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AUTHORITY

AGO ltr 28 Apr 1980

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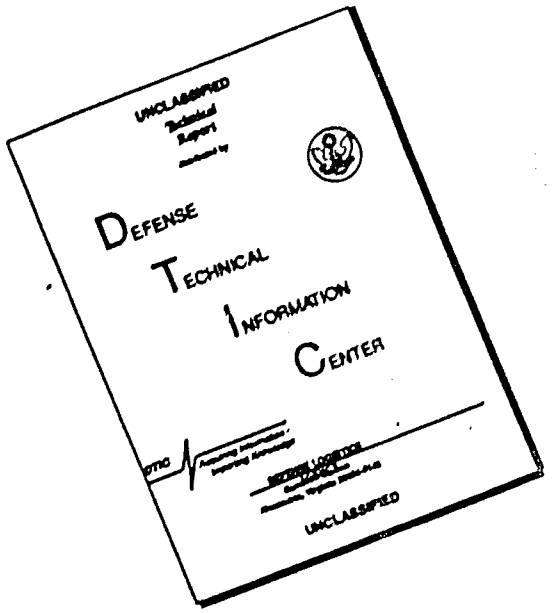

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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO
AGAM-P (M) (15 Feb 68) FOR OT RD 674090 19 February 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 27th Engineer Battalion (Combat), Period Ending 31 October 1967

TO: SEE DISTRIBUTION

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

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

BY ORDER OF THE SECRETARY OF THE ARMY:

C. A. STANFIEL
Colonel, AGC
Acting The Adjutant General

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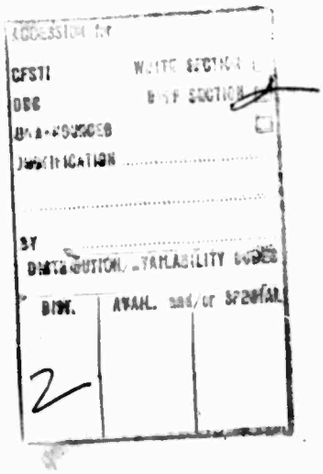

DEPARTMENT OF THE ARMY
Headquarters, 27th Engineer Battalion (Combat)
APO San Francisco 96257

EGFC-CO 8 November 1967

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1967.

THRU: Commanding Officer
34th Engineer Group (Const)
APO 96291

Commanding General
USA Engr Cmnd Vietnam (P)
ATTN: AVCC-P&O
APO 96491

Commanding General
United States Army Vietnam
ATTN: AVHGC-DH
APO 96307

Commander in Chief
United States Army, Pacific
ATTN: GPOP-OT
APO 96588

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

SECTION I. Significant Organizational or Unit Activities

1. Command.

a. During the reporting period, the 27th Engineer Battalion (Combat) was located at BLACKHORSE, Vietnam (YS 438975). The major activities of the battalion included: Base construction, combat support to II Field Forces Vietnam (II FFV) tactical operations, airfield construction and rehabilitation, land lines of communication (LOC) upgrading and rehabilitation and Base Camp Security.

b. During this report period, the battalion was reassigned from United States Army Engineer Command Vietnam (Prov) to 20th Engineer Brigade on 4 August 1967 and continued its attachment to the 34th Engineer Group (Const) for operational control.

c. The following changes of command occurred within the battalion:

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(1) Maj Richard F Gundry assumed command of the 27th FBC from LTC Allen P Richmond III on 19 Aug 67.

(2) Maj Ray A Boeke assumed command of the 27th FBC from Maj Richard F Gundry on 21 Aug 67.

(3) LTC Allen P Richmond III assumed command of the 27th EBC from Maj Ray A Boeke on 28 Aug 67.

(4) Maj Ray A Boeke assumed command of the 27th FBC from LTC Allen P Richmond on 7 Oct 67.

(5) Maj Kent C Kelley assumed command of the 27th FBC from Maj Ray A Boeke on 14 Oct 67.

(6) 2LT Roderick L McKay Jr assumed command of HHC, 27th EBC from Cpt George W Asmuth on 27 Aug 67.

(7) 1LT Kenneth J Kerr assumed command of HHC, 27th EBC from 2LT Roderick L McKay Jr on 11 Sep 67.

(8) 2LT Charles Sullivan assumed command of A Co 27th FBC from Cpt Gerald C Brown on 22 Aug 67.

(9) 1LT Ralph P Dunn Jr assumed command of A Co 27th FBC from 2LT Charles Sullivan on 10 Sep 67.

(10) 2LT Gerald R Jeffers assumed command of B Co 27th FBC from Cpt William Jones on 22 Aug 67.

(11) Cpt Serge Drillock assumed command of B Co 27th FBC from 1LT 1LT Gerald R Jeffers on 6 Sep 67.

(12) 1LT Rickey H Smith assumed command of C Co 27th EBC from 1LT Charles Krausche on 8 Aug 67.

(13) Cpt Woodrow G Lyon assumed command of C Co 27th FBC from 1LT Rickey H Smith on 13 Aug 67.

(14) 1LT Cornelius Hawk Jr assumed command of D Co 27th EBC from Cpt Frank Vinci on 24 Aug 67.

(15) 1LT Jeffery C McCarthy assumed command of D Co 27th EBC from 1LT Cornelius Hawk Jr on 19 Sep 67.

(16) Cpt Leslie E Snell assumed command of D Co 27th FBC from 1LT Jeffery C McCarthy on 25 Sep 67.

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(17) Cpt Kenneth J Haveman assumed command of 591st Engr Co (LE) from Cpt Jerry Meyers on 22 Oct 67.

d. Organizational Structure:

(1) Assigned:

Headquarters and Headquarters Company, BLACKHORSE

A Company, BLACKHORSE

B Company, PHU QUOC ISLAND

C Company, GIA RAY

D Company, VINH LONG

(2) Attached:

591st Engineer Company (LE), BLACKHORSE (Note - ORLL is included as inclosure 1 to aid in maintaining unit identity). 94th Engineer Detachment (Quarry), GIA RAY Quarry Detachment, 595th Engr Co (LE), GIA RAY 2 Sections, 2nd Platoon, 67th Engr Co (DT), BLACKHORSE, 156th Engr Det (WD), PHU QUOC ISLAND.

(3) Detachments:

27th Land Clearing Team to 168th Engineer Battalion (Combat) (A).

e. The following awards were received by members of the Battalion:

AWARD	NUMBER AWARDED
Bronze Star Medal "V"	5
Bronze Star Medal	17
Army Commendation Medal	25
Air Medal	1
Purple Heart	2

2. Personnel, Administration, Morale and Discipline.

a. At the end of the reporting period the strength was:

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	O	WO	NCO	EM	TOT
Auth	37	3	129	689	858
Asgd	38	2	99	727	866
Atch	6	1	33	180	220

b. Personnel Statistics.

(1) KIA: 1

(2) Med Evac out of country: EM 8 OFF 2

(3) ETS: EM 105 OFF 1

(4) EXTENDED (OS TOUR): EM 23 OFF 4

(5) TRANSFERS (within RVN): EM 65 OFF 1

(6) DEROS: 526

c. Administration.

(1) Generally, the administrative communications with B Company (PHU QUOC ISLAND) and C Company (GIA RAY) has improved noticeably with the use of radio. The lack of authorized AN/VRC 106 radios has caused some difficulty, but contact has been established and maintained with the AN/VRC 19 although with reduced quality of reception.

(2) The consolidation of the finance section with the 91st finance at BLACKHORSE has transferred a major area of responsibility from the unit personnel officer. Consolidation has alleviated many of the difficulties previously experienced in preparation of payrolls, partial pays and payroll pickup.

d. Morale:

(1) Morale within the battalion has continued at an extremely high level.

e. Discipline:

Disciplinary problems have been relatively few during the report period. Statistics show 35 Article 15's, 1 Summary Court Martial and 5 Special Court Martials.

3. Intelligence and Counterintelligence.

a. The majority of intelligence information continues to be obtained by this headquarters through direct liaison with the S-2 of the

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11th ACR, the major command on BLACKHORSE Base Camp. The majority of information received from other sources is either too late or too general to be of use for this Headquarters.

b. Counter-Intelligence

(1) Since 1 Aug 67, there have been ten incidents involving mines investigated by the 27th EBC. Seven of these incidents involved injury or damage to US personnel/equipment. In one incident, two VN Nationals were injured.

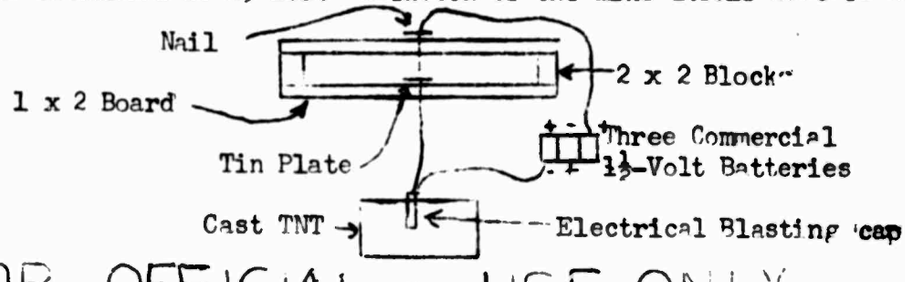
(a) On 2 Aug 67, a lowboy from the 595th Engr Co (LE) was destroyed by a mine with negative casualties, leaving a crater 8' wide and 5' deep. The charge was estimated at 30 lbs. This mine was emplaced on the east side of the road approximately four meters from the centerline of the road.

(b) Also on 2 Aug 67, immediately after the destruction of the lowboy, and 18 lb shape charge was found approximately fifteen meters north of the 1st location on the west side of the road approximately four meters from the centerline of the road.

(c) On 18 Aug 67, a grader from the 501st Engr Co (LE) struck a mine approximately 300 meters north of the first mine, again approximately four meters from centerline on the east side of the road resulting in severe damage to the grader and one US WIA. The mine left a crater 8' wide and 4½' deep. The charge was estimated at 30 lbs. The grader had passed over the same location twice prior to the detonation of the mine.

(d) On 20 Aug 67, a 2½ ton truck from the 54th Artillery Group struck a mine approximately 360 meters north of the first mine in the same position with relation to the centerline which resulted in one truck destroyed, 1 KIA, and 1 WIA (both US). The mine left a crater 11' wide and 6' deep. The charge was estimated at 50 lbs.

(e) On 20 August 1967, after the 2½-Ton truck from the 54th Artillery Group was destroyed, a 3/4-Ton truck from the 27th Engineer Battalion (Combat) struck a mine approximately ten meters south of that location in approximately the same relation to the road centerline. This mine failed to detonate completely and personnel from the 27th Engineer Battalion (Combat) were able to evacuate the detonating device. A charge was then placed on the mine resulting in a crater 8' wide and 5' deep. The charge was estimated at 25 lbs. A sketch of the mine itself appears below.



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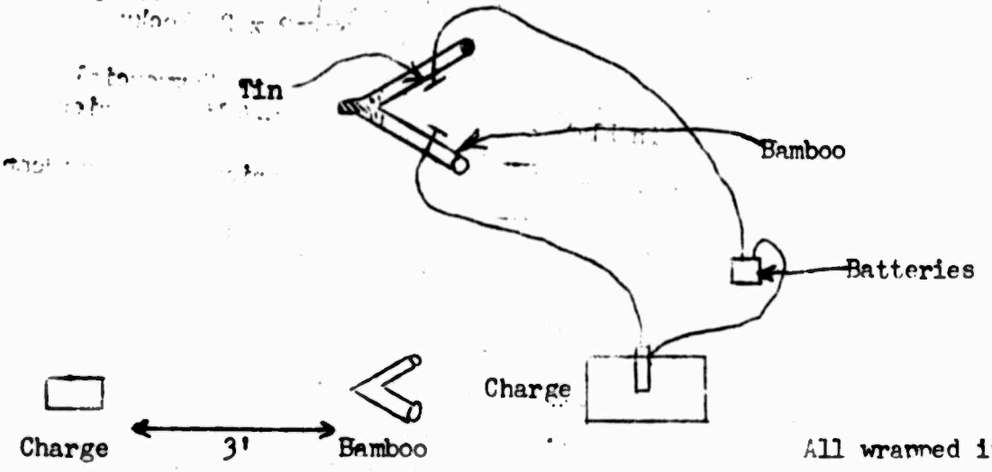
(f) On 30 August 1967 an A Cav from the 11th Armored Cavalry Regiment struck a mine, again on the same side of the road approximately 405 meters north of the first mine resulting in 1 A Cav destroyed and 5 US WIA. The crater was 8' wide and 4' deep. The charge was estimated at 30 lbs.

(g) Also on 30 August 1967, a ¼-Ton truck on a recovery mission from the 67th Engineer Company (DT) struck a mine approximately twenty meters south of the mine which destroyed the A Cav resulting in one ¼-Ton truck destroyed, 2 US KIA, and 1 US WIA. The crater was 9' wide and 5' deep. The charge was estimated to be 40 lbs.

(h) On 6 September 1967, approximately 600 meters north of the first mine, again on the same side of the road approximately four meters from the centerline of the road, a tank from the 11th Armored Cavalry Regiment struck a mine resulting in severe damage to the tank. The resulting crater was 13' wide and 5' deep. The charge was estimated to be 65 lbs.

(i) On 3 October 1967, a civilian log truck struck a mine approximately 3,000 meters north of the first incident. The truck was severely damaged and two VN Nationals injured. The mine left a crater 4½' wide and 3½' deep. The charge was estimated at 10 - 15 lbs. In an insnection of the location, a detonator of the type evacuated on 20 August 1967, was found and evacuated.

(j) On 15 October 1967, a tank from the 11th Armored Cavalry Regiment struck a mine on Route QL 1 west of XUAN LOC. The resulting explosion caused severe damage to the tank. This mine differed from all others in that it was emplaced in the middle of a muddy by-pass in such a manner as to cause the vehicle touching bottom on the center of the trail to make the connection exploding the charge. A diagram of the set-up appears below.



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(2) In all cases of mining incidents, the following items were uniform:

(a) All but two appeared on the west side of the road on the shoulder approximately four meters from the centerline of the road.

(b) All but one of the mine incidents took place during or immediately following a period of extremely heavy rainfall.

(c) In all but two cases the road had been swept prior to the incident.

(3) Actions taken to clear the road.

(a) On 31 August 1967, A Company of the 27th Engineer Battalion (Combat) took the following actions to clear the section of road which was most heavily mined; 2 lb explosive charges were placed every 10' for 500 meters after an initial sweep was made. After the charges had been detonated, the road was ripped to a depth of 6-18" with a bulldozer.

(b) On 7 September 1967, A Company of the 27th Engineer Battalion (Combat) placed 1 lb charges every 5' for a distance of 300 meters after an initial sweep had been made with mine detonators. After detonation, the road was ripped to a depth of 6 - 18".

(c) During neither of these operations was a secondary explosion noted or a mine turned up. However it should be noted that there have been no mine incidents in either of these sections of road since the operations. The operations were conducted in an attempt to:

(1) Sympathetically detonate any mine present.

(2) Turn up any additional mines with the rippers on a bulldozer.

(4) Conclusions.

(a) Due to the limited amount of metal in these mines, detection is extremely difficult.

(b) The chance of detonating a mine is increased during and following periods of heavy rain.

(c) Drivers should be instructed to stay in the middle of the road as much as possible because the mines appear on the shoulders.

c. Reconnaissance

(1) During the reporting period a total of four major route

reconnaissances were performed by the S-2 Section. All of these missions required extensive use of aerial and ground photography.

(2) On 14 August 1967, a low level aerial reconnaissance of Route QL 20 from its junction with Route QL 1 to the III Corps boundary was performed.

(3) On 28 August 1967, a reconnaissance on the ground of Route QL 4 from CAN THO to VINH LONG was performed.

(4) On 1 September 1967, a route reconnaissance of QL 1 from BLACKHORSE to the III Corps boundary was performed.

(5) On 8 October 1967, an aerial reconnaissance of Route 333 from GIA RAY to VO DAT was performed and on 10 Oct 67, a reconnaissance was made of the route again by helicopter, stopping at the major bridges and bad sections of the road. This operation was conducted in conjunction with K Troop of the 11th ACR, who provided a two squad security force for the ground operations. The Air Cav Troop of the 11th ACR provided three D-Model Hueys and three armed Huey helicopters for transportation and air cover.

(6) On all aerial reconnaissance reports, information pertaining to location of bridges, culverts, and rough sections of road are noted. Reports containing this information are then forwarded to higher headquarters.

d. Airfield Inspections: During the reporting period, the S-2 Section was made responsible for the monthly inspections of VO DAT, TANH LINH, XUYEN MOC, XUAN LOC, VI THANH, VINH LONG, and the BLACKHORSE Airfields. The initial inspection consisted of all information pertaining to the airfield in a determination of whether or not the airfields meet all the required criteria. Thereafter the reports were updating of all information previously submitted. In the recent past, the section has been relieved of the responsibility for VI THANH and VINH LONG but continues to inspect the remaining five as transportation becomes available.

e. Security.

(1) During the reporting period, there was one minor security violation involving call signs and frequencies.

(2) During the reporting period, the S-2 published an OPORD on base camp security to conform to a new OPORD published by the 11th ACR, the unit responsible for BLACKHORSE Base Camp security.

(3) In connection with base camp security, the battalion has been required to supply a total of 23 night ambush patrols up to the 18th

of October 1967. The S-2 Section briefed the patrol leaders and provided liaison between them and the 11th ACR to whom they were OPCON. After the 18th of October 1967, the S-2 was required to completely control one patrol per night. One half of each patrol was provided by the 11th ACR while the other half came from the 27th Engr Bn (C). This required the setting up of a 24 hour operation by the S-2 Section to provide the necessary control for the patrol. To solve the manpower problem, two NCO's were assigned to the section to provide the manpower for the night operations. The requirement for one patrol per night also put a larger manpower load on the companies within the battalion as prior to 18 Oct 67 the battalion provided an average of only two patrols per week.

4. Plans, Operations and Training

a. Plans:

(1) During this period, the operations section continued refinement of Base Development plans and unit area layouts for seven cantonments in the battalion area of responsibility. Base Development/Master Plans were revised for current troop strengths and prepared for submission by the Base Development boards. Draft copies of requests for new construction were also prepared for the Base Development Planning Boards and recommendations made for a hasty submission. Working drawings were also prepared for ammo storage and water wells and fill stands.

(2) Site layout and detailed working drawings were completed for the expansion and upgrading of GIA RAY Quarry. Facilities were designed for the installation of two 75 ton per hour and one 225 ton per hour crushers.

(3) "As built" drawings with site layout of existing buildings and terrain features were prepared for XUAN LOC Airfield to facilitate a determination as to location of future facilities, i.e., parking apron, taxiway, access roads, and operations buildings.

(4) Deliberate surveys were initiated on 8.5 miles of LTL2 from BLACKHORSE to XUAN LOC utilizing permanent reference points and concrete bench marks for upgrading to MACV Standard two way all weather capability. Overlays requesting additional real estate were prepared and forwarded through MACV Advisors and Vietnamese channels for approval. Drawings for this initial segment of road are presently in progress, construction management plans have been completed and are currently on the drafting boards.

b. Cantonment Construction Activities

(1) During the reporting period elements of the 27 EBC continued base construction at BLACKHORSE, XUAN LOC, GIA RAY, CHUA CHAN (Hill 837), HAM TAN and PHU QUOC and were relieved of base construction respons-

ibility at VINH LONG and CAN THO. Horizontal construction at all cantonments was seriously hampered by the heaviest rainfall of the year occurring during this report period.

Location	AUG	SEP	OCT
BLACKHORSE	12.09"	11.45"	8.97"
GIA RAY		21.20"	7.25"
HAM TAN	14.41"	21.0"	60.0"
VINH LONG	2.80"	2.64"	3,5"
PHU QUOC, ISLAND	15.50"	13.0"	27.55"

(2) Headquarters Company, 27th Engineer Battalion (Combat)

(a) Headquarters Company with only a limited capability for self help construction was able to complete interior construction and electrical wiring at the Battalion Headquarters, 960 sq ft of dispensary, 1200 ft of troop billets and 800 sq ft of command bunker.

(3) A Company, 27th Engineer Battalion (Combat)

(a) A Company during this quarter continued to be responsible for the horizontal construction of BLACKHORSE Base Camp for the 11th ACR and its support units. Construction activities consisted of road maintenance, emplacement of drainage structures, operation of a concrete batch plant, forming and placing of concrete pads for administration and community service facilities, placing of concrete for self help billets, construction of T-17 membrane helipads and erection of MER for a scout dog platoon.

(b) Horizontal construction completed by A Company this period included: 353,500 lin ft of ditches maintained ; 1152 lin ft of culvert emplaced, 987 cu yds of concrete placed and 2850 sq yds of helipads prepared.

(c) A Company completed horizontal and vertical construction of 2700 sq ft of dog kennel capable of housing 30 scout dogs.

(d) During this period receipt of water storage tanks (300 barrel), submersible pumps and in-line chlorinators has enabled A Company to begin construction of the water storage facilities and fill stands for the XUAN LOC cantonments.

(4) B Company, 27th Engineer Battalion (Combat)

(a) During this report period, B Company continued its construction mission on PHU QUOC ISLAND in the Gulf of Thailand. Construction was completed on two 10 family Army of the RVN (ARVN) dependent housing units and prefabrication of wall panels for a third housing unit.

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(b) Preparation was begun for B Company's return movement to BLACKHORSE when another mission was assigned for their execution prior to leaving PHU QUOC. This mission, was the rehabilitation of AN THOI Airfield to Type III C-130. In preparation for another 3 -4 months operational activities on the island, B Company spent the interim period, required for receipt of supplies and equipment on improvement of the unit area in construction of orderly room/supply room, tent floors, and construction support to ARVN construction programs.

5. C Company, 27th Engineer Battalion (Combat)

a. At the end of last quarter, C Company moved to GIA RAY for expansion and rehabilitation of the quarry to accommodate 2 - 75 ton per hour and 1 - 225 ton per hour crushers. In addition to establishing ramps, headwalls, grizzlies and concrete pads for each crusher, C Company was responsible for clearing and stripping of overburden for quarry #2 and quarry #3, construction of 21,283 sq yds of rock stabilized access road and emplacement of 485 lin ft of culvert.

b. Cantonment construction activities at GIA RAY were second in priority to the expansion of the quarry facilities. However, during the period 380 lin ft of culvert were emplaced, 960 sq ft of messhall addition completed, 400 sq ft of admin completed, 960 sq ft of dayroom completed, and construction of permanent perimeter bunkers initiated.

c. One Platoon of C Company continued to be responsible for vertical construction at BLACKHORSE. Utilizing indigenous personnel as carpenters and limited self help, C Company's element at Base Camp was responsible for erection of 20,700 sq ft of administration building, 2880 sq ft of dispensary, 3840 sq ft of community facilities and 1200 sq ft of communications facilities.

d. Water Well and fill stand construction at BLACKHORSE was begun on a priority basis by the C Company element toward the end of this period. Prior to their movement to GIA RAY on 25 Oct 67 two water towers were completed, 90% of one 500 barrel storage tank assembled and 75% of the second 500 barrel storage tank was assembled. D Company has now assumed responsibility for completion of this project also on a priority basis.

6. D Company, 27th Engineer Battalion (Combat)

a. On 8 Oct 67, 1st Platoon moved from VINH LONG by LCU to return to BLACKHORSE Base Camp and arrived at Base Camp on 11 Oct 67 after three days on the water and one day on the road.

b. On 18 Oct 67, 3rd Platoon moved from VINH LONG by LCU to re-

turn to BLACKHORSE Base Camp and arrived at Base Camp on 19 Oct 67, after two days on the road.

c. Headquarters & Headquarters Platoon followed three days later on the 21 of Oct 67, by LCU from VINH LONG. They arrived at Base Camp on 24 Oct 67. This completed the movement of Delta Company to BLACKHORSE, except the 2nd Platoon which remained at VINH LONG to complete the airfield.

d. D Company has been assigned the responsibility of horizontal construction at BLACKHORSE and the completion of water wells and fill stands.

7. 94th Engr Detachment (Quarry) and Quarry Det, 509th Engr Co (LE): Continued operations at GIA RAY Quarry. During this period both units were assisted by C Company, 27th Engineer Battalion (C) in the development at two additional quarry sites, installation of two crushers and production of the following quantities of rock:

Blast Rock: 13, 400 cu yds
3½ Minus: [illegible], 386 cu yds
1½ Minus: 1178 cu yds

8. Two sections 2nd Platoon, 67th Engr Co (DT). During this report period two sections of the second Platoon, 67th Engr Co (DT) continued to be OPCON to this Headquarters. Their contribution to the hauling of laterite, sand and gravel contributed measurably to this Headquarter's accomplishment of its construction mission.

c. Operational Support Activities

(1) During the reporting period elements of the 27th EBC participated in operational support activities at VO DAT, PHU QUOC, VINH LONG, XUAN LOC, and BLACKHORSE.

(2) Headquarters Company: Headquarter's Company's Heavy Equipment Platoon has provided equipment support to operational activities throughout III and IV Corps areas. Equipment committed to Task Force Smith and Task Force Oder was responsible for 711 acres of medium clearing in support of the 1 Field Squadron, Royal Australian Regiment. Equipment committed to elements of the 27 EBC participated in operations at HAM TAN, VINH LONG, and PHU QUOC during the reporting period.

(3) A Company, 27th Engineer Battalion (Combat)

(a) During the period 1 Aug 67 through 31 Oct 67, Company A, 27th EBC was involved in Combat Support activities which included construction of the XUAN LOC Airfield to Type III, C-130 capability. A culvert system of 3-one meter concrete culverts and one 72" diameter corrugated metal culvert each 150 feet long with masonry headwalls was in-

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stalled across the runway to carry a major stream. A Company also erected a trailer mounted dedrumming mixer to expedite the loading of the asphalt distribution for the application of a single surface treatment. M8 matting will be installed on the turnarounds by A Co in the near futur

(b) At HAM TAN, Co A, 27th EBC completed the artillery cantonment for the heavy artillery battery. They also completed the construction of an O-1 type airfield adjacent to the artillery battery and at present are 94% complete on the renovation of the C-130 airfield parking apron. (See incl 2 HAM TAN Artillery MER After Action Report).

(c) The upgrading of LTL 2 has continued through this quarter. Construction has been hindered by weather and enemy activity. The 591st Light Equipment Company is doing the major construction tasks and A Co is supporting them. There were nine mines placed on LTL 2 by the enemy this quarter. Only one of these mines was uncovered by mine detection teams from A Company. The rest were detonated by engineer equipment working on the road and other vehicles travelling on the road. A Co lost a 25 Ton trailer and the 591st (LE) Company lost a motorized grader, both losses due to mines. In order to avoid the loss of more equipment and personnel, A Co has been detailed to make deliberate sweeps of LTL 2 on a periodic basis. This deliberate sweep utilizes nine mine detectors and 20 men per day of sweep.

(d) Co A, 27th EBC sends out a 14 man ambush patrol approximately every other week. During this quarter this unit has had no enemy contact.

(e) Co A, 27th EBC sent one squad, 11 EM and nine EM attached from the 591st Engr Co (LE), to VO DAT to accomplish repairs as required on a C-130 airfield on 18 Oct 67. The job was completed in three days and the EM returned to BLACKHORSE Base Camp 25 Oct 67. (See incl 3, VO DAT Airfield) (Rehabilitation After Action Report)

(4) B Co 27th EBC: On 2 Sep 67 B Co was assigned the mission of rehabilitating AN THOI Airfield at PHU QUOC ISLAND by removing the deteriorated M6 matting, applying 3" mixed in place sand-asphalt surface treatment, applying 1" sand-asphalt seating layer and installing M8A1 matting. To date B Co has prepared construction management plans, off-loaded matting and RC-800 from an LCV, removed 500 lin ft of M6 matting and completed 4445 sq yds of sand-asphalt surface treatment.

(5) D Co, 27th EBC: During the period 1 Aug 67 to 31 Oct 67, D Co continued working on project 34-67-1CS-27 VINH LONG Airfield Rehabilitation. The unit completed emplacing the 6" sand-cement soil stabilization for the runway, placed 8650 panels of M8A1 matting on runway, overruns and turnaround, and completed 6500 lin ft of sand-cement soil stabilization for the shoulders. The project as of the end of this period is 95% complete.

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(6) 156th Engr Det (Well Drilling): During this period, the 156 Engr Det (WD) continued in operational support of B Co on PHU QUOC ISLAND. Well 156-9 was drilled 123 ft further to a total depth of 168 ft. Water was reached and test pumped 40 gallons per minute. Well 156-10 was initiated at a depth of 61 ft drilled to date.

d. Training: Two major training programs affected the battalion this report period.

(1) Orientation classes conducted by the 11 ACR, totaling six days of instructions, were attended by 27th EBC replacements.

(2) Battalion policy established Sunday afternoons for detailed maintenance and a minimum of one hour block of scheduled instruction on training required by 27th EBC Reg 350-1.

5. Logistics.

a. Supply: During August and September the unit underwent a "rotational hump". Prior to this period, a 50% overage of TA 50-901 field equipment was drawn. This equipment was issued through a battalion central issue facility. Problems were minimal. Field gear which is now excess to our needs is being turned in. The new personnel within the battalion supply section had to be trained.

b. During the period the battalion received several important items of new equipment, specific items include:

(1) One 225 TPH crusher plant.
(2) Ten 22 Ton Euclid dump trucks.
(3) Two 40 Ton cranes.
(4) Three 250 CFM trailer mounted air compressors.

c. Reorganization of the shop operation late in September revealed a higher than normal deadline rate. Contributing factors were:

(1) Incorrect reporting procedure prior to 1 Nov 67.

(2) Additional aging of equipment since last report (average of 70,000 miles per month).

(3) Generally slow fill-time on repair parts requisitions. To correct these problems, greater percent of time has been spent on preventative maintenance and the repair part system was revised. Repair parts present a great maintenance problem in that lag time is excessive and, once the part arrives, it is difficult to deliver it to outlying units. Nothing can be done about lag time at this level. However, one innovation to eliminate excessive down time due to delivery problems was the establishment of a packaged PLL, based on demands, for units departing

for field locations. This system allows the unit commander immediate access to parts and, upon, requisition, creates demands upon the system.

6. Force Development. Due to the expansion of GIA RAY Quarry to two 75 TPH and one 225 TPH crushers, the development and operation of three quarry sites and a production goal of 7000 - 10,000 tons of rock per week, this Headquarters prepared an MTOE for establishing a quarry company. By consolidating the three separate quarry detachments, establishing a command of four officers, 1 warrant officer and 180 enlisted men and acquiring additional equipment, the proposed MTOE unit could be realistically expected to maintain an efficient operation and achieve the production goal. The MTOE was forwarded through channels for consideration.

7. Command Management: Command and control at the battalion level is severely hampered by the lack of organic aviation. Every opportunity is taken for "space available" flights to inspect, control and resupply elements of this command now widely scattered in III and IV Corps areas. The whole management process is compromised to a high degree by the non-availability of responsive transportation. See Section II Part II recommendations.

8. Inspector General: None

9. Civic Affairs: None

SECTION 2, Part I, Observations (Lessons Learned)

1. Personnel: None

2. Operations:

a. Item: Use of claymores on ambush patrol

Discussion: This unit has found that individuals are afraid to detonate claymores. They know how to set them up but they are hesitant about them because of numerous accidents that have been reported about personnel who have detonated claymores that have been turned around by the Viet Cong, resulting in serious injuries to the friendly forces.

Observation: When setting out the claymore, a trip flare should be placed under it. The safety pin should be pulled and the handle should face up. A rubber band or tape should be used to retain the handle when the claymore is disassembled. It is easier to tape the handle down than to insert the safety pin during hours of darkness.

b. Item: Construction in sandy soil

Discussion: In areas where the soil is sandy and heavy rainfall occurs, a low crown on a road or airfield is soon worn off. This allows water to stand in low areas. If this is compensated for by building a higher crown, erosion occurs and leaves lateral ditches.

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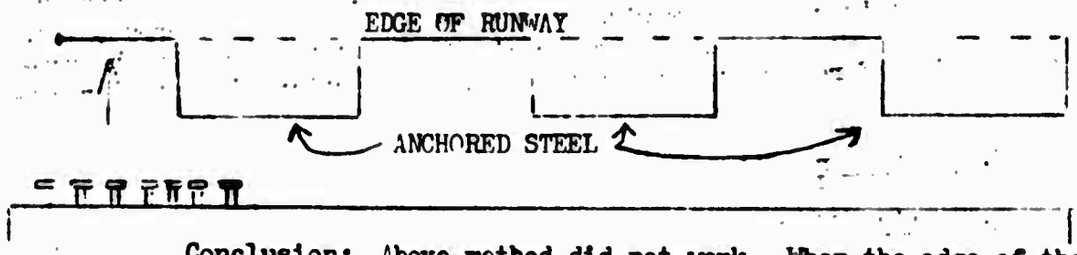
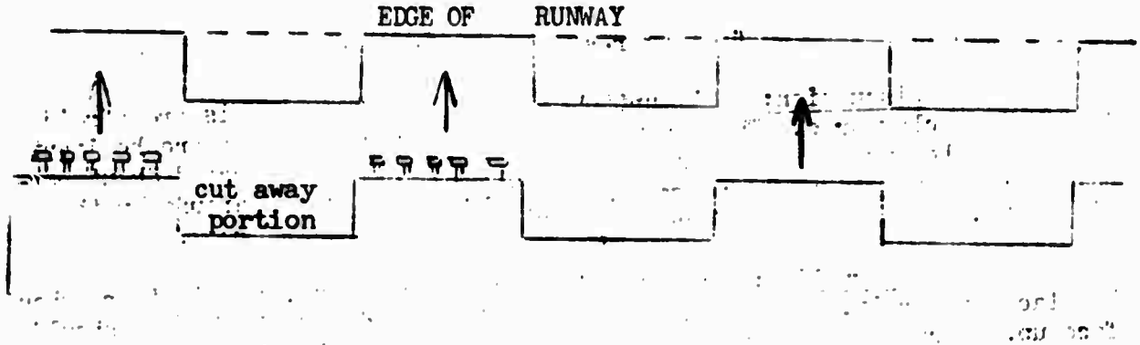
Observation: Airfields and roads constructed in sandy areas must be stabilized with RC-3, laterite, or covered with PSP. M8A1 matting is good for a well compacted surface, but if it is sandy, erosion starts on the sides and slowly works its way underneath. This is predominate on turnarounds for C-123 and C-130 airfields. When this occurs removal of M8A1 and recompaction is in order. This could be eliminated by a heavy shot of RC-3 on turnarounds and shoulders of turnarounds.

d. Item: Welding Turnaround apron to runway.

Discussion: Because of priorities of construction it was decided it would be easier to lay the M8A1 matting for the turnaround at right angles to the M8A1 matting of the runway. An attempt was made to weld the edge of the turn around apron to the edge of the runway as shown below.



Conclusion: Above method did not work. When the edge of the turnaround apron was flush against the edge of the runway, it would leave an uneven joint or lip at that point. This problem was solved by cutting 6" x 19" pieces out of the steel laid against the edge of the runway as shown below:



This method gave even surface traveling from the runway onto the turnaround apron.

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e. Item: Placement of M8A1 matting on Parking Apron Turn-in

Discussion: Requirements at VINH LONG necessitated putting in three aprons which would allow traffic to move off the runway. An attempt was made to build these aprons by going from a 6-5-4-5 pattern of laying steel to a 6-5-6 pattern for approximately 60 feet and not bending or burying this steel so that it could be extended out another six feet to give a twelve foot long ramp by 60 feet wide. Under this would be a sand/cement mix. It was thought the weight of the steel would cause the ramp to deflect or the steel could be bent and anchored by driving eight foot pickets into the ground and welded to the edge of the steel.

Conclusion: After the sand/cement mix was ready, it was found that when the steel was laid over the sand/cement it did not deflect enough even after extending the ramp out another six feet from the runway. Then the steel that was taken up was laid at right angles to the runway, and welded together. The steel then would slope with the sand/cement and could be anchored with the pickets without any difficulty.

f. Item. Use of M8A1 Matting Over Anchorage Ditches.

Discussion: One problem encountered in building sand/cement shoulders was getting enough compaction or support over the anchorage ditches after they had been back filled and compacted. Many times these ditches would become filled with water. Even after the ditches had been pumped out when the ditches were back filled and compacted they would still be muddy and would not compact. They would never get a chance to dry enough to compact because of the rain. Sand/cement would be laid over these ditches. Failures occurred in several places when a C-123 drove off the shoulders and then made an attempt to get on again. After this, M8A1 matting was placed top and parallel to the anchorage ditches.

Conclusion: It is not known at this time whether using M8A1 over the anchorage ditch has solved the problem of support. Approximately 2000 ft of shoulders have been laid in this manner and have experienced some vehicular traffic on them without any failure thus far.

5. None

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Section 2, Part II, Recommendations

1. Personnel: None

2. Operations:

a. Because of the wide dispersion of the Engineer Troops assigned and attached to this Battalion and variety of Engineer missions assigned it has become very apparent that proper command control and technique assistance and guidance are impossible without the use of aircraft.

The limited resources available to both the 34th Engr Gp (Const) and the 20th Engr Bde do not enable them to provide sufficient aerial sorties to satisfy our requirements. Local aircraft resources (those stationed at LONG GIAO) are normally committed on higher priority combat assault or combat support missions.

b. It is recommended that as a minimum one UH-23 be assigned to the Engineer Battalion (Combat) Army. This recommendation has been proposed as an MTOE addition and serious consideration should be given this proposal.

3. Training and Organization. None

4. Intelligence: None

5. Logistics:

a. Direct support maintenance provided to the 27th Engineer Battalion (Combat) and attached units is inadequate. Of prime concern is support of vehicles and specialized quarry equipment in the GIA RAY quarry complex. Excessive loss of utilization of this equipment during the present construction season is anticipated unless provisions are made to augment the very limited support capability (see para 3a below) of the 551st Direct Support Company (Light Maintenance).

The density of major equipment at GIA RAY and in support of operations at GIA RAY will increase as the project develops. Currently assigned to the GIA RAY project are 109 major items of equipment.

Direct support maintenance available for BLACKHORSE and GIA RAY is as follows:

(1) 551st DS Company (Light Maintenance) located at BLACKHORSE Base Camp is authorized ten Engineer Equipment Mechanics and is assigned eight. The unit mission is to provide direct support for:

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UNIT	EQUIP DENSITY
27th Engr Bn (C)	115 items
591st Engr Co (LE)	101
94th Engr Det (Quarry)	45
919th Engr Co (C)	44
11th Armd Cav Reg & 7th Surg Hospital	265
Total:	570

(2) Located at GIA RAY are two Engineer Equipment Mechanics (MOS 62B30), one Wheel Vehicle Mechanic (MOS 63C30) and a shop set, number 3, truck mounted. All are provided by the 140th DS Company.

b. Actions initiated by the 27th Engineer Battalion (Combat) to reduce the DS maintenance shortfall are as follows:

(1) Fullest exploration of the talents of assigned mechanics with technical advice of the 551st DS Company in accomplishment of higher echelon maintenance.

(2) Maximum utilization of Red Ball requisitioning activities.

(3) Revision and updating of PLL's and requests for repair parts.

(4) Utilization of the resources of the Engineer Command MRE (Saigon) for procurement of deadline parts.

(5) Continued command emphasis on PM, proper equipment utilization, and expeditious equipment repair.

c. The actions outlined above cannot solve the basic problem of inadequate Direct Support Maintenance in the BLACKHORSE - GIA RAY area of operations. The 551st DS Company is providing all the support possible in consonance with extremely limited resources. Additionally, the meager second echelon capability of the 27th Engineer Battalion (Combat) is strained to the utmost in meeting the higher echelon maintenance requirements. It is recommended that:

(1) The following minimum equipment and personnel be provided from 1st Logistical Command maintenance assets to be assigned at GIA RAY:

1 ea Shop set, light, #2, truck mounted
1 ea Welding set, arc
1 ea Machinist (44E20)
4 ea Engineer Equipment Mechanic (62B30)
1 ea Welder (44C20)

(2) The requirements for DS assistance in the BLACKHORSE Base Camp area be reevaluated and required additional support be provided.

AFC-CO
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1967.

Kent C Kelley

KENT C KELLEY
MAJOR, CE
Commanding

3 Incl
1. ORLL, 591st Engr Co (LE)
2. After Action Rpt. VO DAT Airfield Rehabilitation
3. After Action Rpt HAM TAN MER

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1 Copy as indorsed US Army Engineer School
1 Copy as indorsed Headquarters, 8th US Army, ATTN: ENGR. (AVCC-MHD)

EGF-OP (8 Nov 67) 1st Ind MAJ Dorris/tma/VTU 2997
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1967

Headquarters 34th Engineer Group (Const), APO San Francisco 96291, 21 November 1967

TO: Commanding General, 20th Engineer Brigade, ATTN: AVBI-OPN, APO 96491

This headquarters concurs with the 27th Engineer Battalion's ORLL Report subject to the following comments:

a. Reference Section 1, paragraph 2b, page 5: Mining incidents occurred on Route LTL 2 between the Blackhorse Base Camp and Xuan Loc.

b. Reference Section 1, paragraph 4c(3)(c), page 13: Deliberate mine sweeping has had negative results to date.

c. Reference Section 2, Part I, paragraph 2b: Non concur with final sentence. A seal coat under M8A1 is not a complete solution. Experience indicates that no course of action used to date to seal the base under metal mat has given good results throughout a rainy season. This headquarters is presently analyzing the problem and initial indications are that nothing less than a fully stabilized base, which is nonsusceptible to water, will work satisfactorily during prolonged useage in the rainy season. The essence of the problem is not strength, as measured by the soaked CBR, but rather the tendency of the base course material to go into a slurry when the water trapped under the metal mat is mixed with the base by the impact of aircraft traffic. The slurry is displaced to the side or pumped through the holes in the mat leaving a depression into which the mat bends. This could precipitate early failure of the mat.

FOR THE COMMANDER:

W C TOMSEN
Major, CE
Adjutant

Copies furnished:
ACSFOR-DA
CO, 27th Engr Bn

AVBI-OPS (31 Oct 67) 2d Ind
SUBJECT: Operational Report - Lessons Learned (RCS-CSFOR-65) for Quarterly Period Ending 31 October 1967

DA, Headquarters, 20th Engineer Brigade, APO 96491, 25 Nov 67

TO: Commanding General, USAECV(P), Attn: AVCC-REO, APO 96491

1. The subject report submitted by the 27th Engineer Battalion has been reviewed by this Headquarters and is considered comprehensive and of value for documentation and review of the units activities and experiences.

2. This Headquarters concurs with the submitted report, with the following comments:

SECTION 2, PART I

Ref Para 2 Operations:

Construction in Sandy Soil

It is well known that sandy soils, when properly densified and confined, are excellent bases for airfields and roads. The use of PSP or matting over a sandy soil which has been properly densified does not provide the degree of confinement desired to prevent particle migration during rainstorms and even strong winds. The use of an asphaltic binder under the PSP or matting is highly desirable to provide minimum bonding and improve confinement.

SECTION 2, PART II

Ref Para 2 Operations:

Aircraft support for the Engineer Battalion (combat) Army is necessary to improve command and control activities. However, these aircraft should be pooled at Engr Group level, together with the logistical and personnel base required to keep the aircraft operational.

FOR THE COMMANDER:

CECIL D. CLARK
Major, CE
Adjutant

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27th Engineer Battalion

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AVCC-P&O (8 Nov 67) 3rd Ind CPT Whitley/bw/LBN-4163
SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1967

HEADQUARTERS UNITED STATES ARMY ENGINEER COMMAND
VIETNAM (PROV), APO 96491 6 DEC 1967

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

This headquarters concurs with the 27th Engineer Battalion's ORLL report and previous indorsements as written; subject to the following comments:

Reference Section 2, Part II, paragraph 5, page 18, item concerning logistics. Since the date of the report, the following actions have been taken:

a. The 34th Engineer Group has transferred the responsibility for this quarry to a construction battalion which is better equipped to resolve the type of problems cited.

b. The 1st Logistical Command has reviewed the maintenance support provided by the 551st DS Company (Light Maintenance) and will provide additional on site and on call maintenance support to Gia Ray Quarry commensurate with available resources.

FOR THE COMMANDER:

Paul A. Loop

PAUL A. LOOP
Colonel, C.E.
Chief of Staff

Cys Furn:
CG, 8th US Army, ATTN: Engr
CG, 20th Engr Bde
CG, 34th Engr Gp
CO, 27th Engr Bn

"THIS PROTECTIVE MARKING IS CANCELLED ON 1JAN 70"

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AVHGC-DST (8 Nov 67) 4th Ind
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1967

HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO 96375 19 JAN 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 31 October 1967 from Headquarters, 27th Engineer Battalion (Combat) (AZ3A) as indorsed.

2. Pertinent comment follows: Reference item concerning operations, page 18, paragraph 2. It is recognized that Engineer unit commanders and staffs have a definite need for aviation support in accomplishing command and control of widely dispersed elements. Due to DA policy on assignment of aircraft to combat support and combat service support units, aircraft are not available for assignment to Engineer units at this time. Aviation support is provided by the 210th Combat Aviation Battalion; I and II FFORCEV; Commander, III MAF, or SA, IV CTZ, based upon the unit's geographical location. This support can be obtained on a mission basis by submission of an adequately justified request to the appropriate headquarters.

3. A copy of this indorsement will be furnished to the reporting unit through channels.

FOR THE COMMANDER:

R. N. DALLAM
Colonel, AGC
Acting Adjutant General

Copy furnished:
HQ, 27th Engr Bn (Cbt)
HQ, US Army Engr Comd

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GPOP-DT(8 Nov 67) 5th Ind
SUBJECT: Operations Report for the Quarterly Period Ending 31 October 1967 from HQ, 27th Engr Bn (UIC: WAZ3AA) (RCS CSFOR-65)

HQ, US ARMY, PACIFIC, APO San Francisco 96558 1 FEB 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:

3 Incl
nc

HEAVRIN SNYDER
CPT, AGC
Asst AG

DEPARTMENT OF THE ARMY
591st Engineer Company (Light Equipment)
APO San Francisco 96257

8 November 1967

SUBJECT: Operational Report - Lessons Learned , (RCS-CSFOR-65) for Quarterly Period Ending 31 October 1967

THRU: Commanding Officer
34th Engineer Group (Const)
APO 96291

Commanding General
USA Engr Command Vietnam (P)
ATTN: AVCC - P&O
APO 96491

Commanding General
United States Army Vietnam
ATTN: AVHGC-DH
APO 96307

Commander in Chief
United States Army, Pacific
ATTN: GPOP-OT
APO 96588

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

SECTION I, SIGNIFICANT ORGANIZATION ACTIVITIES

1. Organization

a. Organized 1 July 1966 by Third U.S. Army GO 226 dated 6 June 1966 under TOE 5-54D.

b. Attachments: One section of 67th Dump Truck Company

2. Mission: to provide a concentration of engineer equipment for the 27th Engineer Battalion (Combat), BLACKHORSE, RVN.

3. Preparation for Overseas Movement

a. Organization: The unit was organized in July 1966 although

the personnel on-station date was not until 20 August 1966. At that time only 55% of the personnel were present for duty. It was not until late September 1966 when the unit had 75% of the personnel present. The initial understrength coupled with non-deployable personnel distracted from the units training in that over 25% of personnel had to undergo make-up training. In addition, several critical skills such as the First Sergeant, two platoon sergeants, the supply sergeant and the mess sergeant were not filled until November 1966.

b. Field Training: During the period of 10 Oct 1966 through 25 may 1967 the unit engaged in eight field exercises. During the exercises training was received in:

(1) Basic soldier skills

(2) Infantry tactics

(3) Utilization of Engineer Equipment (Projects)

(4) Operation of Engineer Equipment (MOS training)

(5) Job site selection, job planning, engineer design and field survey techniques (Officer and key NCO training).

(6) Tactical convoy procedures; over 500 road miles with all organic equipment to practice various techniques.

(7) Platoon, Company and Group level ATT's.

c. Equipment Trainging: During the period 10 October 1966 thru 25 May 1967 the unit was engaged in several major projects at Fort Campbell. Notable examples are:

(1) Construction of several miles of road.

(2) Construction of one 7 acre parking pad with access road.

(3) Construction of a 75 acre parade field.

(4) Clearing of 200 acres of farm land for the local Rod and Gun Club.

(5) Construction of several concrete pads.

(6) Construction on Fort Campbell Golf course.

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(7) Established rock quarry operations for limited time.

(8) Rehabilitation of roads and hard stands.

(9) Construction of a Type II, C123 Landing Zone.

d. PCM Inspections: During the period 5 - 25 May the unit underwent a series of PCM inspections by the 931 Engineer Group (C), CG, Fort Campbell, Third U.S. Army and participated in an army training test 22 - 25 May 1967. All test were passed with superior ratings and the unit was found combat ready.

e. Equipment Preparation, Packing and Rail Loading: Took place during the period 26 May 1966 thru 9 June. Equipment preparation included:

a. Complete annual service on over 100 items of equipment.
b. Packing of TEM, accessaries, and cleaning material.
c. Reduction of vehicle to smallest size.
d. Preparation of transportation control movement documents.
e. Preparation of packing lists.

f. It should be noted that several thousand tons of equipment and supplies were prepared, packed and loaded in a period of 14 days. This was accomplished only because detailed plans, similiar to job schedules and task analysis, were prepared and followed. Not one action had to be repeated or corrected. The point here is that PCM demands are great and, as a result a great deal of organization is required. The plans were made in December 1966, some six months prior to departure, to allow for material acquisition, POM leaves and administrative POM/POR requirements such as physicals, shots, record checks and preparation of wills and powers of attorney.

g. The key to success in both training and PCM appeared to be two-fold: Utilization of the chain of command and phasing of work. During training, for example, various subjects were taught during classroom sessions and practiced immediately after during one of the eight field exercises; platoon integrity was always maintained. In the case of PCM, the many facets of preparation were phased beginning some four months prior to departure. Teams were established to prepare records, rosters and keep the troops informed. During the physical process of preparation (processing, packing and loading) teams were again used, the work was phased and platoon integrity was maintained.

h. Problems and solutions during organization, training and PCM:

(1) Initial understrength and high administrative overhead during months of August, September and November 1967 created a need for make-up classes. The solution was to select, as instructors, outstanding E5's whose subsequent development, aided by the instructor responsibility, led to promotion to Staff Sergeant E6.

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(2) Initial shortage of critical skills was solved by using Junior NCO's to the fullest extent; this aided career development and produced many outstanding section chiefs.

(3) Lack of engineer job experience by recent OCS graduates somewhat hampered training of young operators (65% of whom had less than six months in the army). The solution in this case was utalization of the chain-of-command assignment of several projects and continous seminars where in the discussion was concerned with lessons learned.

(4) Initial shortage of engineer equipment made it difficult to develop specific skills. Operators were cross trained on "on hand" equipment and as mechanics. The result was well rounded operators in all MOS's and greatly improved maintenance posture.

(5) The unit was organized under the outdated TOE 5-54D. The problem is addition of new equipment currently in the supply system, which calls for additional operators. The only solution is to organize new units under the latest TOE or, if that TOE has not been approved, under an MTOE.

(6) A large problem was the shortage of 27% of the units major line items at the original ERD. The solution was to hold the unit in CONUS an additional six months until receipt of most short items. The benefit, obviously, was increased state of readiness due to a second intensified training program. A disadvantage was that over 25% of the original, trained and qualified members were no longer deployable. Units should be programmed for 10 to 12 months to activate, organize and deploy anticipating personnel and logistical shortages rather than 3-4 months.

i. Training oriented towards SEA was difficult due to lack of practical information, while the publication "Lessons Learned" is excellent, it was distributed in insufficient quantities to be totally worth while. In addition, limited or no mention was made of:

(a) Base Camp living conditions.
(b) Shortage of comfort items.
(c) Maintenance problems on specific items of equipment.
(d) Specific personal items to bring.

4. Command, Personnel, Administration and Discipline prior to overseas Movement:

a. Command

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(1) During the period of 1 July 1966 thru 7 July 1967 the unit was attached to 931st Engineer Group (Combat), Fort Campbell, Ky.

(2) Captain Jerry F. Meyers assumed command of the unit on 27 July 1966.

(3) Lt. Gary V Rodgers joined the unit on 6 December 1966 to replace Lt John G White who was non-deployable due to ETS. This was the officer replacement during the PCH phase.

b. Personnel:

(1) Unit reached 55% on 20 August, 62% on 30 August and was at full strength, by 31 May 67.

(2) The unit deployed at full strength.

c. Administration: There were no administrative problems which could not be handled locally.

d. Morale: Remained high during the entire year at Fort Campbell. Major contributing factors were more than adequate promtoion allocations, a spirit of professionalism on the part of the officers and NCO's and the busy schedule of events.

e. Discipline (1 July 66 - 7 July 67):

(1) Deserters: 3
(2) Article 15's: 31
(3) Special Courts Martial: 6
(4) Elemination: 1
(5) Bars to reenlistment: 2
(6) Suicide: 1

5. Deployment and Arrival in SEA:

(1) Unit departed Fort Campbell at 0905 hours, 6 July 1967 by commercial aircraft, one hundred seventy officers and men were in the partv.

(2) Unit boarded USNS General John Pope at 1630 hours 6 July 1967.

(3) USNS John Pope sailed at 1930 hours 7 July 1967.

(4) USNS Pope arrived Vung Tau, Republic of Vietnam 0800 hours, 28 July 1967.

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(5) Members of unit join 27th Engineer Battalion at Black Horse Base camp at 1650 hours 29 July 1967.

(6) The advance party consisting of 10 personnel departed Fort Campbell on 16 July 67 and arrived at Black Horse on 19 July 67.

(7) Moral and discipline remained high throughout the deployment process.

6. Problems connected with deployment: Only one problem was encountered in this connection; the unit knew only that it was going to RVN. It was not until arrival at Vung Tau that we learned of our attachment to the 27th Engr Bn (C). Resultant difficulties included:

(1) Mail: It was two months late.
(2) Official correspondence.
(3) Personnel replacements were lost.
(4) Equipment was lost.

7. Deprocessing of Equipment:

a. The units equipment arrived at Saigon on 1 Aug 67. A task force of 55 men was dispatched to off load, partially deprocess the equipment and move it to base camp. The equipment closed on Base Camp on 7 Aug 67 and final deprocessing took place on a platoon level until 17 August 67.

b. Several major items were removed from the equipment during shipment. Included was OEM boxes (over 50% of all vehicles) and wheel assemblies.

c. Very little damage occured during shipment although many tires were flat.

d. A total of 2877 man hours were expended recovering the equipment. Total road miles was 5,124.

e. No unusual problems were experienced.

8. Personnel, Administration, Morale and Discipline since arrival in RVN.

a. Command

(1) Command: Cpt Kenneth J. Haveman assumed command from Cpt Jerry F. Meyers on 22 Oct 67.

(2) Personnel: The unit strength decreased from 186 to 177 during the report period. In addition, 46 men were transferred as part of the rotation hump infusion program during the period 2 Sep 67 thru 6 Sep 67.

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(a) Wounded in action (1)
(b) Med Evac out of country (Non Hostile): 1
(c) ETS: 7
(d) Transfer within RVN: 61
(e) Other losses: 1

b. Administration: The acquisition of local regulations and administrative forms has been a slow process. Many regulations and forms appear to be not available or no longer published. An additional problem is the acquisition of ration cards for 20% of the unit; again, non-availability is the problem.

(4) Morale: Has reached an exceptionally high level since arrival in RVN. An increased work load and a variety of opportunities are the primary reasons for the excellent morale. During the period 29 recommendations for awards have been submitted.

(5) Discipline: Statistics show 4 Article 15's and no court martials during the period. Working hours of 74 hours per week contribute significantly to high state of discipline.

9. 9. Operations and Plans in RVN:

a. During the period 17 Aug 67 through 31 Oct 67 the unit has been assigned the following projects:

(1) Development of company area which, to date, has included:

a. Construction of latrines, showers, orderly room, 250 man mess hall and day room.

b. Framing of 20 tents for troop billets.

c. Rehabilitation of motor pool.

(2) Maintenance of BLACKHORSE Base Camp roads and hardstands (66-179DC-79A1) which to date, has involved 1812 man hours, 755 equipment hours and maintenance of 217,000 sq yds of road. Some significant improvements were made:

a. Culverts were widened to extend five feet past the road bed. This prevented damage to both ends of culverts and the surface of the road.

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b. A concrete slurry, consisting of 8 to 12 inches of unformed concrete placed over 8-12 inches of rock (8" minus), was developed to be used over culverts to prevent damage when compaction is impossible due to weather.

c. Roads were made virtually flat to prevent slippage on the slick laterite surface.

(3) Construction of haul roads at Gia Ray Quarry (89-202-01-T-75-591) which, to date, has involved construction and maintenance of 50,000 sq yds of road and movement of over 80,000 cubic yards of material. Man hours expended are 15,500, while 1517 equipment hours have been totaled. No problems were encountered with the platoons tactical move to Gia Ray.

(4) Rehabilition of QL-1 and Route 2 (34-67-39L C-27) consists of the upgrading of 6.2 miles of QL-1 from Gia Ray to Route 2 and Route 2 to Black Horse to military standard class 40. Work began on 14 August 1967 and, to date 3 miles of drainage has been constructed. The surface of the existing road has been improved to the extent that it will pass heavey traffic at high speed. The most important technique used was immediate repair of existing drainage structures and constant shaping of the traveled way. Nearly 1000 equipment hours have been expended in this connection. One road grader was severly damaged and one man wounded in action due to a road mine at coordinates 447003 on 18 August 1967.

(5) Construction of a 5 acre ammunition storage area took place between 15 Aug and 13 September. During the construction the unit moved 16,000 cubic yds of material and expended 1473 man hours and 651 equipment hours. Scrapers were used to construct 6 foot high berms. The innovation discovered here was the use of the figure eight traffic pattern for the scrapers and the use of bucket loaders for shaping the sides of the berm.

(6) Construction began on the Xuan Loc Landing Zone (34-67-2CS-27) on 7 Sept 1967. This project involves the upgrading of the existing C123 LZ to a type III, C130 LZ. The platoon to date, has moved over 40,000 cu yds of material and 1000 ton of rock. Completion is expected before 10 November 1967. Compaction was the important step; laterite was applied in 3 to 4 inch lefts with 18 yd scrapers and compacted with a sheepsfoot. The partially compacted lift was continuously shaped with a grader until the sheepsfoot walked out of the material. A 13 wheel pnumatic roller was used to seal the surface. It was found that one dozer with sheepsfoot, one grader and one 13 wheel roller can work efficiently with four scrapers. About 2500 cu yds of material can be hauled, compacted and shaped in 8 hrs using this technique, to date, 3000 man hrs and 1775 equipment hrs have been expended. No problems were involved in the tactical move to Xaun Loc.

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(7) Construction began on the Long Giao airfield (34-67-29CS-27) on 30 October, the project consists of constructing a type II, C123 airfield with a double surface treatment. Warm-up aprons will also be constructed. Completion is anticipated prior to 20 Nov 67.

(8) Equipment utilization on small first degree projects has included:

(a) Construction of Black Horse sanitary fill: 20,000 cu yds

(b) Rehabilitation of Black Horse Dam: 1750 Cu yds

(c) Equipment dispatched to Ham Tan, Phu Quac and Vo Dat.

(9) The unit participated in five combat support operations during the reporting period. Generally operations involved hasty road repairs on the destruction of enemy bunker complexes. The important technique developed for combat support involved the prefabrication of materials expected to be required. A minimum amount of preplanning is not enough; emphasis must be placed on thoroughly preparing for the operation (including repair parts, POL products and recovery vehicles).

(10) No special problems have been experienced on any projects. The technique used in all earth work tasks by this unit remains virtually the same, regardless of the type of material; drain, compact and shape. In several cases drainage criteria has required the removal of material which has has become too plastic and required replacement. In other cases, dry material of good quality has been mixed with plastic materi l with excellent results. Compaction requires the most time on all projects attempted during the period. The compaction equipment begins work with the moving of fill material and continues throughout the project. Shaping relates to drainage and is also a continuous process. It should be noted that during the reporting period of 90 days, nearly 45 days of construction effort have been lost to rain. The technique of drain, compact and shape, however, enables the unit to work during semi-wet periods.

SECTION 2 PART 1, OBSERVATIONS (LESSONS LEARNED).

1. Administration

a. Item: PCM Reports

Discussion: Units recently activated for deployment face a variety of reports ranging from status of dental examinations to shortage of equipment. To reduce the difficulty of specially preparing the reports

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each time they were requested a series of rosters were maintained so that current information was always on hand. Many hours were saved for a few minutes of work each day.

Observation: One clerk can update training, supply, maintenance and administrative records on a daily basis, to provide current status of unit, for detailed reports.

2. Operations

a. Item: Securing of large wheeled engineer equipment for shipment.

Discussion: Some difficulty was experienced securing large wheeled engineer equipment (eg: rough terrain cranes, scrappers and loaders) on rail cars. The problem is two fold; first, the chock blocks approved by railroad authorities for "all" wheeled vehicles are too small and too flimsey to adequately block large wheels on unsprung vehicles. Second, because the vehicles are either unsprung or lightly sprung, the swaying action of the train causes undue pressure on the tires as well as wear to the tire due to the rubbing action against the block. A partial solution was to crib the large vehicles under the frame. Chock blocks were eventually remade but valuable time was lost.

Observation: Railroad standards and transportation corps standards have some degree of varience on unusual or uncommon items of equipment.

b. Item: Packing of OEM

Discussion: In order to prevent loss or damage due to rust and corrosion, it is recommended that all OEM, running or working lights, seats and control lever knobs be packed in a waterproof box. Use of a GAA-Diesel oil mixture (75% GAA) as a preservitive and barrier paper adequately protects metal parts. Large quantities of rags should be packed with the OEM as rags are infrequently available in country.

Observation: OEM and other accessaries should be secured to prevent theft or damage; cleaning material should be packed with the OEM.

c. Item: Flat tires on deploying vehicles

Discussion: A great number of tires were flat upon arrival of the equipment in country. Tire repair equipment was not readily available and a lot of unnecessary effort was wasted repairing the flats. It is recommended that dismounting equipment, a few extra tires, tubes and rims and lug nuts and repair material be packed in specific vehicle (ie shop truck, contact truck, etc) to facilitate repair.

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Observation: Deploying units can expect an above average number of flat tires upon arrival in country due, apparently, to excessive nails, screws etc aboard cargo ships or along ship side.

d. Item: On job-site equipment failures

Discussion: On job-site failures of a minor nature are common on all engineer work sites. In many cases, the problems, while minor, are above the echelon of the operator. A mechanic on the job-site, equipped with adequate tools and some parts, can change hours of downtime into minutes of downtime. The mechanic should be accounted for against the project. His sole function should be on-site repair, supervision of on-site lubs, and observation of the working equipment to detect failures early.

Observation: On-site mechanics prevent unnecessary down time because the travel time lag is eliminated.

e. Item: Earthwork construction during periods of wet weather

Discussion: Many needless hours are lost on earthwork construction projects due to both weather and improper techniques. The weather, of course, can not be controlled but the technique used during wet weather can. Current doctrine discusses compacting shaping and drainage as three separate and distinct steps. During periods of wet weather they are not three steps but a single phase of the operation. Fill material which has not immediately been compacted and shaped , even at the expense of other phases of the project, will fail upon the first heavy rain. Compaction and shaping are, thus, related to drainage. A second example of this relationship is quantity of earth compacted. Material which has been placed in too great a lift (over 8 inches, locally) will not compact adequately. Even though a shape can be placed on a large, partially compacted lift, ruts will develop due to sub-grade failure after a heavy rain, and the project will not drain. A third and commonly observed cause of failure during the monsoon is the mixing of good material with very wet, or plastic material, the resultant mixture soon becomes over stressed when compaction is attempted. Again, a shape can be placed on the material but failure occurs, even during hot dry periods.

A great deal of time is lost waiting for the project to "dry up" after heavy rain. The use of compaction and shaping equipment in connection with placing material will continually provide drainage and lost time will be significantly reduced.

Recent projects indicate that one D7 with sheepsfoot, one Cat 12, and one 13 wheel roller can compact and shape for four 18 yard scrapers(cycle time of 10 minutes) hauling to an area about 400 feet by 75 feet. A recommended sequence is:

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(1) Place 4 inch lift with scraper.

(2) Spread (or evenly distribute) material with D7 pulling sheepsfoot. Two to three passes are adequate locally.

(3) Shape with grader moving windrow to high side.

(4) Compact, again with sheepsfoot until it will walk out.

(5) Shape with grader. Usually the grader will cut the newly compacted material by this step.

(6) Seal with 13 wheel roller.

Loaded clark 290's will aid both compaction and sealing by running over previously placed lifts.

OBSERVATION: Time lost due to weather can be reduced by developing compaction techniques tailored to the soil and climate.

SECTION 2 PART 2 RECOMMENDATIONS

1. Personnel

a. Newly organized deploying units should receive an initial strength of 110-120% due to administrative overhead, PCR disqualifications and normal loss due to personnel action.

b. The P M basic load of DA forms is inadequate, recommend 120 day basic load instead of 90 day load currently authorized.

2. OPERATIONS: None

3. TRAINING & [illegible]: None

4. INTELLIGENCE: None

5. LOGISTICS: None

6. OTHER: None

Kenneth J. Haverman

KENNETH J. HAVEMAN
CPT CE
Commanding

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AFTER ACTION REPORT

A. Name of Operation:
(1) Rehabilitation of VO DAT C-130 Airfield

B. Date Initiated: 18 Oct 67
Date Terminated: 26 Oct 67

C. Location: XA VO DAT, QUAN TAN LINH, TINH BINH TUY, RVN. (YT 720326)

D. Command Headquarters: 27th Engineer Battalion (Combat), BLACKHORSE, RVN.

E. Task Organization:
(1) Organic units: 2nd Squad, 1st Plat, Co A, 27th Engr Bn (C).

(2) Attachments:
(a) 591st LE
(1) 2-D7E Bulldozers
(2) 1-CAT. 12 Roadgrader
(3) 1-Sheepfoot Roller
(4) 8-Enlisted men.

F. Intelligence: On 8 Oct 67, an aerial reconnaissance of Route 333 from GIA RAY to VO DAT was performed and on 10 Oct 67 a reconnaissance was made of the route again by helicopter, stopping at the major bridges and bad sections of the road. This operation was conducted in conjunction with "K" Troop of the 11th Armored Cavalry Regiment, who provided a two squad security force for the ground operations. The Air Cavalry Troop of the 11th Armored Cavalry Regiment provided three D-Model Hueys and three armed Huey Helicopters for transportation and air-cover. The airfield itself was inspected on 21 Sep 67; a list of deficiencies and necessary corrective activities was compiled on the site.

G. Mission: Conduct a tactical road march from BLACKHORSE Base Camp (YS 445972) to VO DAT. At VO DAT the necessary repairs will be made to rehabilitate and open VO DAT Airfield, (Type III, C-130) (YT 720326) to traffic.

H. Concept of Operation: The 3rd Squadron, 11th ACR conducts a clearing operation between BLACKHORSE and VO DAT. At the same time escorting the Engineer Task Force, 27th Engr Bn (C) to the VO DAT Airfield. Once there, the squad plus the attached personnel and equipment from the 591st Engr Co (LE) rehabilitates the airfield. The construction consisted of removing four soft spots from the center of the runway and regrading and compacting the entire surface of the runway.

I. Execution: On 17 Oct 67 at 0730 the 3rd Squadron of 11 ACR moved from BLACKHORSE uo TLT 2 to QL1, then to 333 to VO DAT escorting the 2nd Squad, 1st Plat of "A" Co, 27th Engr Bn (C), plus the attached unit. The Engin-

eer element closed VO DAT at 1630 hrs and then the 3/11 ACR returned to BLACKHORSE. At VO DAT, the low areas were repaired and filled with 700 cu yds of laterite, in the first day of work, 18 Oct 67. The following three days were spent in regrading and recompacting the entire runway. (98,588 sq yds). Due to no available force for an escort, the Engineer unit has remained at VO DAT conducting maintenance on their vehicles and some select earthwork for the 4/52 ARVN. On 26 Oct 67, those elements returned to BLACKHORSE escorted by the 2/11 ACR. They departed VO DAT at 1130 and closed BLACKHORSE at 1400.

J. Results:
(1) Enemy personnel losses: None
(2) Friendly personnel losses: None
(3) Enemy equipment captured: None
(4) Friendly equipment losses: None
(5) Enemy structures destroyed: None

K. Administration and Logistics:
(1) Materials used: (runway marking)
(a) 28 pieces of PSP
(b) 2 Gallons of white paint

(2) Laterite fill used: 700 cu yds

(3) Effort Expanded:
(a) Airfield:
(1) Manhours - 640 hrs
(2) Equipment hours - 200 hrs
(3) Security - 160 manhours

(b) Pacification:
(1) Manhours: 130 hrs
(2) Equipment hours - 90 hrs
(3) Security - 60 manhours

L. Special Equipment and Techniques: Compaction was achieved by the use of loaded 5-ton dump trucks. This method of compaction was used due to the temporary loss of the sheepsfoot roller.

M. Commander's analysis and lessons learned: If no other method of compacting laterite is available, trucks may be used, in which case the laterite must be placed in 3" lifts and then compacted before the next lift is applied.

N. Recommendations:
(1) It is necessary that higher headquarters task local security elements for movement escorts.

(2) Coordination of dates, methods of movement and effort required must be left to local troop commanders.

AFTER ACTION REPORT

A. Name of Operation:

(1) HAM TAN Artillery MER

B. Date initiated: 21 June 1967
Date terminated: 11 July 1967

C. Location: HAM TAN, QUAN HAM TAN, TIHN BINH TUY, RVN. (ZS015827)

D. Command Headquarters: A Company, 27th Engineer Battalion (Combat)

E. Task Organization:

(1) Organic units (a) 3rd Platoon A Company
(b) D7E - Headquarters Platoon, A Company
(c) POL Tanker - Headquarters Platoon, A Company

(2) Attachments (a) Cat 12 Grader - HHC 27 Engr Bn (C).
(b) 4 float reinforced M4T6 raft, 27 ft power boat and 6 transporting trucks - 573 F. B. Co.
(c) 10:5-ton bridge trucks to haul building materials for compound, - 573 F.B. Co.

(3) Detachments: NA

(4) Supporting Forces: NA

F. Intelligence: On May 12, 1967 an initial reconnaissance of the area was conducted. At this time the general area of the compound was checked and a list of the necessary work was drawn up. At the same time a reconnaissance was made of the surrounding area, in search of lateritic sources. On May 18, 1967, a second reconnaissance was conducted and the airfield and a beach landing area were checked. The 517th Engr Det conducted a reconnaissance of all roadways and bridges in the area on May 27, 1967.

G. Mission: To construct the minimum essential requirements of an artillery compound at HAM TAN, BINH TUY, RVN. The MER consists of: berm, roadways and drainage, showers and latrines, motor pool, powder and projectile storage areas and six firing pads.

H. Concept of Operations: The 3rd Platoon conducts an aerial landing with an advance party on the existing C-130 strip at HAM TAN. The remainder arrives and makes a beach landing secured by the advance party. The platoon will set up their base camp and commence the construction of the artillery compound. The artillery unit will land on the beach area secured by the Engineers. The Engineers are responsible for conducting the artillery unit across the beach and to their compound.

I. Execution: On June 12, the 3rd Platoon "A" Company conducted a tactical

roadmarch to LONG BINH, RVN. June 13, 1967, the 2nd squad moved to BIN HOA Airbase and boarded a C-130 for a flight to NHA TRANG. On the same day, the 1st and 3rd squads moved to NEWPORT and boarded 5 LCU's. With these two squads went all attached equipment and personnel. The 2nd squad arrived on the 13th and set up the base camp inside the MACV Advisory Compound in NHA TRANG. On 16 June the main Body arrived at NHA TRANG and crossed the beach. From 17 June until 21 June, the unit was straightening out the materials and preparing for the construction of the compound. At the same time, they were finishing setting up their base camp and defenses.

On 21 June, construction was started on the compound. The first priority of building went to the berms, roadways and drainage system. One squad worked on culverts and supervised the equipment. The other two squads started work with one squad each on the firing pads and on the showers and latrines. By 7 July, the project was up to BOD and the artillery arrived on 10 July. The compound was turned over to the Artillery on 11 July 1967.

J. Results:

(1) Enemy personnel losses: None
(2) Friendly personnel losses: None
(3) Enemy equipment captured: None
(4) Friendly equipment losses: None
(5) Enemy structures destroyed, etc: None

K. Administration and Logistics:

(1) All coordination for movement and resupply was handled by S-3/S-4, 27th Engineer Battalion (C).

(2) Initial supply of POL was by air with all resupply coming by sea.

L. Special equipment and techniques: Vietnamese Nationals were hired to fill sandbags, mix concrete and to finish grade the berms. The VN were given 3 foot long 2" x 4"'s to be used to "knock the top off of the berm" until the berm was 2' wide across the top.

M. Commanders' analysis and Lessons Learned: Work progressed as scheduled until equipment became deadlined. After some equipment became deadlined the work schedule had to be "thrown out" and another one made. Deadline equipment did not cause a delay in BOD or completion of this project.

N. Recommendations: None

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