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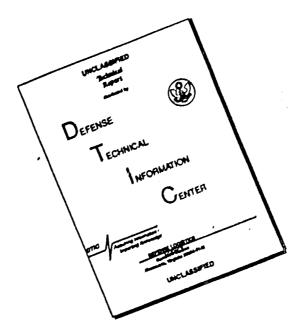
AGO ltr 29 Apr 1980

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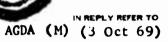
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DEPARTMENT OF THE ARMY

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



FOR OT UT 693278

7 October 1969

860345

SUBJECT: Operational Report - Lessons Learned, Headquarters, 31st Engineer

Battalion, Period Ending 31 July 1969

SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation in accordance with paragraph 5b, AR 525-15. Evaluations and corrective actions should be reported to ACSFOR OT UT, Operational Reports Branch, within 90 days of receipt of covering letter.

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:

1 Incl

45

ROBERT E.

Colonel, M

Acting The Adjutant General

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 31ST ENGINEER BATTALION (C)(A)
APO San Francisco 96490

EGEA-3

8 August 1969

SURJECT: Operational Report Lessons Learned of HQ, 31st Engineer Battalion (C)(A) for the period ending 31 July 1969 RCS CSFOR-65

THRU: Commanding Officer

79th Engineer Group (Const)

ATTN: EGE-3 APO 96491

Commanding General
20th Engineer Brigade
ATTN: AVBI-OS
APO 96491

Commanding General US Army Vietnam ATTN: AVRGC-CST APO 96375

TO:

Commander-in-Chief
US Army Pacific
ATTN: GPOP-DT
APO 96558

FOR OT UT 693278 Inclosure

SECTION: I. OPERATIONS: SIGNIFICANT ACTIVITIES:

- a. Command: LTC George N Andrews continued as Battalion Commander.
- b. Personnel, Administration, Morale, and Discipline:
- (1) At the end of the reporting period the strength of the battalion, including attached units, was 100% of that authorized. The monthly strength figures for the quarter are shown below.

	STRENGTH	OFF	WO	EM	TATOT
31 May 1969	AUTH ASGD	42 3 9	4	9 4 9 9 2 9	99 5 9 7 2
30 June 1969	AUTH	4 2	4	949	995
	ASOD	3 9	4	933	969
31 July 1969	AUTH	42	4	9 49	99 5
	ASGD	4 0	4	9 3 9	9 83

(2) Shortages by MOS in the Battalion this reporting period are indicated in the following charts:

PMOS	<u>AUTH</u>	ASGD(M:Y)	ASCD (JUII)	ASCD(JUL)
12B40	88 ·	53	51	52
12250	7	8	7	5
31G40	5	2	3	3
62N50	1	0	0	0

(3) The following charts list losses and grins during the quarter:

LOSSES	OFF	WO	$\mathbf{E}\mathbf{M}$	VCC
CONUS Rotation	12	2	164	178
Infusion	2	0	Ó	2
Miscellaneous	0	1	48	49
TOTAL	14	3	212	229
GAINS	OFF	WO	EM	AGG
CONUS Replacements	5	2	146	153
Infusion	2	0	0	2
In-country Rags	2	_ 0	20	22
TOTAL	- 9	2	166	177

(4) Thirty-three personnel extended their foreign service tours:

OFF	MO	<u>EM</u>	LATOT
0	0	33	33

(5) The following awards were presented to 31st Engineer Battalion personnel:

MEDALS	OFF	<u>WO</u>	EM	TOT.L
Bronze Ster	12	1	7	20
Army Connendation	3	0	16	19
Purple Heart	0	0	8	8

(6) The following enlisted promotions were made to the grade indicated:

	<u>E4</u>	<u>E5</u>	<u>E6</u>	E7	E8	E 9	TOTAL
May	40	22	3	0	0	0	65
June	18	1 8	1	1	1	0	3 9
July	137	47	2	0	0	0	186

(7) Disciplinary Cases:

	ART 15	SCM	SPCM	LATOT
Mey June	8	0	1	9
June	21	0	1	2 2
July	2	0	1	3

(8) Reenlistment during this period was:

	MAY	JUN	JUL
First Term	1	7	3
Career	1	Ó	0

(9) In the morale area the allocation for Rest and Recuperation Leave receivened filled by personnel of the battalion are shown below:

LOCITION	MAY	JUN	JUL	TONL
Australia	1 2	8	14	34
Bengkok	7	12	1 5	3 4
Hawaii	14	17	17	48
Manila	1	1	1	3
Taipai	7	6	7	20
Kuala Lumpur	0	CANC	EL***	0
Singapore	4	0	2	6
Tokyo	1	1	3	5
Hong Kong	6	5	6	17
Penang	0	0	0	0
Sub-total	52	50	65	167
In-country	3	4	_4	11
TOTAL	55	54	69	178

- c. Intelligence and Counterintelligence:
- (1) All intelligence data is received from G2 1st Cav Div (AM) and IIFFV intelligence summaries.

- (2) During the left reporting period the S2 coction's main activities were minesweeping LTL1A from Place Vinh to the Song Be Bridge. The S2 section also conducted recons for suitable sources of 1 territe for reads and airfields within III CTZ and provided security for numerous 31st Engr In conveys between Phace Vinh and Dong Xoai.
- d. Plans, Operations, and Training:
- (1) Operational Support: During the reporting period 90% of the total battalien effort was devoted to operational support missions. Approximately 75% of the total battalien effort was expended in support of the 1st Cav Div (AM). These were three basic types of Operational Support Missions:
 - (a) Diroct support of combat operations.
 - (b) Deliberate construction to support future operations.
- (c) Troop, equipment and material support to MACV and IIFFV for construction and maintenance of existing roads, airfields, fire support bases, and MACV adviso housing.
- (2) Lines of Communication (LOC); Deliberate road restoration and emergency road repair were conducted. Approximately 1% of the total battalion effort was expended on LOC work during the reporting period.
- (3) Base Construction: The battalian effort expended on base construction increased to 7%. This was due to increased emphasis on MACV projects and 1st Air Cav Div base comp requirements at Phuoc Vinh.
- (4) Design and Construction Engineering: The design requirements remained at approximately the same level as last quarter. Due to the emphasis placed on quality control, designs, and site plans are required for all projects.

(5) Training:

- (a) Special classes are being taught within the battalion from time to time to improve proficiency in certain areas. These classes include: Anti-sapper Training, Radio-telephone Procedures, and Rigging of Airmebile Equipment and Supplies for Movement by Rotary Wing Aircraft.
- (b) Training is also conducted by 79th Engr Gp for the 31st Engr Bn.
 This training includes: PLL, TARES, Design, Critical Path Method, and various reporting procedures required by Group.
- (c) All replacements for the 31st Engr Energe receiving 3 days of training at the 1st Lir Cov Div Training Center located in Bion Hon.

oa Logistios and Maintenance:

(1) Maintenance: The average deadline rate for the battalion during the quarter has been 11.5 overall and 16.9 on critical items, as shown below:

	OVER.LL	CRITIC:L
$M \circ y$	10.8%	16.4%
June	13.5%	21.4%
July	9.8%	12.95

(2) Supply: Supply problems were minimal during the reporting period with the repetien of a critical shortest of 1x,2x, and 4x lumber and plywood. Major construction items is such by type projects are listed below:

	B/SE	LOC	MJ.CV	MUR	OP SPT
Lumber, BF	7861	380	58893	80034	30603
Corr Stl, SH	2 3 7	-	730	450 5	230
Wire, RL	-	_	-	1730	12
Screen, RL	29	_	1 5	17	4
Plywood, SH	-	4	27	2	61
Nails, LB	300	25	13 62	5 25 0	2245
Cement, BG	3.85	71 2	10	1270	34
Culvert, PC	195	319	_	929	-

- f. Force Development: During this reporting period, the battalion experienced an exceptional amount of movement. On 18 May, D Co moved from Long Binh to Physic Vinh and began construction of their contenement area. Project work within the battalion also necessitated a great deal of movement. A Co moved the 2nd Plateon to Dong Koai on 24 Jun for sirfield maintenance and the 3rd Platoen on 27 Jun to Due Phong for the MACV Housing project. Both platoons still remain on site at the end of this reporting period. B Company remained at Quan Loi for completion of the MACV Housing at Hon Quan, a perimeter observation tower, 5th SFG TOC, and continue work on the ASP. On 10 May 2nd Plateon of B Co was neved from Quan Loi to Song Be for construction of three 175mm gun pads. This was finished on 23 Jun and the 2nd Platoon returned to Quan Loi. The 3rd Platoon remained at Song Ba during the ontire reporting period for construction of MACV Housing. The 2nd Flateen of C Co completed construction of MACV Housing at Bo Duc and was extracted on 22 Ray. The 3rd Platcon of C Co moved to Tra Cu on 10 May for construction of artillery pads, a slingout pad, and roadwork. At the end of the quarter 3rd Platoon was preparing to return to Phuoc Vinh. D Company extracted the 3rd Platoon from Duc Hue on 27 Jun upon completion of the Type II C7A airfield. D Co also provided airfield maintenance at Katum from 8 May through 31 Jul, at Duc Phong from 17 May through 30 Jun, and at Tonle Cham from 28 Jun to the present. The 557th LE Co sent its 1st Plateon to Lai Khe during the period 1 May through 31 May for construction of a drainage system for the base camp. The 2nd Platoon remained at Quan Loi attached to B Co for work on the ASP and QL13 south of An Loc. The 1st Platoon was later sent to Cu Chi during the period 10 Jun through 20 Jun for construction of & portion of QL22. From 20 Jun through 26 Jun the 1st Platoon upgraded the perimeter road at Dau Tieng base camp. On 26 Jun they returned to Phuoc Vinh.
- g. Command Management: With reference to Force Development, it is apparent that the battalion's requirements for both fixed win, and retary wing aircraft have increased several fold due to the dispersion of field elements. The battalion requires more retary wing aircraft for Command and Central and repair parts resupply on a regularly scheduled basis. The fixed wing aircraft support received by the battalion consisted of C130, C123, and C7% aircraft. The number of flights received was sufficient; however, the eratic arrival times of aircraft made it extremely difficult to plan aircraft loads accordingly.

- h. Civil Affairs: Operational commitments of the battalian remained high this quarters however, the battalian was able to centinue its program of MEDCAPS in the villages surrounding Phase Vinh. The MEDCAPS are held approximately once every week with an average of 30 patients treated each time. Each MEDCAP employs the Bn Surgeon, 2-3 medies, and 4 EM for security.
- i. Civilian Personnel Affairs: The continued use of local nationals for prefab operations and KP has continued to be successful and without incident.
- j. Headquarters and Headquarters Company:
 - (1) Command: 1LT James C Harm continued as Company Commander.
- (2) Headquarters Company has continued to support the line companies. All of the Heavy Equipment section's effort has been in support of the line companies.
- (3) Headquarters Company continued working in the company area by improving the drainage. In additional BOQ was constructed and new EM wash facilities were installed. The S4 section improved their storage facilities with more overhand protection and increased security structures.
- k. Company A, 31st Engineer Battalion:
 - (1) Command: .1LT Torry Simmons continued as Company Commander.
- (2) Operations: During this quarter A Co constructed in Phuce Vinh a radar tower and 4 perimeter bunkers, 2 CH47 maintenance revetnents, 26 UH1 revetnents, and the DivArty TOC. A Co also cleared 106,200 SF of minefield and detonated in place 53 pieces of ordnance. At the time of this report, A Co is in the process of constructing MACV Housing at Duc Phong, upgrading the airstrip at Dong Kosi, & constructing an air control tower and a radio research TOC at Phuce Vinh.
- 1. Company B, 31st Engineer Battelion:
- (1) Command: 1LT Donald McAbery replaced Cpt Coldwell as Company Commander on 9 Jun 69. 1LT Andrew Mueller replaced 1LT McAbery as Company Commander on 13 July 1969.
- (2) Operations: During this period B Co's work efforts were at two different locations; the 3rd platoon stationed at Son Be and the rest of the company at Quan Loi. For this reporting period the company continued to do base development type work. The platoon at Quan Loi finished the MACV housing project at Hon Quan, the 60' observation tower for the Quan Loi perimeter, a TOC for the 5th SFG, and are nearing completion on the Quan Loi ASP, perimeter clearing, fields of fire, & Perimeter bunkers. The platoons at Quan Loi were also called upon for emergency work on Highway QL13. The 2nd platoon, 557th LE attached to B Company at Quan Loi also provided support in maintaining QL303, the Quan Loi airfield, and the earthwork for the Quan Loi ASP. They are presently working on two maintenance hardstands at Quan Loi. The 3rd platoon at Song Be finished construction of Phase I, MACV Housing as well as construction of three 155mm gun pads, and MACV Housing at Phuoc Binh. The 3rd Platoon is presently working on Phase II, MACV Housing at Song Be.

- m. Company C, 31st Engineer Battalian:
 - (1) Command: Cpt Karl R Woodruff continued as Commany Commander.
- (2) Operations: During the reporting period Company C was involved in various widely scattered projects including MACV Housing at Bo Duc, artillery gun pads at Tra Cu, a Tactical Operations Center for 51st Engr Bn, MER for 1st ACD units, Helicopter Refuel/Rearm facilities, upgrade of Song Be Road, and Phuoc Vinh airfield maintenance and repair.
- n. Company D, 31st Engineer Battalion:
- (1) Command: Cpt Christos A Dovas replaced Cpt Lynn Page as Company Commande: on 8 June 1969.
- (2) Operations: During this reporting period D Co continued its mission of maintenance of forward airfields by completing upgrading operations at Katum and Duc Phong, and are presently at work at Tonle Cham. The 3rd platoon of D Co constructed a Type II C7A airfield at Duc Hue. Other projects included construction of D Co cantonment, MER for 1st ACD, technical assistance for SEA Hut construction at Phuoc Vinh, and testing of various asphaltic treatments for use on forward airfields D Co also provided equipment support at FS Bases Diamond, Joy, and Hobo Wood as well as 1st Inf Div defensive positions (XT6050).
- o. 557th Light Equipment Company:
 - (1) Command: Cpt James P Raymolds continued as Company Commander.
- (2) Operations: During this quarter the 557th LE Co prepared a drainage system for the Lai Khe base camp, constructed the Phuoc Vinh ASP, the Quan Loi ASP, Co D motor pool area, a maintenance pad for the 11th Avn Gp as well as helicopter revetment pads and randwork for the 227th at Phuoc Vinh. Road improvements consisted of upgrading the perimeter road at Dau Tiong base camp and repairing and upgrading QL22 and QL13 south of An Loc.

SECTION II. LESSONS LEARNED: COMMANDERS OBSERVATION, EVALUATION, AND RECOMMENDATIONS

- a. Personnel: None
- b. Intelligence: None
- c. Operations: None
- d. Training: None
- e. Engineering:
 - (1) Soil Cement Stablization
 - (a) OBSERVATION: Failure of soil-cement patches.

- (b) EVALUATION: Use of soil cement for pathole repairs on forward airfields resulted in several instances of failure. The methods of lacement used were implace mixing and hand batching.
- (c) RECOM ENDATIONS: Excellent results were obtained by use of a 16s mixer towed behind a 3/4ton truck. The laterite and cement were dry mixed in the 16s and towed from pothole to pothole. This method gave a uniform and well controlled mix as well as increased mobility. A crew with hand compactors and a water distributor followed the 16s to complete the patchwork.

(2) Dust Pailatives:

- (a) OBSERVATION: Slow curing MC70.
- (b) EVALUATION: MC70 applied as a final surface treatment at Duc Hue airfield would, for all practical purposes, not cure. The airstrip was constructed of a clay base course with a laterite cap. Sand had to be rolled into the MC70 several times to dry it out.
- (c) RECOMENDATIONS: If an asphaltic cutbackis deemed necessary, an RC grade should be used in lieu of an MC grade due to its poor penetration into laterite.

(3) M8A1 Matting Removal:

- (a) OBSERVATION: M8A1 matting is not easely nomeved after time in service, during when much welding was perfromed for maintenance.
- (b) EVALUATION: Once the locking tabs have bent down and the natting secured, it is very time consuming to attempt a piece by piece removal, particularly after repair welding has been done.
- (c) RECOMMENDATIONS: Time is gained by cutting the old matting with torches in approximately 30x40 sections, rolling it with a bucket loader and loading it onto a lowbed trailer with a crane. These rolls can be transported to other sites where they can be unrolled and reused as storage pads, maintenance hardstands, etc.
 - (4) Field Expedient "O" rings for International 3414 backhoe.
 - (a) OBSERVATIONS: Non-availability of "O" rings for I3414 backhoe.
- (b) EVALUATION: Under field conditions the "0" rings in the I3414 backhoe do not stand up under extended periods of operation.
- (c) RECOMMENDATIONS: In order to keep a job moving while awaiting replacement "O" rings, ordinary rubber bands or rings cut from old inner tubes can be used as a field expedient.

- (5) Field Expedient Tubes for Grader Tires
 - (a) OBSERV. ICN: Non-evoilability of inner tubes for Cat 12 grader.
- (b) EVALUATION: Airfield maintenance is brought to a virtual standstill due to a grader devalined.
- (c) RECOMMENDATIONS: A 5ton inner tube can be used in lieu of the grader tire tube as a temporary means of keeping a grader operational.
- f. Logistics: None
- g. Organization: None
- h. Other: Communications:
- (1) OBSERVATION: Field failures of the Plate Trimmer Capacitor 2AlA1C22 in Amplifier AM-3349/GRC-106 have been attributed many times to improper tuning by equipment operators.
- (2) EVALUATION: To prevent excessive Voltage Standing Wave Ratio (VSWR) during tuning procedures of the AN/GRC-106 radio set, the antenna loading and antenna tuning controls must be preset within the prescribed operating limits. Excessive VSWR is evidenced by the tuning meters being driven off scale. If the tuning and loading is not brought into balance within two minutes the plate trimmer capacitor may permanently fail.
- (3) RECOMENDATIONS: The operator should immediately tune the ANY LOAD and ANY TUNE controls after setting HV RESET switch at TUNE and before taking readings with TEST METER. The operator, while watching both associated tuning meters, should practice tuning the ANY TUNE and ANY LOAD at the same time left hand on ANY TUNE and right hand on ANY LOAD knob. This will increase his proficiency and shorten the tuning time.

GEORGE N ANDREWS

LTC CE

Commanding

SUBJECT: Operational Report of the Slst Engineer Battalion (Combat) for the Period 1 May 1969 through 31 July 1969

DA, HEAD WART RS, 79TH ENGINEER CROUP, ATC 96491

TO: Commanding General, 20th Engineer Trigade, ATTN: AVBI-OS, ALC 96491

1. The operational report of the 31st Engineer Battalion has been reviewed and additional comments are as follows:

Reference Section II, e, 2b, page 7: The MC70 application on the Duc Hue Airfield was placed too thick to allow for remal curing. The slow curing was not a result of the type of cut back used.

2. This report is considered to be an adequate summary of the battalion's operational experience during the report period. The report is submitted in accordance with USARV Reg 525-15, dated 13 April 1968.

FOR THE COMMUNICATION.

SHIGEYOSHI PORTIA

CFT, AGC

AVHGC-DST (8 Aug 69) 3d Ind

SUBJECT: Operational Report-Lessons Learned of HQ, 31st Engineer Battalion (C)(A) for the Period Ending 31 July 1969 RCS CSFOR-65

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 1 2 SEP 1969

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 31 July 1969 from Headquarters, 31st Engineer Battallion (C)(Δ).

2. Comments follow:

- a. Reference item concerning "MSAl Matting Removal", section II, page 7, paragraph e(3); concur. This method appears satisfactory when it is necessary to remove large areas of matting. When areas requiring repair are relatively small, the method described in DA Pam 525-3-1, page 44, is applicable.
- b. Reference item concerning "Field Expedient "O" rings for International 3414 backhoe", section II, page 7, paragraph e(4); concur. Ordinary rubber bands or rings cut from old inner tubes can be used as field expedient repair parts are used, they should be installed by an appropriate level of maintenance and should be replaced as soon as the authorized repair part becomes available. Rubber bands and inner tube rubber will not seal as good as the authorized "O" rings and will deteriorate rapidly because the rubber is not treated to withstand the chemical deterioration effect of the hydraulic oil. The use of any field expedient should be authorized by a unit commander only after the replacement part or item has been requested. A continuing requirement for field expedient repair parts of this nature should be investigated because PLL and ASL stockage levels should be sufficient to support requirements.
- c. Reference item concerning "Field Expedient-Tubes for Grader Tires", section II, page 8, paragraph e(5); concur. The most acceptable substitute is the tube from an M-39 bridge truck.
- d. Reference item concerning "Communications", section II, page 8, paragraph h; concur. The unit is advised that operator training is the critical factor. If all currently approved procedures, such as proper presets, were followed, the problem would not exist.

FOR THE COMMANDER:

Cy furn: HQ, 31st Engr Bn

MQ, 20th Engr Bde

CPT, AGC

Assistant Adjutant General

12

AVBI-CS (8 Aug 69) 2nd Ind SUBJECT: Operational Report of the 31st Engineer Battalion (Combat) for the Period Ending 31 July 1969, RCS CSFOR-65(R1)

DA, HEADGUARTERS, 20TH ENGINEER BRIGADE, APO 96491 2 6 600 1969

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

- 1. Submitted in accordance with USARV Regulation 525-15, dated 13 April 1968.
- 2. Subject report for the 31st Engineer Battalion (Combat) has been reviewed and is considered adequate.

FOR THE COMMANDER:

Adjutant

Copies Furnished: CO, 79th Engr Gp CO, 31st Engr Bn GPOP-DT (8 Aug 69) 4th Ind SUBJECT: Operational Report of HQ, 31st Engineer Battalion (C)(A) for Period Ending 31 July 1969, RCS CSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 24 SEP be

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:

D A. TUCKER CPT. AGC

ASST AG

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Experiences of unit engaged in countering	rgency operations, 1 May	69 to 31 July 69.		
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CO, 31st Engineer Battalion				
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