96266

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

In compliance with AR 1-19, dated 26 May 1966, Subject, Operational Reports - Lessons Learned (RCS-CSFOR-65), this headquarters' Operational Report - Lessons Learned for the period 1 February - 30 April 1968 is attached.

FOR THE COMMANDER:


GERALD C. HUBBARD
Major, Artillery
Adjutant

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DEPARTMENT OF THE ARMY
HEADQUARTERS, II FIELD FORCE VIETNAM ARTILLERY
APO SAN FRANCISCO 96266

AVFB-FA

14 MAY 1968

SUBJECT: Operational Report of Headquarters, II Field Force Vietnam
Artillery for Period Ending 30 April 1968, RCS CSFOR-65 (U)

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1. Section 1, Operations: Significant Activities.

a. Administration/Personnel.

(1) (U) During this period there were no changes in the command of II FFORCEV Artillery. Personnel rotation was normal. The following awards were presented to assigned and attached personnel:

- (a) Legion of Merit - 1
- (b) Bronze Star - 13
- (c) Air Medal - 3
- (d) Army Commendation Medal - 9
- (e) Purple Heart - 5

(2) (U) Aside from an increased period of activity during the Tet offensive, the headquarters was engaged in normal operations for the entire period with concurrent effort toward improving defenses and maintaining proficiency in small arms and mandatory general subjects.

(3) (U) Headquarters Battery, 8th Target Acquisition Battalion, 25th Artillery received their annual IG on 9 April and received a Satisfactory rating.

(4) (U) There were no administrative or tactical movements of II FFORCEV Artillery Headquarters during the period.

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(5) (U) Current organizational structure of II FFORCEV Artillery is at Inclosure 1.

b. Operations.

(1) (C) General. During this reporting period repositioning of artillery continued with the changing operational situation, and on three occasions Force Artillery capabilities were decreased by requirements for additional artillery in I CTZ. Continuing emphasis was placed on providing artillery support for SF/CIDG personnel and improving the effectiveness of ARVN Artillery, however, the continuity of these operations was disturbed by the Tet offensive.

(2) (S) Positioning and Mission of II FFORCEV Arty Units. The current base camp positioning of II FFORCEV Artillery units is at Inclosure 2. Heavy artillery coverage within III and IV CTZ's is at Inclosure 3. The general missions are outlined in Inclosure 4, but the specific missions have varied from time to time based on operational requirements.

(a) At the close of the last reporting period, elements of the 2nd Bn, 11th Arty (155mm T) were deployed in both I and II FFORCEV areas of operation. On 8 March 1968, Headquarters and Service Batteries joined Batteries B and C at Phu Bai where they were attached to the 2nd Bde, 101st Airborne Division. Battery A, 2nd Bn, 11th Arty continues to be deployed in III CTZ.

(b) On 11 February 1968, Battery B, 1st Bn, 83rd Arty, deployed from its base camp at Ham Tan via Bien Hoa to Newport where it was loaded on an LST and transported to I CTZ. The battery was placed OPCON to the 108th Arty Group. On 17 March 1968 and 19 March 1968 respectively, Battery C, 1st Bn, 83rd Arty moved from Bien Hoa to Newport; and Headquarters Battery, Service Battery, and Battery A, 1st Bn, 83rd Arty, moved from Xuan Loc to Vung Tau where they were loaded on LSTs and transported to I CTZ. They, like Battery B, were placed OPCON to the 108th Arty Group. The significance of the redeployment of this organization to I CTZ was a substantial reduction in heavy artillery coverage in the southeast section of III CTZ and a marked decrease in heavy artillery support to the 1st ATF at Nui Dat and the ARVN elements at Ham Tan.

(c) The elements of the 5th Bn, (Self-propelled) (Automatic Weapons) 2nd Arty continued to be deployed with the missions indicated at Inclosure 4. An additional quad 50 battery, Battery G, 55th Arty, arrived in-country on 27 February 1968 and was attached to the 5th Bn, 2nd Arty. After completing an initial training cycle and readying equipment for tactical deployment, this battery was diverted to the Provisional Corps Vietnam on 13 April and further attached to the Americal Division. Battery G was shipped combat ready and prepared for immediate deployment upon arrival in I CTZ. Because of II FFORCEV's

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anticipation of this diversion, the battery was not deployed to field locations during the interim period 5 March - 13 April 1968, but instead was used to supplement AW support to the adjacent Long Binh/Plantation/Bien Hoa area. The departure of this battery has been severely felt in light of the increasing requests for AW support.

(d) The advance party of the 5th Bn, 42nd Arty consisting of twenty-eight (28) personnel arrived in-country on 13 April 1968. Subsequently, the main body and the equipment arrived at Vung Tau, on 24 and 29 April 1968 respectively. The 5th Bn, 42nd Arty (155mm T) was assigned to the 54th Arty Group with their Headquarters, Service, and all firing batteries base camped at Bearcat during their in-country training and orientation. The 7th Bn, 9th Arty was the host organization.

(e) Because of the redeployment of the 1st Bn, 83rd Arty and the operational requirements dictated by the Tet offensive, certain base camp movements were necessary to continue provision of optimum heavy artillery support. These movements are significant examples of the flexible capabilities of Force Heavy Artillery and illustrate the ever increasing ingenuity of the artilleryman to meet the challenges of continued coverage and internal defense requirements. The movements were:

1 On 25 January 1968, Battery C, 6th Bn, 27th Arty deployed from Phu Loi to Loc Ninh, a redeployment effected in order to give increased 8" coverage to Loc Ninh while providing additional 175mm coverage along the Cambodian Border. Although this move was originally intended as permanent, Battery C was displaced to Bien Hoa on 10 February 1968 to provide heavy artillery support to the Dong Nai Sensitive Area, and immediately thereafter the 8" platoon was moved to Di An to provide heavy artillery coverage to the Thu Duc/Hoc Mon areas of the CMD. Subsequently, on 10 March Battery C was shifted to Phouc Vinh, a permanent base camp location.

2 On 20 February 1968, Battery B, 2nd Bn, 32nd Arty was deployed to French Fort (Camp St. Barbara) vic XT 2768 where it occupied a base camp that afforded wide coverage of the Cambodian Border. This battery was further reconfigured into a 4-175mm gun battery so that more firepower could be brought to bear on targets in the vicinity of the border and support the Special Forces camps at Thien Ngon vic XT 0881 and Katum vic XT 3390.

3 On 11 March 1968, Battery A, 7th Bn, 8th Arty departed Phouc Vinh for Di An, where it was subsequently deployed to a permanent base camp at Bien Hoa; the deployment to Bien Hoa was by platoons on 19 and 20 March. Then, on 23 March 1968, this battery and Battery B, 7th Bn, 8th Arty interchanged base camps at Bien Hoa and Ben Luc, an interchange primarily made to improve morale and maintenance conditions in Battery B. The Ben Luc position is small, isolated, without infantry protection and is constantly under attack.

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4 On 18 March 1968, Battery C, 7th Bn, 8th Arty shifted from Bien Hoa to Xuan Loc reestablishing heavy artillery coverage in the area vacated by Battery C, 1st Bn, 83rd Arty.

5 On 24 - 25 April 1968, Batteries A and B, 2nd Bn, 32nd Arty interchanged base camps at Tay Ninh and French Fort. This deployment was accomplished by one platoon per battery per day, so that heavy artillery coverage was maintained on a continuous basis.

(3) (C) US Artillery in Support of the Capital Military District. To provide direct support artillery for the 5th ARVN Rangers in the Capital Military District, II FFORCEV Artillery developed and implemented a fourth battery concept. Headquarters, 2nd Bn, 13th Arty (105mm T) and three 4-gun firing batteries moved into the CMD in November and December 1967. The fourth battery (6 gun), A Battery, 2nd Bn, 13th Arty remained at Phu Loi available to meet other artillery support requirements in the III CTZ. During the Tet offensive and the ensuing attacks on Saigon, the 2nd Bn, 13th Arty provided timely and accurate fires for US and ARVN maneuver elements. When the restoration of Saigon to a pre-Tet status was nearly completed, the Commanding Officer of the CMD directed that the 2nd Bn, 13th Arty be relieved by the 61st ARVN Arty. On 1 April 1968, 1st Plt, Battery A, 61st Arty replaced Btry D, 2nd Bn, 13th Arty at Nha Be; on 7 April, Battery A (-), 61st ARVN Arty replaced Battery B, 2nd Bn, 13th Arty at Thu Duc; and on 15 April, 1st and 2nd Plts, Battery C, 252nd ARVN Arty replaced Battery C, 2nd Bn, 13th Arty at Phu Tho Race Track. Batteries C and B, 2nd Bn, 13th Arty returned to Phu Loi on 15 and 17 April 1968 respectively, and Battery D, reassigned a direct support mission to the 9th Inf Div, remained at Nha Be. Although the 2nd Bn, 13th Arty has been relieved of its direct support mission to the 5th Ranger Group and territorial support to the CMD, the battalion has assigned a liaison party to the 5th Ranger Group until the 252nd ARVN Arty is well established and can control fires for the Ranger Group.

(4) (C) Heavy Artillery Support by Naval Gun Fire. During the period 12 March through 7 April 1968, the 1st ATF conducted Operation PINAROO. Originally, the operation was to be supported by Force Heavy Artillery from Battery A, 1st Bn, 83rd Arty, but between the planning phase and the commencement of the operation the battalion was reassigned to the I CTZ. In order to fulfill this heavy artillery requirement the Assistant Fire Support Coordinator of II FFORCEV Arty along with a member of the 1st ATF FSC element effected liaison with the USS Taussig for heavy artillery support. Once these fires were properly coordinated, forward observers with the 1st ATF were able to request responsive and accurate support by directly contacting the ship or relaying their requests through a team of Naval Gun Spotters who were located in Nui Dat. The large volume of fire provided by the USS Taussig (18-20 rounds per minute from six (6) 5"/38's) proved to be a distinct advantage when delivering neutralization fires or fires that required the penetration and destruction of materiel targets.

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(5) (C) Assistance to ARVN.

(a) Artillery of II FFORCEV continued programs of assistance to ARVN, SF/CIDG, and RF/PF in artillery fire support, training and fire planning. During the period, artillery fired 13,256 missions expending 263,739 rounds of ammunition in support of ARVN ground forces, SF/CIDG, and RF/PF. On 52 occasions US Artillery fired in defense of RF/PF outposts and in addition, Force Artillery displaced 18 times to support 14 multi-company size operations. The highlight of ARVN-US assistance and coordination was the two occasions when joint ARVN-US artillery brought time-on-target fires on targets of opportunity with decisive results. Equally significant was an airmobile operation displacing two ARVN howitzers (155mm T) from their base camp location at Ben Cat to Bu Dop and finally to Chi Linh in support of a SF/CIDG operation. During the entire period, artillery of II FFORCEV provided countermortar/rocket, observed and unobserved fires for all RF/PF, ARVN, and SF/CIDG forces in range. This headquarters will continue to emphasize assistance programs and provide the maximum support commensurate with operational capabilities.

(b) The 1st Infantry Division Artillery and the 23rd Artillery Group conducted on-site refresher training for ARVN Artillery units during this period. The 25th Infantry Division Artillery completed its initial refresher training of ARVN units in December 1967, but an additional assistance program commenced during the 3rd quarter, FY 68. In spite of the interruptions created by the tactical situation, the training provided by the 25th Infantry Division Artillery and 23rd Artillery Group was accomplished in a successful and enthusiastic manner. Because of operational commitments and the Tet offensive, the 9th Infantry Division Artillery and the 54th Artillery Group did not conduct ARVN Artillery Refresher Training between 1 February and 31 March 1968, however, the 54th Arty Group will continue ARVN Artillery Refresher Training during the 4th quarter, FY 68. The 9th Infantry Division's present geographical commitments will preclude further participation in ARVN Artillery Refresher Training within the III Corps Tactical Zone, but in the future it is anticipated that the 9th Inf Div Arty will conduct ARVN Artillery Refresher Training in the IV Corps Tactical Zone. The Tet offensive frequently interrupted training since the ARVN Artillery was required to fire missions in support of tactical operations and in some cases provide countermortar/rocket fires. This firing in support of tactical operations did provide an opportunity for the ARVN units to acquire realistic artillery training.

(c) On 4 April 1968, two teams of ARVN personnel from the ARVN 25th Division started artillery training at Thien Ngon and Katum, two recently established SF/CIDG camps in close proximity to the Cambodian Border. A team, consisting of eleven (11) men, is stationed at each camp. Although no US Artillery personnel are conducting the training, they are physically present at both camps to lend assistance when necessary. It is hoped that the CIDG forces will become proficient enough with artillery procedures to give fire support to SF/CIDG.

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operations, which in turn will release the 6th Bn, 77th Arty of a mission which has restricted its flexibility and availability to meet other commitments. Initially, the training period was expected to be 60 days in duration, but the slow progress being made in teaching FDC procedures may necessitate an extension.

(6) (C) Artillery Support of SF/CIDG. During this reporting period, Force Artillery support for SF/CIDG Units increased both in scope and effectiveness. Presently, all SF/CIDG units, with the exception of the camps at Duc Hue and Tra Cu, are well within supporting range of Force Artillery. Nine (9) SF/CIDG camps have ARVN Artillery and two (2) SF/CIDG camps have US Artillery stationed at their locations. Force Artillery supported six (6) Special Forces conducted operations which required displacement of Force Artillery. In all instances observers and liaison parties were provided the supported units. Although assistance was continuous throughout the quarter, the operation of primary significance was the first airlift of ARVN Artillery in a joint effort to support SF/CIDG operations. The first operation, Operation VERDUN, was begun by airlifting a platoon from Battery C, 35th ARVN Arty (155mm T) from Ben Cat to Bu Dop and a platoon from Battery A, 2nd Bn, 11th Arty (155mm T) from Phouc Vinh to Loc Ninh on 18 March 1968. Subsequently, on 22 March 1968, the platoon of Battery C, 35th ARVN Arty was repositioned from Bu Dop to Chi Linh and the platoon of Battery A, 2nd Bn, 11th Arty was repositioned from Loc Ninh to Dong Xoai in support of Operation TOMATO SHAWNEE. For the above operations the ARVN Arty platoon was OPCON to the 23rd Arty Group with a mission of direct support to the 5th Special Forces Group. During these operations the platoon of Battery C, 35th ARVN Arty expended 798 rounds prior to being returned to Ben Cat on 28 March 1968.

(7) (C) Programs to Increase the Accuracy of Artillery.

(a) Metro.

1 The departure of the 1st Bn, 83rd Arty to I CTZ terminated the operation of the Battalion's metro station at Nui Dat on 15 March 1968. Since no appreciable amount of artillery was located near Ham Tan, the metro section of TAB, 8th Bn, 25th Arty was relocated from Ham Tan to Nui Dat. The current base camp location of Metro Sections in II FFORCEV Artillery is at Inclosure 5.

2 The location of the metro sections at Dong Tam and Cu Chi does not provide metro coverage for the entire area between the two locations. In an attempt to rectify this situation the Metro Quality Control Team conducted a study to determine if an average value of metro data could be determined. The result of the study showed that the met data in the first five lines (surface to 2000 meters) is not valid if used outside the range of either station. From computer zone six through sixteen (2500 meters to 10,000 meters) the data is relatively stable and consistent. The data of either station can be used in the area between the two stations. The results of the study were distributed to the 9th and 25th Division Artilleries per their request.

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(b) Calibration of Artillery Pieces. Calibration was conducted for 341 of 431 US/FWMAF and 158 ARVN Artillery pieces during the reporting period. Pull over gauge readings were made on 324 US/FWMAF and 22 ARVN tubes.

(c) Survey. Survey control has been completed for eight (8) observation towers at Long Binh, two (2) towers at Bien Hoa AFB, and one (1) tower at Tan Son Nhut AFB. Two (2) countermortar radar positions were surveyed at Tan Son Nhut AFB and two (2) radar positions were surveyed at Bien Hoa AFB. Survey control was also extended to three (3) artillery positions near Phu Loi and one (1) position in the vicinity of Long Binh. Defensive concentrations are now being surveyed around the perimeter of Tan Son Nhut AFB. Of the 80 ARVN Artillery RF/PF positions supporting Revolutionary Development Teams, survey of 20 positions was completed. Ten (10) additional positions, in close proximity to the 80 planned, were also surveyed. In many instances surveying operations were interrupted by the Tet offensive. The current status of survey control in III CTZ is shown in Inclosure 6.

(8) (U) Ammunition Expenditure Reporting. On 1 February 1968, all II FFORCEV Artillery units and all artillery with the Force, began reporting ammunition expenditures under new definitions published by HQ, USARV. The new definitions standardized reporting throughout Vietnam. The new definitions place artillery ammunition expenditures into eight categories as listed at Inclosure 7.

(9) (U) II FFORCEV Artillery Fire Direction Center. The increase of enemy activity in the Long Binh/Bien Hoa/Plantation area made it necessary to activate a Tactical Fire Direction Center which could coordinate and program the fires of nearby batteries. This FDC was activated on 2 February 1968 and coordinated and programmed the fires of thirteen (13) Field Artillery Batteries ranging in size from 105mm howitzers to 175mm guns. The majority of the fires were planned to harass and interdict enemy movements in the area and to limit his capability to resupply and launch rocket and/or mortar attacks against the Long Binh/Bien Hoa/Plantation complex. The FDC has proven to be extremely valuable since it has been in use. With units continuing to move in and out of the area, the FDC has become the focal point of information and coordination.

(10) (U) Artillery Operations Command Bunker (AOC). During the Tet offensive, rocket attacks and ground assault against Headquarters, II FFORCEV brought to light the vulnerability of this installation's fortifications. On 18 February 1968 ground was broken for the erection of an underground Artillery Operations Command Bunker for II FFORCEV Artillery's Operations and Intelligence Sections. The AOC, being exclusively of wood construction, has its ceiling buried approximately eight (8) feet under surface level. Its dimensions are 20 ft x 48 ft or 960 sq ft, and by the time it was completed on 29 March 1968 by C and D Companies, 62nd Engineer Bn, 20th Brigade, the structure took 11,300 man-hours to build at an approximate cost of \$12,000. This command post for

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Force Artillery in the III and IV CTZ's is replete with all the necessary communications and operational facilities required to sustain tactical operations. This bunker has added a large measure of permanency and stability to the command and control of Force Artillery.

c. Training.

(1) (U) FADAC (Field Artillery Digital Automatic Computer). During this quarter the issuance of FADAC was completed in III CTZ. On 19 - 23 February 1968 issue was made to the 1st Infantry Division Artillery and the 101st Airborne Division Artillery. On 1 - 5 April 1968 the 23rd Artillery Group, 8th TAB, 25th Arty and 66th Topographical Engineer Company received FADAC equipment. Prior to issue, an orientation on the operation and maintenance of this equipment was given. The FADAC Orientation Team conducted the issue and training for these units.

(2) (U) Accident and Incident Fact Sheet. As of January 1968, II FFORCEV Artillery initiated the publication of a fact sheet on accidents and incidents resulting from friendly artillery and mortar fire. Each month several incidents which are indicative of common malpractices or mistakes will be summarized and emphasized by illustrating how proper FDC, firing, observer, or clearance procedures would have averted the situation. These monthly bulletins should assist commanders at all levels in decreasing accidents and incidents. The fact sheet for January 1968 is at Inclosure 8.

d. Intelligence.

(1) (C) Radar Seminar. A radar seminar was conducted by this headquarters on 3 April 1968 to discuss the countermortar and ground surveillance radars. Attendees included personnel from MACV, USARV, and II FFORCEV OPCON units to include the 1st ATF. Conclusions drawn from the seminar are listed at Inclosure 9.

(2) (C) Defense Against Rocket and Mortar Attacks (DARMA).

(a) Rocket attacks continued throughout II FFORCEV TAOI with approximately 156 attacks occurring during the period 1 February to 30 April 1968. These attacks varied in intensity from one (1) round at Lai Khe to 38 122mm rockets at Phu Loi on 16 March. Bien Hoa, Dau Tieng, Phouc Vinh and Long Binh were the sites of other major attacks. This headquarters is continuing to conduct an informal study of all reported mortar and rocket attacks that occur in the III CTZ in hopes that this survey may reveal significant trends in the enemy's conduct of these attacks and that H & I fires may be more effectively planned against mortar and rocket locations.

(b) During the initial phase of the Tet offensive, rocket/mortar attacks increased in conjunction with other enemy activity. As the enemy offensive action decreased, the enemy employed rocket/mortars

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in an attempt to keep Allied Forces in a defensive posture while maneuver forces could disengage to regroup and resupply. As Allied Forces began to move toward enemy base camps, the enemy countered by returning to his former tactic of employing mortars to harass and hinder Allied incursions into these areas. No new mortar techniques have been discovered during the reporting period, however, the enemy has changed his rocket launch techniques in that he frequently fires from hasty positions. Further, he has used crossed or "H" bamboo poles for 122mm rocket launchers rather than tube type launchers. This indicates increased emphasis on harassing type fires.

(c) Two radar detachments, the 6th and 9th Field Artillery Detachment (Radar), arrived in-country on 30 March 1968. The 9th FA Det (Radar) was emplaced in defense of Bien Hoa AFB and the 6th FA Det (Radar) was stationed at Tan Son Nhut AFB. Subsequently, to retrain and supervise, the 248th FA Det (Radar) was moved from Tan Son Nhut to Bien Hoa. At the close of the quarter there were 22 countermortar radars in II FFORCEV TAOI.

(d) On 6 February 1968, II FFORCEV Artillery instituted a program to maintain aerial observers during the hours of darkness and when intelligence indicates an enemy attack is imminent to the Long Binh/Bien Hoa/Plantation area. At all other times the observer is on a five minute to one hour standby alert dependent upon intelligence indicators. This observer flies in the II FFORCEV command helicopter gunship so that he can coordinate the employment of gunships with artillery fires.

(e) A flash base was established around the Long Binh/Bien Hoa/Plantation complex. Eleven existing observation towers were surveyed and fitted with azimuth measuring devices. The azimuth measuring devices are constructed from a piece of plywood with an attached azimuth circle. The circle has been positioned so that the inscribed azimuths are properly oriented. When a flash is sighted a long metal rod affixed to the center of the azimuth circle is sighted to the point of the flash and the appropriate azimuth is relayed to the FDC. These towers are manned 24 hours a day and are directly connected to a flash central located in II FFORCEV Artillery Operations Center. Upon receipt of azimuths to a flash, this section determines the grid of the rocket or mortar firing position by intersection and passes it to the FDC for immediate engagement.

(f) On 25 February 1968, II FFORCEV Artillery organized a visual reconnaissance program for the Long Binh/Bien Hoa/Plantation area. Personnel from the S-2 Section make daily flights over the rocket belt and other sensitive areas which surround this complex in order to become familiar with the terrain and detect changes as they might occur. If a change is noted the target is immediately fired upon and the results photographed by the AO. Photographs are filed and after a suitable period of time the areas are again checked for new changes.

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e. Other.

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(U) Communications. As a result of the recent Tet offensive, it became necessary for Headquarters, II FFORCEV Artillery to establish a Corps Command Fire Direction Net in order to coordinate the fires of additional units which were moved into Hq, II FFORCEV area.

2. Section 2, Lessons Learned: Commander's Observations, Evaluations, and Recommendations.

a. Personnel.

Artillery Lieutenant Colonels

(1) Observation: Headquarters, Department of the Army maintains USARV at about 102% of authorized strength of Artillery Battalion Commanders. The additional 2% is designed to cover personnel losses for whatever reason. The shortage occurs because most artillery commanders require the same qualifications for their Assistant Fire Support Coordinator and S-3 Staff Officers at Force and Division Artillery level as they do their Battalion Commanders. Usually these two staff positions are filled with officers who have had command experience in RVN. With present manning at 102% there is not enough qualified artillery officers to fill these positions. This manning level assumes that each command recommended Artillery Lieutenant Colonel sent to USARV will command for 12 months. This is not the case.

Evaluation: This restrictive policy hinders the flexibility of commanders to manage their officer assets and denies enough qualified officers for these two critical staff positions.

Recommendation: That Department of the Army consider the Assistant Fire Support Coordinator and S-3 Staff Officer positions in Field Force and Division Artillery Headquarters as interchangeable with Artillery Battalion Command positions and allocate qualified replacements accordingly.

Clerk-Typists

(2) Observation: The typing ability of clerk-typists received as replacements is marginal. This compounds the already formidable administrative workload and often causes supervisors to perform as clerks. It also tends to create an excess of these personnel in headquarters elements in an effort to get the work done.

Evaluation: Many personnel in this MOS are not achieving a minimum acceptable typing ability prior to award of the MOS.

Recommendation: That consideration be given to raising the Aptitude Area CL score requirement for personnel selected to be trained in Career Group Specialty 71B.

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b. (C) Operations.Naval Gun Fire

(1) Observation: During the period 12 March through 7 April 1968, the 1st ATF conducted Operation PINAROO. Because II FFORCEV Artillery was unable to provide heavy artillery support for this operation, the USS Taussig was contacted for possible assistance. Once fire support was coordinated among the Assistant Fire Support Coordinator of II FFORCEV Artillery, the 1st ATF FSC and the Ship Commander, calls for fire were responsive and accurate. These fires were controlled by forward observers with the 1st ATF who either directly requested naval gun fire from the ship or through Naval Gun Spotters located at Nui Dat. The large volume of fire (18-20 rds per minute from 6 - 5"/38s) which the destroyer was capable of delivering in a relatively short period of time was a distinct advantage when delivering neutralization fires. Also, the high initial velocity and flat trajectory of naval gun projectiles made them suitable in the direct fire role, particularly upon those targets presenting an appreciable vertical face like the many concrete bunkers present in the area of operation.

Evaluation: The characteristics of naval gun fire were ideal for this type of support. In this case the heavy fire power to the 1st ATF proved to be of great value. Naval gun fire should not be overlooked in future operations, especially where Force Heavy Artillery is not available.

Observation of Naval Gun Fire

(2) Observation: During the period that the USS Taussig supported the 1st ATF with heavy artillery, naval aerial observers devised a unique method of observing fires during night operations. By hovering over a target with an aircraft while the ship's radar simultaneously tracked the aircraft, the fire direction personnel on board the ship were able to accurately establish the enemy's location and immediately bring fire on the target. The only limiting factor in this technique was the inability of the aircraft's personnel to spot the enemy at night. It was suggested that observation aircraft be equipped with a AN/TVS-2 Starlight Scope, but none were available in naval supply channels.

Evaluation: The issue and subsequent utilization of the AN/TVS-2 Starlight Scope will significantly contribute to the effectiveness of this technique.

Recommendation: That the AN/TVS-2 Starlight Scope be made available to naval aircraft for the purpose of observing fires during night operations.

c. (U) Training.

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FADAC Training

Observation: With the completion of in-country FADAC training, which was conducted on a one-time basis, this headquarters has received several requests for refresher training. Unfortunately, the FADAC team is about to depart country and some of these training requests will not be fulfilled. In order to alleviate this situation, this headquarters directed that several junior officers from each battalion attend FADAC training sessions held in the past few months. It is planned that these officers will conduct classes at battalion level and thus bridge the gap created by departing personnel. To date this course of action has proven successful, but it is strictly a temporary measure.

Evaluation: FADAC training must be a continuous process so that new personnel will be able to operate this equipment and utilize FADAC to its fullest potential.

Recommendation: That, if FADAC training has not been incorporated into the Advanced Individual Training of the Career Group specialty 13E, it be done so as soon as possible.

d. (C) Intelligence.

Radar Seminar

(1) Observation: On 3 April 1968, this headquarters held a radar seminar for the purpose of discussing the use of radar in the DARMA program. It was generally accepted that ground surveillance radars, if employed in open, high terrain, were effective against rocket attacks by denying VC access to launching sites. These radars would detect VC movement in setting up launch sites and appropriate countermeasures could be taken before the rockets were launched. It was also generally accepted that the MPQ-4A was limited in its ability to detect rockets in flight. At locations where the radar was employed on 30 foot towers, detection of the rockets was achieved, however, the rocket passed only through the radar's lower beam. As a result the exact location given by the radar was somewhat inaccurate, but the radar did give an accurate azimuth and an approximate range.

Evaluation: It was a consensus that the best way to prevent a rocket attack is to deny the enemy use of suitable terrain from which to fire the rockets. When utilizing radars, the countermortar radar (AN/MPQ-4) is relatively ineffective in detecting rockets, unless situated on towers, and even then rocket/mortar locations are not established within the desired accuracy. Ground surveillance radars are effective in detecting moving personnel, and if employed in a DARMA role, will substantially decrease the probability of a rocket attack at fixed installations.

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Radar Positioning

(2) Observation: The AH/MP4-4A countermortar radars for the defense of Tan Son Nhut AFB were positioned with one radar located on the base proper and the other radars located from 3-6 kilometers outside the base perimeter in secure areas. The shortage of warrant officers to provide effective command and control and the necessity to resupply spare parts by helicopter at all hours of the day and night dictated that all radars be relocated to Tan Son Nhut AFB.

Evaluation: Careful planning should be effected when positioning the countermortar radars used in the defense of fixed installations. Command and control and logistical support problems should be considered along with the coverage to be obtained. The best coverage available is useless if the necessary parts to maintain the radar cannot be transported to the site at all hours of the day and night. The availability of qualified supervisory personnel is also a major factor of consideration. If only one warrant officer is available to supervise two or three radars, the radar sites should be located in the same secure area, or helicopter support should be available on a 24 hour basis.

e. (U) Logistics.

Meteorological Equipment

(1) Observation: Meteorological units under the operational control of this headquarters have experienced extreme difficulty in obtaining expendable and non-expendable meteorological supplies on a continuing basis. Units have submitted valid requisitions on a continuing basis but the supply of these items continues to be haphazard. MRE (Material Readiness Expediter) action has been requested whenever meteorological units have reached a critical point in their operation. MRE action has located the required items in the depots.

Evaluation: Supply action must be initiated to stock meteorological supplies as listed in TM 11-6660-218-12 at the Supply and Service Battalion level in response to the many valid demands that have been made for these items.

GFT's and GST's

(2) Observation: GFT's (Graphical Firing Tables) and GST's (Graphical Site Tables) are low turn-over items. Due to this, inadequate stockage levels exist in-country. Further, stocks of these items are not maintained at the direct support unit but rather at depot. This makes location of these items time-consuming and produces unnecessary delay in filling valid requisitions.

Evaluation: Stockage levels should be established to meet the demand for these "as required" items. Artillery units should submit their requisitions on an A or B priority.

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Recommendation: That GFT's and GST's be stocked at the direct support level.

Air Movement and Resupply by Corps Artillery.

(3) Observation: The nature of warfare in Vietnam requires frequent deployment of light and medium artillery by air to isolated locations as well as installations having fixed wing airfields. During the period of a given operation all classes of supplies may be delivered on a 24 hour basis. In order that aircraft are properly and economically utilized, the II FFORCEV Artillery S-4 Section has given this mission to an officer in the section as his primary duty. He must be completely knowledgeable within the following fields:

- (a) Capabilities of Army Aircraft and sling equipment.
- (b) Capabilities of Air Force Cargo Planes and load handling techniques.
- (c) Characteristics of artillery ammunition.
- (d) Characteristics of artillery weapons and vehicles.
- (e) Air Force operational techniques as they differ from Army Aviation techniques.

Evaluation: When artillery units designed primarily for ground operations become involved in extended air operations there should be a staff officer at each level of command directly charged with coordination of all airlift requirements. This officer must thoroughly familiarize himself in the fields listed above.

f. (U) Organization, None.

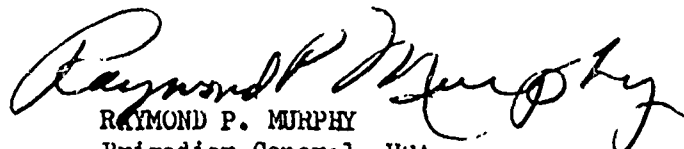
g. (U) Other.

FM Radios

Observation: Due to the 24-hour operation of FM radio nets, it has been determined that generator sets are inadequate. Generators are operated continuously in a hot, dusty, tropical environment.

Evaluation: Reliability of FM nets utilizing the AN/VRC-46's would be greatly increased if rectifiers were made available in order to take advantage of commercial power.

Recommendation: That a rectifier be authorized which will convert commercial AC power to the required DC power for tactical radios.



RAYMOND P. MURPHY
Brigadier General, USA
Commanding

9 Incl

1-Organization of II
FFORCEV Arty

2-Positioning of II FFORCEV Arty

3-Artillery Coverage as of 30 April 1968

4-Missions

5-Metro Coverage

6-Survey Control

7-Ammunition Expenditure Definitions

8-Artillery Accident and Incident Fact Sheet

9-Radar Seminar

Incl 1 & 2 to Incl 9 - Withdrawn, Hq DA

DISTRIBUTION:

3-ACSFOR

2-USARPAC

3-USARV

SECRET

21

AVFBC-RE-H (16 May 68) 1st Ind
SUBJECT: Operational Report - Lessons Learned for Quarterly Period
Ending 30 April 1968 (RCS CSFOR-65) (UIC W-DHI-ES) (U)

DA, HQ II FFORCEV, APO San Francisco 96266 4 JUN 1968

THRU: Commanding General, US Army Vietnam, ATTN: AVHGC(DST), APO 96375


Commander, US Army Pacific, ATTN: GPOP-OT, APO 96558

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

1. Subject report is forwarded.

2. This command has reviewed the attached Operational Report-Lessons
Learned for the II Field Force Vietnam Artillery and concurs with it.

FOR THE COMMANDER:



O. B. FORY
1LT, AGC
Aast AG

16

SECRET

AVHGC-DST (14 May 68) 2d Ind (U)

CPT Arnold/ms/LBN 4495

22

SUBJECT: Operational Report of Headquarters, II Field Force Vietnam
Artillery for Period Ending 30 April 1968, RCS CSFOR-65 (U)

HEADQUARTERS, US ARMY VIETNAM, APO San Francisco 96375 18 JUN 1968

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 30 April 1968 from Headquarters, II Field Force Vietnam Artillery as indorsed.

2. Comments follow:

a. Reference item concerning Artillery LTC's, page 10, paragraph 2a(1): Concur. However, this headquarters has been advised by Department of the Army that there are presently insufficient resources to support the recommended assignment policy.

b. Reference item concerning clerk-typists, page 10, paragraph 2a(2): Nonconcur. CL score is not closely correlated with typing ability, the problem is related to the sustaining base's capability to furnish better qualified typists. Recommend DA review the training program to determine the validity of current qualifying standards for MOS 71B.

c. Reference item concerning GFT's and GST's, page 13, paragraph 2e(2): Nonconcur. GFT's and GST's are not repair parts and therefore would not be stocked at direct support level. Demand for these items is not sufficient to justify stockage at intermediate points below depot. Fire direction personnel who use these items regularly should be able to anticipate requirement for replacing this type item and contact the unit supply sergeant. Requisitions for these items in RVN should always be assigned an O2 or O5 priority.

d. Reference item concerning rectifiers for AN/VRC-46 radios, page 14, paragraph 2g: Concur. Considering present configuration of equipment, the use of Power Supply PP-2953/U, FSN 6130-985-7899 would be more efficient. II Field Force Vietnam Artillery should initiate MTOE action, indicating quantity of items required.

FOR THE COMMANDER:

C. S. Nakatsukasa
C. S. NAKATSUKASA
Captain, AGC
Assistant Adjutant General

Copies furnished:
HQ, II FFORCEV Arty
HQ, II FFORCEV

23

GPOP-DT (16 May 68) 3d Ind (U)

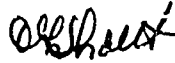
SUBJECT: Operational Report of HQ, II Field Force Vietnam
Arty, for Period Ending 30 Apr 68, RCS CEFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 15 JUL 1968

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

This headquarters has evaluated subject report and
forwarding indorsements and concurs in the report as
indorsed.

FOR THE COMMANDER IN CHIEF:



C.L. SHORTT
CPT, AGC
Asst AG

ORGANIZATION OF II FFORCEV ARTILLERY

1. The following units are attached to Hq, II FFORCLV Artillery:
 - a. Headquarters and Headquarters Battery, 8th Target Acquisition Battalion, 25th Artillery.
2. The following units are under the Operational Control of II FFORCLV Artillery:
 - a. 23d Artillery Group.
 - (1) 2d Battalion, 13th Artillery.
 - (2) 1st Battalion, 27th Artillery.
 - (3) 2d Battalion, 11th Artillery. (Hq, SVC, B & C Btrys
Attached Americal Division)
 - (4) 6th Battalion, 27th Artillery.
 - (5) 2d Battalion, 32d Artillery.
 - b. 54th Artillery Group.
 - (1) 7th Battalion, 9th Artillery.
 - (2) 2d Battalion, 35th Artillery.
 - (3) 3d Battalion, 16th Artillery. (Attached Americal Div)
 - (4) 1st Battalion, 83d Artillery. (OPCON 108th Arty Gr - I CTZ)
 - (5) 7th Battalion, 8th Artillery.
 - (6) 5th Battalion, 42d Artillery.
 - c. 5th Battalion (AM) (SP), 2d Artillery.
 - (1) Battery D (MG), 71st Artillery.
 - (2) Battery C (MG), 55th Artillery. (Attached Americal Div)
 - (3) Battery I (SLT), 29th Artillery.

LOCATION AS OF
30 APRIL 68

LONG BINH YT 051 111
LONG BINH YT 053 112
PHU LOI XT 867 162
PHU LOI XT 847 152
DAU TIENG XT 497 481
PHU LOI XT 845 158
TAY NINH XT 143 525
PHOUC VINH XT 965 493
TAY NINH XT 154 513
FRENCH FORT XT 275 682
TAY NINH XT 160 524
DAU TIENG XT 496 486
QUAN LOI XT 809 903
QUAN LOI XT 809 903
PHOUC BINH YU 138 063
PHOUC VINH XT 965 493
XUAN LOC YT 460 090
BEAR CAT YT 169 995
BEAR CAT YT 169 995

LOCATION AS OF
31 JANUARY 68

LONG BINH YT 051 111
LONG BINH YT 053 112
PHU LOI XT 867 162
PHU LOI XT 847 152
DAU TIENG XT 497 481
PHU LOI XT 845 158
TAY NINH XT 143 525

TAY NINH XT 154 513
TAY NINH XT 160 524
SOUI DA XT 338 578
DAU TIENG XT 496 486
QUAN LOI XT 809 903
QUAN LOI XT 809 903
PHOUC BINH YU 138 063
LOC NINH XU 731 079
XUAN LOC YT 460 090
BEAR CAT YT 169 995

UNIT

HBB, II FFORCEV Arty
HBB, 8th Bn, 25th Arty (TAB)
HBB, 23d Arty Gp
2nd Bn, 13th Arty (105mm T)
HBB, Btry C, 1st Bn, 27th Arty (155mm SP)
Btry A, 1st Bn, 27th Arty
Btry B, 1st Bn, 27th Arty
Btry A, 2nd Bn, 11th Arty (155mm T)
HBB, 2nd Bn, 32d Arty (8"/175mm SP)
Btry A, 2nd Bn, 32d Arty
Btry B, 2nd Bn, 32d Arty
Btry C, 2nd Bn, 32d Arty
HBB, 6th Bn, 27th Arty (8"/175mm SP)
Btry A, 6th Bn, 27th Arty
Btry B, 6th Bn, 27th Arty
Btry C, 6th Bn, 27th Arty
HBB, 54th Arty Gp
7th Bn, 9th Arty (105mm T)
5th Bn, 42d Arty (155mm T)

UNIT	LOCATION AS OF 31 JANUARY 68	LOCATION AS OF 30 APRIL 68
HQB, Btry B, Btry C, 2d Bn, 35th Arty (155mm SP)	XUAN LOC YT 470 097	XUAN LOC YT 470 097
Btry A, 2d Bn, 35th Arty	NUI DAT YS 428 665	NUI DAT YS 428 665
HQB, 7th Bn, 8th Arty (8"/175mm SP)	BIEN HOA YT 025 154	BIEN HOA YT 025 154
Btry A, 7th Bn, 8th Arty	PHUOC VINH XT 965 493	BEN LUC XS 637 766
Btry B, 7th Bn, 8th Arty	BEN LUC XS 637 766	BIEN HOA YT 026 149
Btry C, 7th Bn, 8th Arty	BIEN HOA YT 025 147	XUAN LOC YT 467 089
HQB, 5th Bn (AW) (SP), 2d Arty	LONG BINH YT 128 114	LONG BINH YT 128 114
Btry A, 5th Bn, 2d Arty	PHU LOI XT 810 220	PHU LOI XT 810 220
Btry B, 5th Bn, 2d Arty	CU CHI XT 650 170	CU CHI XT 650 170
Btry C, 5th Bn, 2d Arty	BEAR CAT YT 160 000	BEAR CAT YT 160 000
Btry D, 5th Bn, 2d Arty	TAY NINH XT 160 510	TAY NINH XT 160 510
Btry D (MG), 71st Arty	LONG BINH YT 128 114	LONG BINH YT 128 114
HQB Btry I (SIF), 29th Arty	LONG BINH YT 128 114	LONG BINH YT 128 114
1st Plt	PHU LOI XT 810 220	PHU LOI XT 810 220
2nd Plt	CU CHI XT 650 170	CU CHI XT 650 170
3rd Plt	LONG BINH YT 128 114	LONG BINH YT 128 114

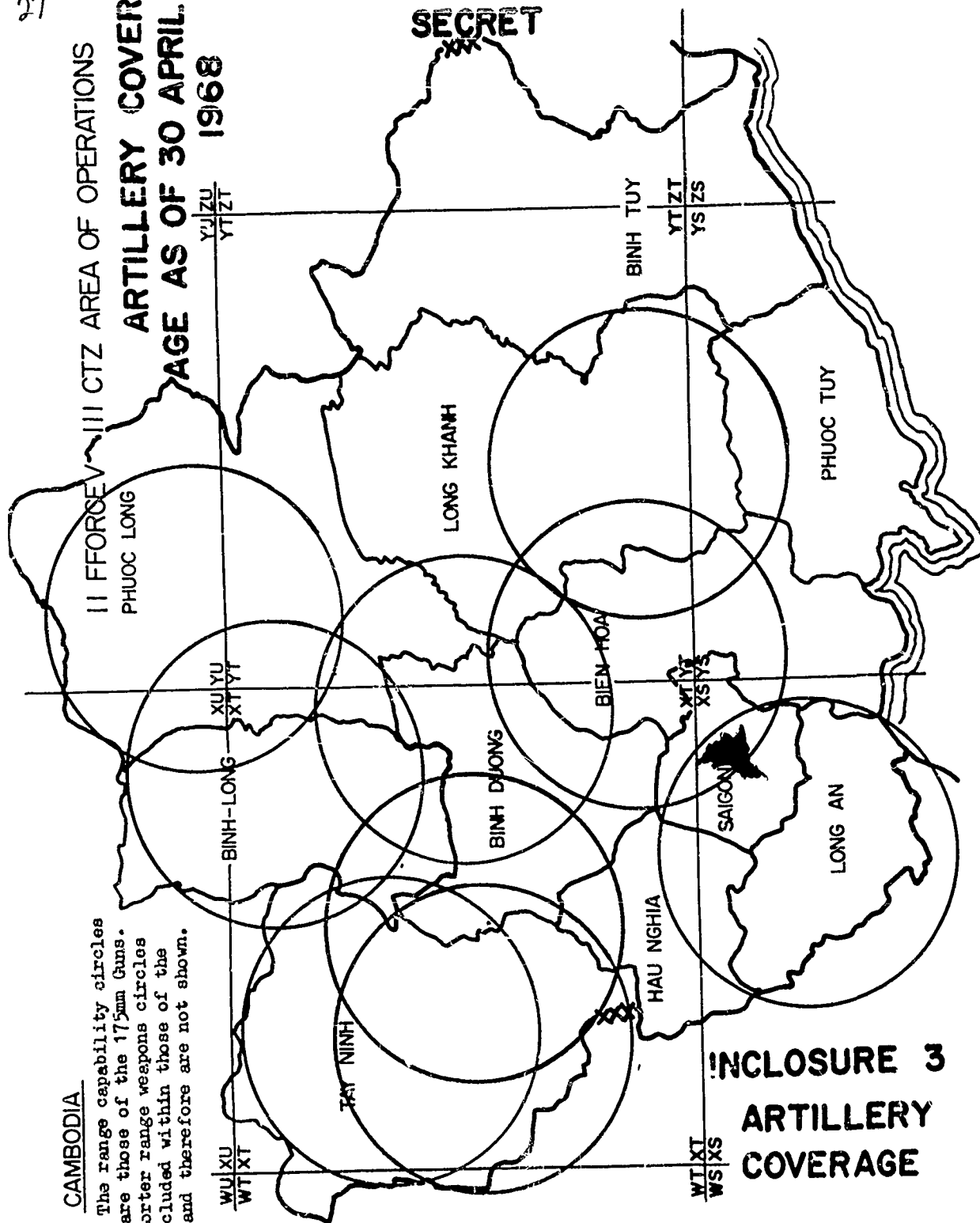
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CAMBODIA

NOTE: The range capability circles shown are those of the 175mm Guns. The shorter range weapons circles are included within those of the 175mm and therefore are not shown.

II FFORCEV III CTZ AREA OF OPERATIONS
**ARTILLERY COVER
AGE AS OF 30 APRIL
1968**



ARV68S 1596

SECRET 22

**INCLOSURE 3
ARTILLERY
COVERAGE**

SECRET

28

MISSIONS OF II FFORCEV ARTILLERY UNITS

1. 23d Artillery Group - General Support II FFORCEV and III ARVN Corps.
 - a. 2d Bn, 13th Arty - GS-Reinf 1st Infantry Division Artillery.
 - b. Btry A, 2d Bn, 11th Arty - GS-Reinf 101st Airborne Division Artillery.
 - c. 1st Bn, 27th Arty - GS-Reinf 25th Infantry Division Artillery.
 - (1) Btry A - Attached 1st Infantry Division Artillery.
 - (2) Btry B - Attached 9th Infantry Division Artillery.
 - (3) Btry C - Attached 25th Infantry Division Artillery.
 - d. 6th Bn, 27th Arty - GS-Reinf 1st Infantry Division Artillery.
 - e. 2d Bn, 32d Arty - GS-Reinf 25th Infantry Division Artillery.
2. 54th Artillery Group - General Support II FFORCEV and III ARVN Corps.
 - a. 7th Bn, 9th Arty - GS-Reinf 9th Infantry Division Artillery.
 - b. 2d Bn, 35th Arty - GS-Reinf 18th ARVN Division Artillery.

Btry A - GS-Reinf 12th Royal Australian Artillery Field Regiment.
 - c. 3d Bn, 16th Arty - Attached Americal Division.
 - d. 1st Bn, 83d Arty - Attached OPCON 108th Artillery Group - I CTZ.
 - e. 7th Bn, 8th Arty - GS-Reinf 9th Infantry Division Artillery.
 - (1) Btry A - GS-Reinf 9th Infantry Division Artillery.
 - (2) Btry B - General Support II FFORCEV.
 - (3) Btry C - General Support II FFORCEV.
3. 5th Battalion (AW) (SP), 2d Artillery - General Support II FFORCEV.
 - a. Btry A - Attached OPCON 1st Infantry Division.
 - b. Btry B - Attached OPCON 25th Infantry Division.
 - c. Btry C - Attached OPCON 9th Infantry Division.

ARV68S 1596

SECRET

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INCLOSURE 4
MISSIONS

G4-S-68- 1472

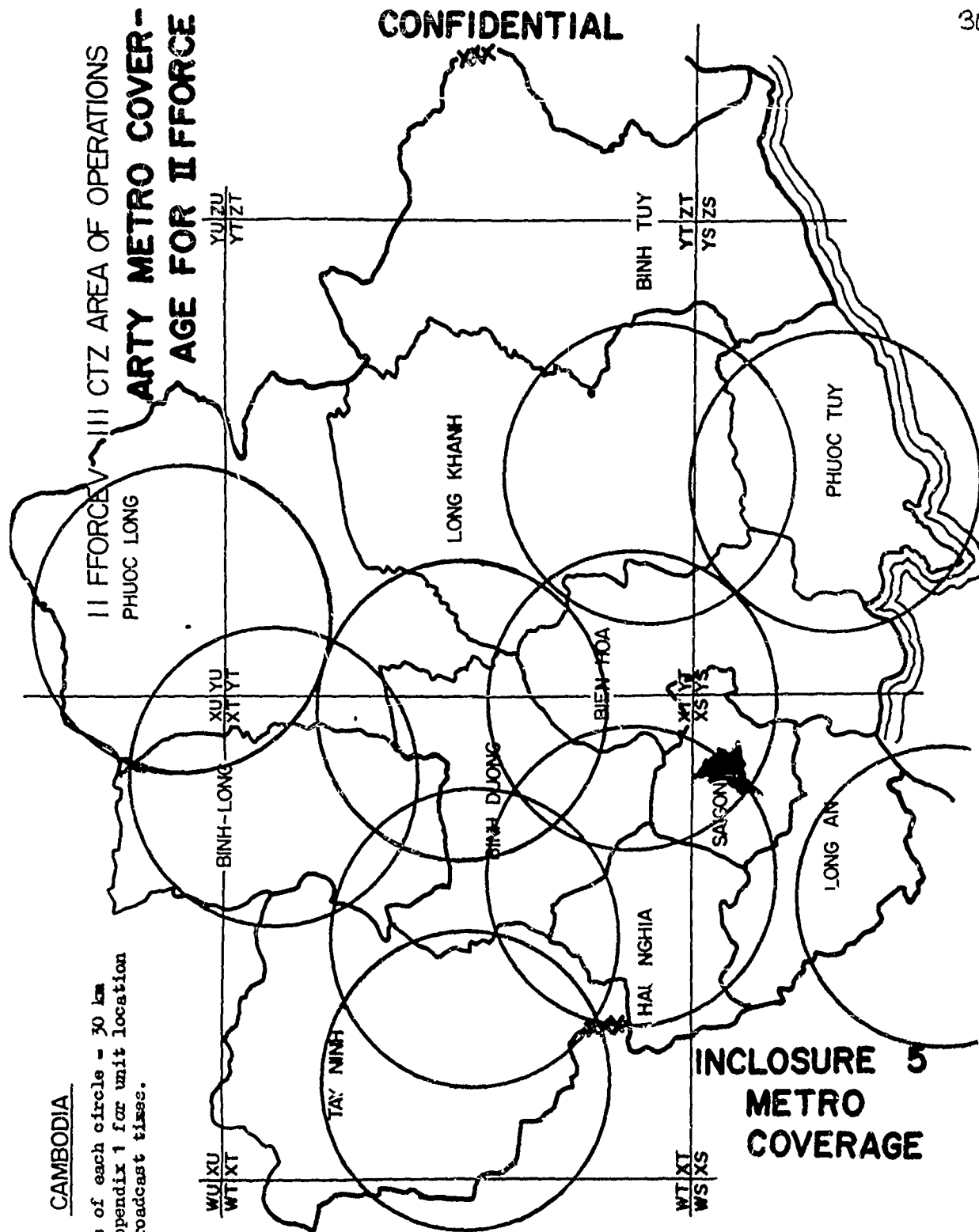
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- d. Btry D - General Support II FFORCEV.
- e. Btry D, 71st Arty (MG) - General Support II FFORCEV.
- f. Btry G, 55th Arty (MG) - Attached Americal Division.
- g. Btry I, 29th Arty (SMT) - General Support II FFORCEV.

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CAMBODIA

Radius of each circle = 30 km
See Appendix 1 for unit location
and broadcast times.



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INCLOSURE 5
METRO
COVERAGE

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<u>UNIT</u>	<u>LOCATION</u>	<u>SCHEDULED NATO BROADCAST TIMES</u>
1. 1st Inf Div Arty	Quan Loi	0200-0800-1400-2000
2. 9th Inf Div Arty	Dong Tam	0200-0800-1400-2000
3. 25th Inf Div Arty	Ca Chi	0600-1200-1800-2400
4. 1st Bn, 27th Arty	Dau Tieng	0400-1000-1600-2200
5. 6th Bn, 27th Arty	Phouc Binh	0300-0900-1500-2100
6. 7th Bn, 8th Arty	Bien Hoa	0400-1000-1600-2200
7. 8th Bn, 25th Arty	Phouc Vinh	0430-1030-1630-2230
8. 8th Bn, 25th Arty	Nui Dat	0300-0900-1500-2100
9. 2nd Bn, 32nd Arty	Tay Ninh	0030-0630-1230-1830
10. 2nd Bn, 35th Arty	Xuan Loc	0515-1115-1715-2315

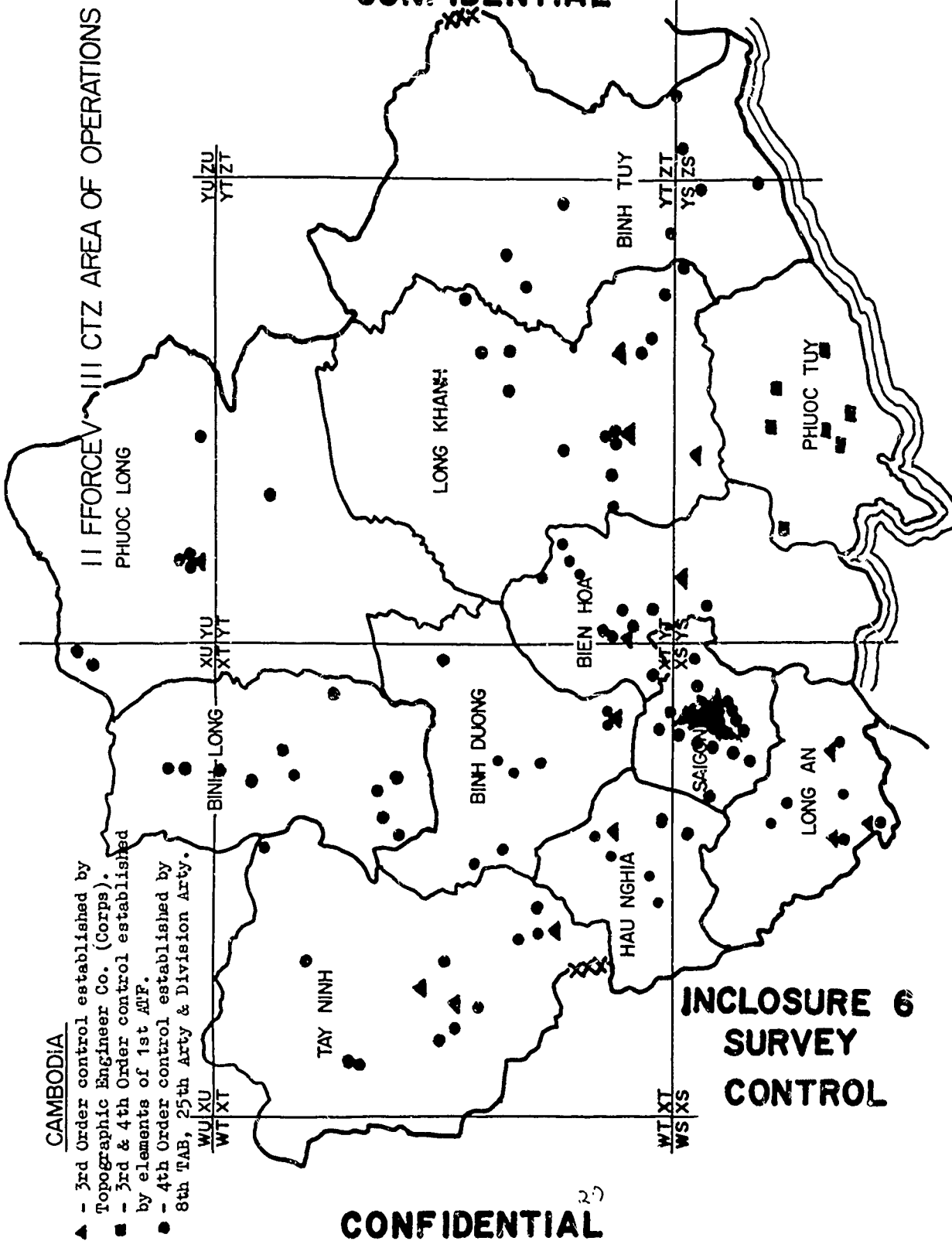
Computer Metro broadcast times are 15 minutes prior to NATO broadcast times.

Appendix 1 to Inclosure 5

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a. Confirmed Targets: The enemy location is known and his presence has been determined by contact with friendly forces or activity seen by air or ground observers. This category includes missions fired against hard targets such as bunker complexes.

b. Acquired Targets: Enemy locations based on SLAR, SPARS, Red Blaze missions, ground surveillance radars, airborne personnel detectors and other detection devices. Targets in this category must be based upon timely reaction and additionally must meet all of the following criteria:

- (1) Detection by one or more of the sensory devices listed.
- (2) Validation by an evaluation of enemy pattern of operation.
- (3) Terrain analysis by competent targeting agencies.

c. Counterbattery Targets: Known or suspected locations engaged by friendly artillery immediately before, during or immediately after enemy rocket/mortar/artillery attacks.

d. Preparation Targets: Landing zones, fire support bases and objectives or areas which receive precautionary artillery fire prior to air assault or ground occupation by friendly forces. This category includes reconnaissance by fire missions and blocking fires.

e. Interdiction Targets: Areas or points which the enemy is likely to use at some unpredicted time. Fire is delivered for the purpose of denying the unrestricted use of an area or point. This category includes targets fired as a result of agent reports that are not timely or lack sufficient reliability to fall in the confirmed category.

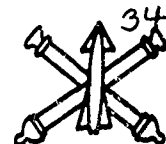
f. Special Purpose Targets: Those targets fired which assist artillery and maneuver elements to improve the technical effectiveness of their operations. This category includes registrations, marking missions, navigation missions, calibrations, adjustment of defensive concentrations and illumination missions.

g. ARVN Support Targets: Missions and rounds fired in support of ARVN forces are extracted from overall totals and reported in this category.

h. Others: Those fired for service practice, training, demonstrations and other categories not included above.

Inclosure 7

Ammunition Expenditure
Definitions



ARTILLERY/MORTAR ACCIDENT AND INCIDENT FACT SHEET FOR THE MONTH OF JANUARY 1968

Artillery/Mortar Accident and Incident Fact Sheet will be published monthly by II FFORCEV Arty. This Fact Sheet is presented in the hope that it will help in reducing the number of incidents.

During January, seventeen artillery and mortar accidents and incidents involving friendly casualties and/or damage to military and civilian property were reported. Of these, fifteen were caused by artillery. There were seven incidents reported, six of which are outlined below.

Number One: Friendly injuries were sustained during adjustment of defensive concentrations. The cause of the incident was determined to be firing too close to exposed friendly troops. To preclude recurrence the Battalion Commander installed the following procedures. All friendly elements will be plotted on the batteries situation map. First rounds will be fired at least 1000 meters from nearest friendly elements and will be adjusted in by no more than 50 meter shifts in deflection or range. Also, friendly troops will be advised to take cover whenever possible.

Number Two: Friendly casualties were sustained due to the failure of the computer to relay cancellation of a target to the recorder; thus the cancelled target was fired. Had the fire direction officer performed his required double check properly the incident might not have occurred. As a result of this incident a gunnery and firing battery inspection team was formed.

Number Three: Friendly casualties resulted when the Forward Observer made a bold correction from a White Phosphorous spotter round and fired for effect without first requesting another spotter round to determine where the rounds would land. The fire for effect landed in a RVN Hamlet. The Forward Observer was punished under UCMJ for not following proper procedures. Many FO's are relatively inexperienced in the adjustment of close-in defensive fires. It is imperative that continuous FO training be emphasized so that new arrivals can benefit from the "Veteran's" experience.

Number Four/Five: On two occasions during the month, while requesting clearance, grids were transposed. In each case, casualties of friendly personnel resulted. Appropriate command action in the form of reprimands was taken. This type incident can easily be avoided if proper read back procedures are emphasized.

Number Six: A battery was layed out by 200 mils when the chief of firing battery placed his aiming circle next to a pile of sand bags under which was a considerable amount of perforated steel planks. Both the battery commander and the

35 battery executive officer failed to check the lay of the battery with a different aiming circle. Action was taken against the battery commander, executive officer and the chief of firing battery under provisions of Article 15, UCMJ. The double check system was in force but not followed. A basic principle of Artillery was violated in positioning the aiming circle.

AVFB-FAB

MEMORANDUM FOR RECORD

17 April 1968

SUBJECT: Radar Seminar

1. (U) A radar seminar was held on 3 Apr 68 at Headquarters, II Field Force Vietnam Artillery. The purpose was to provide a forum for the interchange of ideas, problems/solutions, methods of employment of organic artillery and infantry radar.

2. (U) At inclosure 1 is a list of attendees.

3. (U) At inclosure 2 is the agenda for the seminar.

4. (C) Summary:

a. LTC Maddox, the representative from ACTIV, discussed VATLS (Visual Airborne Target Locator System) and its evaluation in Vietnam. In tests conducted by the U.S. Army Artillery Board at Fort Sill, Oklahoma, it was concluded that although VATLS was not suitable as a standard Army issue item, it could be useful in Vietnam. One set was sent to the 108th Arty Gp near the DMZ, one is being modified to include infrared capability, and the third was cannibalized to make the other two operational. VATLS was designed to identify and locate targets, but it can also be used in artillery survey and mapping. It has a range of 40 kilometers and weighs 1,000 pounds (1,400 pounds with the infrared equipment). The original design called for a UH-1B but a UH-1H was issued and will be required when the infrared equipment is used along with two door gunners. In addition to the manufacturer's representatives, ACTIV has four evaluators. During operation one is in the helicopter, one is in the ground station, one is in the FDC, and one is the senior evaluator. The following results to date were obtained.

(1) Accuracy has averaged 4 or 5 meters in all modes of operation.

(2) Radio interference has not been a problem in the DMZ.

(3) The number of targets acquired was less than the norm compared with aerial observers. This was due to operator inexperience.

(4) System availability has averaged between 60% and 80%. Bad weather, helicopter maintenance, and enemy artillery fire reduced availability to 25%.

(5) The maintenance package that came with the equipment was adequate.

(6) Acquired targets were fired on by a 155mm section. In one mission the fire for effect rounds were three meters from the initial VATLS target coordinates.

(7) LTC Maddox concluded that VATLS has lived up to its reputation as a target locator system and as a survey instrument.

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SUBJECT: Radar Seminar

b. Representing the Office of the Science Advisor was Dr. Dickinson. He discussed the Fire Watch system. It has four optical sensors (each has a sector of 500 mils), a set of coarse infrared detectors (to scan small areas), a display scope (covering 85 mils), an M-43 spotting scope, a night observation device (NOD), a precision IR scope, a pair of microphones, and a LASER range finder. Each of the optical sensors has the capability to give azimuth and elevation. First tests conducted in CONUS revealed that parts of the optical system were too sensitive while others were not sensitive enough, and has been sent back to the manufacturer for tests and adjustments. When these adjustments are completed it is intended that the equipment be tested at the RMZ. Since both sound and flash are required the area to be monitored must be free of extraneous light and noise. He noted that weather is an important factor in determining range, but one could expect 100 - 200 meter accuracy. Presently it does not have metre but hopefully it will. It has a 20 Km range and requires two rounds for accurate location. A question arose concerning new equipment that would detect VC setting up their equipment. He stated that to his knowledge there is no such device under development. In conclusion Dr. Dickinson emphasized the need for feedback information to use as evidence to shake current projects loose and perhaps generate more.

c. Major Maxen (S3, 2d Bn (Mech), 2d Infantry Brigade) represented the organic infantry radar in the 1st Inf Div. In order to assist their mission of keeping Highway 13 open between Lai Khe and An Loc, two AN/PPS-5's and two AN/PPS-4's were placed along the route which was cleared 150 meters to either side and in some spots up to 400 meters. Ambush patrols were used where the radar could not see. Radar was operated only during the night and troops were sent out during the day. He cited 10 radar contacts along the highway since 25 Feb 68, but no confirmed kills as yet. Generally, the radar cannot see far enough into the woods. In one instance radar had a contact and an ambush patrol was sent. One VC was killed. Radar watched the VC withdraw into the woods. Down time for the PPS-4's is 35% to 50%, mainly because of generators. Down time for the PPS-5's is 20%, but it must be evacuated to Long Binh for repairs. Major Maxen concluded that the PPS-5 was a better piece of equipment than the PPS-4 because it can see further and it has both visual and audio presentation for the operator. He felt that radar is effective along Highway 13 but he had no conclusive evidence that it has reduced road mining activity.

d. Captain Weeden (S2) represented the organic artillery radar in the 1st Inf Div. He stated that the AN/MPQ-4A radar was employed in 20 to 50 foot towers and operated between 1900 - 0700H. At Lai Khe one set was oriented toward possible mortar positions while another was searching for rocket launch sites. He noted that unless the radar was scanning where rockets or mortars were fired from when they were fired, no detection would result. So, an observer was placed in the radar towers and whenever he observed a flash the radar section would be notified and the antenna directed toward the site.

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The tests worked well at Phu Loi where clear, flat ground permits good observation. Because rockets usually intercept only the lower beam, a technique was devised to determine launch sites. The distance between entry and exit in the radar beam (rockets make lines on radar scopes) is compared with a firing table for the 122mm rocket and a rough origin interpolated. Accuracy is between one and two hundred meters, and usually correlates with aerial observation. The entire process takes between one and two minutes, but the entry coordinates are given to the FDC immediately. A question was asked concerning the launch sites and Captain Weeden answered by stating that the feeling was that the VC were setting up their rockets sometime before an attack and then hiding underground nearby. At a certain time they would remotely ignite the rocket. When artillery is placed on the area the personnel are gone. However, on occasion, secondary explosions have been observed. It was noted that at Phu Loi during Tet a TPS-25 radar detected VC setting up their equipment and artillery was placed on the area. Secondary explosions were observed and a morning sweep revealed several bodies.

e. Major Merelli (G3 Section) described how the ground surveillance radars were used in the 9th Div. The mission was to keep Highway 4 open between My Tho and Cai Lay (23 Kms). In the past it has been blown every night. PPS-4's were used along the route and a TPS-25 was placed on a 60 foot tower at Deng Tam, which received 13 Km readings. During one night the TPS-25 located 110 targets and 50 were fired. No surveillance was available. He concluded by pointing out that since this mission was started, the highway has been open nearly everyday; the problem that existed several weeks ago is no longer, but the importance of radar in this success is not known precisely. When the expected PPS-5's arrive 40 foot airmobile towers will be used for rapid transportation.

f. Major Reache (S2) represented the 25th Div Arty. He reported tremendous success with the TPS radars. At Trung Lap 3 weeks ago a TPS-25 picked up movement and arty was fired on the area. A sweep of the area the next morning revealed an arm, 16 rounds of 60mm mortar, and huge blood spots. The TPS-33 radar used by the artillery along the Saigon River averaged 24 - 30 sightings per night, and as many as possible were fired. Major Reache went on to describe how observation towers were used to supplement radar. He concluded by stating that it was felt that radar has had some effect in preventing mortar attacks, but that it is not always possible to sweep the area after being fired on. Few maintenance problems were noted with the TPS-25 while the TPS-33's definitely have generator problems.

g. Presenting some points on maintenance was WO Morris, OIC, 349th Signal Det. He described the maintenance procedure for radar. For example, radar from the 725th Detachment at Cu Chi (Division level) is received at the 79th Maint Bn E and C Shop and preliminary repairs are made at the 5th LEM Co. If not repaired in a specified time period, it is then sent to the 147th LEM Co,

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SUBJECT: Radar Seminar

who have operable floats for the PPS-4 and PPS-33's, but no capability for the TPS-25. Generally any power source that produces 115 volts single phase and 28 volts single phase will work as an alternate power source. He offered to help with any maintenance problem which exists.

h. WO Wicker was asked to present some experiences from the 199th LIB. He stated that in areas where the 101st TPS-25 could not see his PPS-5's were used. Success was noted on one occasion when a rocket site was located and observation tower intersections verified the location. In another instance strange noises were heard, and it is believed that these noises were caused by VC dragging away their dead after artillery had been fired into their vicinity.

1. The following topics were concluded from the radar seminar:

(1) The 25th Div has received very good results from the AN/TPS-33 employed northeast of Cu Chi.

(2) To maximize effectiveness of anti-personnel radar they must be employed in clear areas free from ground obstacles and on relatively high ground.

(3) The AN/PPS-4 has been an effective ground surveillance radar system in limited visibility areas.

(4) The AN/PPS-5 is considered superior to the AN/PPS-4 because it has a greater range capability and has both a visual and audio presentation.

(5) The AN/NPQ-4A when mounted in towers can operate at a lower angle of elevation of scan and has a better probability of detecting rockets.

(6) One of the major problems encountered was with the radar associated generators. Specifically, the lack of an adequate maintenance program for generators and the lack of alternate power sources caused excessive downtime. The major inadequacy of the maintenance program lies in the repair of the generator engines.

5. (U) At inclosure 3 is letter, Hq 25th Inf Div, dated 26 November 67, subject: Field Expedient Power Source for AN/PPS-4 radar.

3 Incl
as

Robert W. Badger

ROBERT W. BADGER
Major, Artillery
S2

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 25TH INFANTRY DIVISION
APO San Francisco 96225

AVDCIN

26 November 1967

SUBJECT: Field Expedient Power Source for AN/PPS 4 Radar

TO: See Distribution

1. Reference: TM 11-5840-211-12 April 1960.
2. The purpose of this letter is to acquaint addresses with a technique for using the 24 volt battery system of the M151, the M37B1 and the M113 as a field expedient power source for the AN/PPS-4 radar set. The employment of this technique may be appropriate when BB4 22/U batteries are in short supply or when generators are down for maintenance. (See para 4e, ref A).
3. The following steps are recommended for placing this alternate power system into operation:
 - a. Power Cable CX 4934/U: Secure vehicle battery connection devices to the cable by soldering "eye" type or "alligator" clamps, to the positive and negative wires of the cable. The connections should be marked to identify the positive and the negative wires, i. e. red/positives; black/negative. It should be noted that the entire 24V system must be used. Tactical disposition may make the employment of a cable longer than the standard issue 10 foot, CX 4934/U desirable.
 - b. Connect the cable to battery terminals before connecting it to the radar set.
 - c. Connect the other end to the set and turn the voltage adjust switch to position 1. Place the set in the "standby position" and depress the battery test button. The range extension meter should register in the red zone. Follow the normal procedures for placing the set into operation outlined in reference A.
 - d. Vehicle batteries should be recharged by allowing the vehicle to idle for 10 to 15 minutes each hour. Prior to starting the vehicle, place the set in the "off" position and the voltage adjust switch to position 1. Once the engine is started, place the set in the "standby" position and idle engine for 10-15 minutes. When the engine is turned off, repeat the applicable portions of the process outlined in sub-paragraph c, above.

Incl 3 to Incl 9

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AVDCIN

26 November 1967

SUBJECT: Field Expedient Power Source for AN/PPS 4 Radar

4. It is requested that addressees comment on the effectiveness of this technique and report any problems or suggestions for its improvement to this headquarters, ATTN: AGOFS, G2.

FOR THE COMMANDER:

1 Incl

as

/s/ F. M. CROCKETT
/t/ F. M. CROCKETT
1LT, AGC
Asst AG

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"AN EXTRACT COPY"

Robert W. Badger

ROBERT W. BADGER
Major, Artillery
S2

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