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AUTHORITY

AGO D/A ltr, 29 Apr 1980

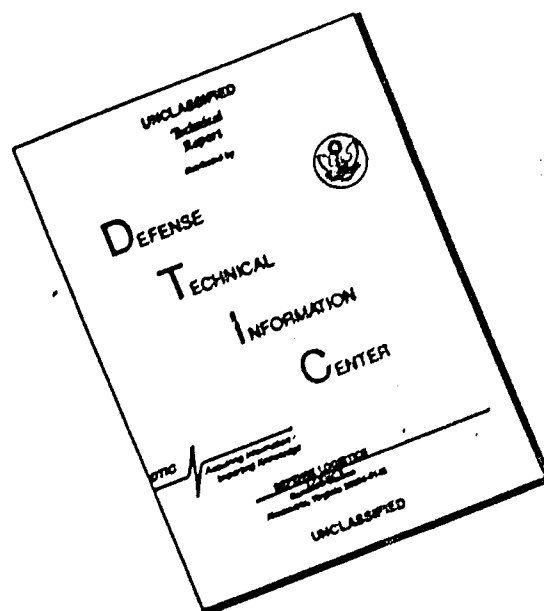
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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

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IN REPLY REFER TO

AGAM-P (M) (8 Nov 67) FOR OT RD 670531

29 November 1967

SUBJECT: Operational Reports--Lessons Learned, Headquarters, 577th Engineer Battalion (Const), Period Ending 31 July 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. Stanfield

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

1 Incl
as

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3
DEPARTMENT OF THE ARMY
HEADQUARTERS, 577TH ENGINEER BATTALION (CONSTRUCTION)
APO US Forces 96316

EGD-BC-CO

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

THRU: Commanding Officer
35th Engineer Group (Const)
APO 96312

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

Commanding General
United States Army Engineer Command, Vietnam
ATTN: AVCC-PO
APO 96491

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

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

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

FOR OT RD FILE
670531

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Section I Significant Unit Activity

1. The 577th Engineer Battalion (Construction) is organized under TO&E 5-115E. The battalion was minus one construction company since arrival in-country in July 1966 until 20 May 1967 when Company B, 69th Engineer Battalion (Const) was assigned and redesignated as Company C, 577th Engineer Battalion (Const). At present the 533d Engr Co (FB) and the 572nd Engr Co (LE) (-) are attached to this unit. One platoon of the 572nd Engr Co (LE) is attached to the 14th Engr Bn (Cbt) and is operating in Dong Ba Thin. Company C, 577th Engr Bn is currently operating in Dong Tre and one reinforced platoon, Company B, 577th Engr Bn is operating in Vung Ro. The remaining elements of the battalion are operating in the Free World Forces (FWF) Cantonment Area in Tuy Hoa. The battalion and attached units are further attached to the 35th Engr Gp (Const) located at Cam Ranh Bay.

2. Company A has continued a two shift operation of aggregate and asphalt cold mix production. For the period, the unit produced 44,016 CY of rock and 3,650 CY of cold mix asphalt. Rock production will continue to be critical to the battalion's operation during the next period due to the upgrading program of National Highway QL-1.

3. Company B is continuing construction at Port Lane, Vung Ro. The access road to Alpha Beach and the intransit cargo storage hardstands (40,000 CY) have been completed. The Navy cube barge off-loading pier is being improved by the addition of a reinforced concrete ramp. Work is continuing on the repair of the concrete LST ramps to replace those undermined and washed out during the last monsoon season. The 380 man Cantonment has been increased to 500 man capacity and will be completed by 1 September 1967. It included 6 two-story tropical frame BEGs, a 500 man mess hall, orderly room/supply room and other administrative buildings. This is a self help construction project.

4. On 28 June 1967 Company C, 577th Engr Bn was deployed to Dong Tre to construct an all weather 2,800 foot runway with crossovers and parking apron for C-123 airstrip and to perform road maintenance. The runway, apron and taxiways have been brought to grade with 44,000 CY of fill and then sealed with asphalt. M8A1 plank will be used for the finished surface. Company C also has the mission to upgrade 13 kilometers of Route TL 2D to carry class 35 traffic and to maintain 18 kilometers of route TL 6B. These routes comprise the only land access routes to Dong Tre from QL-1.

5. At Phu Hiep Company D completed a 5,500 ft C-130 airfield with overruns, parallel taxiway and a hardstand parking apron for OV-1 aircraft. The runway, taxiway and crossovers are surfaced with M8A1 plank over an 8 inch sand-cement stabilized base. Currently under construction are 3 wash racks, additional parking aprons for both an O-1 Company and a DS Company and a 202x75 foot hanger for a CH-47 Company. Future construction includes two additional aircraft hangars, a wash rack, a warehouse, a 10,000 SY maintenance hardstand, a control tower and a number of administration buildings.

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6. Perhaps the most significant project completed during the period was the 91st Evacuation Hospital, which was finished on 17 June 1967. The hospital has a 400 bed capacity and has been operational since the Beneficial Occupancy Date of 1 March 1967. A total of 159,637 man hours were expended for the construction of this hospital, half of which were self-help construction by medical personnel supervised by Company D.

7. A task force composed of elements from HHC and Company A (577th Engr Bn), Company B, 39th Engr Bn and 572nd Engr Co (LE) moved to Cung Son by tactical motor march on 27 April 1967 to rehabilitate the C-123 airfield. Several hundred cubic yards of material were removed from deteriorated areas of the runway, apron and taxiways. The excavations were brought to grade with select fill material, compacted and surfaced with T-17 membrane. The project was completed in 17 days.

8. In the FWF Cantonment Area the battalion has been actively engaged in the support and construction of logistical facilities. In the Class I facility Company B completed 3 elevated reefer buildings yielding a total of 144,000 CF of refrigerated storage space. A 40,000 SY hardstand is nearing completion in the same area. A ration breakdown facility and twin PASCOE warehouses remain to be constructed. A 1500 man mess hall in the Tuy Hoa Subarea Command cantonment is nearing completion. A 30,000 barrel POL storage complex at the Tuy Hoa Air Force Base is under construction by Company D. One 10,000 barrel tank is nearly completed. This tank farm is the terminus of 17 miles of 8" and 6" POL lines originating at Port Lane, Vung Ro. The placement of these lines and the installation of a 500 BBL tank farm and 8 POL pumps were completed jointly by Company B and Company D. An added facility consisting of three 3,000 BBL and two 500 BBL tanks is planned for the Class III facility in the FWF Cantonment Area.

9. Self help cantonment construction has continued throughout the FWF Cantonment Area. The 577th Engr Bn has the responsibility to provide both supervisory personnel and equipment for cantonment construction for over 10,000 allied troops. It is anticipated that all troops in the FWF Area will be in tropical frame billets prior to 1 October 1967 when the monsoon season commences at Tuy Hoa. Self help construction is currently in progress in the 176th Aviation Company, the 180th Aviator Company, the 225th Aviation Company, the 339th (DS) Maintenance Company, the 268th Aviation Battalion, the Republic of Korea (ROKA) Cantonment, Tuy Hoa Subarea Command and the 577th Engineer Battalion areas.

10. During the reporting period two projects were completed under the Revolutionary Program. Company B assisted the Vietnamese in the construction of a recreation area and shelter at the Tuy Hoa school. Company D assisted in the construction of a 1,600 SF masonry school house in the village of Phu Hiep (3), located adjacent to the aviation cantonment. Additionally, 553d Engr Co (FB) has provided vehicle support to assist in the relocation of Vietnamese refugees.

11. The 553d Engr Co (FB) accomplished maintenance, security and traffic control on all tactical fixed span and floating bridges in the battalion area of responsibility. Elements of the 553d Engr Co were deployed to the vicinity of Bong Son to construct a 210 foot M4T6 float bridge and conduct river patrol operations. The 553d is currently making necessary preparations for the installation of culverts and bridges on QL-1 (see paragraph 12 below). The short (15' - 20') bridges will be made of prefabricated concrete "T" beams.

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12. A major project to upgrade the Vietnamese National Highway QL-1, between Vung Ro and the access road to the FWF Cantonment Area, was received by the battalion just prior to the end of the period. During the period Companies B and D both have been continually involved in the maintenance of QL-1, having utilized approximately 1,600 CY of cold mix asphalt for road patching in the last 90 days. The Line of Communications (LOC) program envisions the upgrading of approximately 17 miles of road by widening the road to 24 ft and adding 8 ft shoulders and installing class 35 (two way) bridges. This involves both widening and raising the existing road surface, implaoing a large number of culverts and short concrete bridges and the construction of four major highway bridges with span lengths ranging from 80 to 800 feet. A hot mix bitumen surface is proposed to complete the project.

Section 2. Part I, Observation (Lessons Learned)

1. Personnel - None

2. Operations

a. Item: Avoiding Excessive Nonproductive Time on Crushing Equipment.

Discussion: In order to avoid excessive down time on primary and secondary crushing equipment, it becomes necessary to have duplicate components with high consumption factors readily available. One of the most important components is the shaker box on the primary crusher. With the crusher feed that is available when operating a boulder quarry, the life of a shaker box is about 15 days between major maintenance periods. A second shaker box has been fabricated to obviate extensive down time. The two shaker boxes are rotated as required. Alternation of shaker boxes has virtually eliminated all down time attributed to shaker box repair. A similar procedure has proven effective for the hopper assembly and the feed chain assembly.

Observation: Fabrication of alternate critical parts on rock crusher will help to eliminate down time.

b. Item: Dedrumping of Bituminous Materials and Loading into Bituminous Distributors.

Discussion: Dedrumping from 55 gallon drums of the less viscous grades of bituminous materials can be expedited by building a simple dedrumping facility. This facility can be fabricated out of 3 drums, two 4" lengths of 4" diameter pipe and a gate valve. The drums are welded together to make a long trough. The pipe is connected to the bottom of the trough in which a hole has been cut. The tank is then mounted on a raised platform so that the asphalt distributor may be driven underneath it. The drums may then be rolled up a ramp at the back of the platform, emptied into the tank and from there placed into the distributor. With the aid of dedrumping facilities, an 800 gallon distributor can be loaded in about 30 minutes.

Observation: It is possible to quickly fabricate asphalt dedrumping equipment from available materials.

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c. Item: Buckling of M8A1 Matting

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Discussion: Shortly after completing a 3,500 by 60 foot runway and one 420 by 40 foot crossover it was noted that the M8A1 steel matting was buckling due to considerable expansion and contraction at several of the lateral joints. Two possible factors were noted: (1) that the mat was not properly stretched, and (2) that temperature changes from 70°F to 140°F caused a thermal expansion of the metal. These factors, however, do not fully explain the phenomena. Even if the mat was not properly stretched and thus little room was left for thermal expansion, the mat should have settled back down when the temperature decreased during the night. This was not the case. Once the joints buckled they remained taut and elevated above the base course day and night. The solution was to cut the mat and lay it flat again. In the 420 foot crossover six joints were buckled. Upon cutting the matting in three locations some 21 inches of matting had to be removed. The new seams were then welded. No further buckling has occurred.

Observation: Recommend M8A1 matting be layed during daylight hours. It is essential that the matting be stretched every 50 feet to allow for maximum expansion.

d. Item: Discolored Water

Discussion: A 250 barrel tank was installed and connected to a new 4 inch POL pipe for use on a potable water distribution system. The line and tank were properly sterilized using 50 PPM of chlorine for a 24 hour period. Normal residual chlorine is 3-5 PPM. About one month after installation it was noticed that the water began to be discolored and took on a yellowish hue. It is thought that the cause of the problem is related to the period of time which the water stands in the tank and to the high temperatures encountered. These factors lead to a bacterial growth which, while harmless, imparts an undesirable color and odor to the water. It is recommended that the tank be scrubbed down periodically and that the contents of the storage tank be used within a 24 hour period.

Observation: Potable water system must be kept clean and utilized fully to preclude discoloration and bacterial growth.

e. Item: Jacking and Re-Positioning of Concrete Spans onto Abutments

Discussion: When a concrete bridge span has been blown, the near and far shore ends of the span may move out of alignment on the abutments. Upon raising the spans, it becomes necessary to re-align the spans on the abutments. One method of doing this is to jack the spans up, place Class 60 pins between the span and the abutment, and by use of ratchet chain hoist and/or hydraulic jacks, move the spans back into position.

Observation: It is possible to use material normally available to a float bridge company to reposition the spans of blown concrete bridges.

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f. Item: Reconstructing of a blown Bailey Bridge

Discussion: On the evening of 13 July 1967 at approximately 2200 hours Bridge 136 (Hau Son, Vietnam) was dropped into the gap. This bridge was a Class 30, 100 foot Double Single Bailey Bridge. Due to the great amount of traffic which passes over this bridge it was imperative that it be rebuilt as soon as possible. The lower chords of the bridge panels had been cut and the middle of the bridge had dropped into the water. The top chords were bent, but not cut, therefore the span was still continuous. In order to recover the maximum amount of the bridge it was lightened to remove unnecessary weight by removing decking, stringers and all unnecessary transoms. The remaining sections of the bridge were severed with cutting charges and subsequently removed by dragging them out of the gap with a dozer and disassembling them as they were removed. This bridge was removed from the gap, disassembled and replaced within 30 hours from the time repairs were initiated.

Observation: By the use of a crane, dozer and steel cutting charges it is possible to quickly remove and replace a partially damaged Bailey Bridge.

4. Intelligence: None

5. Logistics: None

6. Maintenance:

a. Item: Fabrication of Spare Parts

Discussion: Air diaphragms for the air brakes on CLARK 175 AM Loaders are difficult to obtain. However, they can be fabricated from regular inner tubes. Experiments made in this unit indicate that a double thickness of inner tube, cut to size of the outer housing, proved to be an acceptable substitute for the missing diaphragms.

Observation: Deadline time can be decreased on front loaders by fabricating air diaphragms.

b. Item: Wear and Tear on Dump Beds of 5 Ton Dump Trucks

Discussion: When operating in a boulder quarry where the material to be crushed is granite, great care must be exercised to insure that dump beds are not damaged. The blast rock that is loaded into the beds is often extremely angular with individual pieces of rock weighing as much as 200 lbs. These pieces of rock, even when loaded carefully, may bend and even puncture the dump bed. In order to protect the dump beds of the 5 ton dump trucks used in the quarry they have been lined with 3"x12" planking. This lining has been secured to the bed and sides by means of an "L" shaped piece of metal on each end of the individual piece of lumber. The metal is then welded to the bed. As the lumber wears out, the tack weld is easily broken and a new piece of lumber inserted. The lumber not only minimizes puncture damage, but helps to distribute the shock load of the falling rock over a greater area of the bed, which helps to prevent bending of the main reinforcing members on the bed and the frame.

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9 Observation: In order to prevent severe damage to dump beds on 5 ton dump trucks working in the quarry, the sides and bottom of the dump beds should be lined with a shock absorbing material.

Section 2, Part II, Recommendations

1. It is recommended that when an engineer construction battalion is deployed in a combat zone such as Vietnam, that it be augmented with the radios and automatic weapons necessary to conduct tactical convoys and to adequately provide for its own defense and the defense of its project sites.

2. It is further recommended that construction companies be augmented with quarry sections when their parent battalion is operating in an area where individual companies may be deployed quickly to locations remote from the battalion headquarters.

3. When a battalion is deployed remotely from its Group Headquarters and the companies are deployed remotely from the battalion it is recommended that the unit be augmented with an aviation section.

4. Personnel records do not accompany the individual soldier when he arrives in Vietnam. As a result, many soldiers do not get paid on time. Often this delay lasts for several months, necessitating numerous letters and messages from this headquarters. It is recommended that EM be charged with carrying their own records when arriving in country.

5. This organization has been in Vietnam for over a year and has maintained round the clock operation of major pieces of construction equipment (i.e. cranes, asphalt distributors, rock crushers, bucket loaders, graders and rollers). The "life span" of many of these items of equipment operating under the conditions found in Vietnam has been greatly reduced. Many key items now provide only occasional use with intervening periods of nonproductive time due to breakdown.

1 Incl

1. TO&E Chart

CARL P RODOLPH

LTC, CE

Commanding

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- 3 - CG, USARV, ATTN: AVGC - DH (Courier)
- 15 - CG, 18th Engr Bde, ATTN: AVBC-C (Courier)
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EGA-3 (8 August 1967) 1st Ind
SUBJECT: Operational Report - Lessons Learned for the Quarterly Period
Ending 31 July 1967

HEADQUARTERS, 35TH ENGINEER GROUP (CONSTRUCTION), APO 96312, 12 August 1967

TO: Commanding General, 18th Engineer Brigade, ATTN: AVBC-OP, APO 96377

1. This headquarters has reviewed the report submitted by the 577th Engineer Battalion (Construction) and considers it an excellent report of unit activities and accomplishments for the period ending 31 July 1967.

2. This headquarters concurs with the observations and recommendations of the Battalion Commander, with the following comment: Page 7, Paragraph 3 - Aviation assets should be allocated for unit's use commensurate with their requirements. It is not feasible to place aviation sections at all dispersed locations within country. Dispersed battalions do receive priority for use of aviation assets.


G. H. NEWMAN
Colonel, CE
Commanding

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121
AVBC-C (31 Jul 67) 2nd Ind Lt Hegmann/cky/DBT-163
SUBJECT: Operational Report - Lessons Learned For the Quarterly Period
Ending 31 July 1967

Headquarters, 18th Engineer Brigade, APO 1 Forces 96377 13 AUG 1967

TO: Commanding General, U.S. Army Engineer Command, Vietnam (Prov),
ATTN: AVCC-P&O, APO US Forces 96491

1. This headquarters has reviewed the report submitted by the 577th Engineer Battalion and considers it an excellent report of unit activities and accomplishments for the period ending 31 July 1967.

2. This headquarters concurs with the observations and recommendations of the Battalion Commander with the following additional comment:

Section 2, part I, paragraph 6 - item B

The 18th Engineer Brigade recently received a number of 22 ton Euclid rock buggies for quarry operations. These vehicles will decrease the need for 5 ton dump trucks in quarry operations.

[Signature]
HAROLD J. ST CLAIR
Colonel, CE
Commanding

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AVCC-P&O (31 July 1967) 3rd Ind
SUBJECT: Operational Report-Lessons Learned for Period Ending
31 July 1967

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

23 SEP 1967

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


This headquarters concurs with the 577th Engineer Battalion's ORLL report as written, subject to the following comments:

a. Reference Section 2, Part II, paragraph 1, page 7: TOE 5-115E authorizes 28 7.62mm machine guns, 15 AN/VRC-46 radios, and 8 AN/VRC-47 radios. Each individual is authorized an individual weapon. These should be sufficient for job security and most convoy operations. Additional security forces and command and control capability should be requested from the local tactical commander if required.

b. Reference Section 2, Part II, paragraph 2, page 7: Rock is the most critical construction material in RVN. Maximum efforts are being made to open as many quarries as possible, with primary emphasis on those areas where requirements are the greatest or transportation most accessible. Current plans will utilize all crusher resources in-country, or due-in. This method of deployment precludes augmentation of construction companies with a quarry section.

c. Reference Section 2, Part II, paragraph 4, page 7: Concur. Department of the Army has changed their policy and personnel now hand-carry their records on PCS orders.

FOR THE COMMANDER:


PAUL A. LOOP
Colonel, CE
Chief of Staff

Copies furnished:

CG, 8th US Army, ATTN: Engr
CG, 18th Engr Bde
CO, 35th Engr Gp
CO, 577th Engr Bn

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AVHCC-DST

7th Ind

SUBJECT: Operational Report-Lessons Learned for the Period ending
31 July 1967 (HQS GPOC-OT) (U)

HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO San Francisco 96375 8 OCT 1967

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

1. This headquarters has reviewed the Operational Report-Lessons Learned for the period ending 31 July 1967 from Headquarters, 577th Engineer Battalion (ASLTB) (LHA) as indicated.

2. Concur with basic report as indicated. Report is considered adequate.

FOR THE COMMANDER:



Asst. Assistant Commander

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GPOP-DT(undtd)

5th Ind

SUBJECT: Operational Report for the Quarterly Period Ending 31 July 1967
from HQ 577th Engr Bn (Const) (UIC: WBAQAA) (RCS CSFOR-65)

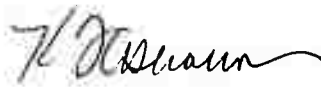
HQ, US ARMY, PACIFIC, APO San Francisco 96558

27 OCT 1967

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:

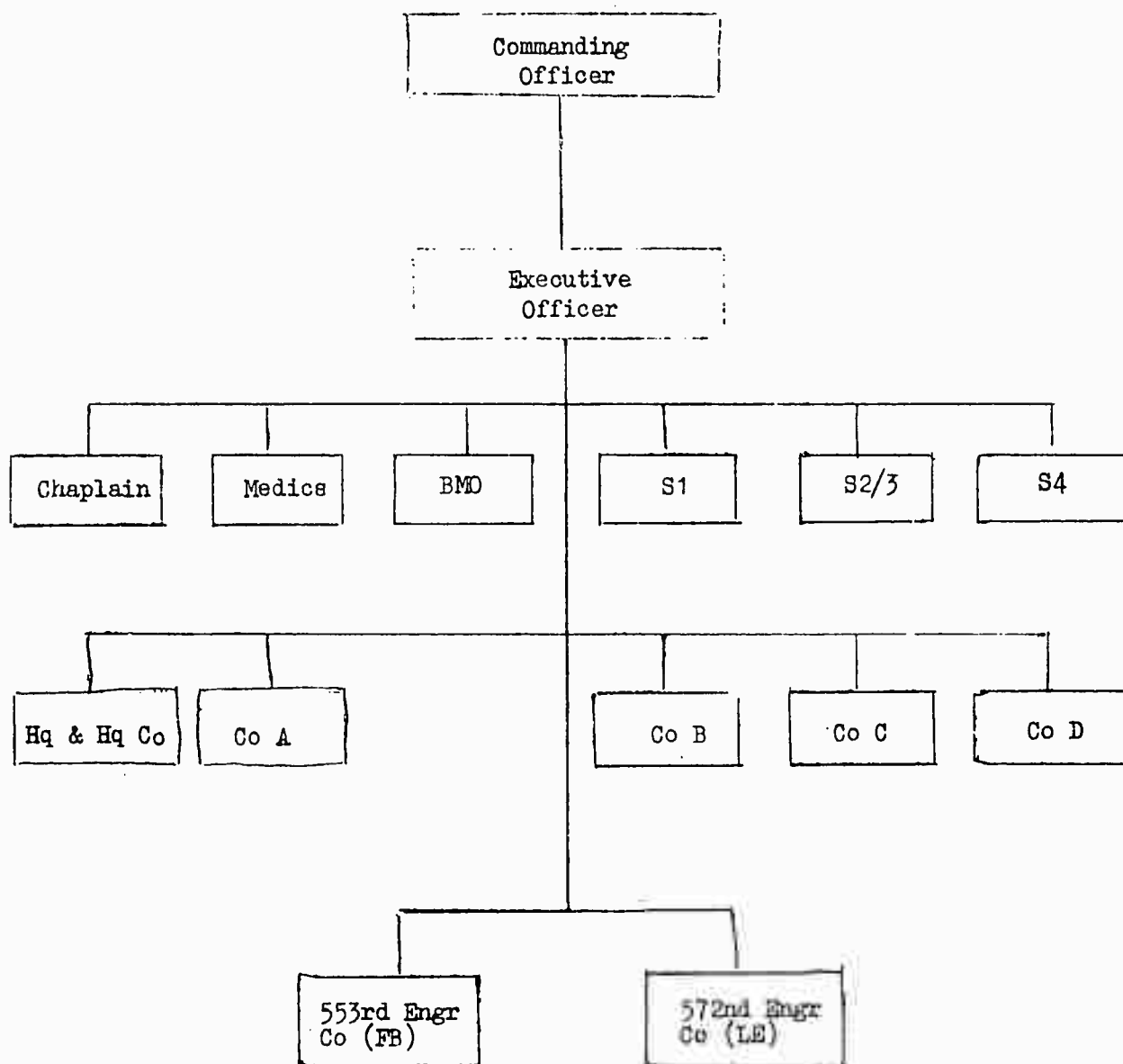


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K. F. OSBOURN
MAJ, AGC
Asst AG

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17
ORGANIZATION
577TH ENGINEER BATTALION (CONSTRUCTION)



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