1 Feb. - 30 April 1968

84th Engineer BN (Construction) ORLL

1 Feb-

1 Feb. - 30 April 1968

84th Engineer Bn (Construction)

ORLL

1 Feb-

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 84TH ENGINEER BATTALION (CONSTRUCTION)
APO 96230

14 May 1968

EOA-EB-CO

SUBJECT: Operational Report of 84th Engineer Battalion (Construction) for Period Ending 30 April 1968, RCS CSFOR-65 (R1)

THRU: Commanding Officer
35th Engineer Group (Const)
APO 96238

Commanding General
18th Engineer Brigade
APO 96377

Commanding General
US Army Engineer Command, Vietnam (PROV)
APO 96375

Commanding General
United States Army, Vietnam
ATTN: AVHGC (DST)
APO 96375

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

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

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EGA-EB-CO 14 May 1968
SUBJECT: Operational Report of 84th Engineer Battalion (Construction) for Period Ending 30 April 1968, RCS CSFOR-65 (R1)

Section 1. Significant Organization or Unit Activities.

a. Command

(1) Organization

(a) Headquarters & HQ Co, 84th Engr Bn

(b) Co A, 84th Engr. Bn

(c) Co B, 84th Engr. Bn

(d) Co C, 84th Engr. Bn

(e) Co D, 84th Engr. Bn
Earthmoving Plt of Co D became attached to 39th Engr Bn for an indefinite TDY period on 18 March 1968

(f) 513th Engr. Co (DT)

(g) 523rd Engr. Co (PC)
Unit came under this command 15 March 1968

(h) 3rd Platoon, 517th Engr Co (LE)
Unit departed this command on 3 Feb 1968

(2) Unit Operations

(a) HQ & HQ Co: The utilities section, augmented with Vietnamese laborers continued work on the improvement of the Camp Williams Cantonment area. Construction included a new 2400 SF mess hall, wash stand for EM, new bunkers for S-1 and S-3, and improvement of the perimeter defenses to include clearing fields of fire and building two man emplacements. Also improvement of the motor pool area was completed to include drainage, a wash rack, and a grease rack.

(b) Company A: The efforts of Company A included the maintenance and repair of battalion ordnance and Engineer equipment, the production of rock, and the distribution of asphalt to improve LOC's. Some of the major accomplishments this quarter included: paving of 3 KM on Valley A road, surfacing 55,000 SY of storage area at the Qui Nhon Port Transit Storage Area, surfacing 9000 SY of storage and parking area at Phu Tai Maintenance complex with ME 30 and ME 70 compound, and the production of 62,791 tons of crushed rock.

(c) Company B: This unit moved from Phu Tai to LZ Uplift on 12 Feb. The major effort of B company was the upgrading of QL#1 highway from Phu My to Bong Son.

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EOA-RE-C) 14 May 1968
SUBJECT: Operational Report of 64th Engineer Battalion (Construction) for Period Ending 30 April 1968, RCS CSFOR-65

This consisted of widening of the road, construction of culverts to include headwalls and wingwalls construction of 3 bridges, preparing the subgrade of the existing road for asphaltic concrete surface, and maintenance and repair of existing bridges and highway. B Company completed portions of the cantonment areas at Phu Cat Air Base for the 41st Artillery Group and supported LZ's Ivy, Ginny, Crystal Salem, Pony, and Uplift by clearing fields of fire and constructing gun emplacements, bunkers, sump pits, and ammo pads. This company also provided a daily mine sweep of roads in their AOR.

(d) Company C: Company C accomplished a variety of projects during this period. The Port Maintenance Building was completed which included a metal 40'x100' Pascoe building set on 3'3" reinforced concrete columns and 25,000 SF of prepared hardstand parking area. The transit storage hardstand area of 55,000 SY of prepared subgrade base and drainage was completed at Port Facilities, Qui Nhon. A water fill point at Phu Tai was also completed which included the assembly of a pre-fabricated 250 barrel metal tank on a pre-engineered steel tower, construction of two fill stands to accommodate two 5,000 gallon water tankers simultaneously and 15,000 SF of hardstand driveway. Other projects that were completed during this period were the building of 2 revetments for aircraft at QNAAP, 9000 SY of hardstand area at Phu Tai Maintenance complex, 120 ' medium tent frames for 173rd AEN BDE, and construction of a 20'x16 communications building with two 80' antenna masts on Vung Chua mountain. Company C also participated in operational support of a joint Korean and U.S. operation north of Qui Nhon by upgrading Route 412 for tank traffic. An 80'x240' refrigerated warehouse at the Qui Nhon depot facility was started this quarter.

(e) Company D: Efforts of Company D during this quarter centered around construction of Phase I of QL#1 south of Phu Tai and continued work at Long Hy Depot. D Company played a principal role in the security of Qui Nhon during and after the recent TET offensive. Company D was dug in on a strategic hill west of Qui Nhon with the primary mission of infantry support from 9 Feb to 29 Feb. Work completed during this period was a motor shed and eight of sixteen concrete pads for the cantonment area at Long Hy Depot. Blasting, hauling, preparing subgrade and base, and constructing culvert headwalls, and wingwalls on QL#1 south of Phu Tai continued. Electrical work on the Butler warehouses at Long Hy depot also continued through this period. The ADPS building at Long Hy depot, a 70'x144' air conditioned wooden and reinforced concrete structure, was begun this quarter. D Company's Earthmoving Platoon on 18 March was attached for operational control of the 39th Engr Bn (Combat) for the purpose of upgrading QL#1 North of Ho Duc. This attachment remained in effect throughout this quarter.

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EGA-BB-CO 14 May 1968
SUBJECT: Operational Report of 84th Engineer Battalion (Construction) for Period Ending 30 April 1968, RCS CSFOR-65 (R1)

(f) 523rd Engineer Company (PC): The major effort in construction this period was the completion of Tank Farm Number 3 at Qui Nhon and causeway bridge No. 2 at the Qui Nhon port. The Tank farm construction included (3) 50,000 BBL welded steel tanks, (4) 10,000 BBL welded steel tanks, berms for fire walls, piping, manifold system, and painting of the tanks. A variety of other projects this quarter were undertaken, including upgrading the flight control tower at Lane Army Airfield, diving support for the 5th Terminal Command, hauling and driving piles for the 589th Engr. Bn (Const) at Bridges 19-11 and 19-26, maintenance of LST beach, and repair of Bridge QL-1-322.

(g) 513th Engineer Company (DT): During this period the 513th Engr Company gave dump truck support to this Battalion for hauling rock and construction materials and supported the move of the 35th Engr Bn and the 45th Engr Group. On 20 March, the 513th Engr Company (DT) came under operational control of the 937th Engineer Group.

b. Personnel, Administration, Morale, and Discipline: During this reporting period the battalion continued its record of over 90% participation in the Savings Bond program while Soldiers Deposits held at 13%. There were a total of 103 people recommended for an award for outstanding performance. The battalion suffered 21 casualties and 3 battle deaths in this quarter. A total of 44 men extended their tours in Vietnam during this quarter.

c. Intelligence and Counter Intelligence: Upon the initiation of the VC/NVA TET offensive, the Battalion became extensively engaged in the defense of the Qui Nhon Installation, initially deploying two companies as provisional infantry. In addition, both base camp security and the provisional platoon controlled by this Headquarters on Ke Soin Mountain were greatly increased to counter the enemy threat. These commitments, except the provisional platoon were gradually reduced near the end of February and the Battalion returned to its normal mission. The Headquarters and C Company Compound was attacked on two occasions: On 3 February the compound was attacked by a squad size sapper unit resulting in two friendly killed and two friendly wounded. On 26 February, the compound was again attacked by a squad size sapper unit in coordination with an attack on the local ARVN ASP. This attack resulted in two enemy killed with no friendly casualties. On 11 February, a minor mortar attack on the Phu Tai Crusher/Quarry Complex resulted in one friendly killed. Numerous enemy incidents of LOC interdiction and work party harassing fires resulted in sixteen friendly wounded and five bridges destroyed. Total casualties for the period were: Three friendly killed and eighteen friendly wounded and two enemy killed. Good intelligence liaision continued to be maintained by this unit with the Capital ROK Infantry Division, 22nd ARVN Infantry Division, 5th Special Forces, Binh Dinh Province, and other combat and support units in the area.

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EGA-BB-CO 14 May 1968
SUBJECT: Operational Report of 84th Engineer Battalion (Construction) for Period Ending 30 April 1968, RCS CSFOR-65 (R1)

d. Plans, Operations, and Training: Increased security requirements and operational support missions resulting from increased enemy activities during TET cut into the construction resources of the battalion. Two companies were organized and committed as Infantry units, one for two days and one for 3 weeks. In early February the AOR for this Battalion was extended considerably and effort was diverted from Base Development construction to LOC work. Planning was accomplished for a greater percentage of effort to be given to LOC work in the coming quarter. Training during this period emphasized OJT of many newly assigned personnel and weapons firing for all personnel.

e. Logistics: An intensive follow-up procedure on all types of requisitions has disclosed that a large percentage of all requisitions submitted are lost in supply channels. Because of the close liaison and willing cooperation with supply personnel these lost requisitions are becoming known almost immediately and new requests are being submitted. According to the director of supply a new accounting system is being installed and it should alleviate this problem. There are still critical shortages of TOE items which are all on valid requisitions and are being checked constantly. Many board feet of "two-by" lumber are on request and may, in the near future, become critical. An average of 350 requisitions were processed each week of the reported quarter. The battalion consumed in excess of 130,000 gallons of mogas and 140,000 gallons of diesel.

f. Force Development: N/A

g. Command Management: N/A

h. Inspector General: N/A

i. Civic Affairs: During this reporting period the battalion undertook a variety of civic action projects. The members of this battalion voluntarily contributed 138,575VN$ for the support of the Holy Infant Orphanage and the Kim Chau Orphanage. The Battalion also provided materials and technical assistance for the construction of a 20x60 medical ward for the refugee center located at coordinate, CR003258. This medical ward is now complete and in operation. It contains a complete water and electrical system. Also during this period, the Kim Chau Orphanage was provided with a 12x16 shower facility and 3000 gallon water tower. When this project was completed, the kitchen, aid room, and shower all had running water. The battalion has also continued to provide an NCO to the Qui Nhon Public works department to provide technical assistance for the city's engineering projects and to act as a liaison between the 84th and the City of Qui Nhon.

Section 2, Part I, Observations (Lessons Learned)

A. Personnel: None

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14 May 1968

EGA-EB-CO
SUBJECT: Operational Report of 64th Engineer Battalion (Construction) for Period Ending 30 April 1968, RCS CSFOR (R1)

b. Operations:

1. Item: Expedient Repair of a Two inch Hole in the Side of a Welded Steel Tank.

Discussion: During the 1968 TET offensive one of the 50,000 BBL tanks at Tank Farm No. 3 was struck by a B-40 rocket. The impact of the round created a two inch diameter hole in the side of the tank approximately fifteen feet above the floor. Since the tank contained eleven feet of JP-4 Jet Fuel at the time it was impossible to repair the hole by welding unless the tank was drained and flushed. It was decided that an expedient method of repair could eleminate the delay caused by draining of the tank. The method decided upon was to use a four inch square steel plate coated with neoprene and bolted to the outside of the tank with a "Molly Bolt" inserted through the hole. This method of repair took only two hours to repair and the tank has been filled to full capacity on several occasions since the hole was plugged.

Observations: This fabricated plug is a quick and expedient way of repairing tanks and saving the contents. To date there have been no traces of seepage from this hole.

2. Item: Culvert Jacking Post

Discussion: During the process of expanding culvert to accommodate struts, wooden jacking posts frequently slipped or buckled causing severe danger to the personnal inside the CMP. A metal post was developed to enclose both the upper sill and the jack post to prevent failure during the jacking process. Inclosure I outlines the assembly details of the jacking post and the correct operation of the unit. Different lengths must be made for each size CMP (48" 60" 72"). A telescoping unit would not be advisable unless close tolerances could be obtained between the telescoping tubes to prevent buckling.

Observations: The additional time and equipment needed to fabricate jacking posts would be fruitful because the unit both speeds assembly of culvert struts and reduces the hazard of failing wooden jacking post.

3. Item: A-Frame type Airfield Revetment Ties

Discussion: The original design of the standard A frame type Airfield-Aircraft Revetment requires wire ties to keep the walers in the proper position. The use of 1/2" to 5/8" banding material in conjunction with a banding machine to tie the walers together through the A frame was used in place of the tie wire to decrease the time element in construction.

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EGA-BB-CO 14 May 1968
SUBJECT: Operational Report of 64th Engineer Battalion (Construction) for Period Ending 30 April 1968, RCS CSFOR-65 (R1)

Observation: The use of banding material cuts the construction time for this phase considerably thus a great saving in manpower cost.

4. Item: Use of CH 47 Helicopter for construction in Inaccessible places.

Discussion: The construction of a communications facility on Vung Chua mountain included the setting of two 80' Class A telephone poles for an antenna mast. The site was inaccessible to any type of lifting equipment since it was on the peak of the mountain. It was decided to try and set the antenna mast by helicopter. The mast was assembled on the ground by tying the two 80' poles together as called for in the plans for construction, placing the steps on the poles and fastening the ground guys and wrapping them around the poles before placement. The ground anchorage was built and holes for the two pole base were dug. The entire mast was lifted by a CH 47 helicopter and set in place. As soon as the aircraft lowered the mast into the base holes the guys were unwrapped and fastened to the ground anchorage system that was in place. The setting of the mast by the CH 47 took less than one hour.

Observations: The use of air support in the construction effort can greatly reduce time and cost of construction in inaccessible locations. Precise prior planning and having all phases such as guy wires tag lines and anchorage systems all in place is absolutely necessary to make the operation worthwhile and run smoothly.

c. Training: None

d. Intelligence: None

e. Logistics

1. Item: Conveyor Belt Drive on 225 TPH Rock Crusher

Discussion: It was noted during operation that the integral conveyor did not move fast enough to prevent rock from piling up and slowing down the jaws. It was discovered that a right angle drive in the propelling shaft had a reduction assembly that could be switched to increase shaft speed

Observation: A right angle reduction drive can be switched in the 225 Primary Crusher to increase the speed of the integral belt conveyor.

g. Other: None

Section 2 Part II, Recommendations

None

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EUA-BB-CO 14 May 1968

SUBJECT: Operational Report of 84th Engineer Battalion (Construction) for Period Ending 30 April 1966, RCS CSFOR-65 (R1)

Ralph T. Garver

RALPH T. GARVER
LTC, CE
Commanding

DISTRIBUTION:
5 copies to 35th Engr Gp (Const)
6 copies to USADCV (P), Adv. copies
2 copies to USARPAC
8 copies to 18th Engr Bde
3 copies to USARV

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AVHGC-DST (14 May 68) 3d Ind CPT Arnold/dls/LBN 4485
SUBJECT: Operational Report of 84th Engineer Battalion (Construction) for Period Ending 30 April 1968, RCS CSFOR-65 (R1)

HEADQUARTERS, US ARMY VIETNAM, APO San Francisco 96375 16 JUN 1968

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

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 30 April 1968 from Headquarters, 84th Engineer Battalion (Construction).

2. Concur with report as submitted.

FOR THE COMMANDER:

CHARLES A. BYRD
Major, AGC
Assistant Adjutant General

1 Incl
nc

Cy furn:
HQ 18th Engr Bde
HQ 84th Engr Bn (Const)

MFR: ORLL was not staffed due to lack of significant unresolved problem areas.

ACTION OFFICER: CPT Arnold/4485

CH DST DIV	
CH MS BR	
CH DOC BR	
CH TNG BR	
A/O	

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[illegible] (30 April 1968) 1st Ind [illegible]
SUBJECT: Operational Report - Lessons Learned (RCS-[illegible]) for Quarterly Period ending 30 April 1968.

DA, HQ, 35th Engineer Group, APO 96230, 20 May 1968.

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

The Operational Report - Lessons Learned submitted by the 84th Engineer Battalion (Const) has been reviewed by this headquarters and is considered an excellent summary of the Battalion's operations during the reporting period ending 30 April 1968. This headquarters concurs with the remarks of the Battalion Commander.

1 Incl
nc

JOHN A. HUGHES
Colonel, CE
Commanding

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AVBC-C (14 May 1968) 2nd Ind
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the period ending 30 April 1968, RCS CSFOR-65 (R1)

DA, Headquarters, 18th Engineer Brigade, APO 96377

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

1. This headquarters has reviewed the Operational Report-Lessons Learned for the 84th Engineer Battalion (Construction) for the quarterly period ending 30 April 1968. The report is considered an excellent account of the Battalion's activities for the reporting period.

2. This headquarters concurs with the observations and recommendations of the Battalion Commander.

FOR THE COMMANDER:

1 Incl
nc

DOUGLAS K. BLUE
Colonel, CE
Deputy Commander

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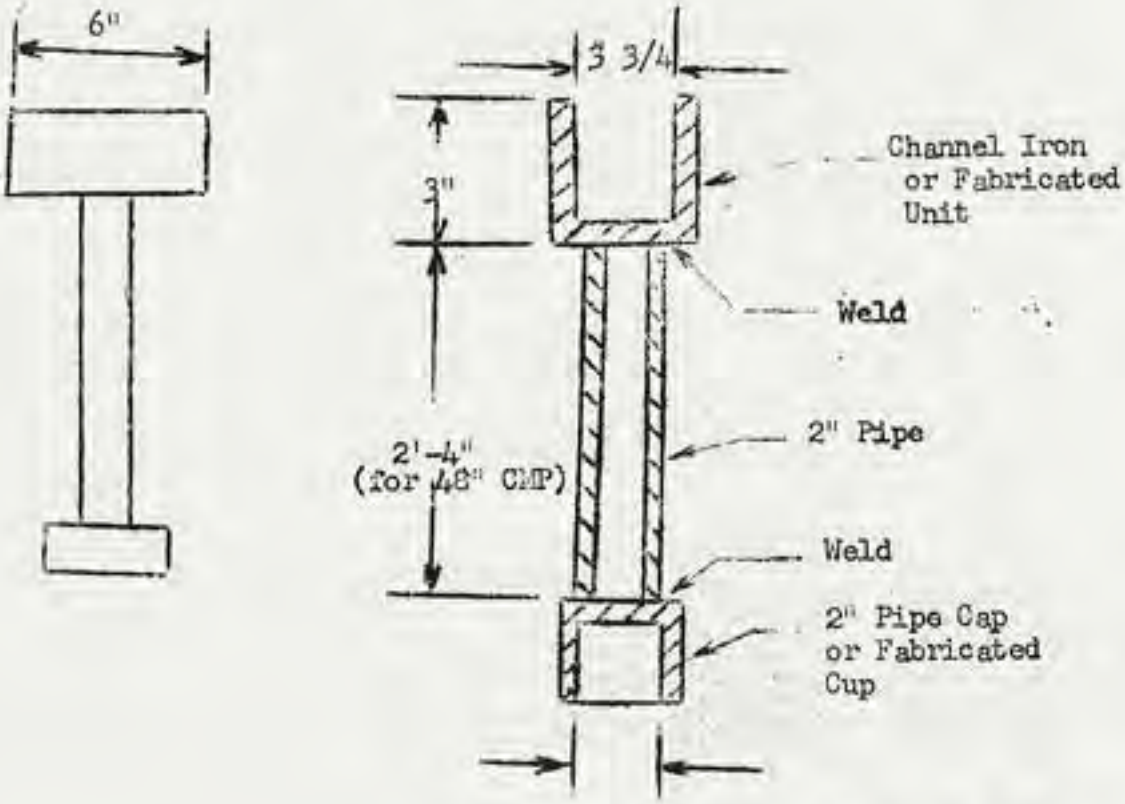
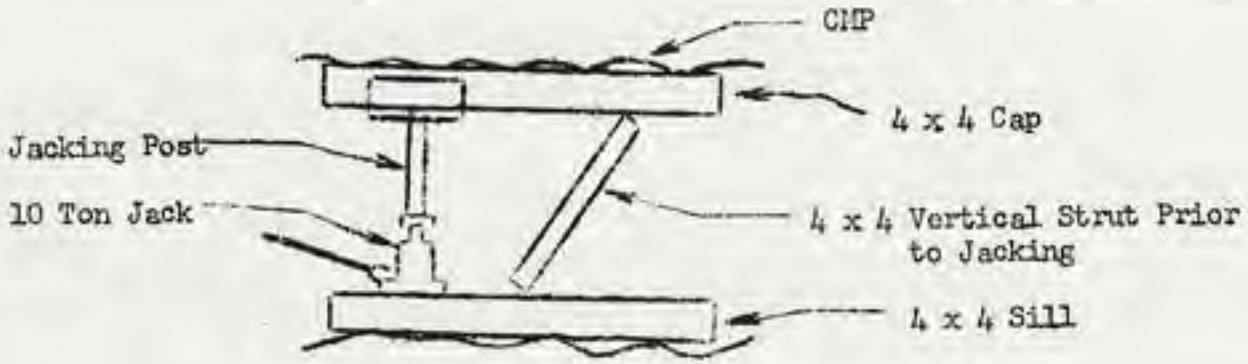


NOTE: Inside bearing surfaces for 4 x 4 lumber and jack post must be parallel and both caps must be centered on the post before welding.



INCLOSURE I

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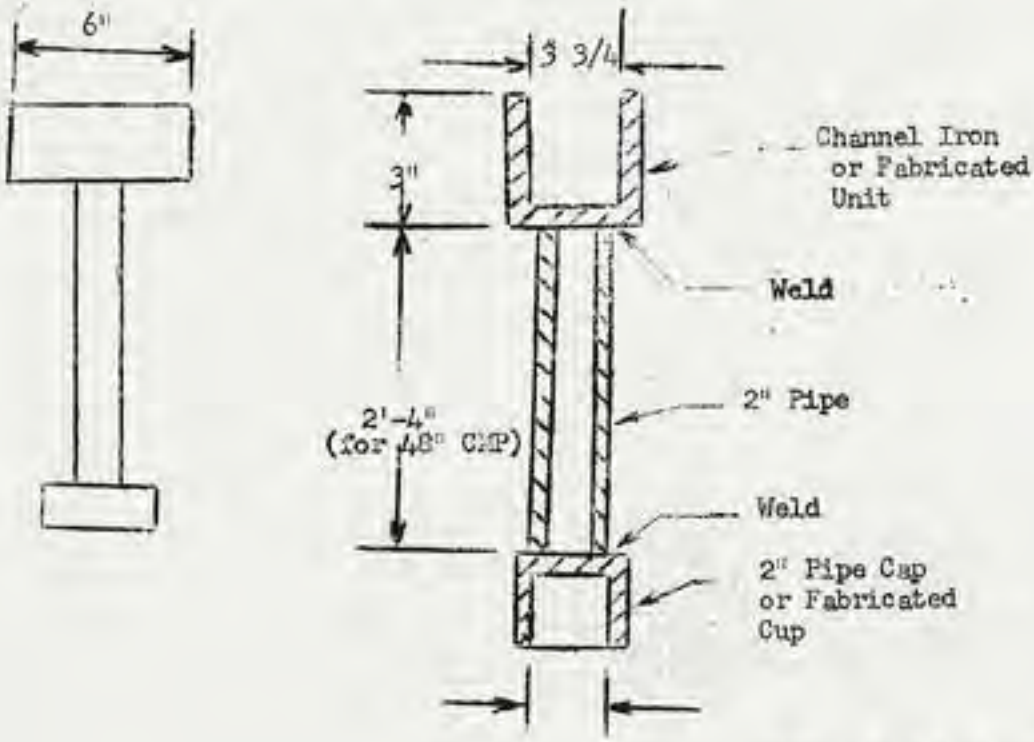
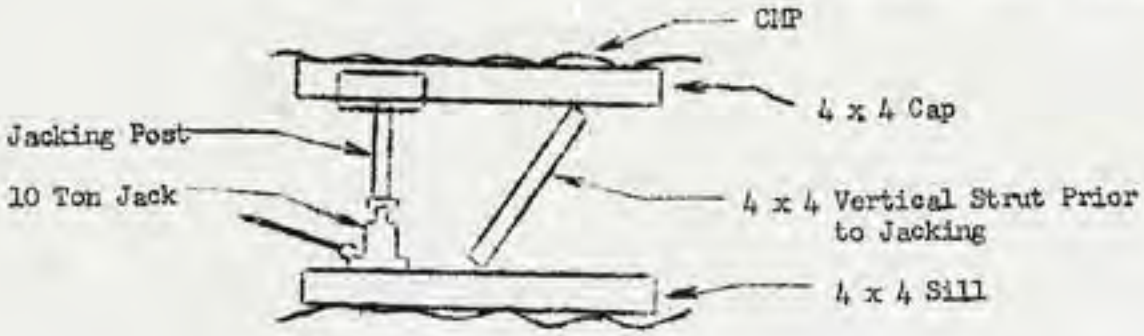


NOTE: Inside bearing surfaces for 4 x 4 lumber and jack post must be parallel and both caps must be centered on the post before welding.



ENCLOSURE I

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EGA-CBA-CO 14 August 1968
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 July 1968, RCS CSFOR-65 (R1)

OBSERVATIONS: The expedient cable provides the unit with additional emergency starting capability without substantial cost or assembly time.

G. Other: None

Section 2 Part II Recommendations

None

Ralph T. Garver

RALPH T. GARVER
LTC, CE
Commanding

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3 copies to 18th Engr Bde
3 copies to USARV
2 copies to USARPAC
1 copy to USAES

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84th ENGINEER BN (Construction)

OCLL

1 May – 31 July 1968

1 May

AVHGC-DST (14 Aug 68) 3d Ind MAJ Klingman/ds/LBN 4433
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 July 1968 (RCS CSFOR-65) (R1)

HEADQUARTERS, US ARMY VIETNAM, APO San Francisco 96375 13 SEP 1968

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 1968 from Headquarters, 84th Engineer Battalion (Construction).

2. Reference item concerning the use of a 2 pole (single phase) double breaker with boxes, as a substitute for a circuit breaker lighting panel board, Section 2, paragraph B3: Concur. This method is acceptable in accordance with the National Electric Code, but should only be used as an expedient. The cost of installation will increase due to the increased manhours necessary for installation, plus the cost of additional wire and each separate circuit breaker box installed.

FOR THE COMMANDER:

A.R. GUENTHER
CPT, AGC
ASST. ADJUTANT GENERAL

Cy furn:
HQ 18th Engr Bde
HQ 84th Engr Bn

MFR: ORLL was staffed through:
Engr - CPT Brown/4419

ACTION OFFICER: MAJ Klingman/4433

CH DST DIV
CH MS BR
CH DOC BR
CH TNG BR
A/O

PROTECTIVE MARKINGS MAY BE CANCELLED WHEN SEPARATED FROM PROTECTED MATERIAL

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 84TH ENGINEER BATTALION (CONSTRUCTION)
APO 96238

EGA-CBA-CO

14 August 1968

SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 July 1968, RCS CSFOR-65 (R1)

THRU: Commanding Officer
35th Engineer Group (Const)
APO 96238

Commanding General
18th Engineer Brigade
APO 96377

Commanding General
United States Army Vietnam
ATTN: AVHGC (DST)
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 (ACSFOR DA)
Washington D.C. 20310

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EDA-CBA-CO 14 August 1968
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 July 1968, RCS CSFOR-65 (R1)

Section 1 Significant Organization or Unit Activities:

a. Command

(1) Organization

(a) Headquarters & HQ Co 84th Engr Bn

(b) Company A, 84th Engr Bn

(c) Company B 84th Engr Bn

(d) Company C 84th Engr Bn

(e) Company D 84th Engr Bn

Earthmoving Plt of Company D returned to the control of it's parent unit on 15 July 1968

(f) 513th Engr Co (DT)

(g) 523rd Engr Co (PC)

Unit departed this command on 1 July 1968

(h) 536th Engr Det (PC)

Unit came under this command on 1 July 1968

(2) Unit Operations:

(a) Headquarters & Headquarters Company: The utilities section, augmented with Vietnamese laborers continued work on the improvement of the Camp Williams Cantonment area. Construction included about 500 ft. of drainage ditches and placement of 60 linear feet of CMP for culverts. HHC also maintained a high standard of maintenance of its equipment this period. The company maintained its record of the lowest dead line rate in the battalion for this quarter.

(b) Company A: The efforts of Company A included the maintenance and repair of battalion ordnance and engineer equipment, the production of rock and the distribution of asphalt for maintenance and upgrade of the LOC's. Some of the major accomplishments this quarter included the production of 35,938 tons of crushed rock, painting of the center line on QL #1 and QL #19 for a total of 94 miles, repairing of QL #1 from Song Cai to Bong Son with 60 tons of hot mix asphalt, and paving 14 bridge approaches on QL #1 between Qui Nhon and Bong Son. The direct support maintenance section completed 96 engineer equipment jobs and 115 ordnance equipment jobs.

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EGA-CBA-CO 14 August 1968

SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 July 1968, RCS CSFOR-65 (R1)

(c) Company B: During this quarter, B Company has been involved in construction of QL-1 from Phu My to Bong Son and from bridge No 297 to the village of Binh Thanh. Having completed the basic construction of QL #1 highway from Phu My to Bong Son, three platoons of the company moved to Binh Thanh compound 20KM South of Qui Nhon on 15 May 1968 from LZ Uplift. One platoon remained at LZ Uplift until 12 July 1968 to finish culverts and headwalls and to repair a damaged section of roadway. To date 3.7KM of sub-base has been prepared for base course north from the village of Binh Thanh and 1.6KM of base course has been spread. Four culverts have been completed to include headwalls. While at the Binh Thanh Compound, B Company has been responsible for road maintenance from the road junction of 6B and QL #1 (Coord CQ 072712) to Bridge 297 in addition to the new LOC construction. B Company also supported other units at LZ Uplift and Binh Thanh Compound by clearing and stripping fields of fire, constructing two helicopter landing pads, constructing all weather roads on the compound, and constructing a new company base camp.

(d) Company C: Company C has been involved in a large number of projects of both horizontal and vertical construction. During this quarter, Company C has completed the medical storage warehouse at the Qui Nhon Depot to include 8,000 Sq Ft of warehouse, ramps, driveways, and drainage ditches within the warehouse area; a new mess hall for 35th Engineer Group; ten (10) prefabricated (20' x 20') shelters for MACV advisor teams, and the tactical operation center bunker at the Province Chief's headquarters. The Bailey Bridge at 442-3 was taken out and located as a by pass at QL-1 #318 while the deteriorated, existing bridge is being replaced by this company. A number of projects were started this quarter and are currently under construction by C Company. The following projects are under construction: The Tandem Switch Building which is a metal prefabricated (40' x 100') Pasco building to include latrines and air conditioning at the Vung Chua Communication site; water well facilities which consist of three water wells and a 250 barrel storage tank at the Phu Tai Ice Plant; repair of the existing berms (50' x 160'), and construction of new storage pads and aprons at the Phu Tai ASP; and Class II & IV Warehouses at Long My Depot which consist of two 120' x 200' prefabricated buildings. Company C also participated in operational support of a Korean Operation to provide security for the railroad work crews by upgrading and opening road 6B to fair weather traffic from the road junction of 6B and QL-1 (Coord CQ 072712) to ROKA Capital Division Headquarters (Coord BR 959217). The project is still underway at the end of the period.

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EGA-CBA-CO 14 August 1968
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 July 1968, RCS CSFOR-65 (R1)

(e) Company D: During this reporting period, Company D worked on a variety of projects. D Company's earthmoving platoon supported C Company of the 39th Engr Bn (Combat) in upgrading of QL-1, north of Mo Duc for most of this period, returning to the company on 15 July 1968 to enable the company to continue earth work on QL-1 south of Qui Nhon on both sides of Cu Mong Pass. Construction on LOC (QL-1 in Cu Mong Pass) continued during the whole period with the installation of 8 culverts with headwalls. Also a large quantity of rock removal was done in the pass with the use of explosives. The electrical wiring and lighting in the Long My Depot, eight 120' x 200' and two 120' x 400' Butler warehouses was completed this period. Work continued this quarter on the ADPS building at Long My Depot, a 70' x 140' wood frame building with corrugated metal siding, insulated and finished for air conditioning for use as a data processing building. Work commenced this quarter on the 40' x 60' Dial Central Office building in Phu Tai Valley.

(f) 513th Engineer Company (DT): During the period the 513th Engineer Company (DT) supported two different Engineer Battalions and one separate Engineer Company located within the Corps II Tactical zone area. At the beginning of this quarter the Company was attached to the 937th Engineer Group, at Pleiku, for operational control. The second platoon was in Dak To attached to D Company of the 299th Engineer Battalion (Combat). While at this location the platoon hauled 100,000 cubic yards of sand and 12,233 cubic yards of rock to the road site between Dak To and Kontum. The first platoon was attached to the 70th Engineer Company (Dump Truck) located at Pleiku, RVN. The first platoon's major project was the hauling of asphalt for QL-19 between Pleiku and An Khe. In mid-July the company returned to Qui Nhon and was immediately attached for operational control to Delta Company of the 589th Engineer Battalion (Construction) at An Khe. It is now hauling asphalt from An Khe toward Pleiku for the paving of QL-19 between An Khe and Pleiku.

(g) 536th Engineer Detachment (PC): The 536th Engineer Detachment (Port Construction) was attached to the 84th Engineer Battalion (Construction) for operational control effective 1 July 1968. The unit has previously been attached to the 34th Engineer Group (Construction) APO 96291. The 523rd Engineer Company (PC) left the Qui Nhon area

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EHA-CEA-3 14 August 1968

SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 July 1968, RCS CSFOR-65 (R1)

and moved into the area previously occupied by the 536th Detachment. Projects that were completed or under construction prior to the 536th Detachment coming under control of the 84th Engineer Battalion were: the My Tho Barge Off Loading Facility which was completed on 4 June 1968 and Vinh Long Rock Off Loading Facility. These two projects were turned over to the 523rd Engineer Company (PC) as of 1 July 1968. Projects that were turned over the to the 536th Detachment by the 523rd Engineer Company (PC) as of 1 July 1968 were the repair of Bridge QL1-322, the Ammo Off Loading Facility on the Qui Nhon Harbor causeway, and the Autosevecom facility in Qui Nhon. The Ammo Off Loading Facility is under construction with a total of 15,320 cubic yards of sand already in place. The Autosevecom Facility is a reinforced concrete and concrete block building and is 70% complete. The 536th Engineer Detachment (Port Construction) has supported the 61st ARVN Engr Bn by driving 14" H-piles at bridge QL1-258 and has supported the 5th Terminal Command with divers.

b. Personnel, Administration, Morale, and Discipline: During this reporting period the battalion participation in Savings Bond Program averaged 78% while Soldiers Deposits participation averaged 3%. There were a total of 46 people recommended for awards for outstanding performance. The battalion suffered 12 casualties and 1 battle death during this quarter. There were 139 disciplinary cases (129 article 15's and 10 court-martials) and a total of 44 men extended their tours in Vietnam during this period.

c. Intelligence and Counter Intelligence: Numerous incidents of enemy LOC interdiction and harassing of work parties by sniper fire continued through the quarter and resulted in one member of this battalion killed in action and seven wounded in action. In addition to the personnel casualities suffered during LOC construction, two culverts on QL #1 were destroyed by enemy action. The requirement for a provisional platoon on Ke Sain mountain, controlled by this headquarters, was deleted on 13 June 1968. Good intelligence liaison continued to be maintained by this unit with the Capital ROK Infantry Division, 22nd ARVN Infantry 5th Special force, Binh Dinh Province and other combat and support units in the area

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d. Plans, Operations and Training: Weather conditions during the period remained good for construction activities. The battalion's priority projects centered around the LOC construction of QL-1. The use of several units of the battalion as mentioned above in support of other battalions greatly cut into the construction resources of the battalion. Planning was accomplished for the battalion LOC construction and vertical construction for the next year with LOC work receiving the highest priority. Training during this period emphasized OJT of many newly assigned personnel and weapons firing and safety for all personnel.

e. Logistics: Recently several of our complex communications projects have been curtailed due to the long lead electrical and air conditioning supplies arriving late or not at all. We had problems with the last three prefabricated steel buildings with component parts being either lost in shipment or not shipped at all, which caused us to redesign one of the buildings using a wood frame structure instead of the prefabricated building. We have continued an intensive followup on all our requisitions, but will soon be critically short of one inch lumber used in our cantonment projects. Past problems were bridging materials and plumbing supplies, but both of these are starting to arrive in our area. We remain critically short of several TOE items, all of which are on valid requisitions and are being checked constantly. We have continued to process in excess of 350 requisitions each week, and believe this will increase with the thirteen detachments to be attached in August to the battalion for logistical support. We have completed several logistical support missions to U.S. units for construction materials, and to several ARVN units for bridge supplies and materials. The battalion has continued to operate two waterpoints in support of its companies. Our units have consumed in excess of 130,000 gallons of Mogas and 150,000 gallons of diesel fuel this period.

f. Force Development: N/A

g. Command Management: Company C underwent a USARV Command Management Maintenance Inspection on 18 July 1968. The result of that inspection was highly satisfactory.

h. Inspector General: N/A

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i. Civic Action: The Battalion undertook a variety of civic action projects during this quarter. The members of this battalion voluntarily contributed 266,000 VN$ for the support of Holy Infant and Kim Chau Orphanage. In addition, two parties were given for the Children of the Kim Chau Orphanage by HHC and C Company at Camp Williams Compound. The battalion has also continued to provide an NCO overday to the Qui Nhon Public Works Department for technical assistance for the city's engineering projects and to act as liasion between the 84th and the City of Qui Nhon. The 84th Engineer Battalion has also furnished material and equipment for Civic Action and Revolutionary Development projects in support of the 41st Civil Affairs Company. Some of these projects are the new high school for Tuy Phuoc District and a new village headquarters in the Tuy Phuoc District. Company B, to promote good will in their new area of operation, built a 6KM fair weather (sand and laterite) road from the village of Binh Thanh to the bay. This road provides the fishermen in the village access to the sea.

Section 2. Part I Observations (Lessons Learned)

A. Personnel: None

B. Operation:

1. Item: The use of U pickets in the construction of runoff ditches on steep inclines.

DISCUSSION: In constructing culverts where the outflow of the culvert is on a fill slope of several hundred feet at an angle of 45 degrees, the problem of erosion becomes acute. One method to approach this is to construct a concrete spillway from the outflow of the culvert to the intersection of the incline and the base of the hill, however quite frequently on filled surfaces the water undermines the concrete spillway until it cracks and disintegrates. One way to alleviate this problem is to drive U pickets 4 to 5 feet into fill slightly offset on 6 foot centers and tie two re-bars onto the pickets and construct a reinforced concrete spillway. This will suffice until sufficient soil consolidation and vegetation growth prevents massive erosion around the culvert and headwall.

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OBSERVATION: U pickets driven into the ground to reinforce a concrete spillway, tied and interlaced with rebar is an excellent deterrent to massive soil erosion around the culvert and concrete headwall and serves to anchor the spillway in place.

2. Item: The use of cement stabilization in the construction of culverts on unstable organic soil.

DISCUSSION: In constructing a culvert at CR 028-152, it was found that the water table was approximately a foot higher than the culvert and that a number of springs were present. The construction of this particular culvert consisted of 4 foot(48") culverts, 70 feet long. The major problem was that there was no apparent bottom to the area in which the culverts were to rest. For example a stick or pole (10 feet long) could be pushed out of sight in the bottom of the spring bed. The culvert was dug out approximately three or more feet below the water table and backfilled with 350 cy of blastrock. Approximately a 6" layer of sand was placed and 150 sacks of cement also placed on top of the blastrock. This was mixed and bladed by a dozer until a level surface was obtained. After a period of 5 or 6 days the bottom of the culvert was firm enough to drive a loaded 5 Ton over it without getting it stuck even though the elevation of the ground level of the culvert was approximately 3 to 4 inches below the water table. The culvert was then placed and backfilled with sand to a depth of approximately 6" above the water table and then backfilled with an impervious material. A reinforced continous footer was placed at the end of the culverts at an approximate depth of 18" and a width of 36". This prevented the pervious sand layer from acting as a verticle sand drain. Later a headwall was constructed upon the footer.

OBSERVATION: Cement stabilization while it may be expensive, is an excellent form of solving the problem of soil stabilization in a spring infested area with an organic sub-base.

3. Item: The use of 2 pole (single phase) double breaker, with boxes, as a substitute for circuit breaker lighting panel board.

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DISCUSSION: In wiring the Long My Depot, it was found that the panel board contained a number of circuit breakers (20A) which were not available. A successful substitute was used by mounting as many as 10, 2 pole, single phase double breaker (with box) in line on a ½" to 5/8" plywood board and attaching the plywood sheet to the building. This method works quite well and this type of breaker is much more readily obtainable than the type circuit breaker using a lighting panel board; since lighting panel boards generally are made by a particular manufacturer to fit into a particular type board. It was found that in some cases when using 2 pole, double breaker, single phase, made by different manufacturers that the breakers did not carry the design load, when the design load approached the capacity of the breaker. This was compensated for by using a different manufacturers breaker or by removing one light from the circuit.

OBSERVATION: That individual 2 pole double breaker, single phase and box may be used as an acceptable substitute in place of a circuit breaker lighting panel board.

C. Training: None

D. Intelligence: None

E. Logistics: Item - Expedient Jumper Cable

DISCUSSION: The shortage of battery jumper cables within the unit caused delays in starting faulty equipment. A cable was fabricated by utilizing salvaged power cable and expended M-16 cartridges. A ten-foot piece of 2/0 dual conductor power cable was prepared by stripping the insulation from the four ends. The M-16 cartridges were sawed off at the base to provide a hollow cylinder. The cases were then soldered into the wire and taped to complete assembly. The cartridges fit tightly into the recepticles on engineer equipment and the cable performs satisfactorally.

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OBSERVATIONS: The expedient cable provides the unit with additional emergency starting capability without substantial cost or assembly time.

G. Other: None

Section 2 Part II Recommendations

None

Ralph T Garver

RALPH T. GARVER
LTC, CE
Commanding

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HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 8 DEC 1968

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

This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 October 1968 from Headquarters, 84th Engineer Battalion (Construction) and concurs with the report, as modified by the preceding indorsements.

FOR THE COMMANDER:

F. S. TAYLOR, JR.
Major, AGC
Asst Adjutant General

Cy furn:
HQ 18th Engr Bde
HQ 84th Engr Bn

MFR: ORLL was staffed through:
Engr: SFC Clayton/4750

ACTION OFFICER: MAJ KLINGMAN/4433

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 84TH ENGINEER BATTALION (CONSTRUCTION)
APO 96238

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

Commanding General
18th Engineer Brigade
APO 96377

Commanding General
United States Army Vietnam
ATTN: AVHGC (DST)
APO 96307

Commander in Chief
United States Army Pacific
ATTN: GPOP-OT
APO 96588

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

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Section 1 Significant Organization or Unit Activities:

a. Command

(1) Organization

(a) Headquarters & HQ Co, 84th Engr Bn

(b) Company A, 84th Engr Bn

(c) Company B, 84th Engr Bn

(d) Company C, 84th Engr Bn

(e) Company D, 84th Engr Bn

(f) 513th Engr Co (DT)

Unit departed this command on 3 September 1968

(g) 536th Engr Det (PC)

(h) 51st Engr Plt (Asphalt)

Unit came under this command on 3 August 1968

Unit departed this command on 8 October 1968

(i) 444th Engr Det (HQ)

Unit came under this command on 1 August 1968

Unit inactivated on 23 August 1968

(j) 2nd Plt, 643rd Engr Co (PL)

Unit came under this command on 1 October 1968

(k) 614th Engr (Power Distribution Team)

Unit came under this command on 1 August 1968

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(1) Ad Hoc Power Distribution Team

Unit came under this command on 1 August 1968

(m) 35th Engr Bn Land Clearing Team

Unit came under this command on 8 October 1968

(2) Unit Operations:

(a) Headquarters & Headquarters Company: The utilities section, augmented with Vietnamese laborers continued work on the improvement of the Camp Williams Cantonment area. On 1 August 1968, HHC took over administrative control of the 614th Power Distribution Team, and the Ad Hoc Power Distribution Team.

(b) Company A: The efforts of Company A included the maintenance and repair of battalion ordnance and engineer equipment, the production of crushed rock, the distribution of asphalt for maintenance and upgrade of LOC's, and soil stabilization by hydroseeding. Some of the major accomplishments this period included the production of 12,530 cubic yards of crushed rock, patching and paving sections of QL #1 and QL #19 with 107 tons of hot mix asphalt, and distributing 52,365 gal of peneprime on roads, bridges, and helipads for dust control. In addition, 9.5 acres of land were seeded with the hydroseeder for the purpose of erosion control.

(c) Company B has been predominately concerned with construction of drainage structures and road upgrade on highway QL-1 during the last quarter. At present, the company's immediate area of operations now extends from the Phu Tai ASP, through Cu Mong Pass, to Binh Thanh. To date, eight (8) culverts in Phase III of the project (EDE 68-16-45) have been installed and three (3) bailey bridges have been erected in anticipation of the oncoming monsoon season. Subbase of 9.4 KM's have been prepared. Base course has been spread on 3.3KM's and 1.5KM's of the road have been paved with asphalt. Work on Phase I and II has been mostly limited to road maintenance in order to keep the pass open to traffic. Within "B" Company cantonment area physical security structures have been improved and the drainage system has undergone extensive work. Also efforts have been made to improve the motor pool area. Whenever possible, B Company supports the Koreans with materials and equipment for their operations and engages in civic action projects with the local villagers.

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(d) During this period "C" Company has been involved in a variety of projects. Thirteen (13) MACV shelters have been completed and all but five (5) have been shipped to the using units. Bridge # 318 on highway QL-1 was completed ahead of schedule and the bailey bridge used as a bypass has been taken out. The paving of Route 6B was taken over RMK and was completed under the supervision of C Company EM platoon. This included the access road of 6B to ROK division headquarters. Route 6B was also reopened from Van Canh to the intersection of QL-1 South with no enemy activity encountered. A 250 barrel water storage tank and a twenty (20) seat burn-out type latrine were erected at 35th Engineer Group headquarters. The AUTOSEVOCOM Facility was started during this quarter. This project was taken over from the 536th Engr Det (PC) and is 95% complete. Work consisted of completing the inside of the facility with all electrical wiring, wall and ceiling panels, tile floor, inside latrine facilities and air conditioning completed. The block plant and prefab yard are currently supporting the POW hospital being constructed by "D" Company with cement blocks and prefabricated buildings. The Tandem Switch building on Vung Chua Signal complex is 80% complete and lacks only the air conditioning system, septic tank and ceiling for completion. The 440'x80' Cold Storage Warehouse is also in full swing. The Sub Floor has been placed, wall panels are up and the trusses are currently being placed. Work at the LRVN ASP has been slowed down by weather, but is nearly complete. The Phu Tai ASP has been turned over to D Co for completion. The EM Platoon of C Co is currently repairing flood damages on QL-1. Work on the Phu Tai Ice Plant continues. It is now 75% complete. The Purification Unit has arrived and is now being installed.

(e) During this reporting period "D" Company worked on a variety of projects. Work on Phase I and II of highway QL-1 progressed well this period, but was turned over to "B" Company in August to free D Company for other commitments. The automatic data processing center, a 70' x 144' air conditioned, wood frame, computer building at Long My Depot was completed. Work on the Dial Central office has progressed well, leaving the 40' x 60' wood frame building approximately 75% complete. The walls, roof, ceiling partitions and interior paneling have all been constructed. Work is presently being conducted on the electrical wiring, insulation and acoustical tile for the switchboard room ceiling is being placed. "D" Company started work in the Phu Tai ASP in August. There are many ammunition berms that need repair due to erosion. Concrete pads are also being placed for small arms ammunition storage. Work on the 240 bed POW hospital was also started this period. The hospital consists of eight (8) quonset type buildings, twelve (12) ward type buildings (wood frame), sidewalk canopy walkways and a sophisticated water and sewage system. Work started in September and at present is approximately 3% complete. "D" Company also assumed responsibility for road maintenance on highway QL-19 from its east base to bridge # 27. Five (5) bridge bypasses were built along this route for employment in the event of damage or destruction to the bridge.

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(f) The 536th Engr Det (PC) was responsible for the repair of bridge # 322 on highway QL-1 during this quarter. This consisted of the replacement of a blown 20' span. The work included replacing two pile bents, concrete caps 36 WF 230 steel stringers, and timber decking. The Ammo Offloading Facility, located on Qui Nhons Harbor causeway, was started during this period. Phase I, the placement of two mooring buoys in the ammo turning basin was completed. Work is nearing completion on the pile driving barge. The haul of fill has been completed at the barge wharf site. Repair of the barge quay was started. The installation of camels was begun as a temporary repair until materials and manpower are available for permanent repair.

(g) At the beginning of the quarter, the 35th LCT was responsible for clearing Route TB 506 from LZ Uplift west to LZ Pony. The overall mission was accomplished in approximately two months. Security was provided by the 1st of the 69th Armor, 173rd Airborne Brigade. From 28 July until 4 September the land clearing team cleared areas in the Bong Son Plains while support and security was supplied by the 173rd Airborne Brigade and the 40th ARVN Regiment. During this operation the 35th LCT was credited for the capture of several Viet Cong with arms, records and Viet Cong flags. The job of clearing 150 meters of land on each side of highway LTL 6B started on 15 October with the ROK Capitol Infantry Division providing security. This is, at present, their mission with approximately 927 acres already cleared.

b. Personnel, Administration, Morale, and Discipline: During this reporting period battalion participation in the Savings Bond Program averaged 78% while soldiers deposits participation averaged 2%. There were a total of 33 personnel recommended for awards, and 44 personnel voluntarily extended their foreign service tours. The battalion suffered one casualty and no battle deaths during this quarter. There were 118 disciplinary cases (103 article 15's and 15 courts-martial).

c. Intelligence and counter intelligence: Enemy activities on LOC's continued, resulting in one bridge and one culvert being destroyed by enemy action. Enemy harrassment of work crews decreased to a negligable level, except for one incident, on 26 October while elements of the 2nd Plt, 643rd Engr Co (PL) and the 240th QM Bn were engaged in repair of a POL Line on the beach in Qui Nhon City, they received two unidentified explosions and AW/SA fire resulting in three members of the 643rd Engr Co (PL) being wounded in action. Good intelligence continued to be maintained by this unit with the Capital ROK Infantry Division, 5th Special Forces, Binh Dinh Province Forces and other combat and support units in the area. During this period the defense plans for this sector were completely revised and implimented. This unit is responsible for the defense of two personnel compounds, two POL storage farms, and a PX HQ and storage area under the Qui Nhon Installation Defense structure.

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d. Plans Operations and Training: Weather conditions during the period severly hampered the LOC Upgrading on QL-1 and caused extensive damage on both QL-1 and QL-19. The addition of sections of QL-19 to the battalions area of responsibility, along with added base construction projects has resulted ina decrease of LOC construction on QL-1 south. Therefore at present only one line company is working on new LOC Construction while the other two line companies are committed to base construction and LOC maintenance and repair Training during this period emphasized OJT of many newly assigned personnel, and weapons firing and safety for all personnel.

e. Logistics: During the period, the S-4 was involved in many functions pertaining to the supply of class IV items to the organic and attached units within the battalion. Of upmost importance was the supply of class II TO&E equipment and class IV construction materials in order to expedite the successful accomplishment of the battalions overall mission. During the period many of the long lead items for the complex communications projects were obtained, however there are still critical shortages for the air conditioning units and duct work. The battalion has completed several logistical support missions to US units for construction materials, and to several ARVN units for bridge supplies and materials. The S-4 has continued to operate two water points in support of its companies.

f. Force Development: N/A

g. Command Management: N/A

h. Inspector General: N/A

i. Civic Action: The battalion under tooka variety of civic action projects during this quarter. The members of this battalion voluntarily contributed 121,040 VN$ for the support of Holy Infant and Kim Chau Orphanage, the 84th Engr Bn has also furnished material and equipment for civic action and revolutionary development projects in support of the 41st Civil Affairs Company. Company B, to promote good will in their area of operation, has done minor road work for the village of Binh Thanh. HHC has continued to provide an NCO everyday to the Qui Nhon public works department for technical assistance for the city's engineering projects, and to act as liasion between the 84th Engr Bn and the city of Qui Nhon.

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Section 2, Part I, Observations (Lessons Learned)

A. Personnel: None

B. OPERATIONS:

1 Item: Use of a modified vibrating process in the placing of concrete pads.

DISCUSSION: In the construction of concrete pads for the Automatic Data Processing Center, Dial Central Office, and the POW Hospital it has been found that screeding concrete first with a four inch diameter pipe the width of the form, with a vibrator positioned in the center levels and smooths concrete more easily and uniformly than a wooden hand drawn screed. When the concrete is placed in the form the pipe with the vibrator inserted is rolled quickly along the form to cause uniform setting of the concrete. This process is then followed by a wooden screed to fill any depressions or remove any high points. This process has proven itself over and over again. No problems arise unless the pipe is rolled too slowly allowing the concrete to segregate.

OBSERVATION: Use of the vibrating screed method for placing concrete makes the job easier and insures a more uniform distribution of concrete throughout the form.

2 Item: Use of three inch minus aggregate to cap bypasses and serve as a wearing surface.

DISCUSSION: In construction of bypasses on QL #19, most have been built from compacted laterite only. During a hard and continuous rain, erosion takes its toll slowly eating away the roadway until traffic is restricted in some areas. Two bypasses built on QL #19, both capped with three inch minus rock (six to eight inches) sustained very minor damage from heavy rains. During a recent flood of this area, flood waters rapidly washed over these bypasses. The bypasses capped with aggregate held up longer and sustained less damage than the ones built from compacted laterite only.

OBSERVATION: Capping bypasses with three inch minus aggregate although expensive, is an excellent method of deterring erosion and washout.

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3 Item: Building bypasses on down stream side of bridges.

DISCUSSION: In construction of bypasses on QL #19 several bypasses were built on the up stream side of bridges. Several factors contributed to the decision to build these bypasses in this manner. There is a POL pipeline on the down stream side hampering the construction of approaches to the rivers. In most cases there are bunkers (bridge guards) or some other obstacle to hinder operations and in some cases the width of the up stream side of the river is smaller than down stream. These factors coupled with the knowledge of the normal high water level of the river led to the assumption that we were perfectly safe using this method. After approximately thirty-six hours of typhoon rain the water levels reached a new high and began flowing more swiftly than anticipated. The culverts were not able to carry this large volume of water. The water flowed over the bypass causing a churning action against both abutments of the bridges on the up stream side. At one bridge site the water action was significant enough to wash out large sections of the road behind concrete abutments, even through a concrete retaining wall was present. Building the bypass on the down stream side of a bridge would render the churning action of the water harmless in the event of an unexpected flood. Bypasses built on the down stream side of bridges, although in some instances they were partially washed out, left the bridge abutment and approaches unharmed.

OBSERVATION: The construction of bypasses on the down stream side of bridges, while it may be troublesome and time consuming, is the best method of constructing bridge bypasses.

4 Item: The imbedding of 2" closed link chain into a concrete anchor thus eliminating the need for a lifting eye.

DISCUSSION: The original design for the construction of concrete anchors, to be used for the mooring buoy system, called for three (3) pieces of #10 rebar, embedded in the concrete, to act as a lifting eye. In the process of lifting the anchor the lifting eye failed and a suitable substitute had to be made. An alternate design was developed consisting of embedding the anchor chain in the concrete thus eliminating the rebar lifting eye. The chain is lowered about 4' into the 8' block of concrete and #4 rebar is placed horizontally thru the imbeded link of the chain

OBSERVATION: That imbedding anchor chain directly into a concrete anchor provides a stronger connection than the use of a lifting eye of rebar. It also eliminates the time consuming process of bending the large #10 rebar.

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C. Training: None

D. Intelligence:

1 Item: Presence of Children around project sites.

DISCUSSION: This unit had a recent incident involving the booby trapping of a pipline being installed along a populated area. It was noticed that just prior to the incident, the many children who usually congregate around the project site, had returned to their nearby homes.

OBSERVATION: It is felt that the Vietnamese Children who play in the area around the job site have knowledge of any enemy activity in the immediate vicinity, therefore when they suddenly disappear from the project site it's a good indication that there may be an enemy operation in the area.

E. Logistics:

1 Item: Screen for Concrete Aggregate

DISCUSSION: The quarry section was assigned the mission of producing concrete aggregate. The equipment available was one 75 TPH Eagle Primary Crusher and a Pioneer Crusher set: 225 TPH Primary and 150 TPH Secondary. The secondary unit has no capability for screening out fines produced by the secondary crushing operation, but does screen out fines present after the primary crushing. The product obtained was satisfactory except that about 15% by weight of the output was too fine, making the aggregate unsuitable for use in concrete.

The solution found was placing a screen in the path of the output of the secondary unit. Angled about 45 degrees, the screen effectively separated fine material from the output product, leaving an acceptably clean aggregate suitable for concrete work. By using a steep angle for the screen, vibration of the screen was not necessary. The solution required use of one additional conveyor under the screen to carry off the fine material.

OBSERVATIONS: The value of this screen system varies depending upon the availability and price of aggregate and 3"(-) crushed rock calculations, assuming six months use at full production and current prices indicate savings up to $84,000.00. The screen requires dry material as moist particles cling to and clog the screen, giving a product with excess fines material.

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F. Other:

1 Item: Laying of POL Pipeline in insecure areas.

DISCUSSION: While placing POL Pipe along the beach in Qui Nhon an incident occured which brought out the necessity of having strict security procedures when undertaking this operation. Six or seven 20' sections of 6" pipe had been laid out in preparation for coupling. However the day crew was not able to complete the coupling and the sections lay unattended until a night crew arrived to complete the connecting. When one of the night crew started to move a section of pipe into place there was an explosion, caused by a charge placed under the section of uncoupled pipe. As a result of the explosion three men were wounded.

OBSERVATION: This incident could have been avoided by insuring that the pipe was secure at all times, even thru a shift change. Also sections of pipe should not be laid out a great length in advance of coupling. Another step to prevent a recurrence of this type of incident is to move all pipes left in an insecure area with the use of a rope tied to the pipe.

Robert J. Corley

ROBERT J. CORLEY
LTC CE
Commanding

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SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the period ending 31 January 1969, RCS CSFOR-65 (R1)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 19 MAR 1969

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

This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 January 1969 from Headquarters, 84th Engineer Battalion (Construction) and concurs with the report and the indorsements of intermediate headquarters.

FOR THE COMMANDER:

Cy furn:
84th Engr Bn
18th Engr Bde

W. C. ARNTZ
CPT, AGC
Assistant Adjutant General

CONCURRENCE/NONCONCURRENCE: Reviewed by the Engineer: no comments deemed appropriate.

ENGINEER: MAJ Emig/4750

ACTION OFFICER: MAJ ROBBINS/LBN 4433

COL. READ, ACofS, G3 ____ RECORD COPY RETURN TO AVHGC-DST.

CH DST DIV	
CH MS BR	
CH DOC BR	
CH TNG BR	
A/O	

AGC-CO (15 Feb 69) 1st Ind
SUBJECT: Operational Report on Lessons Learned for the period 1 November to 31 January 1969

DA, HEADQUARTERS 937TH ENGINEER GROUP (COMBAT), APO 96318, 20 February 1969

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

1. The subject report, submitted by the 84th Engineer Battalion (Coust), has been reviewed and is considered a well compiled report of organizational activities.

2. I concur with the observations and recommendations of the Battalion Commander.

JESSE L. FISHBACK
Colonel, CE.
Commanding

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AVBC-BC (31 Jan 69) 2nd Ind
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 January 1969, RCS CSFOR - 65 (R1)

DA, Headquarters, 18th Engineer Brigade, APO 96377 4 MAR 1969

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

1. This headquarters has reviewed the Operational Report - Lessons Learned for the 84th Engineer Battalion (Construction) as indorsed by the 937th Engineer Group (Combat). The report is considered to be an excellent account of the Battalion's activities for the reporting period.

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

a. Reference section 2, paragraph b (1). Backhoes were part of the MCA Equipment buy and are due in country this spring.

b. Reference section 2, paragraph b (5). Laterite soils should not be used below a concrete slab if there is any alternative. Sand is a much better material for backfilling and will allow two way drainage of excess water.

JOHN H. ELDER, JR.
Colonel, CE
Commanding

CF:
937th Engr Gp
84th Engr Bn

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 84TH ENGINEER BATTALION (CONSTRUCTION)
APO 96238

EGCC-CO

15 February 1969

SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the period ending 31 January 1969, RCS CSFOR-65 (R1)

THRU: Commanding Officer
937th Engineer Group (Combat)
APO 96318

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

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

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

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

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EGCC-CO 15 February 1969
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 January 1969, RCS CSFOR-65 (R1)

1. Section 1 Significant Organization or Unit Activities:

a. Command

(1) Organization:

(a) Headquarters & Headquarters Company, 84th Engr Bn (Const)

(b) Company A, 84th Engr Bn (Const)

(c) Company B, 84th Engr Bn (Const)

(d) Company C, 84th Engr Bn (Const)

(e) Company D, 84th Engr Bn (Const)

(f) 536th Engr Det (PC)

(g) 2nd Plt, 643rd Engr Co (PL)

(h) Ad Hoc Power Distribution Team

(i) 614th Engr (Power Distribution Team)
Unit departed this command on 18 November 1968.

(j) 35th Engr Bn Land Clearing Team
Unit departed this command on 31 November 1968.

(2) Unit Operations:

(a) Headquarters & Headquarters Company: The utilities section continued to maintain the Camp Williams Cantonment area; this section was augmented with Vietnamese laborers as required. Under the control of HHC, the Ad Hoc Power Distribution Team was primarily utilized on the Cha Rang Valley Power Distribution Project and the Security Lighting of Lane AAF. Neither project has been completed as of this report due to the scope of work and late arrival of materials necessary for completion.

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EGCC-CO 15 February 1969
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 January 1969, RCS CSFOR-65 (R1)

(b) Company A had the responsibility for the maintenance and repair of this battalion's ordnance and engineer equipment. This company also operates the Howell Quarry and Crusher Complex, as well as providing the support for LOC maintenance and upgrade. During this reporting period Howell Quarry produced 8,152 CYS of crushed rock, and 84 tons of hot mix asphalt was used for maintenance of QL-1 and QL-19. Company A's hydroseeder was used to stabilize 25.2 acres with grass seed, using 81 lbs of bermuda, 393 lbs of rice, and 1656 lbs of fertilizer.

(c) Company B was predominately involved with the construction of drainage structures and road rehabilitation of QL-1 from Binh Thanh (CQ 057014) to Tuy An (CQ100692). To facilitate the unit in it's mission, Company B began movement of its base camp to Miami Beach (CQ104783) on 20 January 1969.

(d) Company C concentrated its effort on base construction type projects within the Qui Nhon area. It provides such operational support as a prefab yard to build MACV Huts and standard tropical buildings as needed for directed projects. The Autosevocom Facility was finished during this reporting period and work continued on the 440' x 80' Cold Storage Warehouse in Qui Nhon. The 2nd Plt, 643rd Engr Co (PL) receives operational support from Company C/84th as required.

(e) Company D was involved in both LOC and base construction work. It, with Company A, provides maintenance for QL-1 and QL-19. Both A and D companies were the primary elements involved in the building of a by-pass for bridge #302 on QL-1 when it was blown on 24 January 1969. Company C provided what earth moving equipment it had to supplement A & D companies' efforts. The 22nd ARVN Div provided the necessary 5 ton dumps to haul blast rock from RMK's Quarry, located just north of bridge #302; while the 84th hauled the necessary blast rock from Howell Quarry. The joint efforts of the US and ARVN Engineers enabled traffic to pass only thirty six hours after the bridge was blown. Company D is continuing work on the Dial Central Building and the 240 Bed POW Hospital, both located in Phu Tai.

(f) The 536th Engr Det (PC) was prinicpally working on the Ammo Off-Loading Facility and repairing the Barge Quay, both projects are part of Qui Nhon's Harbor system. This unit was also called upon to support the 2nd Plt, 643rd Engr Co (PL) by driving the necessary pilings to support an 8" welded steel pipeline as the pipeline crossed over water on the Qui Nhon Harbor Causeway.

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EGCC-CO 15 February 1969
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 January 1969, RCS CSFOR-65 (R1)

(g) The 2nd Plt, 64/3rd Engr Co (PL) had the sole responsibility for installing an 8" welded steel POL pipeline from the pumping station on Qui Nhon Harbor Causeway to Tank Farm #1. The route that was finally approved meant the burial of this pipeline thru the railroad yard of Qui Nhon and it was at this point Company C added its additional support to accomplish the assigned mission. During this reporting period 15,180 ft of 8" welded line was completed and temporarily hooked into an existing 8" coupled (Invasion type pipe) at the south end of Qui Nhon Airfield to provide a means of pumping POL to Tank Farm #1 while the remainder of the project is completed.

b. Personnel, Administration, Morale, and Discipline: During this reporting period the 84th Engr Bn's participation in the Savings Bond Program averaged 66.6% while soldiers deposits participation averaged 3.1%. There was a total of 27 personnel recommended for awards, and 92 personnel voluntarily extended their foreign service tours. This battalion suffered one casualty and one battle death during this quarter. There were 109 disciplinary cases, 89 article 15's and 20 courts martial.

c. Intelligence and counter intelligence: Enemy activities against LOC's remained light, resulting in one bridge being destroyed by enemy action. The method of this action is significant in that the explosives used on an intermediate support were apparently placed below water line during the previous night and then detonated by a former bridge security guard, using the pretense of fishing during daylight hours while under surveillance of bridge security guards. Enemy harrassment of work crews remained light with only two incidents resulting in minor damage to one grader and one wounded (slight) in action. There were no incidents of enemy action against base camps of this Battalion; however, a reaction force of Hq Co responded when sappers penetrated POL Tank Farm #2. This action resulted in moderate damage to the tank farm, four members of the 134th QM Co being wounded in action and the enemy sustaining six killed and one captured (wounded) in action. Mining of LOC's increased slightly with six mines being located by friendly minesweep teams in the B Co area and a seventh resulted in minor damage to a friendly vehicle. One security element of this unit received one grenade while in convoy resulting in one killed in action. Under the threat of an expected enemy winter/spring campaign, good intelligence continued to be maintained by this unit with the Capital ROK Infantry Division, 22nd ARVN Infantry Division, 5th Special Forces, 173rd AB Brigade, Binh Dinh and Phu Yen Province Forces and other combat and support units in the Battalion's AOR.

d. Plans Operations and Training: Weather conditions severly hampered the LOC maintenance and rehabilitation within the 84th Engr Bn's AOR. During this reporting period the effort was concentrated in repair of the damage incurred due to the rains and flooding action. There was only one bridge blown during this period: #302, QL-1, 24 January 1969. At present

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EGCC-CO 15 February 1969
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 January 1969, RCS CSFOR-65 (R1)

there remains only one line company committed to LOC construction (Co B/84th) while two other line companies are committed to base construction and LOC maintenance and repair (Co A/84th & Co D/84th). Training emphasized during this reporting period was the OJT/Cross training of newly assigned personnel as well as the weapons/safety training conducted each Sunday morning for all newly assigned personnel.

e. Logistics: During the past quarter, the S-4 gave logistical support to the five organic companies of the 84th Engineer Battalion (Const) and also its attached units; the 536th Engineer Detachment (PC) and the 2nd Platoon of the 643rd Engineer Co (PL). The areas of logistical support included:

(1) Class A rations for some 1000 personnel each day, procured and distributed by the ration breakdown facility.

(2) Two (2) water points which together produce approximately 40,000 gallons of potable water each day.

(3) POL delivery to all organic and attached units amounting to 37,000 gallons of Mogas and 42,000 gallons of Diesel Fuel per month.

(4) Supply of Class IV Construction Materials to all units for MCA funded projects. An average of 350 requistions for construction materials are processed each week by the BCM section of the S-4.

(5) Supply of Class II TOE Equipment, where an average of 150 requisitions for expendable and non-expendable equipment and supplies are processed by the property book section each week. The quarter showed an influx of 30 new pieces of TOE equipment.

(6) Resupply of unit basic loads and demolitions through the Phu Tai ASP. An average of 10,000 lbs of TNT are used each month for quarry operations.

f. Force Development: N/A

g. Command Management: N/A

h. Inspector General: The Annual General Inspection of the 84th Engr Bn (Const) was conducted during the period 18-22 November 1968. The 84th Engr Bn (Const) received a satisfactory rating (based on a satisfactory - unsatisfactory rating scale). All personnel contacted were found to be professionally competent and enthusiastic in the performance of assigned duties. The overall appearance of areas, the condition of facilities and equipment, except as otherwise noted, and the positive attitude exhibited by all personnel were indicative of a high degree of professionalism and dedication. The 84th Engr Bn (Const) was reinspected in all areas wherein deficiencies were noted for each of the companies and it was verified that the necessary corrective action was accomplished.

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SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 January 1969, RCS CSFOR-65 (R1)

1. Civic Action: During this reporting period, the 84th Engr Bn (Const) distributed $VN 346,000 between the Phnoc Thion Orphanage in An Khe and the Kim Chau Orphanage in Binh Dinh. This money was used to hire teachers, maintain water heaters and generators, and for further use at the orphanages directors discretion. The $VN 346,000 was donated by the personnel of the 84th Engr Bn (Const). $VN 90,000 was obtained from the 18th Engr Bde Civic Action Fund ($VN 84,000) and the Qui Nhon Support Command Chaplain's Fund ($VN 6,000) for further distribution by the 84th Engr Bn (Const) Civil Affairs Section. During this period the 84th also sponsored a Christmas Party for the Save the Children Hospital located in Qui Nhon; where a large amount of toys and clothing were distributed. As part of the daily civic action program within the 84th the following scrap materials were distributed to various orphanages, schools, and refugee centers in the Qui Nhon area: 150 broken bags of cement, 50 sheets of roofing, 3500 BF of lumber, and 180 CYS of 3"(-).

2. Section 2, Observations (Lessons Learned)

a. Personnel: None

b. Operations:

(1) Item: Limited use of Intrenching Machine for laying of POL pipeline.

(a) OBSERVATION: Considerable maintenance down time was experienced when an intrenching machine was used under various types of soil conditions.

(b) EVALUATION: It was found that the intrenching machine was unable to handle the blast rock and 3"(-) used to stable sandy areas. The intrenching machine would become overloaded and in many cases critical parts were stressed to their breaking point. It was also noted that in an area composed entirely of sand the trench would cave in so quickly that it endangered the stability of the intrenching machine and the trench had to be redig by hand.

(c) RECOMMENDATION: The use of a commerical type backhoe would all but replace the intrenching machine for burial of a pipeline. This unit was unable to secure any of the four (4) commercial type backhoes in Vietnam; therefore a D7E was used to trench in sandy areas and a grader employed on the stabilized areas. There was a great deal of hand digging required where the aforementioned equipment did not have room to operate, a backhoe in these areas would have resulted in a great saving in man-hours as well as total time required to complete that portion of the project.

(2) Item: Laying of POL pipeline in secure and insecure areas.

(a) OBSERVATION: When welding sections of 8" steel pipe together it was observed upon final testing of the system that foreign material had been intentionally placed inside the line.

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SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 January 1969, RCS CSFOR-65 (R1)

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(b) EVALUATION: The work crews would weld about ten (10) to twelve (12) 20' sections of pipe together per day. This work was accomplished in both secure and insecure areas; however, these longer sections of pipeline were not always welded into the main line during the same day. When the flushing and testing of the operational portion was begun the pipeline was found to be blocked in critical areas (elbows or points of elevation of the pipeline). This foreign material that had to be removed was placed in the line from areas that were considered secure and insecure.

(c) RECOMMENDATION: That any pipeline (coupled or welded) be effectively capped off prior to the end of each day's work. Thus foreign material could not be placed into lengthy sections of a pipeline without being readily apparent to the work crews. The caps can be cut from ¼" or 3/8" steel plate and effectively tack welded on to the end of the portion of line welded during that day. These caps are easily removed prior to the next days work, to allow continuation of the project.

(3) Item: The use of drainage pipe in place of a sump pump.

(a) OBSERVATION: While constructing a cable vault for the Dial Central building, a sump pump could not be obtained for use as specified in the plans.

(b) EVALUATION: A substitute for the sump pump had to be found in order to insure a dry cable vault. It was found that a drain pipe could be installed approximately two (2) inches above the floor level of the cable vault. This pipe was laid in such a manner that it would exit above the surrounding ground level. Thus an effective substitute was found.

(c) RECOMMENDATION: That drainage pipe be considered as a substitute for a sump pump in a building where the vault/floor level is at or above the surrounding ground level.

(4) Item: Construction of a 120' Rheem Dudley Warehouse Arches:

(a) OBSERVATION: The arches were found to be very flexible when first lifted into position and subject to buckling under their own weight if sufficient lift points are not used. A shortage of cranes made it impossible to lift at more than one point. Rheem Dudley recommends that two cranes be used simultaneously; however the weight of the arches is small and does not justify the commitment of two cranes even if they are available. Wreckers do not have enough boom to reach the arch even at the ends.

(b) EVALUATION: The solution is to lift the middle of the arch with one 20 ton crane with two support cables, one attached ten or twelve feet on each side of the peak of the arch. Lift the ends of the arches with truck mounted "cherry-picker" light cranes borrowed from the depot and owned and operated by the Han Jin Transportation Company. The "cherry-pickers" at each end significantly steadied the arch during erection and also through their localized pushing and pulling facilitated the

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EGCC-CO 15 February 1969
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 January 1969, RCS CSFOR-65 (R1)

matching of the arch to its bolt holes.

(c) RECOMMENDATION: That units tasked with the erection of Rheem Dudley Buildings or those similar in nature study the availility of local lifting devices to expedite the erection procedures.

(5) Item: Use of sand as suitable fill for inside a building.

(a) OBSERVATION: It has been found that many times there is not sufficient room to use laterite to bring the floor level inside a building up to the height necessary prior to the placing of concrete as the final floor.

(b) EVALUATION: Laterite is normally used; however, the only efficient method of compaction is with a sheeps-foot roller. It was found to be impossible to use a sheeps-foot roller inside of confined areas and the use of a compresser driven backfill tamper would be very time consuming. The solution is to backfill the area with sand consolidated into place with water and some vibration from a concrete vibrator. If the building is built on laterite over sand, water in large quantities can be applied and subsequently eliminated by gravity. To speed this drainage holes throught the sub base should be dug and keyed with sand to serve as a ready route of escape for the water.

(c) RECOMMENDATION: That sand be considered a suitable substance to backfill within a confined/limited area such as within the limits of a building foundation.

(6) Item: Driving sheetpile with the use of the leads and fabricated hammer guide.

(a) OBSERVATION: To drive DP-2 sheetpile, the normal procedure is to attach the hammer to a so called "Monkey Stick", but this attachment was not available. A more efficient method is to fabricate a guide, which allows the hammer to ride on the outside of the leads.

(b) EVALUATION: This can be accomplished by extending steel arms from the hammer, and welding them to four (4) pieces of angle iron which will serve as a guide up and down the lead rails. If desired you can weld braces between the plate steel arms to brace the guide. For best results reverse the adapter plates from the boom to the leads. This allows the primary line to suspend the hammer straight down on the outside of the leads. The lower section of the leads can be removed depending on the depth that the sheetpile is to be driven.

(c) RECOMMENDATION: Advantages of this method include greater stability while driving pile, and easy access to all lead sections if trouble should arise.

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EGCC-CO 15 February 1969
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 31 January 1969, RCS CSFOR-65 (R1)

c. Training: None

d. Inteligence: None

e. Logistics: None

f. Organization: None

g. Other: None

Robert J Corley

ROBERT J. CORLEY
LTC, CE
Commanding

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11 Copies to 937th Engr Gp (C)
8 Copies to 18th Engr Bde
3 Copies to USARV
2 Copies to USARPAC
1 Copy to USAES

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1 Feb. - 30 April 1969

84th Engineer Bn (Construction) ORLL 1 Feb. - 30 A

NND DECLASSIFIED 927622 By [illegible] NARA, Date [illegible]

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AVHGC-DST (14 May 69) 3d Ind
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the period ending 30 April 1969, RCS CSFOR--65 (R1)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 19 JUN 1969

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

This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 30 April 1969 from Headquarters, 84th Engineer Battalion (Construction) and concurs with the report as indorsed.

FOR THE COMMANDER:

Cy furn:
84th Engr Bn
18th Engr Bde

W. C. ARNTZ
CPT, AGC
Assistant Adjutant General

MFR: ORLL was staffed through:

Engr: MAJ Emig/4750

ACTION OFFICER: MAJ STEWART/LBN 4433

CONCURRENCE/NONCONCURRENCE: Not required.

Suitable for Commander's Notes: Yes/No

COL. HEAD, ACofS, G3 ____ RECORD COPY RETURN TO AVHGC-DST.

To dist 26 June

CH DST DIV	
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CH DOC BR	
CH TNG BR	
A/O	

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AEC-OP (30 April 69) 1st Ind
SUBJECT: Operational Report of the 84th Engineer Battalion (Const) for the Period Ending 30 April 1969 (RCS-CSFOR-65)

DA, HEADQUARTERS, 937TH ENGINEER GROUP (COMBAT), APO 96318, 22 May 1969

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

1. The Operational Report - Lessons Learned of the 84th Engineer Battalion (Construction) has been reviewed by this headquarters and is considered to be an excellent account of the 84th Engineer Battalion's activities during the reporting period ending 30 April 1969.

2. This headquarters concurs with all the observations and recommendations of the Battalion Commander.

1 Incl
as

W.G. KRATZ
COLONEL, CE
Commanding

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AVBC-DC (30 April 1969) 2nd Ind
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 30 April 1969, RCS CSFOR-65 (R1)

DA, Headquarters, 18th Engineer Brigade, APO 96377 6 JUN 1969

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

1. This headquarters has reviewed the Operational Report - Lessons Learned for the 84th Engineer Battalion (Construction) as indorsed by the 937th Engineer Group (Combat). The Report is considered to be an excellent account of the Battalion's activities for the reporting period.

2. This headquarters concurs with the observations and recommendations of the Battalion and Group Commanders.

[signature]
J. W. MORRIS
Colonel, CE
Commanding

1 Incl
nc

CF: CO, 937th Engr Gp
CO, 84th Engr Bn

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 84TH ENGINEER BATTALION (CONSTRUCTION)
APO 96238

ECCC-CO 14 May 1969

SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the period ending 30 April 1969, RCS CSFOR-65 (R1)

THRU: Commanding Officer
937th Engineer Group (Combat)
APO 96318

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

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

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

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

EGCC-OO 14 May 1969
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 30 April 1969, RCS CSFOR-65 (R1)

1. Section 1 Significant Organizations or Unit Activities:

a. Command:

(1) Organization:

(a) Headquarters & Headquarters Company, 84th Engr Bn (Const)

(b) Company A, 84th Engr Bn (Const)

(c) Company B, 84th Engr Bn (Const)

(d) Company C, 84th Engr Bn (Const)

(e) Company D, 84th Engr Bn (Const)

(f) 536th Engr Det (PC)

(g) Company B, 299th Engr Bn (Combat)
Under OPCON of this Headquarters since 1 April 1969.

(h) Ad Hoc Power Distribution Team Assigned to HHC/84th

(i) 2nd Plt, 643rd Engr Co (PL)
Disbanded on 25 January 1969 and its personnel reassigned to units of the Battalion.

(2) Unit Operations:

(a) Headquarters & Headquarters Company: The utilities section continued to maintain the Camp Williams Cantonment area; this section was augmented with Vietnamese laborers as required. Under the control of HHC, the Ad Hoc Power Distribution Team was primarily utilized on the Cha Rang Valley Power Distribution Project and the Security Lighting of Lane AAF. Neither project has been completed as of this report due to the scope of work and late arrival of materials necessary for completion.

(b) Company A had the responsibility for the maintenance and repair of BattalionOrdnance and Engineer equipment. This company also operated the Howell Quarry and Crusher Complex until 1 April 1969, thereafter moving to the Chop Chai Quarry and Crusher Complex located at Tuy Hoa North. The move was accomplished smoothly and expedituously, as testified by the fact that the new complex was in production by 13 April 1969. During this reporting period the aggregate production of both Quarries was 17,667 CY of crushed rock, used in support of LOC Projects. Road maintenance projects utilized 5,795 GAL of MC-70 and 550.2 TONS of hot mix, mainly on QL-19; operational support type projects for roadways, taxiways, Tank Farms, and Helipads utilized 11,980 GAL of MC-70 and 2,650 GAL of Peneprime.

HICC-CO

14 May 1969

SUBJECT: Operational Report of the 84th Engineer Battalion (Construction) for the Period Ending 30 April 1969, RCS CSFOR-65 (R1)

(c) Company B was mainly involved in the construction of their new cantonement area at Miami Beach (CQ104783), completed by 15 March 1969, and the upgrading of QL-1 between Tuy An (CQ105687) and Tuy Hoa (CQ174448). This unit was also tasked with the maintenance of QL-1 between Binh Thanh (CR058014) and Tuy Hoa (CQ17448). This company moved over 80,000 CY of fill and poured 200 CY of concrete for new culverts in the road projects assigned to it.

(d) Company C concentrated its efforts on base construction type projects within the Qui Nhon Area, operating a prefab yard to build Standard Tropical Buildings and MACV Shelters and preparing concrete bridge markers. The 440'x 80' Cold Storage Warehouse is 90% complete, the Tandem Switch Building was completed with the exception of the surrounding revetment, and Class II & IV Warehouse is approximately 35% complete, with steel framework and trusses erected on the Nicheman Building. The Depot Warehouse and Administrative Space was completed and turned over to the Installation Commander. The POW Hospital being built by a construction platoon from Company D attached to Company C, is approximately 60% complete. This Company also had responsibility for the maintenance of QL-1 from Phu Tai (CR005210) to Phu Cat (BR907486) and of QL-19 from QL-1 (BR964333) to the An Khe Pass (BR619470); this responsibility was transferred to the 299th Engr Bn (C) on 15 April 1969. At that time, company effort shifted to the upgrading of QL-1 between Phu Tai and Binh Thanh (CR 058014), with emphasis on the Cu Mong Pass Area (CR042114); two new MCA D-9 dozers from Company A were attached to Company C for this project, as were two squads from Company B, 299th Engr Bn (C). Operational Support Missions for Tank Farms #1, 2 and 3, as well as Pump Station #2 were completed; these missions involved berms, chain link fencing, six fill stands and two access roads. Finally, this company constructed and buried the second half of the "B" Pipeline along Red Beach and Vung Chua Road with personnel acquired from the disbanded 2 Plt, 643rd Engr Co (PL).

(e) Company D moved to Tuy Hoa North (CQ152484) on 15 April 1969 and started constructing the cantonement areas (TOE's and MER's) for itself and for Company A. This company initially had responsibility for the maintenance of QL-1 from Phu Tai to Phu Cat and of QL-19 from QL-1 to the An Khe Pass; this responsibility was later transferred to the 299th Engr Bn (C), and the responsibility for QL-1 from Binh Thanh to Tuy Hoa acquired. The main effort, though, was on road upgrading between Tuy An (CQ105687) and Tuy Hoa (CQ174448), where some 37,000 CY of fill were hauled, together with 175 CY of concrete for 5 new culverts, and between Binh Thanh (CR 058014) and Phu Tai (CR005210) later transferred to Company C. Base construction was performed by Detachments to Company C: one Platoon worked at Cold Storage Warehouse and another at POW Hospital.

(f) The 536th Engr Det (PC) was principally working on the Ammo Off-Loading Facility and repairing the existing Barge Quay; both projects are part of Qui Nhon Harbor System. The Former is 46% completed and the Latter 45%.

(g) Company B, 299th Engr Bn (C) was placed under the Operational Control of the Battalion on 1 April 1969, and utilized its manpower and resources in two major projects. The first project was the Operational Support of the 1st Logistical Command in the Qui Nhon Area, which entailed the construction of

4 bunkers, 3 guard towers, and 5 fill stands in Tank Farms #1, 2 & 3, as well as the ABD, Qui Nhon Area. The second project was the upgrade of QL-1, Phu Tai to Binh Thanh through drainage facilities; in this project B/299th placed 12 culverts, including 1-quad 48" and 1-quad 60".

b. Personnel, Administration, Morale and Discipline: During this reporting period the troop participation in the Savings Bond Program averaged 66.1%, while Soldiers' Deposits participation averaged 5.7%. There was a total of 45 personnel recommended for awards, and 118 personnel voluntarily extended their foreign service tours. This Battalion suffered eight casualties and one battle death during this Quarter. There were 124 disciplinary cases, 85 Article 15's, 29 Special Courts-Martial, and 10 Summary Courts-Martial.

c. Intelligence and Counterintelligence: Enemy activity against LOC's remained moderate, resulting in two bridges being destroyed by enemy action. The explosives utilized were locally made, and apparently command detonated. Enemy harrassment of work crews for the reporting period can be classified as moderate, with four incidents resulting in one grader, one quarter-ton vehicle and one three-quarter-ton vehicle damaged, one man KIA and four WIA. There were no incidents of enemy action against base camps of this Battalion; however, the Battalion supported the 134th QM Company with two dozers, one front loader and eight 5-ton dump trucks when sappers penetrated Tank Farm #2. This action resulted in major damage to the Tank Farm. Mining of LOC's remained moderate during this reporting period, with a total of nine mining incidents, two of which were located by friendly mine sweeps. Under the threat of an expected enemy spring campaign, good intelligence continued to be maintained by this unit with the Capital ROK Infantry Division, 22nd ARVN Infantry Division, 5th Special Forces Group, 173rd Airborne Brigade, Binh Dinh and Phu Yen Province Forces, MACV Tuy Hoa, and other combat and combat support units in the Battalion's AOR.

d. Plans, Operations, and Training: This reporting period saw the construction effort being shifted from base construction to road upgrade: at the beginning of the period only one company, B/84th, was engaged in road construction, whereas at the closing of the reporting period all companies were so engaged. The major projects are QL-1 Upgrade, Phu Tai to Binh Thanh (assigned to Company C), and QL-1 Upgrade, Tuy An to Tuy Hoa (assigned to Company B and Company D, with support from Company A). All companies are responsible for LOC maintenance in the Battalion's AOR, from Binh Thanh To Vung Ro. Base construction, mainly in the Qui Nhon Area, is being done by Company C, with attachments from Companies D and B. Training emphasis during this reporting period was on the OJT/Cross-Training of newly assigned personnel, as well as on the weapons safety training conducted each Sunday morning for all newly assigned personnel.

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e. Logistics: During the past Quarter, the S-4 section gave logistical support to the five organic companies of the 84th Engineer Battalion (Construction), its attached unit, the 536th Engr Det (FC), and Company B, 299th Engineer Battalion (Combat), under the operational control of this battalion since 1 April 1969. The areas of logistical support included:

(1) Class A rations for some 1,000 personnel each day, procured and distributed by the ration break down facility.

(2) Two (2) water points which together produce approximately 40,000 gal of potable water daily.

(3) POL delivery to all organic and attached units amounting to 37,000 gal of Mogas and 42,000 gal of diesel fuel per month.

(4) Supply of Class IV Construction Materials to all units for MCA funded projects. An average of 350 requisitions for construction materials are processed each week by the BOM section of S-4.

(5) Supply of Class II TOE equipment. An average of 150 requisitions for expendable and non-expendable equipment and supplies are processed by the property book section each week. The Quarter showed an influx of 176 new pieces of equipment, both TOE and MCA.

(6) Resupply of unit basic loads and demolitions through the Phu Tai ASP. An average of 10,000 lb of TNT are used each month for quarry operations.

f. Force Development: N/A

g. Command Management: N/A

h. Inspector General: N/A

i. Civic Action: During this reporting period, the 84th Engineer Battalion (Construction) distributed $VN 196,000 among various orphanages in Qui Nhon, An Khe and Tuy Hoa. This money was used to hire teachers, maintain water heaters and generators, and for further use at the discretion of the institutions' directors. The monies were donated by the personnel of this Battalion. $VN 4,210 was obtained from the Qui Nhon Support Command Chaplain's Fund and further distributed by the Battalion Chaplain among charitable organizations. As part of the daily civic action program within the 84th Engineer Battalion (Construction), the following scrap materials were distributed to various orphanages, schools and refugee centers

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20 gal of paint, 100 cy of 3"(-) crushed rock, and 30 pieces of 18" CMP. Expenditures from US/FWMAF Military Civic Action were #VN 84,000 during this period, spent in the Qui Nhon area orphanages.

2. Section 2: Observations (Lessons Learned)

a. Personnel: None

b. Operations:

(1) Item: The tendency to "overbuild" when widening a road through rice paddy areas.

(a) Observation: While doing road work on QL-1, a tendency to "overbuild" existed when widening the road through rice paddy areas.

(b) Evaluation: Without close supervision road width will not stay within allowable standards.

(c) Recommendation: Road width must be closely monitored during all phases of construction to insure that excessive widening is kept to a minimum.

(2) Item: Making efficient use of mobile scaffolds when Cherry pickers and Cranes aren't available.

(a) Observation: In constructing a 24' high fence around fuel tanks at the Tank Farms, a problem was encountered since the majority of the construction effort was expended 24' above ground.

(b) Evaluation: A substitute for Cherry Pickers and Cranes had to be found so that the project deadline could be met.

(c) Recommendation: The problem was alleviated by constructing a 16' high standard scaffold on the bed of a 5 ton dump truck.

(3) Item: Improvising snap ties for wales on building columns.

(a) Observation: While building a framework for 2' x 2' x7'-6" reinforced concrete columns, it was discovered that snap ties for the wales were not available.

(b) Evaluation: A method of securing the wales had to be found so that work on the project could continue.

(c) Recommendation: Engineer pickets cut to the proper length and drilled to receive No 4 re-bar can serve as an adequate substitute.

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(4) Item: Finding an expedient method for loading culvert onto a lowboy trailer.

(a) Observation: While waiting to load a 72"x38' culvert, it became apparent that an unnecessary delay would occur because of the absence of adequate lifting equipment.

(b) Evaluation: To avoid a two hour delay, an adequate substitute had to be found so that the culvert could be promptly loaded on the lowboy.

(c) Recommendation: A D7-E dozer and 290 M scraper were used. The 290 M scraper was parked parallel to the lowboy on one side, while the D7-E dozer pushed the culvert onto the lowboy.

(5) Item: Placing of weep hole tubes through headwall and running back into culvert for improved drainage.

(a) Observation: While placing a headwall for one of the culverts on QL-1 South, the headwall was approximately 75 feet in from the edge of the mountain, thereby leaving soil on both sides of the headwall.

(b) Evaluation: The problem was how to make the weep hole tubes more effective in draining the roadbed.

(c) Recommendation: The problem was solved by running the weep hole tubes through the headwall from the compacted roadbed side and then bending them into the top of the culvert.

(6) Item: The use of K-Wall revetments around a permanent installation.

(a) Observation: While constructing K-Wall revetments, problems arose when installation was started on an uneven base.

(b) Evaluation: While constructing K-Wall revetments, problems arose concerning how to best fasten sections and properly align the revetment.

(c) Recommendation: Great care and consideration must be given to site preparation, to insure that revetment rest on a graded and level base.

(7) Item: The prefabrication of the corner pieces for a bulkhead wall of ZP type sheetpile.

(a) Observation: Since the corner pieces for a bulkhead wall are not usually manufactured, the constructing unit must make them. Furthermore, while cutting the sheepiling to make these corner pieces, the heat from the cutting torch warps the piles and makes a straight edge difficult to obtain.

(b) Evaluation: The corner pieces for the bulkhead wall must be free

(c) Recommendation: The problem can be eliminated by cutting the sheetpiling at intervals of about six inches with an inch or so left between each interval. These inch sections prevent piling from warping. The remaining sections can then be cut with little effort on the piling.

(8). Item: Placing Bench and Swedge Bolts in Abutment

(a) Observation: Bench and front face forms could not be placed before pouring concrete up to bench level because the face width was not wide enough to place a chute to within 5' of the footer.

(b) Evaluation: Concrete would be poured up to bench level, then the bench and face form would be placed and braced before the face would be poured without the use of a chute.

(c) Recommendations:

(1) Prefab the bench and face forms so that holes are drilled where the swedge bolts will go. Have the form placed at the site where it will be easy to place and brace the bench and frontface forms.

(2) Pour concrete to bench level and smooth bench with trowel. Place face form, then bench form. Place bolts into the drilled holes in the bench and anchor the bolts to the form with tie wire. It is imperative to get the bolts placed as quickly as possible because cement sets quickly in this climate.

(3) Place tie wire and spacers in the face forms, then brace the bench and face forms.

(9). Item: Placing rebar into forms where a large amount of concrete will be poured.

(a) Observation: Cutting and placing rebar at the job site led to poor workmanship. The people placing the rebar found themselves working at close quarters and climbing on the rebar causing the rebar to sag and bend.

(b) Evaluation: Prefabing the rebar structure then transporting it to the work site in large pieces allowed workers enough working room and eliminated the placing rebar being climbed on while the rebar was tied together.

(c) Recommendations:

(1) Prefab rebar structures as much as feasible before placing.

(2) Place only three sides of concrete form before placing rebar. After placing rebar, the fourth side of the form can be placed and braced and tie wire added.

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c. Training: None

d. Intelligence: None

e. Logistics: None

f. Organization: None

g. Other: None

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