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AUTHORITY
AGO, D/A ltr, 29 Apr 1980

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 14TH ENGINEER BATTALION (COMBAT)
APO S.F. 96495

EGD-BB-3

30 April 1970

SUBJECT: Operational Report of 14th Engineer Battalion (Combat) for
Period Ending 30 April 1970, RCSFOR-65 (R1)

THRU: Commanding Officer
45th Engineer Group
APO S.F. 96308

Commanding General
18th Engineer Brigade
ATTN: AVBC-C
APO 96377

Commanding General
United States Army, Vietnam
ATTN: AVGC-DST
APO 96375

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

TO: Assistant Chief of Staff for Force Development
Department of the Army (4DSFOR DA)
Washington, DC 20310

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1. Section 1, Operations: Significant Activities

The headquarters of the 14th Engineer Battalion (Combat) was located at FSB Nancy until 3 April 1970. A unit move was accomplished to Camp Rhodes, Quang Tri Combat Base, on 4 April 1970. The move was quite facile for a permanent installation with sufficient facilities was taken over from a departing naval construction unit, MCB 74. During the quarter the battalion had units deployed from the DMZ to Phu Bai, a distance of approximately 90 kilometers. The primary missions were quite diverse and tasked every talent within the battalion. Heavy gunpad and bunker construction at Fire Support Bases, road upgrading and construction, short duration combat support missions, minesweeps, mess hall construction, culvert and bridge construction, airfield upgrading, and revetment construction, represent the most common work accomplished during the reporting period. During the first two months of the reporting period, the weather had a detrimental effect on mission accomplishment. From 1 Feb to 31 March the area of operations benefitted from only 33 non-rainy days.

Enemy activity continued to increase substantially during the period and totalled 2 sapper attacks, 28 mine incidents, and 29 mortar and rocket fire incidents. Results were; 86 VC/NVA KIA, 5 US KIA, 13 US WIA, and 31 pieces of equipment damaged or destroyed.

Increased mining activity by the enemy forced the use of minesweep teams to support the majority of projects and an increase in man hours devoted to minesweep operations resulted. Extensive use of non-metallic mines and booby traps by the enemy limited the success of deliberate sweep operations. Various minesweep techniques were employed in an effort to insure safe passage for tactical units. Float blading with a D/E bull dozer, backing a heavily loaded 5 ton truck, use of a well trained "mine dog" and handler, and standard visual and mine detector techniques were utilized. No method proved completely effective. Total Man hours devoted to minesweeps reached 15,750 during the quarter.

During the quarter, the battalion conducted 86 days of operations, and 2 1/2 days of training, and devoted 1/2 day to annual holiday.

The Annual General Inspection of the 14th Engineer Battalion was conducted from 30 March - 4 April by a USARV IG team. In the 282 areas inspected the unit received 212 excellent ratings, 61 satisfactory ratings, and 11 unsatisfactory ratings resulting in an overall rating of satisfactory (based on a choice of satisfactory or unsatisfactory).

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The CP of A/14 was located at Quang Tri throughout the reporting period. Operational Support at FSB C-1 and continued Duel Blade (Large steel and reinforced concrete bunkers) construction at FSB C-1 and FSB A-1 were the primary missions accomplished by A/14. In addition, A/14 maintained a "quick response" minesweep team of about 10 men who participated in 7 short notice combat support operations. This small force worked on revetment projects during periods when minesweeps and combat support missions were not required.

Duel Elade bunker construction at FSB A-1 was a distinct challenge in that the fire base was located on a large sand dune. Wheeled vehicle traffic could not negotiate the sand, making bunker assembly on site virtually impossible. The problem was solved by prefabricating all steel bunker components at FSB C-1 and transporting them on 25 ton trailers to the base of FSB A-1. A D7E bulldozer then towed all components into place allowing rapid final assembly.

A resume of accomplishments by A/14 during the reporting period is as follows:

1. Completed 15 Duel Blade bunkers at FSB C-1 which concluded construction at that site.
2. Completed 16 Duel Blade bunkers at FSB A-1.
3. Supported 7 separate combat operations with minesweep teams and bulldozers.
4. Upgraded 7 km of road from QL-1 to FSB A-1.
5. Placed 23,266 sf of M8A1 matting for helipad and constructed 1200 lf of aircraft revetments at Phu Bai.
6. Constructed 4 heavy gun pads, 10 ammunition bunkers, XO post and relocated a 50' observation tower at FSB C-1 in support of 2/94 Artillery Battalion.
7. Constructed a 150 man mess hall at FSB C-1.
8. Constructed 466 lf of 6 ft high revetment for radar facilities, Camp Roberts.
9. Relocated 280 lf aircraft revetment at Quang Tri Airfield.
10. Constructed 1 - 10 ft x 24 ft x 8 ft command bunker for Echo Sector, Quang Tri Combat Base.

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The CP of B/14 was located at Quang Tri throughout the reporting period. The principal missions included major reconsolidation and construction at two fire bases, FSB C-2 and FSB A-4, which are controlled by the 1st Brigade, 5th Infantry Division (Mechanized).

B/14 detached a 37 man force to the 937th Engineer Group on 26 March to augment available man power on major road construction in that area of operations. The force returned on 22 April upon completion of assigned missions

Movement of heavy artillery batteries in Northern I Corps has generated considerable engineer work. B/14 was given the mission to build 4 heavy heavy gun pads, 8 ammunition bunkers, 1 Fire Direction Center and 1 XO post at LZ Sharon. The tactical situation necessitated the utmost alacrity, and construction was initiated immediately upon receipt of the mission. To enhance early completion, a review of existing heavy gun pad designs was made resulting in a new plan. In lieu of concrete pads, a suitable substitute proved to be a soil-cement mix with a concrete core and a timber wearing surface. Construction time was reduced from 8 days per gun pad to 2 days. B/14 constructed a complete firing battery position in 17 days.

B/14 continued to provide supervisory assistance for the construction of the Ai Tu Childrens 3rd Marine Division Memorial Hospital in Quang Tri. Only a two man effort is required on site but considerable planning effort went into design, procurement, and construction of the external building sheets.

A resume of accomplishments of B/14 during the reporting period is as follows:

1. Constructed 4 heavy gun pads, 8 ammunition bunkers, and fire direction center/XO post for 2/94 Artillery Battalion, at LZ Sharon.
2. Constructed 26 living bunkers, 1-35' tower, and 90' x 140' helipad, at FSB C-2.
3. Constructed 11 living bunkers, 2 ammunition bunkers, 1-150 man mess hall, 1-traffic control bunker, and 6 burn-out latrines at FSB A-4.
4. Provided supervision for construction of Ai Tu Childrens Hospital, Quang Tri.

The CP of C/14 was located at FSB Nancy throughout the reporting period. During this quarter C/14 has been responsible for completing the drainage structures on the road from FSB Nancy to FSB Barbara, upgrading of 12 km of Rt 5554, and providing mine sweep teams in support of operations to and from FSB Barbara.

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The advent of suitable construction weather allowed C/14 to make significant progress on Rt 555A upgrading. Five class 60 timber trestle bridges were required on the remaining section of road and represented the critical path to mission completion. In an effort to enhance completion a detailed reconnaissance was made to determine the feasibility of constructing the largest span bridge concurrently with the 4 smaller bridges. A circuitous route was found which would allow movement of equipment and materials to the far shore of the proposed bridge site. After careful planning, a decision was made to establish a night defensive position (NDP) at that location and begin construction of the 300 ft. bridge from the far shore.

An inherent problem in this decision was the moving of timber piles to the bridge site. Depth soundings recorded dictated the need for piles in excess of 55 ft if splice free piers were to be made. The temporary access road to the NDP prohibited transport of piles over 35 ft long. Through cooperation with Naval Task Force Clearwater, the piles were hauled from Tan My Ramp, 36 kilometers south of the bridge site, by strapping them to the side of an LCM-6 (landing craft, mechanized). Internal loads were impossible due to the limited draft.

A resume of accomplishments by C/14 during the reporting period is as follows:

1. Upgraded 12 km of Rt 555A.
2. Constructed 320 ft of class 60 timber trestle bridge.
3. Completed 10 major drainage structures on Barbara road.
4. Constructed Metro bunker at FSB Barbara.
5. Provided 27 special minesweeps.
6. Conducted daily minesweeps.
7. Constructed 170 lf of 10 ft revetments.
8. Opened and operated a river run rock pit.
9. Reconstructed 11 bunkers damaged by enemy activity at FSB Nancy.

The CP of D/14 was located at Camp Evans throughout the reporting period. The primary missions assigned were completion of Operational Support, FSB Barbara, construction of 15 km of road from Camp Evans to FSB Rakkasan, construction of a 150 man mess hall at Camp Carroll, and upgrade of the Xom Pho Road.

D/14 completed the heavy gun positions on FSB Barbara on 15 March. The project represented a milestone in logistical air support for 136 - GH47 sorties were utilized in a 64 day period to complete the project. Considerable experience was obtained in working at close quarters with heavy artillery. The concussive effects of the 8 inch howitzer and 175 mm canon require design augmentations for bunkers which must be in proximity of the weapons. Additional bracing, and bolted vertical timber plates must be used to prevent rapid structural deterioration of the bunker.

The project to build a road to FSB Rakkasan was reinstated due to a change in the tactical situation. Previous construction efforts had concentrated on cutting a pioneer trace to FSB Rakkasan, and were interrupted by enemy forces. Current construction is focused on upgrading the trace to a minimum all weather road. This project is expected to extend well into the next reporting period.

A resume of accomplishments of D/14 during the reporting period is as follows:

1. Upgraded 7 km of pioneer trace from Camp Evans to FSB Rakkasan.
2. Constructed 12 living bunkers, 1 XO post, 1 FDC, 8 ammunition bunkers and 1 command post at FSB Barbara.
3. Constructed a 150 man mess hall at Camp Carroll
4. Constructed a 16' x 32' ammunition bunker at Mai Loc Special Forces Camp.
5. Upgraded 2 km of Xom Pho Road.
6. Upgraded 1600' of interior roads at Camp Carroll.
7. Provided 21 special minesweeps.
8. Provided daily minesweeps.

The 630th LE Company was located at FSB Nancy until 4 April at which time they moved to Camp Rhodes, Quang Tri Combat Base with the 14th Engineer Battalion. The 630th was instrumental in completing initial road upgrading to FSB Barbara.

Equipment assets from the 630th LE Company play a key role in approximately 75% of the battalion's projects. In addition to general support of line companies, the 630th has been tasked to accomplish all horizontal construction throughout the area of operations. A resume of accomplishments of the 630th during the reporting period is as follows:

1. Provided equipment support to all companies in the battalion.
2. Hauled and placed 9000 cubic yards of rock for interior roads, Camp Carroll.
3. Upgraded 18 km of road from FSB Nancy to FSB Barbara.
4. Improved 8000 lf of interior roads at FSB 4-4.
5. Improved 4000 lf of interior roads at FSB C-2.
6. Upgraded existing Mai Loc Airstrip to C-123, type I standards.

The 59th Engineer Company, Land Clearing, remained under operational control of the 14th EBC until 5 April at which time the unit became attached.

On 2 February the 59th LCC completed a difficult 6000 acre clearing mission west of FSB C-2 and began a maintenance stand down. On 17 February the unit moved north of FSB C-1 to begin clearing 4900 acres for the 1st ARVN Division. During the first 3 days of the clearing the unit experienced 10 mining incidents and lost 8 dozers. A decision was made to abandon the area and proceed to the next priority clearing area. Once again mining incidents occurred and 4 more dozers were lost. The mission was then terminated and on 26 Feb the 59th LCC returned to Quang Tri for maintenance stand down. On 17 Mar the 59th LCC moved to Mai Loc to begin a 9600 acre clearing mission. Three weeks of lost time occurred due to enemy activity during April and the 59th LCC fully utilized this time to repair and maintain equipment. 1780 acres have been cleared to date.

2. Section 2, Lessons Learned: Commanders Observations, Evaluations, and Recommendations.

- a. Personnel: none

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b. Operation.

1) Bunker construction adjacent to heavy artillery positions:

(a) Observation: Standard bunker design for ammunition bunkers is inadequate to withstand the concussive effects of heavy artillery firing.

(b) Evaluation: Standard designs for ammunition bunkers incorporate 3" x 12" timbers nailed to vertical posts with 60 d nails. Even when backfilled, these horizontal timbers cannot withstand the concussive effects of heavy artillery when the azimuth of fire is overhead and the nails pull out. Even a 24" drift pin has been forced out of a cap and post by the blast. Some means of securing the horizontal members was required. An effective solution was the use of a vertical plate of 3" x 12" timber bolted securely through the post. This vertical plate prevented the nails from pulling loose on the horizontal members.

(c) Recommendation: Incorporate bolted vertical plates on all posts in the design of ammunition bunkers which must be compatible with heavy artillery.

2) Protection of living bunkers

(a) Observation: Sand Bags are commonly used as protective overhead cover on living bunkers.

(b) Evaluation: Sand bags are a slow and expensive means of backfilling the roofs of living bunkers and provide a short term solution due to deteriorative effects produced by climatic conditions. By incorporating a simple 24" - 30" high timber retaining wall on the roof of each living bunker the need for sand bags can be eliminated. A comparison of the first cost of a sand bag retaining wall versus a timber retaining wall and earth backfill indicated the latter was 50% cheaper. In addition, a timber retaining wall will remain effective considerably longer.

(c) Recommendation: Incorporate a timber retaining wall on the roof of living bunkers as part of standard design, eliminating the need for sand bags.

3) Design for heavy artillery gun pads:

(a) Observation: The design for heavy artillery gun pads most commonly incorporates a concrete slab with timber wearing surface.

(b) Evaluation: Experience has shown that a concrete slab is actually an overdesign and is not required for support of heavy artillery pieces. A modified gun pad design which incorporates 6" x 12" footers in a spoke design, backfilled with a soil-cement mix, anchored to a 36" concrete core at the center, and capped with a timber wearing surface is completely functional. This design can be constructed in 1/4 the time of a concrete pad, requires less equipment and materials for construction, and is less expensive.

c. Training: none

d. Intelligence: none

e. Logistics: Mine detectors

(a) Observation: The metallic mine detector, polan model IND P-153, used by this unit will not detect plastic explosives used as land mines.

(b) Evaluation: Enemy mining activity relies heavily on home-made plastic mines with a minimum of metallic devices incorporated. When buried carefully at significant depths, these mines are extremely difficult to detect.

(c) Recommendation: Every effort should be made to expedite procurement of density type mine detectors for this unit. The type of mining activity common to the area of operations and the frequency of required minesweeps justifies the effort.

f. Other: none

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George R. Vavra
GEORGE R. VAVRA
LTC, CE
Commanding

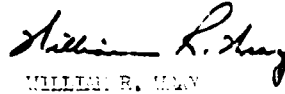
EGD-3 (30 Apr 70) 1st Ind
SUBJECT: Operational Report - Lessons Learned, 14th Engineer Battalion
(Combat) for the period ending 30 April 1970, ICSFOR-65 (RI)

DA, Headquarters, 45th Engineer Group (Const), APO 96208 14 May 1970

TO: Commanding General, 18th Engineer Brigade, AFM: AVIC-C, AIG 96377

1. The Operational Report - Lessons Learned for the 14th Engineer Battalion (Combat) has been reviewed by this headquarters and is considered to be an accurate account of the Battalion's activities during the reporting period. This headquarters concurs with the observations and recommendations of the Battalion Commander.

2. Reference: Section 2, item e. Concur. 45th Group has been authorized 20 each mine detectors M/FRS-7 per Combat Battalion. These detectors have been requisitioned but not yet issued due to the fact they are being tested by the 4th Infantry Division. Completion of testing is scheduled for 12 May 70; if tests are favorable, the detectors should become available in mid-June 1970.



WILLIAM R. MAY
COL, CE
Commanding

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AVBC-OS (30 April 1970) 2nd Ind
SUBJECT: Operational Report-Lessons Learned, 14th Engineer Battalion
(Combat), Period Ending 30 April 1970, RCS-CSFOR-65 (RI)

DA, HEADQUARTERS, 18TH ENGINEER BRIGADE, APO 96377

TO: Commanding General, U.S. Army Vietnam, ATTN: AVHGC-DST, APO 96375


1. This Headquarters has reviewed the Operational Report-Lessons Learned for the 14th Engineer Battalion (Combat), as indorsed by the 45th Engineer Group (Construction). The report is considered to be an accurate account of the Battalion's activities during the reporting period.

2. This Headquarters concurs with the observations and recommendations of the Battalion and Group Commanders, with the following comments added:

a. Reference: Section 2, item B(1). Concur. The recommendation is felt to be sound, however further improvement could be attained by adding large washers to each end of the bolt to minimize the bolt being vibrated through the wood.

b. Reference: Section 2, item B(2). Concur. This method of cover has been used at most of our living bunkers. It is inexpensive and efficient.

c. Reference: Section 2, item B(3). Concur. This method is basically sound and has previously been used with success. In some cases, however, soil type limits this construction method as not all soil types can be stabilized with cement. If the proper material is available it is inexpensive and can measurably expedite completion.


H.C. SCHRADER
Brigadier General, USA
Commanding

CF:
CO, 45th Engr Gp
CO, 14th Engr Bn

AVHGC-DST (30 April 1970) 3d Ind
SUBJECT: Operational Report of 14th Engineer Battalion (Combat) for
Period Ending 30 April 1970, RCSFOR-65 (R1)


Headquarters, United States Army Vietnam, APO San Francisco 96375 30 JUN 1970

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

1. This Headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 30 April 1970 from Headquarters, 14th Engineer Battalion (Combat) and concurs with comments of indorsing headquarters.

2. Reference item concerning "Mine Detectors", page 9, paragraph e, and 1st Indorsement, paragraph 2: concur. The three battalions of 45th Engineer Group are at the top of the list for priority issue of the PRS-7 detector. RVN testing was completed on 1 May 1970 with favorable results. Test report was forwarded to DA (OCE). RVN availability is now scheduled for September 1970. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:


D. J. Winter
CPT, AGC
Assistant Adjutant General

Cy furn:
18th Engr Bde
14th Engr Bn

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GPOP-DT (30 Apr 70) 4th Ind
SUBJECT: Operational Report of HQ, 14th Engineer Battalion (Combat) for
Period Ending 30 April 1970, RCS CSFOR-65 (R2)

HQ, US Army, Pacific, APO San Francisco 96558 9 JUL 70

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

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:



L.M. OZAKI
CPT, AGC
Asst AG

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