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AUTHORITY
AGO D/A ltr, 29 Apr 1980

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HEADQUARTERS
937TH ENGINEER GROUP (COMBAT)
APO US Forces 96238

15 May 1966

DGC-3

SUBJECT: Operational Report on Lessons Learned (RCS CSGPO - 28 (R1)) for Period
1 January thru 30 April 1966

STATEMENT #2 UNCLASSIFIED

THRU: Channels

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

attn: FOR OT-RD.

1. References:

- a. AR 525-24, 29 Oct 65, Subject: Combat Operations Command Report.
- b. USARV CIR 870-1, 11 Nov 65 w/c1, 1 Apr 66
- c. 18th ENGR BDE REG 870-1, 11 Apr 66
- d. Map, VIETNAM AMS, Series L 701, UTM 1:50,000 Sheet Nr 6752-IV and 6852-III.

SECTION I

2. Significant Organization or Unit Activities

a. General Summary

(1) Mission: The primary mission of the Group is construction of facilities such as roads, bridges, airfields, depots, ports and cantonments and providing combat support of the tactical operations in Vietnam.

(2) Attachments: To accomplish this mission the following units were assigned or attached during the reporting period.

- (a) 19th Engineer Battalion (C)
- (b) 70th Engineer Battalion (C)
- (c) 84th Engineer Battalion (Const)
- (d) 299th Engineer Battalion (C)
- (e) 362nd Engineer Company (IE) *
- (f) 497th Engineer Company (PC), one platoon

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- (g) 509th Engineer Company (PD)
- (h) 511th Engineer Company (PB)
- (i) 513th Engineer Company (DT), one platoon
- (j) 553rd Engineer Company (FD), two platoons
- (k) 630th Engineer Company (LE)

* Transferred to 159th Engineer Group (Const) in April 66

(3.) Personnel: The total overall aggregate assigned strength of the Group fluctuated between the range of 85 to 93% during the reporting period. The assigned strength remained approximately 87 to 88% during most of this period, but began to increase during the latter half of April. It continued increasing until it reached the peak percentage of 93.6% during the last week of April 1966.

a. Officers: The assigned strength of the officers remained continually around full authorization to slightly above during the entire period. However, during the last week in April it dropped to 97%, the lowest point during the period.

b. Senior NCO's (E7,8,9): The senior NCO strength ranged from 88-95% during this period. It also reached its lowest point during the last week of April.

c. The most critical personnel area was in grades E1 through E4. Throughout the entire period the greatest manpower deficit was in this area. At times this assigned strength dropped to a critical level of approximately 75%. During the last week of April the assigned personnel in this category reached its highest peak.

(4) Personnel Services:

(a) Recreation: The recreational opportunities increased greatly during this period. There was a swimming beach opened in Qui Nhon during the month of April. This was the first swimming facility available to the troops in this area. Also, later in the month of April there was a fresh water swimming beach opened in Phu Tai Valley. This gave the personnel in the valley a much better chance to go swimming without having to drive all the way to Qui Nhon. Swimming facilities were also opened in the An Khe area during this period.

(b) The Special Services have begun to provide recreational items in the Qui Nhon Area. A Special Services Office was opened in Qui Nhon during the month of April. At present, there is not a particularly large selection of items, but the system is improving. The major items received from the Special Services are a few tape recorders, radios, game kits, musical instruments, gymnastic equipment, and some water ski equipment.

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A water ski instruction school was begun at the swimming beach in Qui Nhon in late April by the Special Services Officer.

(c.) Unit Fund: A Central Post Fund was established by the United States Army Support Command, Qui Nhon in April. This allows all units of the Group to have a Unit Fund at company level. The Unit Funds receive 50 cents each month for each man, and an additional 25¢ is kept by the Central Post Fund to use for special grants. Presently there is no banking system established, so all purchases are made by the Central Post Fund Custodian; except purchases made from an imprest fund, up to \$100, authorized each Unit Fund. The Unit Fund has not been in existence long enough to have materially contributed to the welfare of the troops; however, within the next few months the situation should improve.

d. Post Exchange: The post exchanges have improved within the past few months. They now stock most all necessary items and many desirable items, i.e., tape recorders, camaras, radios, movie projectors, watches, etc. They also provide limited special order service.

b. Summary of Operations

(1) This organization has been engaged in the following major construction missions during the reporting period.

(a) Construction of 8.5 miles of two-lane class Y perimeter road and widening of 11 miles of existing roads to two-lane class Y, construction of 6 bridges to class 25 one-way and more than 100 culverts, by the 19th Engineer Battalion (C) in the ROKA Division Area.

(b) Construction of 12 miles of two-lane class Y roads, construction of 3 each class 35 two-lane trestle bridges, approximately 100 culverts and widening of 5 miles of single lane road to two-lane by the 70th Engineer Battalion (C) in the 1st Air Cavalry Division Area.

(c) Construction of approximately 4 miles of two-lane class Y roads in Fleiku, widening of 13 miles of single lane to two-lane road, construction of more than 50 culverts, two each two-lane class 35 bridges and 6 each single lane class 30 bridges in the Qui Nhon area by the 299th Engineer Battalion (C).

(d) Continued construction of the depot in Qui Nhon which includes 260,000 square feet of warehouse space, 100,000 square feet of shed storage, 300,000 square feet of open storage and approximately 175,000 cubic feet of refrigerated storage by the 84th Engineer Battalion (Const).

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(e) Continued construction of a logistical complex near An Khe, which includes 95 acres of open storage, berms for 39 each 10,000 gallon collapsible POL tanks, 20 each ammunition storage pads with earth berms, 50,000 square feet of warehouse space, 40,000 square feet shed storage and 32,000 cubic feet of refrigerated storage by the 70th Engineer Battalion (C).

(f) Construction of a Logistical Complex at Pleiku which includes twenty ammunition storage pads with earth berms, 21,000 square feet of warehouse space, 24,000 square feet of shed storage and 50,000 square feet of open storage space by the 299th Engineer Battalion (C).

(g) Construction of a consolidated maintenance facility which includes 19 maintenance buildings with 138,000 sq ft, 12 supply buildings with 65,000 sq ft, 18 administrative buildings with 18,000 sq ft, 72 acres of hardstand and a 1000 man cantonment being constructed on Rt 19 approximately 15 miles west of Qui Nhon by the 19th Engr Bn.

(h) Construction of a 100,000 bbl tank farm to include 2 each 6" pipelines two miles long connecting the two locations, 2 each 8" pipelines one mile long connecting the tank farm to the submarine pipeline and 2 each 8" submarine pipelines. The tank farm is being constructed by the 19th Engineer Battalion and submarine pipelines by the 84th Engineer Battalion and its attached platoon of the 497th Engineer Company (PC).

(i) Construction of Airfields were accomplished at the following locations:

(1) Extended the compacted earth surfaced Song Cau Airfield from 1750' to 2500' plus construction of 100' x 100' turn arounds at each end by the 19th Engineer Battalion.

(2) Construction of an 1800' compacted earth airstrip to accommodate Caribou aircraft at the 22nd ARVN Division Headquarters near Qui Nhon by the 19th Engineer Battalion (C).

(3) Removed the PSP surface and existing base course on the southern 1100' of the Qui Nhon airfield. Rebuilt this section to C-130 specification with an asphalt surface. Construction by the 84th Engineer Battalion (Const).

(4) Rehabilitated a 2500' section of the Cheo Res Airfield and placed NB PSP over the asphalt surface. Constructed a 100,000 sq ft parking apron using T-17 monbrane as a surface. Construction was by the 299th Engineer Battalion (C).

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(5) Construction of a forward area medium lift airfield 4200' long with asphalt surface at An Khe. Parking apron and rehabilitation of the existing strip to be used as a parallel taxiway are included in this project assigned to the 84th Battalion (Const).

(j) Construction of heliports and other aircraft facilities;

(1) Completed construction of a fifty (50) pad heliport with a single penetration macadam surface. All facilities required to accommodate and service two helicopter companies were incorporated into this project constructed by the 19th Engineer Battalion (C).

(2) Construction of a twenty five (25) pad heliport with a single penetration macadam surface. All facilities required to service one helicopter company is being constructed by the 19th Engineer Battalion (C).

(3) Construction of the 1st Air Cavalry Division heliport which includes, 48 each CH47 helicopter pads, 4 each CH54 helicopter pads, 320 UH1 helicopter pads, 77 OH13 and LOH helicopter pads and 5.3 miles of two-lane surfaced roads. The roads are single penetration macadam, the CH47 and CH54 pads are a single penetration asphalt surface overlaid with MB PSP and UH1 & OH13 pads will be treated with peneprime and overlaid with PSP. This work is being accomplished by the 70th Engineer Battalion (C).

(4) Construction of an aircraft maintenance facility at Fleiku. This project includes 2 each 175'x190' hangers, 1 each 80'x220' supply building, administrative space, 250 man cantonment and approximately 300,000 square feet of hardstand using T-17 membrane for the surface. Construction is by the 299th Engineer Battalion (C).

(k) Construction of a permanent ASP in the Phu Tai Valley, west of Qui Nhon. This project includes 10 each concrete pads with open front sheds 20'x50', 41 concrete open storage pads 30'x70', 50 concrete open storage pads 40'x100' and necessary guard towers, security fence and lighting, administrative building, box shop, surveillance building and renovation buildings. This project is being constructed by the 299th Engineer Battalion (C).

(l) Construction continued on the following hospital facilities.

(1) A 140 bed MASH at An Khe by the 70th Engr Bn (C). This project calls for 19 quonsets connected by covered walkways, 9 tropical frame buildings and laterite pads for tents to house the hospital personnel. The hospital became operational on 4 January 66 and since that time expansion of the basic facility plus electrical and water distribution has been accomplished.

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(2) A 540 bed Evacuation Hospital in Qui Nhon by the 84th Engr Bn (Const). This hospital has been expanded from a 480 bed facility during the current period plus construction of additional covered walkways, electrical and plumbing facilities.

(3) Construction started on an 30 bed hospital in Pleiku by the 299th Engr Bn (C). This facility includes 8 quonsets as the basic treatment plant plus utilities and a cantonment for hospital staff.

(m) Installation of security lighting and guard towers around the 1st Cavalry Division Base Camp in An Khe. This project now consists of 516 concrete light poles with 1,032 flood lights incorporating 540,000' of electrical wire and 8 each 100 kw generators. There are 68 guard towers for use by perimeter security forces. This project is being constructed by the 70th Engineer Battalion.

(n) Construction of port facilities at Qui Nhon is being accomplished by the 84th Engineer Battalion and its attached port construction platoon. During this period improvements have been made on the LST ramps and a 600' extension of lighterage ramps has been under construction. Repairs have been made on the floating Navy cube causeway and the mooring facility for the two 4" submarine pipelines.

(o) All Battalions have been engaged in road and bridge maintenance throughout the II Corps Tactical Zone.

(2) This organization has performed the following combat support missions during the reporting period:

(a) Road construction by the 19th and 299th Engineer Battalions (C) to allow movement of combat vehicles and artillery into the Bong Son and Ky Son Mountain areas.

(b) Extension of the Song Cau airfield from 1750' to 2500' to support a tactical operation.

(c) Rehabilitation of the Cheo Reo airfield to support tactical operations.

(d) Providing perimeter defense forces for the barrier of the 1st Cavalry Division by the 70th Engineer Battalion.

(e) Providing deliberate reconnaissance of 328 miles of roads and compiling data on over 200 bridges in the II Corps tactical Zone.

c. Logistics:

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(1) ITEM: Receipt of incomplete equipment.

DISCUSSION: Major end items of equipment shipped thru depots to units in Vietnam are received with major component assemblies missing. Examples are rock crushers and conveyors without motors, dozers without blade arms and drills without drill steel.

OBSERVATION: CONUS depots and shipping agencies should insure end items are complete prior to shipment and properly manifested.

(2) ITEM: Receipt of incomplete construction material facilities.

DISCUSSION: Functional components and separate major facilities of construction items are received with major shortages. Examples are shortages in 56 line items (4184 separate pieces) on a single shipment of 51 warehouse buildings from Japan. Principal shortages are 2 girders and 139 main columns and beams. An H14E Fuel System was received with shortages in 21 line items.

OBSERVATION: Depots and shipping agencies must insure that facilities are shipped complete and properly controlled to completely eliminate pilferage.

(3) ITEM: Damage/loss to equipment/materials during off-loading.

DISCUSSION: Extensive and expensive damage to equipment and construction materials has been incurred during the past 9 months during "off-loading" operations in Qui Nhon. The transfer of items from ships to lighterage to trucks continues to involve an unacceptable amount of damage. Some items of equipment require major re-build effort; 10-30% loss in cement shipments are not unusual, corrugated sheet metal packages are totally lost; building beams and columns require extensive straightening, and boxes, crates or packages are misrouted to the consignee resulting in the total loss of the shipment. The apparent effort is "tonnage" and not "quality".

OBSERVATION: Transportation units require more command supervision.

d. Civic Actions:

During the reporting period units of the Group undertook 35 civic action projects. These projects vary in scope and type. Examples are medical treatment to civilians in villages and towns, supporting construction of hospitals and churches, distribution of health and sanitation products and teaching of sanitation and English. Each project has been

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directed toward raising the standard of living of the Vietnamese people and fostering a greater degree of mutual understanding between the Vietnamese Nationals, the established government of Vietnam, and the US Forces.

SECTION II

3. Commander's Recommendations

a. Personnel: Action should be taken to bring all units up to full strength and provide adequate replacements to maintain the Group at or above that level.

b. Change of TO&E: Recommend action be taken to effect reorganization of all combat battalions under TO&E 5-35E. This change will greatly enhance the construction capability of this Group.

c. Transportation of Construction materials: Request an increase in the ability of the transportation units to effect movement of class IV construction materials from the base depot to the major installation outside of the Qui Nhon area. Presently the Group units are too heavily committed to transport construction material to the widely separated construction sites.

d. Supply shortages: Milstrip should be improved in order to provide adequate stockage of repair parts. The percent fill of normal requisitions within the group is unsatisfactory. An adequate fill of replenishment requisitions would reduce the amount of Red Ball Express requisitions and would allow a reduction of the relatively high deadline rate of equipment.

e. TO&E Generators: Additional generators are urgently needed to replace and supplement the TO&E generators which have been operating at peak output over extended periods of time. Larger generators are required under present operating conditions to support refrigeration equipment, power equipment and increase lighting for extended hours of operation.

SECTION III

4. LESSONS LEARNED

a. ITEM: Water Distribution for Construction Projects.

DISCUSSION: Due to the extreme heat, and in most cases the length of the water haul route, water for compaction and other construction projects is very critical throughout the Republic of Vietnam. Methods utilized included:

(1) The erection of a truck fill stand as close to the construction site as possible, thereby minimizing the length of the water haul. This can be done by installing either 4" or 6" invasion pipe from water source to the truck fill stand. A standard pump is required.

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(2) The use of Navy Cubes, or any similar large water container, tied together on a 25 ton trailer. The water discharge is by gravity through a prefabricated spray bar. This method enables a large amount of water to be handled at one time.

(3) On construction sites where concrete is being placed, fabric water tanks, either canvas or rubberized, should be used to store large quantities of water for mixing and curing purposes.

OBSERVATION: All construction units that will be engaged in large earth work projects should be augmented with either additional water distributors or tanks suitable for water haul. Augmentation would be dependent upon length of water haul and scope of project.

b. ITEM: Material Hauling Equipment for Off-loading Supplies.

DISCUSSION: Due to the lack of sufficient supply storage yards and personnel to handle supplies, the engineer units have had to handle all classes of supplies coming to them. Normally, engineer construction units would not be required to off-load the supplies from the ships or aircraft, and haul the tonnage of supply required to support the unit, plus support the construction material handling. The TOE authorization for the engineer battalions does not authorize any material handling equipment, therefore, construction personnel and equipment have been utilized to off-load these items. This material handling takes away the construction effort. The movement of parts and supplies on construction sites could be handled more efficiently if material handling equipment was available.

OBSERVATION: Engineer Battalions should be augmented with material handling equipment for use in the handling of supplies and construction materials both in the supply yards and construction sites. Augmentation would depend upon existing support provided by the logistic units in the area and scope of materials required for the construction effort.

c. ITEM: Inadequacy of TOE Equipment for large scale concrete construction.

DISCUSSION: The two (2) 16S concrete mixers currently authorized the engineer construction companies are inadequate for large concrete pouring operations. Their output is less than required and excessive manpower is needed to operate the equipment. The use of concrete mixing batch bins which allow loading into dump trucks, coupled with a large concrete mixer with a skip which allows the dump trucks to dump directly into its skip, reduce the manpower requirements by approximately 50%. Higher quality of concrete is maintained at the same time as greater production is achieved. The use of steel concrete forms also increases productivity.

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OBSERVATION: One set of batch bins and a large slip form concrete mixer and approximately 2,000 feet of steel concrete forms should be added to the equipment augmentation of each Engineer Construction Battalion.

d. ITEM: Need of Augmentation of TOE.

DISCUSSION: Engineer Combat Battalions are organized under TOE 5-35D Series, reorganization under the "E" Series has been requested.

OBSERVATION: It is felt that non-divisional combat battalions deploying to RVN with the primary mission of construction should be reorganized under TOE 5-35E with certain augmentations.

e. ITEM: Value of Indigenous Labor.

DISCUSSION: The value of utilizing indigenous labor whenever and wherever possible cannot be over-emphasized. It is estimated that laborers, quarry workers, masons and carpenters are about one half as productive as the American soldier.

OBSERVATION: It is a valuable supplement to the troop effort to employ the maximum number of indigenous laborers that can be effectively supervised and that the local area can supply.

f. ITEM: Utilization of Boat Oil for dust palliative.

DISCUSSION: Dust is one of the major problems encountered in RVN. Laterite, the predominantly accessible road building material, tends to pulverize when subjected to traffic, producing a dust layer which reduces visibility, posing a safety hazard, causes wear on vehicles and antagonizes the local inhabitants. Boat Oil 9150-231-6654 or 55, the only material available at the time, applied in the following manner has proven an effective means of controlling dust.

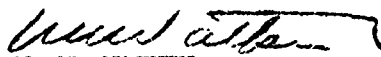
- (1) Means of application: Asphalt distributor
- (2) Application rate: 0.25 gallons per sq yd.
- (3) Traffic allowed on roads immediately after application.
- (4) Penetration to approximately $\frac{1}{4}$ inch.

OBSERVATION: Surface produced is extremely impervious to water, dust free, and stands up well under heavy traffic. Surface remains slippery

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for a minimum of two hours after application. Recommend that oil be applied to only side of the roadway at a time and that the inherent hazard be publicized.



W. W. WATKIN
Colonel, CE
Commanding

AVEB-DBC (15 May 66)

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SUBJECT: Operational Report of Lessons Learned (RCS CSGPO-28)(R-1) for
Period 1 January thru 30 April 1966

HEADQUARTERS, 18TH ENGINEER BRIGADE, APO 96307, 21 July 1966

TO: SEP DISTRIBUTION

The following comments are furnished pertaining to the Operational Report of Lessons Learned, 937th Engineer Group (Combat):

1. Section I.

a. Paragraph 1c(1), 1c(2) and 1c(3) Logistics. Subjects mentioned in referenced paragraphs discussed with members of the Logistical Command and have been the subjects of command correspondence from this Headquarters. Units have been instructed to submit both shortage and damage reports through channels in order to facilitate action in each case.

2. Section II.

a. Paragraph 3a. Recommendations for augmentation of units to ensure maintenance of full unit strength have been made to USARV in letter from this Headquarters dated 10 Mar 1966, Subject: Personnel Actions Recommended to Augment Construction Effort of the 18th Engineer Brigade (U).

b. Paragraph 3b. This Headquarters forwarded a request to Headquarters USARV on 25 April 1966, requesting authority to reorganize Brigade units under the "E" series TO&E.

c. Paragraph 3d. Shortage of spare parts resulted from late submission of Prescribed Load Lists to supporting Depot Supply Units. Submission was finally accomplished after Group units arrived in theatre, hence, the slow delivery of repair parts. Availability of repair parts should show marked improvement during the 1st half of the present fiscal year (67).

d. Paragraph 3e. Replacement generators are expected to arrive in theatre during July 1966, and will provide for adequate replacements and supplements for those generators currently on hand in Brigade units.

3. Section III.

a. Paragraph 1b. As a regular part of future planning, units have been instructed to anticipate requirements for supplemental equipment and to forward justifications and requirements for same through channels.

AVEB-DBC

21 July 1966

SUBJECT: Operational Report of Lessons Learned (RCS CSGPO-28 (R-1) for
Period 1 January thru 30 April

b. Paragraph 4c. HO paving teams have been requested and are expected to arrive in theatre in the very near future.

c. Paragraph 4d. Reference paragraph 2b above.



P. W. RAMEE
Colonel, CE
Deputy Commander

DISTRIBUTION:

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Washington, D.C. 20310 (Thru channels)

Cy 1 - Asst C of S for Force Development, DA, Wash D.C. 20310 (Direct)

Cy 2 - Commanding General, USARPAC, APO US Forces 96558, ATTN: GPOP-MH

Cy 3, 4, 5 - Commanding General, USARV, ATTN: AVC

Cy 6 - Unit Files

AVHGC-DH (15 May 66) 2nd Ind
SUBJECT: Operational Report on Lessons Learned (RCS CSGPO-28 (R1)) for
Period 1 January thru 30 April 1966

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96307 ^{31 JUL 1966}

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

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

1. This headquarters concurs with the 937th Engineer Group operational
report on lessons learned as indorsed.

2. Reference paragraph 2b, 1st indorsement: The request for
reorganization was forwarded to USARPAC on 2 June 1966. It was subsequently
returned with the directions that the 18th Brigade submit modification
tables of organization and equipment (MTOE's). This was forwarded to the
18th Engineer Brigade by indorsement from this headquarters on 22 June 1966.
The MTOE's have not been received from the Brigade.

FOR THE COMMANDER:



M.M. MEDOKOWICH

Major AGC

Asst Adj General

GPOP-MH (15 May 66) 3d Ind
SUBJECT: Operational Report on Lessons Learned (RCS CSGPO-28 (R1)) for
Period 1 January thru 30 April 1966

HQ, US ARMY, PACIFIC, APO San Francisco 96558 9 SEP 1966

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

1. The Operational Report on Lessons Learned of the 937th Engineer
Group for the period 1 January - 30 April 1966 is forwarded herewith.

2. This headquarters concurs with the basic ORLL and the preceding
indorsements.

FOR THE COMMANDER IN CHIEF:



D. A. HARRISON
Capt, AGC
Asst AG

Copy furn:
CG USARV, Attn: AVHGC-DC