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AGO, d/a ltr, 29 Apr 1980

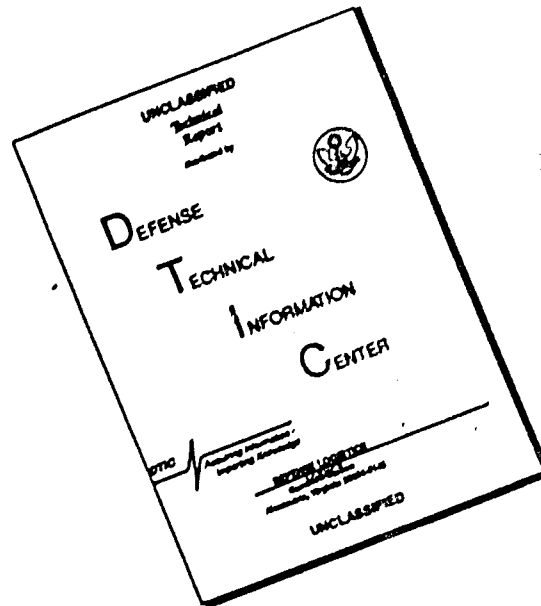
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DEPARTMENT OF THE ARMY
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WASHINGTON, D.C. 20310



IN REPLY REFER TO

AGAM-P (M) (19 Apr 68)

FOR OT RD 681266

30 April 1968

AD832527

SUBJECT: Operational Report - Lessons Learned, Headquarters, 864th Engineer Battalion (Const), Period Ending 31 January 1968 (U)

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Kenneth G. Wickham

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25 Apr 68, P.C. 20310

STATEMENT #2 UNCLASSIFIED

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 864TH ENGINEER BATTALION (CONST)
APO 96240

EGACBC-3

31 January 1968

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65), for
Quarterly Period Ending (31 January 1968)

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

Commanding General
18th Engineer Brigade
APO 96377

Commanding General
US Army Engineer Command Vietnam (PROV)
ATTN: AVCC-P&O
APO 96491

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

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

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

Section 1. Significant Organization or Unit Activities.

a. Command

(1) The battalion is organized under TOE 5-115E, dated 5 August 1965. The 569th Engineer Company (TOPO) (COLPS) is attached for administrative control.

(2) No changes occurred in the command or staff element of the 864th Engineer Battalion during this period. However, all company level commanders changed since 6 November 1967. On that date, new commanders 2LT Ralph V. Willing and Captain Harold A. Davidson were assigned to Headquarters Company and C Company respectively. On 8 December a new commander, Captain Donald H. Anselm, was assigned to D Company. Company A received its new commander, Captain Richard Anderschat, on 10 December. The full changeover for the battalion was completed

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SUBJECT: Operational Report - Lessons Learned (EGACBC-65), for
Quarterly Period Ending (31 January 1968) (Cont)

31 January 1968

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when 1LT Barry H. Pritchard was assigned as the commander of B Company on 20 December 1967. The commander of the attached 569th Engineer Company (TOPO), Captain Richard N. Foreman, assumed that post on 3 January 1968.

(3) The period was highlighted by the relocation of organic companies, the complete rebuilding of the superstructure of a 709' flood damaged bridge at Dien Khanh, and the completion of several major projects. In November, Company A relocated to Nha Trang leaving the crusher and quarry complex at Ba Ngoi under the operational control of Company D and attaching trucks and drivers required for the hauling of aggregate and asphalt for the reconstruction of coastal highway QL-1, to Company D. The operational control of the quarry complex by Company D was temporary because of expansion of the operation in December at Ba Ngoi to provide rock for projects in excess of the requirements of Company D. This change gave Company D a better opportunity to concentrate their efforts on the important highway project. The loss of the asphalt and quarry sections of the 102d Engineer Company (CS) along with their equipment had a great impact on the operations of the battalion. By realigning forces, operations were adjusted to the loss of this equipment.

b. Personnel, Administration, Morale, Discipline.

(1) During the latter portion of this period, the 864th Engineer Battalion began to experience a sharp drop in personnel strength. Near the end of January, the aggregate strength had dropped to 100 spaces short of our authorization. The morale of the unit continued to be high, and, as plans were announced to assign a second company from this battalion to highway construction operations, the number of requests for tour extensions indicated a strong interest on the part of the individual soldier for this important engineer mission. The state of discipline in our units improved as cantonment-type construction work was de-emphasized and units deployed to initiate highway construction. In addition to the normal administrative work related to the processing of new arrivals and departing personnel, administration was increased by the infusion program. This program was intended to shift personnel with other commands in order to level out unusually heavy DEKOS humps. The program has a commendable objective but because of its adverse impact on the morale of individuals, it should be limited to apply only to personnel volunteering for a reassignment.

(2) During this period there were several changes in attachments. In late November, the asphalt platoon of the 102d Engineer Company (Construction Support) was reassigned to the 937th Engineer Group. In December 1967, the 40th Engineer Detachment (Well Drilling) and the 171st Engineer Detachment (Well Drilling) were reassigned to the 577th Engineer Battalion (Construction), 35th Engineer Group (Construction). In January 1968, the 588th Engineer Detachment (Well Drilling) was reassigned to the 14th Engineer Battalion (Combat), 35th Engineer Group (Construction), having been assigned to this unit only one month.

FOR OFFICIAL USE ONLY

31 January 1968

SUBJECT: Operational Report - Lessons Learned (hCS CSFOR-65), for
Quarterly Period Ending (31 January 1968) (Con't)

(4) On 28 December in a battalion review formation, Brigadier General Roper, Commanding General 18th Engineer Brigade, presented the Meritorious Unit Commendation and attached the streamer to the battalion colors. This commendation covered the period of service of this battalion in Vietnam from May 1965 to February 1967. This occasion underlined the fact that the 864th Engineer Battalion was the first Army battalion to reach Vietnam in the build-up in 1965.

c. Intelligence and Counter-intelligence of the 864th Engineer Battalion (Construction).

The construction operations were not of a nature generating opportunities for significant intelligence activity. However, a number of operations were conducted in this period which brought battalion units into close contact with enemy operations. In order to plan and execute these operational tasks, it became necessary to study and evaluate all the intelligence information attainable concerning the battalion area of responsibility. Excellent contacts for intelligence gathering were made with Special Forces elements operating in the battalion area of interest. The information obtained from these sources and from Civil Irregular Defense Group elements provided the information needed to acquaint our commanders and supervisors with the nature of the hostile threat in their areas.

d. Plans, Operations and Training.

The area of responsibility assigned to this battalion continued to expand and to shift northward. The battalion is currently located in the center of its area of responsibility.

The highlights of battalion operations included many accomplishments. In the last days of November, the 864th Engineer Battalion, using elements of all companies, replaced the complete superstructure of a 709' timber trestle bridge. The superstructure of this bridge was washed down-river by a monsoon flood. Because of the military significance of this vital bridge, which was the only cargo traffic road-link to reach locations north of Nha Trang, immediate repair action was required. In four days, working around the clock in monsoon rains, two pile bents were redriven, fifty pier caps were replaced, and the remaining superstructure to include curbs and sidewalks over the fifty-one spans of the bridge were reconstructed and opened to traffic.

Hon Tre Island projects were essentially complete at the end of the period, which marked an end to approximately one and a half years of construction. The projects included a Hawk missile site, a signal site, a 600-man cantonment area, and three and four tenths miles of a two-lane paved road from the LCU landing ramp to the top of the mountain at an elevation of 482 meters.

Project GP 35-P260-67, locally called "Pie Slice", also drew to a close with only the paving of streets and the completion of a concrete lining for swale ditches remaining at the close of the period.

EGACBC-3

31 January 1963

SUBJECT: Operational Report - Lessons Learned (ECS CEFCL-65), for
Quarterly Period Ending (31 January 1963) (Con't)

The increased emphasis on construction of National Highway QL-1 necessitated the relocation of another company to that project. Most of the projects assigned to Company C were transferred to Company B, ending a two-year period of occupation for Company C in Nha Trang. With two companies now involved in highway construction, the battalion is in a new era with vertical construction of cantonments and similar facilities losing emphasis.

Paving has continued in Nha Trang to include the roads in "Pie Slice" and an operational mission for the Air Force which resulted when a C130 was destroyed by mortar fire, leaving approximately 10,000 square yards of asphalt damaged.

In the area of statistics during this period, the battalion used 56,538 tons of rock, poured 2,288 cubic yards of concrete, constructed 89,400 square feet of standard-three and standard-four billets, built 78,030 square feet of various other structures, hauled 196,749 cubic yards of fill, completed 2.45 miles of highway to LACV standard, performed road maintenance on 61.5 miles of National Highway QL-1, repaired the overdecking on seven bridges, and rebuilt the Song Cai Bridge utilizing some 200,000 board feet of lumber, and approximately five tons of nails, spikes and drift pins.

The monsoon season for this region occurred during this period. The period most affected started about 15 November and ended about 26 December. Although this was not a severe monsoon, highway construction operations were conducted on a limited scale in this period.

e. Headquarters and Headquarters Company performed its usual supporting role during the quarter. The S2/3 Section was again heavily committed in design, survey and soils testing. In vertical design, the following was accomplished:

(1) A complete set of working drawings for the 7,500-man John F. McDermott Cantonment, which includes:

- (a) An Officer's club.
- (b) Electrical installation for the 400-man mess halls.
- (c) Plumbing system for mess halls and showers.
- (d) Protective bunkers for the cantonment.

- (2) Design of the 709' Song Cai Bridge at Dien Khanh.
- (3) Design of the IFFV Chapel renovation.
- (4) Design of a maintenance building.

31 January 1968

SUBJECT: Operational Report - Lessons Learned (KCS CSFOR-65), for
Quarterly Period Ending (31 January 1968) (Con't)

For horizontal construction, design work included:

- (1) Completion of the design of five miles of QL-1 National Highway.
- (2) Design of two miles of Route #4 Bypass in Nha Trang.
- (3) Completion of a feasibility study based on a reconnaissance for a proposed highway through the Suoi Dong - Song Dong Valley west of Nha Trang.
- (4) Redesign of the drainage and road layout for project GP 35-P260-67, Army Logistics Center (Pie Slice).

Survey parties continued with their support of the line companies on National Highway QL-1, survey of other minor roads, and buildings and hardstands in Nha Trang. The soils technicians were fully employed in the quality control aspects of construction on QL-1, and the projects in Nha Trang.

During December, a reconnaissance party made up of the operations officer, the pipeline engineer and the construction engineer, along with seven enlisted members of the operations section, performed a feasibility reconnaissance through the Suoi Dong - Song Dong Valley west of Nha Trang. A platoon of Vietnamese Special Forces and two American Special Forces advisors provided tactical security for this reconnaissance. The reconnaissance was made through a dense jungle valley occupied by hostile forces for the purpose of obtaining information for a planned highway which would shorten the distance from Nha Trang to QL-1 and points to the south.

The coordination of operations in the rebuilding of the Song Cai Bridge described earlier developed suddenly and became a task which took priority over all other work during the last days of November.

1. Company A continued to operate two multi-unit crusher plants and the Nha Trang asphalt plant. In November, as work on Hon Tre Island drew to a close, the crusher and quarry operation, after being in operation there for over twelve months, was terminated and the equipment relocated to new sites. The rock crushing section of the 610th Engineer Company (CS) completed its support of this battalion's construction operations at Hon Tre in November but in January elements of this same section were again placed in support of this battalion's operation; this time at the Ba Ngoi Quarry, west of Cam Ranh. The asphalt platoon of the 102d Engineer Company (CS) along with their equipment rejoined their parent company during this period. As the period ended Company A continued to operate two crushers and an asphalt plant without augmentation of their personnel strength. The Ba Ngoi Quarry has been expanded by the addition of a 200 TPH primary, intermediate and secondary crusher already in place. At the close of this period an additional 75 TPH crusher was added to the operational control of this battalion in the Ba Ngoi Quarry. The expansion of the Ba Ngoi Quarry has been necessary to provide base course aggregate to support not only two companies of this battalion on QL-1 highway construction,

EGACEC-3

31 January 1968

SUBJECT: Operational Report - Lessons Learned (HCS CSFCR-65), for
Quarterly Period Ending (31 January 1968) (Cont)

but also to supply rock for elements of another construction battalion and the Vietnamese 203rd Construction Battalion south of Ba Ngoi. At present the planned output from this complex is 1,500 cubic yards a day. A small number of drills and equipment has been made available to expand this multiple bench quarry to meet the increased requirements. In Nha Trang the rock production decreased as the priority for operations and maintenance personnel shifted to Ba Ngoi; but, near the end of the period, production at the Nha Trang plant is again regaining momentum.

The major highlight of the quarter for Company A was its relocation from Cam Ranh Bay to Nha Trang. At the time of this move, the second asphalt plant operated by this battalion in Cam Ranh was turned over to the 610th Engineer Company (CS). The asphalt platoon, 610th Engr Co (CS), began to provide support to this battalion in paving QL-1 in November. A portion of the equipment platoon of Company A, augmented with maintenance personnel, remained at the Ba Ngoi Quarry. Eleven 5-ton dump trucks with drivers and maintenance personnel from A Company were attached to Company D to be utilized hauling base course and asphalt in support of highway construction on QL-1. A steady program for placing of asphalt in Nha Trang continues with a total of one and one-half miles being paved and a total of 56,538 cubic yards of crushed rock being produced at all crusher complexes.

f. The series of unit moves left Company B as the engineer construction company responsible for the balance of the construction program in Nha Trang. As the period ended, B Company became responsible for those projects of C Company as C Company departed for a highway construction assignment. During this period, the operations of this company were highlighted by the use of increased numbers of Vietnamese local national skilled laborers in all phases of construction. This augmentation to the troop labor force has worked most satisfactorily. The quality of the work far exceeds self-help and the production rate is far higher. Major accomplishments of this period for this unit can be best noted by looking at the overall construction effort spent. The vertical construction of a large Nha Trang Logistics Depot was completed in January. This complex, started under civilian contract but assigned for completion by the 864th Engineer Battalion, included five 500-man mess halls of metal Butler construction complete with electrical, plumbing and mess facilities, one metal Butler Administration Building, 18 quonset shower and latrine facilities complete with full plumbing including hot water, one administration quonset complete with partitions and electrical wiring and the installation of fans, switches and lights in 154 billets, one laundry facility with a 560 gallon underground fuel tank, one maintenance shed of sufficient size to handle large engineer earthmoving equipment, and one dispatch building. Horizontal construction consisted of complete drainage for the more than 50 acres used in the depot, and construction from the subbase up to finished asphalt of 60,000 square meters of roads and hardstands. This horizontal effort is now 40% complete. Also included in the complex was the conversion of 42 tent frames to bachelor officer quarters, all of which were completed this period. A large portion of our construction effort this period went into containment construction of the 7,500-man Camp McDermott area. Although the responsibility of the overall project remained with C Company, several facilities and the major

31 January 1968

SUBJECT: Operational report - Lessons Learned (HCS CSF0K-65), for
Quarterly Period Ending (31 January 1968) (Con't)

portion of the earthwork was tasked to B Company. In preparing a suitable base for the many facilities in this low lying region, a total of more than 60,000 cubic yards of fill material was hauled, compacted and graded. Also more than 50,000 square feet of tropicalized two-story billets, 400-man mess halls, showers, latrines, and administrative quonsets were constructed during this time span. In addition to this, an 8,400 square foot maintenance building was constructed to permit this unit to carry out its highly important and extensive maintenance operations. Another, but more sophisticated structure neared completion this period in the form of a 2,400 square foot Communication Center. This building, when complete, will have air conditioning, tiled floors, acoustical tiled ceilings and walls, and concealed wiring. This facility, originally designed for contract construction was completed with the exception of the floor tile, which has not yet become available, and the air conditioning ductwork, which is presently being fabricated under civilian contract. Horizontal construction, in addition to that already mentioned in the 7,500 man cantonment area, played an important role in this period's activities. A 4,500 square yard depot storage yard consisting of a double bituminous surface treatment was 70% completed when construction was halted due to a combination of monsoon weather and the lack of an asphalt distributor. A second earthmoving project at a ROKA Compound north of Nha Trang called Sip Ja Sung, involved preparing a multiple generator pad base to a compaction specification of 100% modified AASHO, filling and shaping seven foot berms for two POL storage tanks, constructing an access road and clearing for the power distribution lines within the compound. A third earthmoving project involved a course of blast rock fill material for the top of a large off-loading dock in the Nha Trang Outport. A total of more than 10,000 cubic yards of blast rock and fill was delivered to the site, placed, compacted and shaped. Several operational support missions were assigned this unit as a result of both monsoon weather and enemy activity during this period. Five bridges, damaged to the extent that LOC traffic was halted, were repaired on a priority basis. A sixth bridge, the timber trestle over the Song Cai River at Dien Khanh, RVN was reconstructed as mentioned earlier. A total of three bridge bypasses had to be constructed on an emergency schedule in a short time period working twenty-four hours a day through heavy monsoon rains and in highly insecure areas in which engineer troops provided their own tactical security. Other operational support work included 10,000 square feet of asphalt placed at the Nha Trang Air Base to replace a section of apron that was destroyed under the flaming wreckage of a C130 aircraft damaged by enemy mortar rounds, and numerous repairs were made to small sections of roads which had deteriorated to the extent that traffic passage had become hazardous. Civic action work included street repairs within the city of Nha Trang and the donation of used construction materials made available as a result of replacement construction. In addition to the above directed construction project, B Company operated on a continuing basis the Nha Trang concrete batching plant which produced an average of 60 cubic yards of concrete a day for a total of 4,800 cubic yards of concrete during the period in support of B Company, C Company and Air Force construction projects. It also managed the asphalt and rock crushing complex until A Company's takeover in December.

EGACBC-3

31 January 1968

SUBJECT: Operational Report - Lessons Learned (HCS CSFOR-65), for
Quarterly Period Ending (31 January 1968) (Con't)

g. Company C, having turned over most of its projects in Nha Trang to Company B, departed Nha Trang after more than two years of work in that region. At one time, the company had twenty-two projects underway, including all the major project work at Hon Tre Island. A requirement to renovate the IFFV Chapel was assigned on 20 October 1967. Augmented by personnel from the utilities section in Headquarters Company, this unit started the renovation by removing all interior walls and fixtures leaving only a shell. Supplied with materials from normal supply channels and from local purchase sources, the unit completed the construction in thirty days. The interior was modified to include the relocation of offices, chancel, air conditioners, windows and overhead lights. As construction proceeded, the interior masonry walls were covered with mahogany stained plywood set out from the wall with two by four spacers to give a shadow depth effect. An acoustical ceiling was installed over the plywood ceiling. The electric lights were installed in an overhead cove for indirect lighting. The chancel was constructed with a hood effect and indirect lighting along with a mahogany rail, raised chancel and fabricated altar, resulting in a finished project which earned the high praise of the Commanding General of IFFV. During the latter part of the period, an additional helicopter company was assigned to Nha Trang airfield which necessitated the construction of fourteen additional helicopter revetments. This project was completed in a very short time using a design involving wooden pallets and 55 gallon drums. The major construction event for this company was the completion of 3.4 miles of a paved two-lane all-weather access road to the top of the mountain on Hon Tre Island. Due to the very rough mountainous terrain and solid rock, it presented many problems during construction. The road required thirteen culverts which were set in areas that had to be blasted out of veins of solid rock in order to be placed in position. With the construction coming to a close, the 35th Engineer Group Power Distribution Team spent four weeks in the cantonment area installing the power distribution systems. All that now remains to be done is to complete the water storage system, consisting of the installation of two pumps, two chlorinators, connecting the piping to all facilities, and the construction of two pump houses. This will end a project started approximately two years ago and includes a Hawk missile site, a signal site, a 600-man cantonment area, dog kennels, and the road. A large portion of the work of this company was also concentrated on Camp McDermott. Buildings completed during the period include a total of 114,200 square feet of floor space, comprising fifteen two-story billets, three 400-man mess halls, seven 500-man showers and eleven double administrative quonsets. Operational support missions over the period resulted from the effects of monsoon weather. Maintenance and upkeep of approximately 15 miles of QL-1, and 8 miles of HL-1 were frequently required because of washout and traffic damage. HL-1, which has no pavement, was almost completely rebuilt as the traffic and weather had deteriorated the road to such condition that vehicular traffic speed was reduced to approximately five miles per hour for its total distance. At the end of November, flooding conditions at Dien Khanh, west of Nha Trang, washed away the complete superstructure of the Song Cai Bridge as described earlier. Notified early in the evening of the 29th, Company C arrived on site at 1000 hours 30 November with three platoons and sufficient construction equipment to work on a two-shift basis 24 hours a day. As mountains of materials started arriving on the job

31 January 1968

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65), for
Quarterly Period Ending (31 January 1968) (Con't)

site, Company C set its platoons into motion on different tasks. At the same time, Company B was working on the bridge from the north shore. The 709-foot bridge was opened to traffic at 1430 hours on the fourth day. During the month of January, Company C relocated to a temporary camp site on highway QL-1 to start their assigned portion of the rehabilitation of the national highway. The company moved into a temporary cantonment awaiting the departure of troops in an adjacent defensive position. To date, approximately one mile has been stripped and grubbed, 2,000 feet of subgrade and 1,000 feet of subbase material has been placed.

h. In November, Company D completed its move from the airfield support complex, which had been constructed by this unit, to a new cantonment on Dong Ba Thin. The requirement to move resulted when an aviation unit was assigned to occupy the facilities in which this engineer company had been living. Only five weeks were provided to develop new facilities for Company D. With a combination of night shift work, local hire workers and augmentation from other battalion units, the new facilities were completed on time. The major effort during this period continued to be the rehabilitation of the section of highway QL-1 from Dong Ba Thin to Suoi Vinh with 2.45 miles completed out of a total of six miles. Company D hauled 14,980 cubic yards of rock for base course and 109,460 cubic yards of fill material during this reporting period. Due to the distance from Nha Trang to Ba Ngoi, the crusher and quarry complex was, for a time, placed under operational control of Company D. After constructing another headwall to facilitate installation of an additional 75 TPH crusher, the operational control of the entire quarry facility was returned to Company A. The complex had to be rapidly expanded to supply aggregate to four different units with an output goal of 1,500 cubic yards per day. The construction of a precast concrete bridge was completed on QL-1 just south of Suoi Vinh making a total of three of this type bridge installed by Company D. Also numerous culverts of various sizes were installed as the road was being constructed. During the rebuilding of the Song Cai Bridge at the end of November, one construction platoon from D Company augmented the battalion's effort to complete this 709-foot timber trestle bridge in four days. A new project assigned in December is the construction of the 18th Engineer Brigade Chapel at Dong Ba Thin. This facility will have a concrete floor space of 2,400 square feet, inverted "V" trusses anchored on extended footer columns, and will feature an interior balcony. It will be open on the sides where the roof extends down near the top of the columns. Work has started and is approximately 40% complete. Road maintenance on the company's area of responsibility along QL-1 from Ba Ngoi to Suoi Cat was conducted continuously. It consisted of pot hole repair, replacing the treadway on two timber trestle bridges, the construction of concrete stone headwalls for culverts, and improvement of existing drainage.

The mandatory training program was conducted regularly on Sunday mornings. Also, because of special construction tasks, it became necessary to schedule seminars or classes for selected personnel. In this period, this was done for the upgrading of unit maintenance operations. The aim of these sessions was to bring the squad, section, and platoon supervisory level into the picture for implementing maintenance programs. Another special class was held for supervisors

EGACBC-3

31 January 1968

SUBJECT: Operational Report - Lessons Learned (KUS CSFCh-65), for
Quarterly Period Ending (31 January 1968 (Con't))

involved in earth-moving and road construction operations. This class was held to familiarize the entire group with soil testing, compaction techniques, culvert and bridge construction operations and similar points.

i. Logistics

For the major portion of this period, there was no appreciable change in logistics service. General improvements had been noted in the supply of construction materials. In the case of several crash projects, for example, the Song Cai Bridge, the release and transportation of the bridge materials was handled in an outstanding manner. However, this battalion was still carrying out its assignments without equipment which would have permitted more expeditious accomplishment of that work. Examples of such shortages are: five out of eight cranes, thirty out of thirty-four generators, three out of nine graders, five out of nine scoop loaders, seven out of seven pneumatic tool and compressor outfits and eight out of ten welding sets. As the period ends, there are strong indications that some of these shortages may be filled. Were this to occur, the capacity for highway construction work involving quarry operation and culvert and bridge construction would be greatly enhanced.

j. Force Development

No comment.

k. Command Management

No comment.

l. Inspector General

The AGI for this battalion took place during the week of 18 December 1967. At the completion of this inspection all personnel were described as professionally competent and enthusiastic in their desire to perform assigned duties. Esprit de corps and morale were considered superior. The overall appearance and condition of facilities and equipment and the positive attitude exhibited by all personnel were given as indicative of an exceptionally high degree of professionalism and leadership.

m. Information

No comment.

n. Civil Affairs

While the schedule of the 864th Engineer Battalion was saturated with assigned tasks, all available opportunities were exploited to participate in civil affairs. Such opportunities occurred in the vicinity of highway construction operation along highway QL-1. Salvage materials generated during construc-

EGACBC-3

31 January 1968

SUBJECT: Operational Report - Lessons Learned (RCS CSFCH-65), for
Quarterly Period Ending (31 January 1968) (Con't)

tion and bridge repair operations were made available to inhabitants of adjacent villages. Company C improved an area for a light plane landing strip. The project performed for the district chief yielded great benefits permitting the district chief to improve the coordination of his defense operations. Families who were required to leave their homes because of the highway right-of-way were provided salvage materials and many of them erected excellent homes and shelters by these means. In the city of Nha Trang, it appeared that this battalion became everyone's civil affairs contact. Many visits were received from Air Force, CORDS, Navy and other Army agencies or commands. The main form of assistance requested was asphalt for street patching. In the period of this report, a very significant amount of civic action participation was accomplished.

Section 2, Part 1, Observation (Lessons Learned)

a. Personnel

Local National Construction Personnel

ITEM: Utilization of Local National Construction Personnel.

DISCUSSION: In the past, the utilization of local nationals as supplementary construction personnel had been implemented on a moderate scale. These personnel were utilized on run of the mill jobs with usually simple design. This was done in order to free the vertical construction platoons personnel for higher priority, more delicate construction. Allocations of personnel spaces required extensive justification and guidance seemed to discourage utilization of civilian personnel. Recently, since many of the local national personnel have shown a high degree of adaptability to our construction procedures and a large amount of ingenuity, these personnel have been organized in units parallel to a military unit, and more or less integrated to augment our construction platoons. This resulted in a much greater construction capability. The local national units have been broken down into "squads" or teams of carpenters, masons, etc. Each unit or squad is headed by a foreman and, with the occasional assistance of a local national interpreter, assigned projects by the Construction Platoon Sergeants. These units demonstrated they were able to work along with the military personnel of the construction platoon.

OBSERVATIONS: Vietnamese civilian construction employees have shown that they are able to rapidly adjust to the construction requirements of military construction units greatly increasing the capability of construction platoons.

b. Operations

Headwall Construction

ITEM: Headwall Construction.

TEXT NOT REPRODUCIBLE

MINOR-1

31 January 1968

SUBJECT: Operational Report - Lessons Learned (HCS CSFOL-65), for
Quarterly Period Ending (31 January 1968) (Cont)

DISCUSSION: The use of a 4" section of 12" culvert to be used as a metal band around the piling at points where the anchor cable is wrapped.

OBSERVATION: This prevents the cable from cutting into the pile and weakening it.

Corrugated Metal Roofing

ISSUE: Obtaining correct and uniform bend on corrugated metal roofing.

DISCUSSION: When bending corrugated metal roofing for the ridge of the roof on buildings, it was discovered that it was very difficult to obtain the correct angle of bend and to bend the corrugated metal roofing evenly along the entire length.

OBSERVATION: It was found that by building a wooden jig with the correct angle and with slots on each side of the jig, it is possible to slide the corrugated metal roofing into the slots, pound it gently along the apex of the angle with a blunt instrument thereby consistently obtaining a uniform bend the entire width of the corrugated metal roofing.

Construction over Flowing Springs

ISSUE: Construction of a road over an area with flowing springs.

DISCUSSION: While constructing a two-lane standard military road on Hon Tre Island, a section of the road had to be built over several small springs. This presented a major problem, particularly during the rainy season, since water would penetrate the subbase of the road on the uphill side.

OBSERVATION: The solution in this case was a large French drain and an interceptor ditch. The French drain consisted of a layer of hand-placed 6" to 8" rock for a thickness of two feet over the affected area, sloped at approximately 3% for drainage. The interceptor ditch was deepened to two feet to trap the subsurface flow. After four months of observation, no water had penetrated the subbase.

Construction SOP's

ISSUE: Efficiency of Operations Control.

DISCUSSION: Many recurring operations accomplished at company level involve support from adjacent and higher headquarters. One such operation is asphalt paving which is presently being used extensively in Vietnam. Quite often a critical piece of equipment will be unavailable or unplanned, and, as a result, the operation will be delayed.

ELACBC-3

31 January 1968

SUBJECT: Operational Report - Lessons Learned (HQS CSFCH-65), for
Quarterly Period Ending (31 January 1968) (Con't)

OBSERVATION: It has been found that if a single unit is designated as being in charge of such operations and if a standard operating procedure is developed for coordination of recurring operations involving several units, then more efficient and effective operations can be carried out with minimum chances of delay. Other operations for which SOP's are particularly adaptable are emergency road and bridge operations and operational support missions.

Working Drawings

ITEM: Working drawings.

DISCUSSION: It was found during this period that the battalion did not have a complete set of working drawings for a cantonment project. This situation made coordination and quality control of the project extremely difficult. The drawings which were on hand had been pieced together from standard drawings provided to the battalion by various sources. It was found that the standard drawings had many errors and in many cases did not meet the requirements of the project directive. A vigorous program was initiated by the engineer and drafting section of the battalion to revamp the standard drawings and produce a set of complete drawings.

OBSERVATION: When a large cantonment area project is assigned to a unit, an all out effort should be initiated as early as possible in the construction within that cantonment area. For example, plot plans with complete design elevations and drainage design, and detail drawings for all various foundations, structures, electrical, plumbing, etc.

ITEM: Drawing numbers.

DISCUSSION: In the past the drawing numbers were established to read as 864-67 (sequence numbers) which indicated it was an 864th Engineer Battalion drawing accomplished in the year 1967 and it was the fourth or fifth etc., drawing completed in that year. This was not at all satisfactory due to the difficulty experienced in attempting to relocate specific drawings pertaining to a project. A new numbering system was established which has proven to be a great improvement over the old method. Each drawing in a set was given the pertinent project number as the drawing number. The set was then broken down into logical groupings i.e. architectural, civil, structural, mechanical, electrical. These subgroups were then broken down into construction sequence and numbered accordingly. For example the first drawing in the set for the cantonment area is the overall layout of the project and carries the same drawing number as the project; the sheet number is called A-1 or Architectural Drawing Number 1.

OBSERVATION: Drawing numbers can provide the user with a vivid reference index. A numbering sequence set up as described above provides control and flexibility in a drawing file.

EG.CBC-3

31 January 1968

SUBJECT: Operational Report - Lessons Learned (HCS CSFCL-65), for
Quarterly Period Ending (31 January 1968) (Con't)

c. Training and Organization

No comment.

d. Intelligence

No comment.

e. Logistics

Radio Antenna Mounts

ITEM: Failure of antenna mounts for radio set AN/RC-46 mounted in truck, 1/4 ton.

DISCUSSION: It was found that when the antenna was tied down the strain placed on the angle bracket causes it to crack and break.

OBSERVATION: A suitable substitute was fabricated from 1/8 inch steel, and it was found that this worked much better. An EIR is being submitted.

Materials From Depot

ITEM: Obtaining materials from depot.

DISCUSSION: It was learned that the Federal Stock Number obtained from the latest edition of supply publications are not usually the best to use on requisitions. The reason for this being that there is a required lead time between the time of publication and stockage in depot. It is recommended that published stockage lists for depot be consulted before making any requisitions.

OBSERVATION: The best method to insure receipt of materials is to use FSN's that are on the published depot stockage list.

ITEM: Wheel bearing grease.

DISCUSSION: Wheel bearings in the LeTourneau CT-4, 18 cubic yard scraper operating over rough and mountainous terrain have failed as a result of extreme heat causing the breakdown of military Gun grease (temperature over 125 degrees fahrenheit). The high heat is generated by excessive braking. Approximately 10 failures occurred in six months as a result of the decomposition of the grease. The use of high temperature aircraft grease has resulted in no wheel bearing failures in the last three months. An EIR has been submitted recommending a change in the scraper lubrication order.

OBSERVATION: Wheel bearings of the LeTourneau CT-4 scraper should be lubricated with a high temperature aircraft grease when operating in rough and mountainous terrain requiring excessive braking.

17
EGACBC-3

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for 31 January 1968
Quarterly Period Ending (31 January 1968) (Con't)

f. Other

No comment.

Section 2, Part II, Recommendations

None.



LAURENCE L. HEIMERL
LTC, CE
Commanding

DISTRIBUTION:

- 5 - CO, 35th Engr Gp (Const)
- 6 - CG, USAECV(P), ATTN: AVCC-P&O
- 3 - CG, USAHV, ATTN: AVCGH-DH
- 2 - CIC, USARPAC, ATTN: GPOP-OP

19

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EGA-3 (31 January 1968) ~~1st Ind~~ ^{1st} Luther/tb/2500
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for Quarterly
Period Ending 31 January 1968

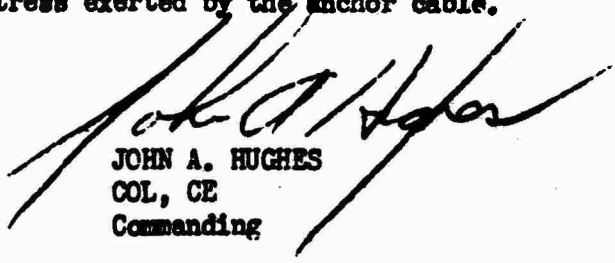
DA, Headquarters, 35th Engineer Group (Const), APO 96312, 24 February 1968

TO: Commanding General, 18th Engineer Brigade, APO 96377

1. I have reviewed the Operational Report-Lessons Learned submitted by the 864th Engineer Battalion (Const) and consider it an accurate account of unit activities and accomplishments with the additional comment that the 203rd Engr Bn (ARVN) mentioned on page 6 is a combat battalion.

2. I concur with the observations and recommendations of the battalion commander with the following additional comment:

Section 2, Part I, b Headwall Construction: This is an excellent idea for the expedient protection of pile but care should be taken to insure that the protection afforded by one or more thicknesses of culvert is sufficient to withstand the stress exerted by the anchor cable.


JOHN A. HUGHES
COL, CE
Commanding

cc: 864th Engr Bn

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AVBC-C (31 Jan 68) 2nd Ind CPT Ellegood/dtc/DRT-163
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for Quarterly
Period Ending 31 January 1968.

Headquarters, 18th Engineer Brigade, APO 96377

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

1. This Headquarters has reviewed the Operational Report - Lessons Learned for the reporting period ending 31 January 1968 and considers it to be an excellent summary of the activities of the 864th Engineer Battalion (Const) for the reporting period ending 31 January 1968.

2. This Headquarters concurs in the observations of the Unit Commander with the following comments added:

a. There are certain recognized worthwhile advantages in the use of local national personnel to augment our U.S. construction effort. However, there are attendant and distinct disadvantages which were emphasized during the recent TET offensive. This Headquarters' recommendations concerning the use of local national construction personnel were discussed in detail in an indorsement to a letter from USAECV(P), Subject: Civilianization Program.

b. The observation concerning the numbering policy of working drawings will be incorporated in a design policy memorandum which will be published by this Headquarters in the near future.

Harold J. St. Clair
HAROLD J. ST CLAIR
Colonel, CE
Deputy Commander

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AVCC-P&C (31 Jan 68) 3rd Ind
SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly
Period Ending 31 Jan 68

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

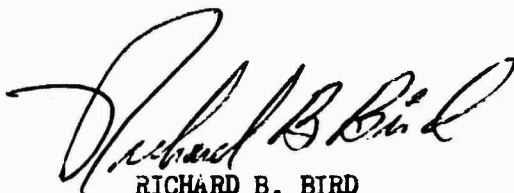
11 MAR 1968

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

The attached ORLL has been reviewed by this headquarters and is considered
adequate except as follows:

Item concerning working drawings, Section 2, Part I, page 13. MACV standard
drawings are available through this headquarters and should be used to the maximum
extent possible. In the event standard designs for a specific project do not exist,
subordinate unit designs may be used provided MACDC Construction Bulletin 415-2-10
and USARV Regulation 415-3 are adhered to.

FOR THE COMMANDER:



RICHARD B. BIRD
Captain, AGC
Assistant Adjutant General

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This Protective Marking is Canceled on **1 JAN 1970**

AVHGC-DST (31 Jan 68) 4th Ind
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65), for
Quarterly Period Ending (31 January 1968)

HEADQUARTERS, US ARMY VIETNAM, APO San Francisco 96375 14 MAR 1968

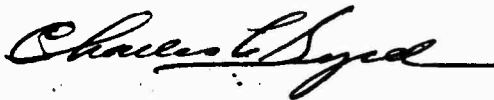
TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 January 1968 from Headquarters, 864th Engineer Battalion (Const) (WCW4AA) as indorsed.

2. Concur with report as indorsed. Report is considered adequate.

3. A copy of this indorsement will be furnished to the reporting unit through channels.

FOR THE COMMANDER:



CHARLES A. BYRD
Major, AGC
Assistant Adjutant General

Copies furnished:
HQ, USAECV (P)
HQ, 864th Engr Bn (Const)

23.
GPOP-DT (31 Jan 68) 5th Ind
SUBJECT: Operational Report of HQ, 864th Engr Bn (Const) for Period
Ending 31 January 1968 (RCS CSFOR-65)

HQ, US Army, Pacific, APO San Francisco 96558 29 MAR 1968

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

This headquarters has evaluated subject report and forwarding indorse-
ments and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:



K. F. OSBOURN
MAJ, AGC
Asst AG

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DOCUMENT CONTROL DATA - R & D

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21

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