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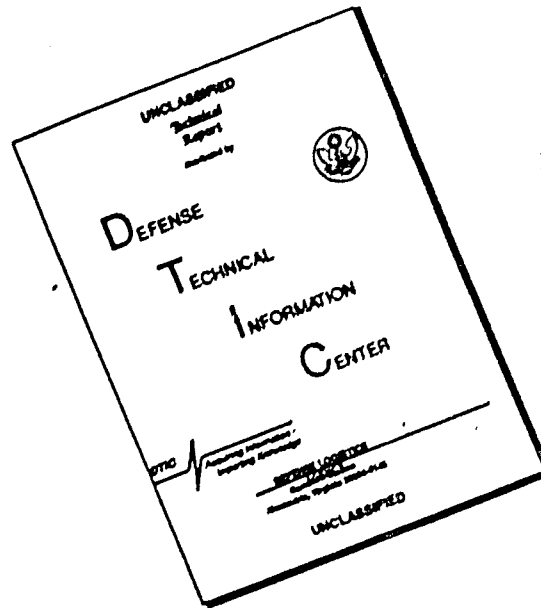
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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310



IN REPLY REFER TO

AGAM-P (M) (25 Jan 67) FOR OT

3 February 1967

SUBJECT: Operational Report - Lessons Learned, HQ 46th Engineer Battalion
(Construction)

TO: SEE DISTRIBUTION

1. Forwarded as inclosure is Operational Report - Lessons Learned, Headquarters, 46th Engineer Battalion (Construction) for period 1 July - 31 October 1966. Information contained in this report should be reviewed and evaluated by CDC in accordance with paragraph 6f of AR 1-19 and by CONARC in accordance with paragraph 6c and d of 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 the Commandants of the Service Schools 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:

1 Incl
a/s

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

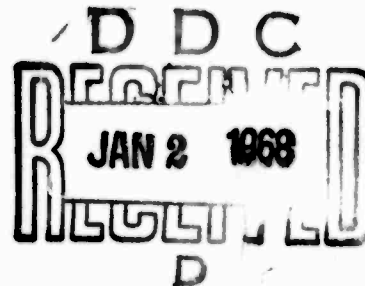
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(Distribution continued on page 2) ~~STATEMENT #2 UNCLASSIFIED~~

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HEADQUARTERS
46TH ENGINEER BATTALION (CONSTRUCTION)
APO 96491

EBA-1

14 November 1966

SUBJECT: Operational Report on lessons Learned for Period 1 July 1966
to 31 October 1966 (RCS: CSGPO-28 (R-1))

TO: See Distribution

1. SIGNIFICANT ORGANIZATIONAL ACTIVITIES:

During the past quarter the 46th Engineer Battalion (Construction) was joined in country by C Company 577th Engineer Battalion who was attached upon arrival in the Long Binh area on 2 August 1966. The decision to attach C Company 577 to the 46th in the Long Binh area was received on 23 July by the advance party that had been in the Cam Ranh Bay area awaiting the arrival of the unit. The personnel of the company had departed Ft Benning Georgia with its parent battalion on 4 July 1966 to sail from San Diego, California on 10 July 1966 aboard the USNS Gordon. The company received its equipment two days after arrival in Long Binh when the Jefferson City Victory arrived in Saigon Port. The equipment had been shipped from Savannah, Georgia on 28 June 1966. The C Company personnel were transported on the USNS Gordon to Vung Tau and then flown to Bien Hoa. Overland movement by bus and truck completed the move to its present location in Long Binh.

b. Employment: The battalion has been employed in its present location in a general support role for the construction of base camps, cantonment areas and general construction projects.

(1) The battalion remains assigned to the 159th Engineer Group and 18th Engineer Brigade.

(2) Missions: The missions of the battalion have remained generally the same. The battalion minus provides heavy construction support in the Long Binh area with one company furnishing construction support in the Vung Tau area. The mission of the 536th Engineer Detachment (Port Construction) remains to provide port construction capability to the Vung Tau area.

(3) Attachments and Detachments: Company C 577th Engineer Battalion was attached upon its arrival in the area on 2 August 1966. 536th Engineer Detachment (Port Construction) remains attached.

Inclosure 1

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(4) Unit Operations: The unit continued operations on the Long Binh Ammunition Depot when work began on a fourth area on 15 July 1966. The project continues to expand and is to be one of the largest ammunition storage areas in the world when completed. During the past quarter the new cantonment area for the 90th Replacement Battalion was turned over for occupancy. The occupancy of the new area has new replacements processing through the facility at Long Binh in an attempt to relieve some of the troop congestion in Saigon. These two projects are under the control of B Company with horizontal effort used in the ammunition depot and vertical construction effort used on the buildings still to be finished at the 90th. The ammunition depot is 87% complete and the 90th Replacement Depot is 81% complete. C Company continued work expanding facilities at II Field Forces Vietnam (II FFV). However, priority was adjusted late in the period so the major emphasis was placed on a taxiway, parking apron and supply storage facility at Tan Son Nhut Airbase for the 34th Transportation Group (Support). The project suffered delays caused by wet weather but is now 50% complete with 15 Jan 1967 as the expected completion date. C Company 577 Engineer Battalion was employed primarily in a support role for the first part of the quarter. The increase in equipment available to the battalion was responsible for more work on the ammunition depot than otherwise would have been possible. As the quarter progressed and new projects were started the company was given projects of its own and completed three cantonment areas for US troop units (518th Engineer Gas Generating Detachment, B/Btry 6/56th Arty Air Defense unit and 64th Quarter Master cantonment areas) and progressed rapidly in the completion of an air-defense-artillery site for B Battery 6/56th Arty at Ho Hai. Also C Co 577th Engr Bn extended several miles of haul road and did extensive road maintenance in the Long Binh - Ho Nai areas. Construction in the Vung Tau area was increased during the past quarter with the most emphasis being placed on rebuilding an existing runway and increasing port facilities, specifically a connecting causeway for a Delong pier to be installed in December. A task force was organized under the direct supervision of the battalion operations officer who was relocated to Vung Tau. The task force has operational control of all 18th Engineer Brigade units in the Vung Tau area, these units include D Co 46th, 536th Engineer Detachment (PC) and a quarry platoon from the 103 Engineer Company (Construction Support). In addition there were a number of individuals attached to D Co or 536th Engr Det such as equipment operators, dump truck drivers, surveyors, draftsmen and soils analysts. The task force has the majority of the battalion's earth hauling capability employed on the airfield and port construction facilities. The airfield project is 50% complete and the causeway portion of the port facility is 48% complete.

c. Functional Activities:

(1) 46th Engineer Battalion is organized under 5-115D, C Co 577th Engr Bn 5-118E and 536th Engr Det (PC) 5-129 E w change 2 and GO 149 from US Army Engineer Center and Fort Belvoir.

(2) Personnel Strengths: The battalion completed one year in country in late October. However since the departure from CONUS was by surface transportation the majority of the personnel arriving with the battalion had departed in September. During the past quarter the percentage of personnel varied greatly because of the high turnover but as of 31 October the battalion was at 100% strength. One area that has been low is junior officers assigned. For the past three months the battalion has averaged

6 to 8 lieutenants short of authorization. NCO's were also critical averaging 29% short during the period. NCO's brought back to duty from retirement proved to be of little help. 2 out of 6 have been evacuated through medical channels and the others requiring extensive retraining after years out of the Army.

(3) Morale and Welfare: Morale is very good. As new people have arrived and become acquainted with the amount of work that is accomplished they have acquired a great deal of pride in their job resulting in high morale. Recreation facilities are sparse with no predicted improvement in the near future. This battalion has had no problem with illnesses of any kind. The unit dispensary had been able to keep time lost to illness to a negligible amount.

(4) Operations and Training: The training conducted by the battalion is almost exclusively on-the-job with familiarization firing with individual weapons being conducted monthly. The battalion was host to a two man training team for the operation and maintenance of D7E caterpillar tractor. The class was for units in the 159 Engr Gp who were receiving the new type dozers.

(5) Logistics: Supply of construction material has greatly improved and does not slowdown any major construction projects an appreciable amount, with exception of electrical supplies and equipment repair parts. There is a shortage of hand tools and self service supply store items. Some clothing items are in short supply. For the last six weeks of the quarter there was a 13% fill on hand tool requisitions and 20% fill of items listed as available from the self service supply store. It is expected that these percentages will increase with time, but the situation is not good at present.

(6) Labor: The local wage rate laborers continue to be a source of additional labor with approximately (800) on permanent hire for the units of the battalion.

(7) Medical and Dental: There has been no problem of assistance with the Battalion aid Station handling the majority of illnesses and injuries. For cases too serious to be handled locally the 93rd Evac Hospital gives excellent service and is only a few minutes distance from the battalion location.

(8) Communications: The administrative telephone system is the primary method of communication between the units of the battalion and other units. Service has improved during the past quarter but much time is wasted trying to reach units that are not on the same switchboard. It is sometimes impossible to reach Vung Tau for several hours at a time. This is a distance of approximately 50 miles. It is almost as difficult to reach Saigon only 20 miles away.

(9) Water Supply: After operating at or near capacity for one year the water purification units that are TOE to the battalion have become very worn and parts are not readily available to make necessary repairs. Larger purification units would do much to improve the amount of potable water that is available.

Inclosure 1

(10) Relationship with Installation: The battalion occupies an area adjacent to 159 Engineer Group and relations are excellent. The Long Binh Sub Area Command is now operational but has not completely taken control of functions that are the responsibility of an Army Post. D Company and 536th have excellent relationship with Vung Tau Sub Area Command.

(11) Civic Actions: Projects are limited because of the number of high priority construction. Several members have spent off duty time in two area schools to teach English to the Vietnamese. Six orphans are also sponsored by men of the battalion through contributions to a nearby orphanage. Periodically a civic action team will go to nearby Xuan Tra to distribute soap, clothes, toys and other gifts from the battalion and gifts from CONUS to be distributed by the battalion. The Battalion Surgeon takes advantage of these opportunities to treat the sick members of the village.

2. COMMANDER'S RECOMMENDATIONS AND OBSERVATIONS AND LESSONS LEARNED:

Part I. Observations (Lesson Learned)

a. Item: Prefabricated metal building on concrete foundations.

b. Discussion: During the monsoon rains it was discovered rain came under the walls of the building that ended level and flush with the concrete slab. It was discovered that by sinking the base of posts of a 20' x 50' metal shed approximately one inch below the floor level the steel siding extended below the floor line and prevented the rain from entering the building. A convenient way of sinking the posts is to make templates of the base plate from each column from one inch thick lumber. The template is put in place when the slab is poured and then removed after the concrete is set.

c. Walls of pre-fabricated buildings should extend below the concrete slab used as a floor to prevent seepage entry of wind driven rain.

a. Item: Fuel filters for M51A2 5 ton dump truck.

b. Discussion: Fuel filters were not available for the M51A2 dump trucks and there were many trucks needing new filters. An acceptable substitute for field expedient use could be made by using the oil filter from a Caterpillar Model 12 Road Grader and building up the end of the filter with cork washers.

c. Observation: By looking for substitutes and using ingenuity it is possible to operate equipment more efficiently than keeping the worn out item in use until a standard replacement is available.

a. Item: Throw out bearings for M51A2 trucks.

b. Discussion: There was a high mortality of the throwout bearings of 5 ton dump trucks and a shortage of replacements available. However, the clutches on a Huber Warco Road grader is interchangeable with the 5 ton dump truck. The only modification is to install a grease fitting on the throw-out bearing before installing it on a M51A2 5 ton dump truck.

c. Observation: A cross reference of interchangeable parts should be available to prevent equipment being idle because a standard repair part is not available.

a. Item: Sealing POL tank seams.

b. Discussion: Manufacturer's instructions on erecting 40,000 Bbl bolted steel tanks stated only the floor and bottom seams required sealing compound. Because of deterioration of rubber wedge gaskets caused by weather the first tank erected leaked badly. On subsequent tanks sealing compound was used on all horizontal seams and the leaks did not occur.

c. Observation: Sealing compound should be used on all horizontal seams when erecting bolted steel tanks.

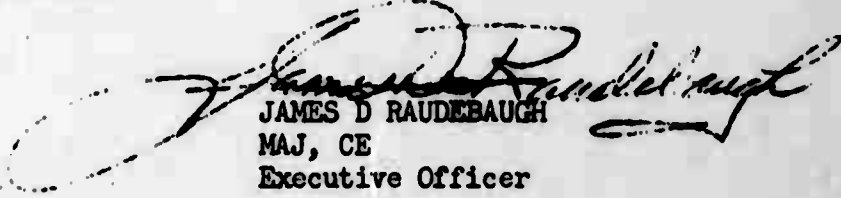
PART II: Recommendations:

1. Recreational facilities be improved for troop units in RVN. Swimming pools, tennis courts, soft ball fields and basketball goals should be provided and equipment furnished. Off duty recreational facilities would improve morale increase unit esprit and provide a means of relaxing without resorting to the bars in the local area.

2. That stockage and supply of hand tools be improved. It is imperative that hand tools be available for a construction unit to maintain the necessary efficiency. Emphasis is placed on maintaining and controlling tools to prevent damage or loss but it is difficult to prevent all breakage or loss.

3. That an improvement in communication facilities be provided. The expense of providing more and better equipment would be off set by the gain in operating efficiency.

4. That continued emphasis be placed on gaining inventory control, location of stocks, and more responsiveness to the customer in the area of supply operations.


JAMES D RAUDEBAUGH
MAJ, CE
Executive Officer

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 APO 96491

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EGB-3 (14 Nov 66)

1st Ind

CPT Nicol/gjv/LB543

SUBJECT: Operational Report on lessons Learned for Period 1 July 1966
to 31 October 1966 (RCS: CSGPO-28(R-1))

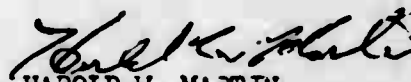
Headquarters, 159th Engineer Group (Const), APO 96491 17 November 1966

TO: Commanding General, 18th Engineer Brigade, ATTN: AVEB-3, APO 96307

1. This report is comprehensive and presents an excellent synopsis of the units' employment and activities during the period covered.

2. This Group concurs with the need for improvements in the areas covered in PART II: Recommendations. Recreational facilities are included on the master plan for Long Binh, but neither Army Engineer nor contractor effort is presently available to accomplish the necessary construction. While the areas covered in recommendations 2, 3 and 4 require improvement, it is understood that all possible efforts are being made to do so, and continuing progress is discernible.

FOR THE COMMANDER:



HAROLD W. MARTIN
Major, CE
Adjutant

AVBC-C (14 Nov 66)

2d Ind

SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly
Period Ending 31 October 1966

Headquarters, 18th Engineer Brigade, APO 96307 12 DEC 1966

TO: Commanding General, United States Army, Vietnam, ATTN: AVC-DH,
APO 96307

1. This headquarters concurs with the subject report as submitted by the 46th Engineer Battalion (Const), and the 1st indorsement comments by the Commander, 159th Engineer Group (Const).

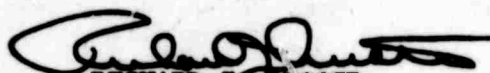
AVBC-C (14 Nov 66)

2d Ind

SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly
Period Ending 31 October 1966

2. The majority use lessons learned, submitted in the brigade units' quarterly reports, are being consolidated into one pamphlet each period and distributed to all brigade units and as information to higher headquarters.

FOR THE COMMANDER:



RICHARD J. DUCOTE
Colonel, CE
Chief of Staff

Inclosure 1

AVHOC-DH (14 Nov 66)

3d Ind

SUBJECT: Operational Report-Lessons Learned for the Period Ending
31 October 1966 (RCS CSFOR-65)

HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO San Francisco 96307 6 JAN '67

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOF-OT
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the period ending 31 October 1966 from Headquarters, 46th Engineer Battalion (Construction) as indorsed.

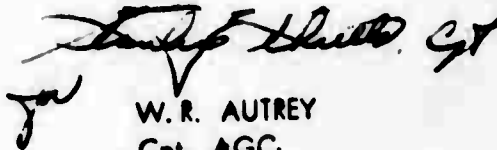
2. Pertinent comments are as follows:

a. Reference Paragraph 1, Part II, Page 5: The 199th Engineer Group, parent unit of the 46th Engineer Battalion has requisitioned and has been issued special services type equipment for the subordinate units as follows: horseshoes, boxing equipment, weightlifting equipment, footballs, basketball equipment, tennis equipment, and volleyball equipment. Radios, TV's, tape recorders, bingo sets, darkroom equipment and other expendable equipment, such as card games, puzzles, badminton sets and table tennis sets, have also been requisitioned. In addition, other equipment, such as softball equipment, is available for issue from the depot. Due to the critical shortage of contract labor and engineer construction troop labor, most units build softball fields, basketball courts, outdoor theaters, volleyball and horseshoe courts on a self-help basis.

b. Reference Paragraphs 2 and 4, Part II, Page 5: Concur. Improved supply management as a result of the 1st Logistical Command's 14th Inventory Control Center becoming operational should provide for more equitable distribution of available hand tools, more efficient stock control, and timely requisitioning action to ensure stockage objectives are met.

c. Reference Paragraph 1c (8), Page 3, and Paragraph 3, Part II, Page 5: Action is in progress to install automatic dial telephone service at Long Binh (August 1967) and Vung Tau (January 1967). An automatic dial tandem switch is programmed in FY 69 to replace the manual Saigon Long Distance (LD) Switchboard.

FOR THE COMMANDER:



W. R. AUTREY

Cpt, AGC

Asst Adjutant General

Inclosure 1

GPOP-OT (14 Nov 66) 4th Ind
SUBJECT: Operational Report-Lessons Learned for the Period Ending
31 October 1966 (RCS CSFOR-65)

HQ, US ARMY, PACIFIC, APO San Francisco 96358 21 JAN 1967

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

This headquarters concurs in the basic report as indorsed.

FOR THE COMMANDER IN CHIEF:



G. L. McMULLIN
CPT, AGC
Asst AG