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AUTHORITY

AGO D/A ltr, 29 Apr 1980

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HEADQUARTERS
538TH ENGINEER BATTALION (CONSTRUCTION)
APO San Francisco 96233

OPERATIONAL REPORT OF LESSONS LEARNED
FOR QUARTERLY PERIOD ENDING 31 October 1966
RCS CSFOR - 65



AD824763

SECTION I

1. Mission. The primary mission of the 538th Engineer Battalion is the building of 140 kilometers of two-way, Class 50 road from KORAT to KABIN BURI, Thailand. Many secondary missions of building temporary and semi-permanent facilities in Camp Friendship and throughout Thailand have been accomplished by the battalion.

2. Planning. The planning of all Job Directives assigned to the Battalion and those that originate at the battalion are handled by the S-3. A weekly operations meeting is held on Monday afternoon. Operations officers from all assigned companies come to discuss the previous weeks work and to plan the work activities for the week. Here equipment and manpower are shifted in accordance with work items to be accomplished during the week in an attempt to improve the efficiency of the battalion.

3. Pertinent Decisions. During the reporting period one major decision was made that changed the primary mission of the battalion. The original mission of the battalion was to construct a military road following the trace of the existing road. However, in July 1966 the OICC produced a final design for the road that did not coincide with the existing road in many areas. After a series of briefings and a personal reconnaissance, Major General Stilwell made the decision of where the road would be and to what specifications. He also gave the battalion a deadline date of 15 March 1967 to complete his requirements.

4. Difficulties Encountered.

a. Problem: A failure of the subbase material on portions of the road built over rice paddies constantly occurred in the rainy season. Although the fill material was compacted to the proper density at optimum water content in dry weather, the road bed would sink and become soft in wet weather.

(1) Action Taken - The remedy to this problem was found by placing boulders and large flat rocks down before placing the fill (subbase). The rocks would spread out the bearing pressure over the rice paddy soil until it was able to carry the designed load. The rock would then be capped with a layer of laterite to keep the water from seeping down through the rock into the poorer soil. The battalion calls this method of road building "Floating the Road".

(2) Lesson Learned - How to construct a road over very poor soil conditions.

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b. Problem: Heavy rains on the 18th and 19th of September caused a washout of two bypasses near the village of PAK THONG CHAI, between Camp Essayons and Camp Friendship. Although parts of the road were flooded, traffic could still continue over two old class 12 wooden bridges (See Inclosure 1). A tractor trailer ran off one bypass causing a bottleneck at one bridge (See Inclosure 2 and 3). If the bridges sustained constant heavy loads they would fail, cutting off the camp from it's primary sources of supply.

(1) Action Taken - The battalion sent their liaison officer to the local police in PAK THONG CHAI to request them to clear the two bypass sites of spectators and traffic. The police were also requested to limit the traffic going over the bridges to empty trucks and passenger cars. The battalion provided a D-8 dozer that pulled the tractor trailer from the bypass. The battalion also limited their traffic over the bridges to empty 5 ton trucks, half loaded 2½ ton trucks, and vehicles of lower class (holding all vehicles to a minimum). The bridge did not fail and the battalion was able to get continuous supplies from Camp Friendship.

(2) Lesson Learned - Quick action, the proper use of Thai liaison officers and good working relationship with the local authorities can produce satisfactory solutions when natural crises arise.

c. Problem: A parking area at the POL Tank Farm near the KORAT Air Force Base was constructed over very poor material. The first procedure used to remedy this condition was to compact the subgrade, bringing in a 12 inch lift of laterite, and cap with a six inch layer of laterite and cement (Soil stabilization) mixed with the proper amount of water. Either the proper amounts of the ingredients were not used or the bearing loads were just too heavy because the area failed to support required loads.

(1) Action Taken - The poor material was excavated to a depth of about four (4) feet. The subgrade compacted as much as possible and then laterite was brought in and compacted in six (6) inch layers until the proper grade was reached. This solution proved satisfactory.

(2) Lesson Learned - In some soil conditions the unstable subgrade must be excavated and replaced with satisfactory material compacted to proper specification in order to support heavy stationary loads.

d. Problem: Daily handling of heavy material in the S-4 yard at battalion required the constant use of the only wrecker available at Camp Essayons. When the wrecker was dispatched out the work in the S-4 yard would stop.

(1) Action Taken - Two pipe line trucks that were not being used were pressed into service. Equipped with the proper slings, they performed effectively the task of moving the material, freeing the wrecker to perform other missions. (See Inclosure 4).

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(2) Lesson Learned - That the battalion makes maximum utilization of all assigned equipment by the substitution of equipment built to perform a different mission but fully capable of satisfying a different requirement.

e. Problem: The large amount of dust on the road in dry weather is a constant safety hazard.

(1) Action Taken - To reduce the hazard the battalion has instructed that all of their vehicles will be driven with the headlights turned on.

(2) Lesson Learned - To use equipment already provided to reduce known safety hazards.

f. Problem: A potential washout was being caused by a gully that was directing a stream of water over a very narrow section of the road. Ditching was impractical and a culvert installation was impossible at the time because of the terrain and weather.

(1) Action Taken - A sandbagged box trench was cut across the road and spanned by a bridge ramp. It has worked effectively in keeping the road open until a more permanent solution can be worked out.

(2) Lesson Learned - That a Bailey Bridge ramp can be used for an expedient bridge or a small open box culvert. (See Inclosure 5).

g. Problem: The length of time it takes to build many similar type buildings in one area.

(1) Action Taken - An assembly line type set-up of crews was found to be extremely effective and easy to control. One crew prefabricating panels, another putting them up, one crew installing posts and footers, another crew placing stringers, etc. In this manner maximum effort was being utilized at all times. Prefabrication and pre-cutting and assembly were used to great advantage.

(2) Lesson Learned - To increase the speed of building similar type buildings through the use of the assembly line.

h. Problem: Decomposed granite has proven to be good wearing surface on a road. However, it is prone to raveling and erosion on shoulder slopes.

(1) Action Taken - Proper treatment with asphalt has given an excellent finished lift and has reduced the erosion of the shoulders.

(2) Lesson Learned - The treatment of decomposed granite with asphalt provides a stable wearing surface on dirt roads.

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SECTION II

1. Personnel.

a. The problem of Mass Rotation.

(1) The turnover of personnel within a three-month period is still a problem. With experienced personnel all leaving and unexperienced personnel taking over without any break in period the efficiency of the battalion suffers. With the tour remaining at one year the problem will repeat.

(2) Recommendation: That the battalion, now short of personnel, be built up gradually until an overage of personnel exists. Then, by the curtail or extension of the tour by a month, the problem will be eliminated.

b. Shortage of personnel in grades of E-5 and above and shortage of critical skills.

(1) The present distribution of grades in the battalion, including the 561st Engr Co, is as follows:

	E-9	E-8	E-7	E-6	E-5	E-4	E-3	E-2	E-1
Auth	1	8	33	65	335	492	171	4	0
Asgd	1	7	27	44	82	256	571	55	3

(2) The critical skills short in the battalion are:

<u>MOS</u>	<u>JOB TITLE</u>	<u>NUMBER</u>
51A	Construction Utilities Worker	8
51B	Carpenter	7
51D	Mason	3
51G	Soils Analyst	1
51H	Construction Foreman	18
51K	Plumber	11
52F	Electrician	6
62A	Engineer Equip Assistant	22
62B	Engineer Equip Mechanic	6
62D	Surfacing Equip Specialist	7
62E	Construction Machine Operator	61
63A	Auto Maintenance Apprentice	7
81B	Construction Draftsman	2
91B	Medical Specialist	4
91C	Medical Assistant	1
94A	Food Service Assistant	3
94B	Mess Steward	5

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(3) Present Promotion Criteria - The majority of personnel assigned against outstanding requisitions are AUS and are normally eligible for promotion to grade E-4 or E-5 just prior to ETS and rotation to CONUS. Consequently, assigned strength in grades E-4 and E-5 will be under authorization until such a time as replacements in proper grade and MOS are on station. This situation is reflected in paragraph b (1) above.

(4) Recommendation: That an increasing number of personnel, E-4 and above, be assigned to the battalion.

c. DA Assignment Policies.

(1) Department of the Army policy of assigning personnel in secondary, additional or basic Career Group MOS against specific MOS requirements and authorizations, i.e. assigning a 51E20 (Camouflage Specialist) against requisition for 51K20 (Plumber), 51 (Construction and Utilities) being the basic career group for both individuals.

(2) Recommendations: That personnel assigned to the battalion be assigned with the proper MOS to their specific MOS requested.

2. Operations, Training and Organization.

a. A large percentage of personnel replacements in the grades of E-2 and E-3, who have arrived in this battalion since 1 May 1966, have not completed POM training requirements. Their records indicate that they have not received such one-time training requirements as Geneva Convention, Military Justice, or Clandestine Surveillance and Listening Devices. In examining the problem it has been found that in some cases the personnel have received the training but no record was made of it and in other cases that personnel had never received such training.

Recommendation: That individual records be thoroughly screened prior to overseas shipment to insure that all training requirements are complete.

b. The Commanders Call Program in the battalion has not been effective due to a lack of support material for scheduled topics. August and September 1966 schedules of topics to be given, did not arrive until the second week of the month for which the schedules were applicable. When a schedule does arrive, the support material does not follow and there is nothing from which a lesson plan can be drawn. For the month of September 1966, three of the four topics scheduled had to be dropped due to lack of supporting material.

Recommendation: That a means be established to provide timely support material for the Commanders Call Program.

3. Intelligence - No comment.

4. Logistics. In order to meet the deadline date for the road, there is a need for all assigned construction equipment to be operational. Since this is not possible, an equipment float is needed.

Recommendation: A maintenance float of construction equipment be established at twenty percent of population for the following items: Wheeled tractors, tracked tractors, graders, water distributors, front loaders and dump trucks.

5 Incl
as

/s/ Russell J. Lamp

RUSSELL J. LAMP
LTC, CE
Commanding

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RILCA-OP (27 Oct 66) 1st Ind
SUBJECT: Operational Report of Lessons Learned for Quarterly Period
Ending 31 October 1966 (RCS CSFOR-65)

Headquarters, 44th Engineer Group (Construction), APO 96233

TO: Commanding Officer, 9th Logistical Command (B), APO 96233

1. The attached Operational Report for quarterly period ending 31 October 1966 for the 538th Engineer Battalion (Construction) is forwarded with comments as indicated.

2. Reference Section I, paragraph 4c: In this test of soil stabilization with cement, a failure to restrict heavy tanker traffic during the entire curing period invalidated the test.

3. Reference Section II, paragraph 1a: The problem expressed by the Battalion with respect to rotation in mass is felt by the entire Group due to the relative newness in country of some of the subordinate units.

4. Reference Section II, paragraph 1c: Assignment of personnel in MOS's not required in the command necessitates extensive retraining activities. This reduces the effectiveness of the operational elements.

5. Reference Section II, paragraph 2b: Distribution is made directly to the subordinate elements and not through the 44th Group. This headquarters has requested that timely distribution of required material be made to the battalions.

6. Reference Section II, paragraph 4: Actions are being initiated by this headquarters to improve maintenance policies and procedures and to establish a more positive maintenance program. During this period training in repair parts supply was provided this unit by an instructor from USARYIS as another attempt to decrease the deadline rate. One of the primary requirements being considered is the authorization and establishment of maintenance float equipment.

1 Incl (4 cys)
nc

Jeslie B Harding
JESLIE B. HARDING
Colonel, CE
Commanding

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RILC-DO (27 Oct 66) 2nd Ind
SUBJECT: Operational Report of Lessons Learned for Quarterly Period
Ending 31 October 1966 (RCS CSFOR-65)

Headquarters, 9th Logistical Command (B), APO 96233

TO: CG, USARYIS, APO San Francisco 96331

1. The serious problem of mass rotation will be alleviated somewhat by extension and curtailment of the tour over a sixty day period. This is to say, that a small percentage of EM will have their twelve month tour reduced by thirty days; a larger percentage will rotate on their DEROS, and a percentage will be involuntarily extended thirty days. The success of this solution of course is dependent on the timely arrival of replacements.

2. The operational posture of our activities in Thailand as opposed to a training organization, dictates the need for trained replacements in the proper MOS code. Assignment by Career Group, additional, or secondary MOS, while not totally undesirable has placed an extra burden on commanders to train or retain replacements. This is a task that they are not properly organized to conduct to a high degree of proficiency. This problem coupled with the already existing personnel shortages, has a significantly ~~disturbing~~ing effect on operational activities.

3. All personnel shortages have been requisitioned according to standard procedures. The essential difficulty, however, is non-arrival of replacements. In September of 1966, for example, the command experienced approximately a 40% no-show of its total projected arrivals for that month.

For *Carl R. Duncan*
LESLIE B. HARDING
Colonel, CE
Acting Commander

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e.3

RIC-MH (27 Oct 66) 3d Ind
SUBJECT: Operational Report of Lessons Learned for Quarterly Period
Ending 31 October 1966 (RCS CSFOR-65)

HQ, United States Army, Ryukyu Islands, APO San Francisco 96331 13 JAN 1967

TO: Commander in Chief, U. S. Army, Pacific, APO 96558

This report and preceding indorsements have been reviewed and the following comments are submitted:

a. Reference paragraph 3, Section I, basic report: It hardly seems possible that the Inland Road can be completed by 15 March 1967. However, since Major General Stilwell's "requirements" are not enumerated, it is impossible to determine whether this date is realistic or not.

b. Reference paragraph 1, Section II, basic report: The lack of MOS qualified personnel can be expected to continue in view of the difficulty expressed by DA in meeting world-wide commitments with trained personnel. This shortage of resources will require a continuing effort on the part of the gaining units to conduct OJT Programs until better trained replacements become available.

c. Reference paragraph 4, Section II, basic report and paragraph 6, 1st Indorsement: During conferences and work sessions at this headquarters with 9th Logistical Command representatives 14-17 November 1966, 9th Logistical Command was requested to state their maintenance float requirements by letter. When this information is received, the proposal and requirements will be reviewed and action taken.

d. Reference paragraph 1 of 2nd Indorsement. Concur on the recommended solution for handling mass rotations.

FOR THE COMMANDER



1 Incl
nc

G. F. WHITE
Major, AGC
Asst AG

GPOP-OT(27 Oct 66)

4th Ind

SUBJECT: Operational Report-Lessons Learned for the Period Ending
31 October 1966 (RCS CSFOR-65), HQ 538th Engr Bn (Const)

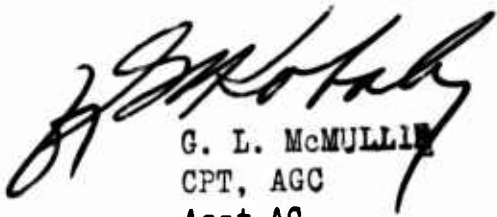
HQ, US ARMY, PACIFIC, APO San Francisco 96558 15 FEB 1967

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:

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G. L. McMULLIN
CPT, AGC
Asst AG



Incl 1

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Incl 2

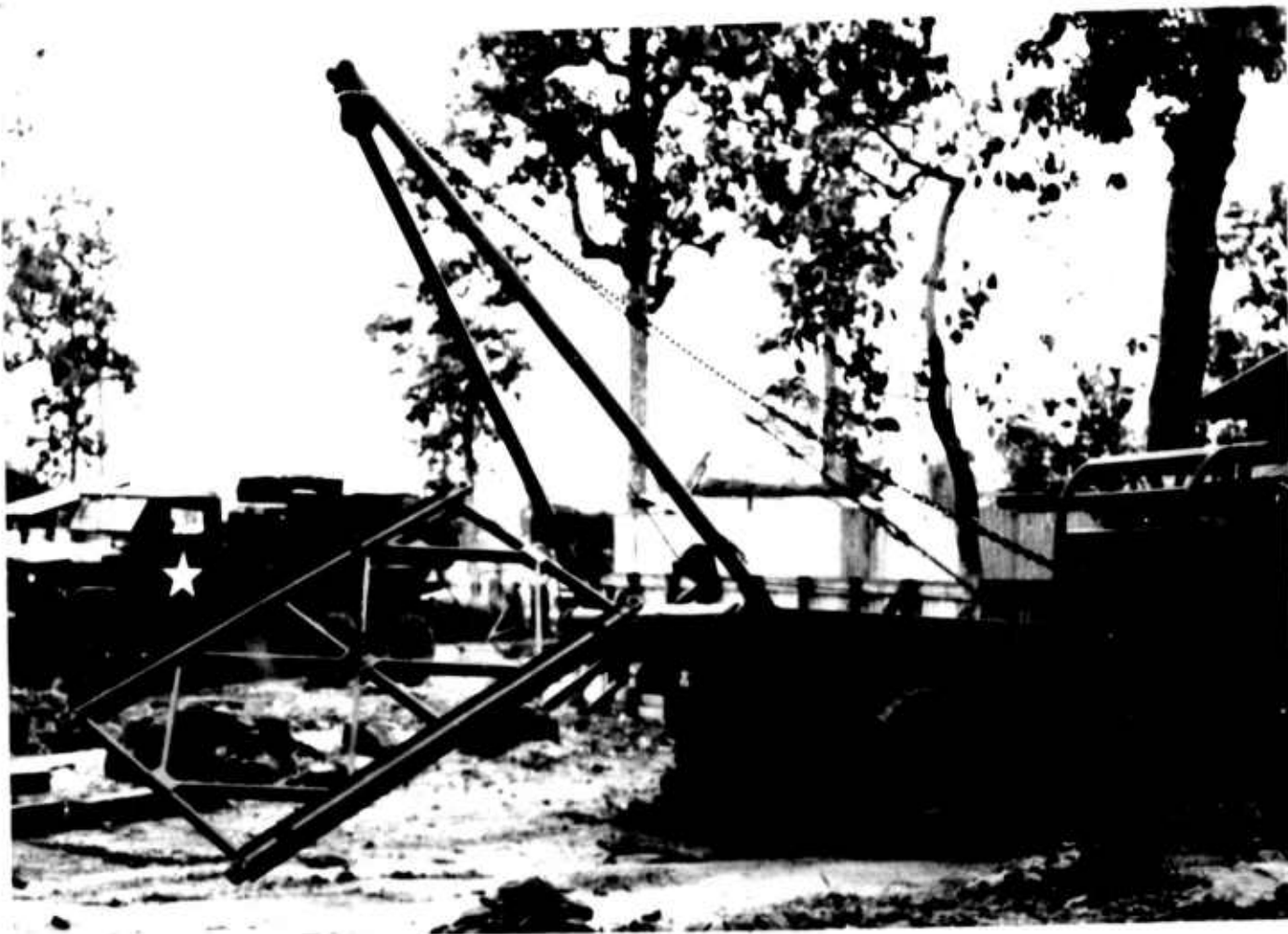
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