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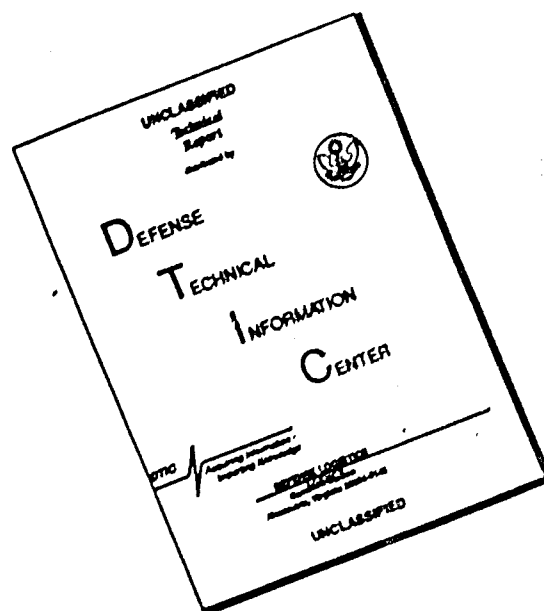
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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO

AGAM-P (M)(26 Apr 68)

FOR OT RD 681279

30 April 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 34th
Engineer Battalion (Const), Period Ending 31 January 1968 (U)

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2. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 34TH ENGINEER BATTALION (CONSTRUCTION)
APO San Francisco 96384

EBD-CO

15 February 1968

SUBJECT: Operational Report - Lessons Learned (RCS-CSFOR65) for
Quarterly Period Ending 31 January 1968

THRU: Commanding Officer
79th Engineer Group
ATTN: EGE-3
APO US Forces 96491

Commanding General
20th Engineer Brigade
ATTN: AVBI-OPN
APO US Forces 96491

Commanding General
United States Army Engineer Command (Prov)
ATTN: AVCC-P&O
APO US Forces 96491

Commanding General
United States Army Vietnam
ATTN: AVHGC-DH
APO US Forces 96307

Commander in Chief
United States Army Pacific
ATTN: GPOF-OT
APO US Forces 96558

TO: Assistant Chief of Staff for Force Development
Department of the Army (ACSFOR-DA)
Washington DC 20310

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EET-CO

15 February 1968

SUBJECT: Operational Report - Lessons Learned (RCS-CSFCR65) for
Quarterly Period Ending 31 January 1968

SECTION I: Significant Organization or Unit Activities

1. General

During the period 1 November 1967 - 31 January 1968, the 34th Engineer Battalion accomplished various engineer projects in the III Corps Tactical Zone. The battalion was primarily engaged in maintenance of lines of communications, construction support of four cantonment areas, drilling and development of water wells, construction of minimum essential requirements for an air cavalry squadron, construction of maintenance facilities for fixed and rotary wing aircraft, and maintenance of two airfields. During the reporting period, the greatest part of the battalion's vertical construction capability was located at Phu Loi. Horizontal construction was concentrated in Di An.

2. Command

a. Increased difficulties in communications and coordination were encountered as elements of the battalion deployed to widely separated locations. During the reporting period Company D remained at Phu Loi; Company C moved to Phuoc Vinh; one platoon of Company B moved to Lai Khe, and one to Di An; and horizontal construction elements from all companies moved to Di An. In addition, personnel and equipment were placed on TDY to various units and locations. Communications with Company C were complicated by need for heavy reliance on air travel in view of the irregular opening of the road to Phuoc Vinh.

b. The command structure of the battalion for this reporting period has been as follows:

BATTALION COMMANDER: LTC John C Ogilvie
CE, 28 Jul 66 - Present

EXECUTIVE OFFICER: MAJ Kenneth D Moore
CE, 20 Aug 66 - 21 Jan 68

MAJ Richard J Tallon
CE, 21 Jan 68 - Present

HEADQUARTERS COMPANY: 1LT Edward F Covell
CE, 29 Aug 67 - 3 Dec 67

1LT Richard M Chubb
CE, 4 Dec 67 - Present

COMPANY A: CPT Wilbur E McConico
Arty, 1 Aug 67 - 3 Dec 67

CPT George F Moore
CE, 4 Dec 67 - Present

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COMPANY B: 1LT James J Reed
CE, 5 Sep 67 - Present

COMPANY C: CPT Roger C Strom
CE, 29 Aug 67 - Present

COMPANY D: CPT Robert E Frederick
Arty, 12 Jul 67 - Present

3. Personnel, Administration, Morale, Discipline

a. The average battalion strength for the quarter was 826 (92% of authorized strength). The average officer strength for the quarter was 36. NCO's in the grade E-6 (primary MOS 51H) continued to be the most significant shortage within the battalion.

b. Efforts during the period continued toward alleviating the large rotational hump. Controlled infusion with the 554th Engr Bn (Const) and the 4th Engr Bn of the 4th Infantry Division were the major events during the period. To further reduce the rotational hump a program was initiated by 20th Engr Bde in which new arrivals scheduled for 159th Engr Gp were sent to this battalion and a like MCS in the rotational hump was sent to the 159th Engr Gp. At the close of the reporting period there remained 300 with a DIKOS between 10 and 18 April 1968.

c. A vigorous safety program is being conducted within the battalion with some apparent effectiveness since the number of accidents in January dropped to less than half of those in December.

d. The Battalion's Saving Bond Program remained high with 93% of personnel participating.

e. Morale of the unit has remained high as reflected by outstanding troop effort on the job. An EM Club was opened during the period and several areas were prepared for athletic fields. Professional entertainment shows continued to be held at least twice monthly and unit cook outs were held quite often. At least 75% of the battalion has moved into tropicalized wood frame billets. Movies are shown six nights a week and each company is continuing use of the television sets and tape recorders provided by Special Services.

f. No significant medical problems were encountered among battalion personnel during the reporting period. One case of malaria was detected in an individual shortly after he transferred to the battalion. One case of hepatitis and one case of encephalitis were discovered during the reporting period.

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g. Religious services are held each Sunday for both Protestant and Catholic faiths at all locations supported by elements of the battalion. The battalion chaplain conducts Protestant services at the battalion headquarters each Sunday. The Chaplain provides counseling for an average of three personnel daily. Religious study groups meet weekly, and a daily devotional period is conducted by the Chaplain.

h. Disciplinary problems within the battalion increased slightly over the last reporting period but cannot be attributed to any one factor. The major problem areas were the excessive use of alcohol and one case involving the use of marijuana.

4. Intelligence and Counterintelligence:

a. The 34th Engineer Battalion retained responsibility for more than 30% of the Bien Hoa Army perimeter. A total of seven units contributed to the defense of the sector controlled by the 34th Engr Bn. Extensive improvements in tactical wire entanglements and fighting positions were made throughout the defensive sector.

b. At Phu Loi, Company D provided guards to man 2 perimeter bunkers as part of an integrated base security system. In addition, Company D provided a reaction force of 25 men as required by the base commander.

c. At Phuoc Vinh, Company C provided a reaction force controlled by the local tactical commander. Company C had no perimeter responsibility.

d. Daily intelligence reports from II Field Forces Vietnam are processed by the Battalion S-2. In addition, local base commanders provide intelligence data for elements of the battalion at stations apart from the battalion headquarters. These reports are used for planning local base security and security at project locations.

5. Plans, Operations, and Training:

a. Plans and Operations:

(1) The 34th Engineer Battalion remained heavily committed on construction projects in RVN. At the end of the reporting period, approximately one third of the battalion strength was located at Bien Hoa, with battalion headquarters. One company was at Phu Loi; one company was at Phuoc Vinh; one platoon was at Loi Khe; an earth moving platoon was at Di An; the quarry section was at Mui Ba Den; and equipment and personnel were on TDY at other base camps.

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(2) The battalion continued to gain experience in both vertical and horizontal construction. During the reporting period 85,680 SF of buildings were completed, 3,289 CY of concrete were placed, 164,137 CY of laterite and earthen fill were hauled and compacted, and 3,163,583 SY were treated for dust control. Continual dry weather near the end of the reporting period enabled rapid extraction of laterite for horizontal construction.

(3) The battalion operated prefabrication shops utilizing local civilian labor at Bien Hoa, Phu Loi, and Phuoc Vinh. These shops produced 1,225 panels, 583 trusses, 28 portable showers, and 19 burn out latrines. Use of Vietnamese carpenter packs continued with excellent results.

(4) The reporting period included the transition between the monsoon season and the dry season. Each season presented unique problems in horizontal construction. Frequent rain during the monsoon season hampered extraction and compaction of laterite, and required extra precaution when placing concrete. The dry condition of the soils after long periods with no rain during the dry season caused the battalion to divert a large effort to hauling water to assure proper moisture content for compaction and to prevent cracks in concrete slabs.

(5) The majority of assigned construction projects located at Bien Hoa were transferred to other engineer units during the reporting period. This reflected the growing commitment of battalion construction effort to other base camps.

b. A resume of major projects assigned to the battalion is as follows:

(1) The battalion constructed 9 Pascoe buildings for the 1st Infantry Division Headquarters complex, to include interior paneling and electrical system.

(2) LOC maintenance continued on approximately 4.4 miles of QL 1 until transferred to another unit. The battalion was given the responsibility of maintaining 25.4 miles of QL13. Maintenance effort was directed toward repair of damage caused by frequent enemy interdiction. Daily aerial reconnaissance was performed along the route.

(3) Earthwork was completed on the motor pool and hardstand area for the 5th Special Forces Group. A total of 12,000 CY of laterite were hauled and compacted on this project.

(4) Vertical and horizontal construction effort continued on three 75' x 202' pre-engineered rotary wing maintenance hangars at Phu Loi. At the end of the reporting period, four of the five hangars required were essentially complete with the exception of permanent lighting fixtures. Construction was begun on two 30' x 40' fixed wing maintenance hangars at Phu Loi. These hangars will be timber structures, with a 40' timber truss as the principal structural member.

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(5) At Phuoc Vinh, construction was begun on one 75' x 202' steel rotary wing maintenance hangar, and two 30' x 40' timber fixed wing maintenance hangers.

(6) The battalion erected two pumphouses, two timber towers, and two 21,000 gal steel tanks for water fill points at Bien Hoa. It also completed two steel towers, two steel tanks, and a pump house at Phuoc Vinh.

(7) Responsibility was assumed for well drilling operations at Phuoc Vinh, and one well was completed at a depth of 83 feet. The well produces 15 GPM. No other wells have been programmed.

(8) Airfield maintenance was performed at both Phu Loi and Phuoc Vinh. This required immediate repair of enemy damage at both locations and necessary dust control at Phuoc Vinh.

(9) Construction of an ammunition storage point was undertaken at Phu Loi. Required Construction included hardstand areas, storage areas consisting of two main berms with finger berms, and one barrier berm.

(10) Earthwork was completed on an MER for an air cavalry squadron. Total requirements included 4 parking areas, 4 maintenance hardstands and a runway. In addition, 22 MEAL matting revetments were constructed for rotary wing aircraft assigned to the air cavalry squadron. 255,444 CY of laterite and earthen fill were hauled and compacted on this project.

(11) Initial plans were made, and construction was initiated on the electrical power distribution system at Lai Khe, using the power distribution team trained in August 1967. Project consists of a 3 phase 4160 volt primary system, with 110/220 volt secondary.

(12) Many projects were undertaken in addition to those listed above. These included installation of the electrical system for a microwave relay station; construction of a steel structured 80' x 100' post exchange, and a 40' x 48' wood frame exchange warehouse; installation of three 60" culverts with concrete headwalls to replace a tactical bridge; delivery of materials for ARVN dependent housing; completion of IWCS site at Phu Loi; construction of Class I Supply area at Phu Loi; and operation of laterite pits at four locations.

(13) Technical assistance on a self-help basis was provided for one cantonment area at each of four locations (Bien Hoa, Cat Lai, Phu Loi, and Phuoc Vinh). The battalion completed 2510 SF of billets at Cat Lai, 7608 SF of billets and 2400 SF of community facilities at Bien Hoa, 28,400 SF of billets at Phu Loi, and 18,720 SF of billets at Phuoc Vinh. In addition, the battalion upgraded interior wiring in billets and mess-halls throughout the cantonment at Phuoc Vinh.

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c. Training:

(1) Formal training consisted of orientation for all personnel arriving in-country. All personnel newly assigned to the battalion were familiarized on the M79 Grenade Launcher, M60 Machine Gun, M16 Rifle, and the Claymore Mine prior to commitment for operations or security duties.

(2) Plans were formulated for a second training school for an electrical power distribution team. The school will train replacements for those members of the present power distribution team who rotate in April 1968, and will be incorporated to the maximum possible extent into the construction of the distribution system at Lai Khe.

(3) Maintenance training was conducted for 21 ARVN enlisted men and 3 ARVN officers. Training consisted of a one week period of OJT in maintenance, with minimum instruction sessions. Results were good. Students contributed to maintenance activities in the battalion, and left with an understanding of the techniques of good maintenance activities.

6. Logistics:

a. S-4 activities encountered no major problems. The operation of moving supplies and materials during C Company's deployment went smoothly. Supplies were moved during daylight hours with the loading and unloading done at night. Arrangements were made for Company C to pick up Class I & III at their new location. Class II, IV, & V continued to be supplied through this battalion.

b. Critical shortages of material were: Small electrical items, large timbers, electrical wires, limestone, drawing reproduction paper, and various sized nuts and bolts.

c. The battalion has not received initial issue of the following TO&E items: one water distributor, one 10 ton crane, two woodworking equipment shops, and one rotary mixer. Additionally there is a shortage of two 250 CFM air compressors and one entrenching machine. These items were damaged beyond repair while on combat support operations, and replacements have not been issued.

d. The battalion's cumulative deadline rate at the end of this reporting period was 2.7%. This constitutes an increase of 0.8% since the previous quarterly reporting period. Increased age of the equipment is deemed the principle cause of this increase.

e. Since arriving in country, the inventory of parts maintained on the Prescribed Load List (PLL) and Authorized Stockage List (ASL) has been depleted to a level of 75% and 74% respectively. From this level, the inventory has risen to 80% for PLL parts and 83% for ASL items. Inventory appears to be remaining static at that level. An average of 30% of the Red Ball requisitions submitted each month are filled during that month.

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7. Force Development: None

8. Command Management:

a. The projects and missions assigned to the 34th Engineer Battalion are managed by the Battalion Operations Officer. Daily operations meetings are held with the companies based at Bien Hoa to discuss problems and to coordinate equipment support for the outlying companies. A helicopter is available twice weekly for liaison and inspection visits, and for transport of critical parts, materials, and personnel.

b. Weekly staff meetings are held, and once monthly all officers in the battalion except those scheduled for other duties are assembled and briefed by the staff and company commanders. These meetings assist in keeping all personnel informed of the current battalion status. The high rate of officer turnover requires frequent briefings on objectives and policies.

c. When a project directive is received, a battalion directive is assigned to the appropriate company. The S-3 Section accomplishes the design and drafting to accompany the battalion directive. The company is then responsible for submitting a complete BOM, construction plan, construction schedule, drainage plan, and safety plan to the S-3 Section for approval. A project officer within the S-3 Section checks for quality control and resolves problems that arise. In addition, close coordination with base development boards is maintained for planning purposes.

9. Inspector General: The annual inspection by the Inspector General was held 22 - 25 January 1968. The results of the inspection were satisfactory in all areas.

10. Information:

a. The battalion receives the following newspapers: The Army Reporter, The Observer, The Castle Courier, and the Pioneer during the month. The Pacific Stars and Stripes is distributed daily through the 79th Engineer Group by courier. The battalion receives the following magazines: Army, Commander's Digest, and The Army Digest.

b. The battalion continued publication of a bimonthly newspaper entitled "The Volcano".

c. Hometown News Releases and news articles are submitted to the 79th Engineer Group.

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11. Civic Action:

a. Heavy project commitments and isolated assignments of some elements of the battalion have precluded extensive expenditure of effort for civic action construction. Technical assistance and equipment have been provided for local construction projects and for events in local population centers.

b. The medical section has continued MEDCAP work begun during the previous reporting period and has extended support to several population centers. The surgeon now provides medical service to ten local villages and two orphanages. About 725 people are treated monthly in the local villages.

c. Two orphanages in Ho Nai are supported by the battalion. The orphanage receive medical support and contributions of food and clothing collected by the battalion. Parties were given periodically for the orphans in both institutions.

d. At the end of the reporting period the battalion employed a total of 459 local national civilians. As construction effort was diverted from the Bien Hoa cantonment to other locations, the requirement for local labor was greatly reduced, and the total personnel hired dropped from 700 in mid-November 1967 to the present figure. Local nationals are presently employed as shown below:

	<u>OMA</u>	<u>MCA</u>	<u>AIK</u>	<u>Housegirl</u>
Bien Hoa	67	9	0	35
Phu Loi	40	89	45	50
Phuoc Vinh	13	41	50	20
TOTAL	120	139	95	105

SECTION II Part I, Observations (Lessons Learned)

ITEM: Dry Weather Compaction

DISCUSSION: During the monsoon season, problems were rarely encountered which called for addition of moisture to earth or laterite fill prior to compaction. During the dry season the moisture content of fill materials became very low, even in newly excavated fill. To achieve proper compaction sufficient moisture was required to achieve optimum moisture content. Limited water distribution capability requires a studied approach to providing optimum moisture content.

OBSERVATION: Dry conditions cause water applied to fill material to evaporate rapidly, and requires addition of large amounts of moisture to fill materials prior to compaction. To achieve maximum compaction capability on large earthmoving jobs, addition of moisture should continue throughout the night. This minimizes evaporation of moisture due to heat, and sun, and allows greatest compaction effort during the day.

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ITEM: Placement of Concrete in Dry Weather:

DISCUSSION: Extended period of no rain causes laterite pads intended as bases for concrete slabs to become extremely dry. Placement of concrete directly on dry laterite pads causes excessive moisture to be lost from the concrete. Loss of this moisture causes cracks in the finished slab. In addition, heat buildup in the laterite pad results in rapid hydration of concrete placed on the slab, and cracks in the finished concrete.

OBSERVATION: Before placing concrete in dry weather, steps should be taken to prevent rapid hydration or loss of moisture in the concrete placed. The laterite base pads should be moistened, and a layer of 15 lb roofing felt, or other moisture proof material, should be placed between the pad and the concrete to be placed. These measures will reduce the incidence of cracks in concrete slabs by preventing loss of moisture and rapid hydration.

ITEM: Curing of Concrete

DISCUSSION: Curing of concrete requires availability of moisture for the green concrete. Use of soaked burlap or sandbags requires frequent inspection and use of water to soak the burlap. In addition, occasional surface imperfections are caused by the burlap.

OBSERVATION: A more effective curing method is ponding, thereby eliminating loss of manhours involved in the use of soaked burlap. An earthen dam was built on the edge of concrete slabs, and the entire slab was covered with 3-4" of water. This method reduces slab evaporation, requires less frequent inspection, and eliminates the problem of damage to the slab finish caused by burlap.

ITEM: Junction of 40' x 100' Pre-engineered Pascoe Sheds

DISCUSSION: Construction on one assigned project required side by side construction of two 40' x 100' Pascoe sheds in order to provide greater usable floor space. The sheds had no provisions for siding, or for any junction between the two buildings. The sheds are intended to be built using a double layer of roofing.

OBSERVATION: Construction was accomplished by installing only one layer of roofing, and constructing a framing system to accommodate the second layer of roofing as siding. A valley gutter was constructed to handle water run off from the two inner roof sections. Corrugated metal roofing was bent to form the valley gutter, and attached to the roofing sheets with metal screws spaced approximately one inch apart. Care must be taken to form the valley gutter so that there is a slope along the longitudinal axis of the gutter.

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ITEM: Construction of 36' Water Towers

DISCUSSION: Erection of 36' water towers at Phuoc Vinh had to be accomplished with only one crane, since sufficient boom extensions were not available to provide two 50' booms. Due to the weight of the tower, it could not be completely assembled and then lifted into place on the footers.

OBSERVATION: Construction was accomplished by erecting one half of the tower on the footers and the other half on the ground. The upper half was then lifted and held in place by the single crane, and attached to the lower half. This method of construction resulted in more efficient and more rapid construction than the method employing two cranes.

ITEM: Construction of Bolted Steel Water Tanks

DISCUSSION: Construction of bolted steel water tanks presented several unique problems. Plans called for a sand layer beneath the floor of the tank. During construction the sand gets kicked up on bottom plates and interferes with getting water tight joints. During construction it was also discovered that bolts were easily broken by attempting to tighten them excessively. Excessive tightening also ruptured seals provided with the tank. Very small leaks were generally still present after complete assembly of the tank and tightening of all bolts.

OBSERVATION: During construction, it was determined that sand was not essential on towers having a smooth and level decking. Where sand is required to provide an even base for the tower, it should be covered with T17 Membrane or 15 lb roofing felt. This covering will prevent accumulation of sand in the joints and resultant leaks. A torque wrench should be used to tighten bolts. If none is available, the same personnel should be used to tighten all bolts. This assures uniform torque on each row of bolts. Small leaks will always be present, so excessive tightening of bolts should be avoided initially. Bolts can then be tightened to stop leaks present when the tank is filled. After the tank has been filled and allowed to sit for 48-72 hours, all minor leaks will have sealed themselves. The inner row of bolts on the side door is inaccessible from the outside, and should be tightened prior to filling the tank.

ITEM: Preventing Erosion under Concrete Headwalls

DISCUSSION: After installation of a large culvert complex on a granular base, it was discovered that water was flowing through the rock bed and visibly seeping between culverts and headwall and perhaps seeping under the headwall footings.

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OBSERVATION: Addition of a clay blanket layer extending 10-20 feet from the upstream headwall effectively sealed the stream bed limiting possible seepage beneath headwalls and precluding any further risks of erosion around the culverts. Clay was locally available in a laterite pit. Plans should include such a seal prior to initiation of construction of culvert complexes and headwalls in sandy or quite granular stream beds.

ITEM: Application of Penepriime on C-130 Airfields

DISCUSSION: Penepriime was applied to a laterite airfield capable of accomodating C-130 aircraft. Application of penepriime was effective, but inadequate cure time before air traffic resumed resulted in pick up of penepriime by C-130 aircraft. Penepriime was thrown into the wheel well and brake system, and the aircraft had to be flown to Okinawa for cleaning and repair.

OBSERVATION: Before runways are peneprimed, arrangements must be made to close the field to C-130 traffic until the penepriime is cured. A 48 hour cure period generally allows sufficient cure to prevent pickup and resultant damage.

ITEM: Dust Control

DISCUSSION: During the dry season, control of dust on roads and helicopter pads is a major problem. Penepriime is the most lasting of the temporary dust control agents available. Heavy traffic prevents closing roads or helipads to allow adequate curing time for penepriime.

OBSERVATION: Dilution of penepriime with diesel fuel to a 75%-25% solution provides an acceptable means of allowing traffic to use the treated area rapidly. This dilution increases penetration and eliminates the tendency for the treated area to "pick up" on the wheels of vehicles. After a one hour cure period, traffic can be routed onto the newly peneprimed surface with minimal damage. The resultant surface has not, however, proven to be as strong and durable as that obtained by using heated 100% penepriime and allowing adequate curing time.

ITEM: Repair of Peneprimed Areas

DISCUSSION: Penepriime has proven an effective agent for dust control. Properly applied to a well prepared surface, penepriime provides a wear surface which is very durable. A penepriime surface does not have the strength required to sustain heavy traffic without deterioration. Once the surface of a peneprimed area is broken, deterioration progresses rapidly.

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OBSERVATION: Damage to penneprimed surfaces can be effectively repaired using an RC3 prime coat, and either sand, chips, or hot mix asphalt as patch material. Choice of patch material is determined by the size of the damaged area. Large deep patches should be made of hot mix asphalt. Small shallow ones should be made using sand. Large patches should be swept, primed with RC3, and brought to the proper level by well compacted hot mix asphalt. Patches made using sand or chips should be constructed using a penetration macadam technique using RC3 and patch material. All patches should be built up no higher than the surrounding road surface, since the patch is actually stronger than the surrounding area. These patch techniques greatly extend the effective life of roads and hardstands treated with penneprime. Timely repair with RC3 and sand before the broken surface permits serious deterioration has proven to be most effective procedure.

ITEM: Preparation of Sandbags

DISCUSSION: Often there is a high demand for filled sandbags for use in defensive positions or culvert headwalls. Local national daily hire personnel have been used extensively for the purpose of filling sandbags. Loading the filled sandbags for transport to project locations was found to be a time consuming task, and often resulted in a sizeable loss due to leaks and rips.

OBSERVATION: Sandbags should be stacked on pallets as they are filled. This method greatly reduces loading time, and eliminates damage in the loading operation.

ITEM: LOC Maintenance

DISCUSSION: Primary lines of communications have been blocked on numerous occasions by log or timber obstacles. Most of these roadblocks have been constructed from timber left near the road from land clearing operations.

OBSERVATION: Logs and timber should be moved at least 100 meters from the side of LOCs after land clearing operations.

ITEM: Use of Local Nationals for Concrete Work

DISCUSSION: Placement of concrete requires a large number of laborers, and movement of large quantities of materials. The immediate solution to the above problem is activation of a batch plant operation. This also requires a large labor force, and use of personnel with skills needed on other operations.

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OBSERVATION: Use of local national civilian laborers in batch plant operations and in placement and finishing of concrete has resulted in efficient operations in all concrete work and more efficient utilization of American manpower. Two 12 men teams were formed to support two 16S mixers. Seven man teams of masons were formed to place and finish concrete at project locations. US personnel are employed as equipment operators and supervisors.

2. Training

ITEM: Defensive Perimeter Communications

DISCUSSION: Phone communications with perimeter bunkers rely on a hot loop phone circuit. Four to six phones operate off one circuit, allowing one control phone to communicate with all phones independently or collectively. Frequent problems have arisen because the phone circuit would not ring, although voice communication was effective and no phones had any defect.

OBSERVATION: Investigation revealed that depressing the push-to-talk switch created a short in the ring circuit of the entire phone net. The problem was alleviated by specifically instructing all personnel prior to guard duty on the cause and solution of the problem.

3. Logistics

ITEM: Maintenance of TDY Equipment

DISCUSSION: Dispatch of battalion equipment to various locations throughout the III Corps area has created serious problems in maintenance coordination, repair parts supply, and maintenance records. The problem is complicated by lack of organizational or direct support maintenance facilities at some locations.

OBSERVATION: Many of the problems caused by TDY commitment of equipment have been solved by the sending of mechanics or contact teams with equipment on TDY. These maintenance teams oversee preparation of equipment records and performance of maintenance by the equipment operators. They also insure that repair parts are correctly identified and requisitioned, perform necessary organizational maintenance, and maintain records required by TM 38-750.

ITEM: 18 Cubic Yard Scraper Brake Couplings

DISCUSSION: A common deficiency on 18 CY scrapers has been a break between the hose and brake valve coupling. Receipt of the proper replacement assembly has been slow and unreliable.

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15 February 1968

SUBJECT: Operational Report - Lessons Learned (RCS-CSFOR65) for
Quarterly Period Ending 31 January 1968

OBSERVATION: A substitute item has been used until receipt of the proper assembly, and has proven effective. The correct part is FSN 4720-913-1184. If not available through PLL, an adaptor, straight, FSN 4730-711-6298, has been installed after cutting the hose at the coupling. The substitute item can also be identified as Areoquip part No (00624) 4722-6-65.

ITEM: Transmission Failure 290 M Tractor

DISCUSSION: Several transmission failures have been experienced due to improper assembly at the factory. Ring retaining, first and second speed clutch assembly mounting, FSN 5340-531-8484, part # (79136) 5100-375, and washer, bearing, first and second speed clutch assembly mounting, FSN 3110-981-8539, part # (12603) 217419, were not installed on the support plug assembly first and second speed clutch. The transmission operated properly until wear by hub assembly, part # (12603) 217112, on piston, part # (12603) 217106, progressed to the point that the piston would not push the clutch assemblies back into the proper position on the support plug when clutch is engaged.

OBSERVATION: The first indication of improper operation was excessive time for clutch engagement when up shifting to second speed or down shifting from third speed to second, or second speed to first. When starting to move out in first gear, the clutch would not engage until an engine speed of 1500 to 1800 RPM was reached causing the tractor to jump on engagement. This caused excessive strain to be applied to the propeller shafts, breaking the front propeller shaft, bending the output flange, and punching holes in cover, first and second clutch. Operators were instructed to report any transmission which does not shift properly in first or second gear. An Equipment Improvement Recommendation (EIR) was turned in on transmission on 7 Dec 67. EIR was assigned a control number of 660883, and a case number of C 2420-2476-0710-03.

ITEM: Propeller shaft 5 Ton Dump Trucks

DISCUSSION: Recently this unit has experienced a problem of universal joint bearing journal bolts working loose, causing the universal joint to fail and resulting in damage to the transmission.

OBSERVATION: There is no requirement in the outline of preventive maintenance services that requires the shaft to be removed and inspected. However, we have made it a part of our daily motor stables that this item be checked. If found loose, the shaft should be removed, inspected, tightened, and reinstalled in accordance with Table IV, trouble shooting item 60 page 39, TM 9-2320-211-20. We have also started removing the shafts on semi-annual and 3000 mile scheduled preventive services. We then inspect, tighten, and reinstall shaft.

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EHD-00

15 February 1968

SUBJECT: Operational Report - Lessons Learned (RCS-CSFOR65) for

4. Other

ITEM: Non-Specific Penile Ulcer

DISCUSSION: In South Vietnam 10% of this Battalion's venereal disease is of the non-specific penile ulcer variety. Bacteriologic examinations are unable to detect a specific causative organism of the ulcers. The ulcers are classified as non-specific after Syphilis, Chancroid, and other known V.D. are ruled out. Treatment of ulcers is a broad spectrum antibiotic.

OBSERVATION: The effective treatment of a non-specific penile ulcer is 500 mgm of Tetracycline four (4) times a day for 5 continuous days. This regiment has successfully eradicated all the non-specific penile ulcers seen in this battalion.

SECTION 2, Part II

Recommendations: All training for construction personnel, especially earthmoving equipment operators, destined for service in Vietnam should not only emphasize techniques applicable to monsoon conditions, but also emphasize techniques applicable to the opposite extreme of dry, dusty conditions with no measurable rain occurring for weeks or months. While sudden heavy rain showers occurred in the Bien Hoa - Di An - Phu Loi area almost daily in July, August, September, and early October, the same area has received no measurable rain during the last eight weeks. Unfortunately such weather extremes and its effects are hard to appreciate until one has gone through the whole cycle - at which time he normally rotates. Actually the dry period can be almost as frustrating and treacherous as the monsoons. Even when water distribution for compaction is continued all through the night, the availability of water and water hauling and distributing equipment is seldom sufficient to allow optimum moisture conditions for compaction to be attained. Survey errors that become instantly apparent with the first rain are seen and quickly corrected during the monsoons, but can go undetected for weeks during the dry period making frequent checks of survey doubly important during this time. Ditches, culverts and bridge openings appear to be oversized during this dry period producing a tendency to make expedient repairs that restrict drainageways. Even among those who have witnessed a monsoon period, there is a noticeable tendency to construct similar drainageways during the

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dry period. Persons training for Vietnam must be made just as aware of the dry period as the monsoons if we are to insure maximum construction efficiency and progress at all times.

2 Incl

1. Organizational Diagram
2. After Action Report
(Operation KICKOFF)

JOHN C OGILVIE
LTC CE
Commanding

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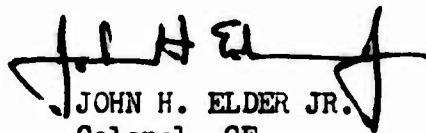
31
EGE-CO (15 Feb 68) 1st Ind
SUBJECT: Operational Report - Lessons Learned (RCS-CSFOR 65) for
Quarterly Period Ending 31 January 1968

DA, HEADQUARTERS, 79TH ENGINEER GROUP, APO 96491, 22 February 1968

TO: Commanding General, 20th Engineer Brigade, APO 96491

1. The Operational Report - Lessons Learned submitted by the 34th Engineer Battalion has been reviewed and is considered extremely complete and well written.

2. SECTION 2, PART I. Concur in recommendation. Most major earthwork projects are constructed in the Group area during the so called "dry season" from December through March. The problems of "dry season" construction should be emphasized in training conducted for officers and engineer equipment operators.


JOHN H. ELDER JR.
Colonel, CE
Commanding

Copy Furnished:
CO, 34th Engr Bn

AVBI-OS (15 Feb 68) 2nd Ind
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for
Quarterly Period Ending 31 January 1968

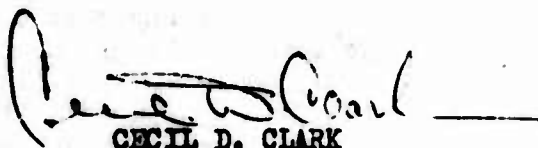
DA, Headquarters, 20th Engineer Brigade, APO 96491 2 March 1968

TO: Commanding General, USAECV(P), ATTN: AVCC-P&O, APO 96491

1. Forwarded for your information and action IAW USAECV(P) Reg 1-19,
dated 15 April 1967.

2. This headquarters concurs with the ORLL submitted by the 34th
Engineer Battalion and comments in the first indorsement.

FOR THE COMMANDER:


CECIL D. CLARK
Major, CE
Adjutant

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AVCC-P&O (15 Feb 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), APO 96491. 15 MAR 1968

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

The attached ORLL, submitted by the 34th Engineer Battalion (Const),
has been reviewed by this headquarters and is considered adequate except
as follows:

Item concerning Pascoe sheds, Section 2, Part I, page 10. The approach
is adequate for short term use. Two layers of roofing are required for long
term protection. If corrugated roofing is used for gutters, the bending of
the roofing is likely to cause cracking of the galvanizing and subsequent rust-
ing. This may be prevented by flooding the gutter with asphalt and painting
the underside with oil paint or asphalt. The gutter must be lapped under the
roofing sufficiently far up the roof to prevent leakage in the event the gut-
ter becomes blocked. Spacing of screws at 4" to 6" on center is adequate.
Rubberized neoprene may be used as an alternate for the metal gutter and its
flexibility could allow for any movement.

FOR THE COMMANDER:

John Thielou 1LT, AGC
RICHARD B. BIRD
Captain, AGC
Assistant Adjutant General

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CANCELLED 1 JAN 1970

24
GPOP-DT (15 Feb 68) 5th Ind

SUBJECT: Operational Report of HQ, 34th Engr Bn (Const) for Period
Ending 31 January 1968, RCS CSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 12 APR 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:

C.L. Shortt

C.L. SHORTT
CPT, AGC
Asst AG

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AVHGC-DST (15 Feb 68) 4th Ind
SUBJECT: Operational Report - Lessons Learned (HCS-COFOR65) for
Quarterly Period Ending 31 January 1968

HEADQUARTERS, US ARMY VIETNAM, APO San Francisco 96375 23 MAR 1968

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

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 January 1968 from Headquarters, 34th Engineer Battalion (Construction) (WZNA) as indorsed.

2. Pertinent comment follows: Reference item concerning recommendation on training for construction personnel, page 16, section 2, part II: Concur. Current comments are valid; however, it is felt that practical application of construction techniques will be impossible because of difficulty in simulating RVN conditions. However, classroom presentation or discussion will be of value in presenting construction techniques and could be incorporated in appropriate PCI's at the USATC, Engineer.

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

FOR THE COMMANDER:



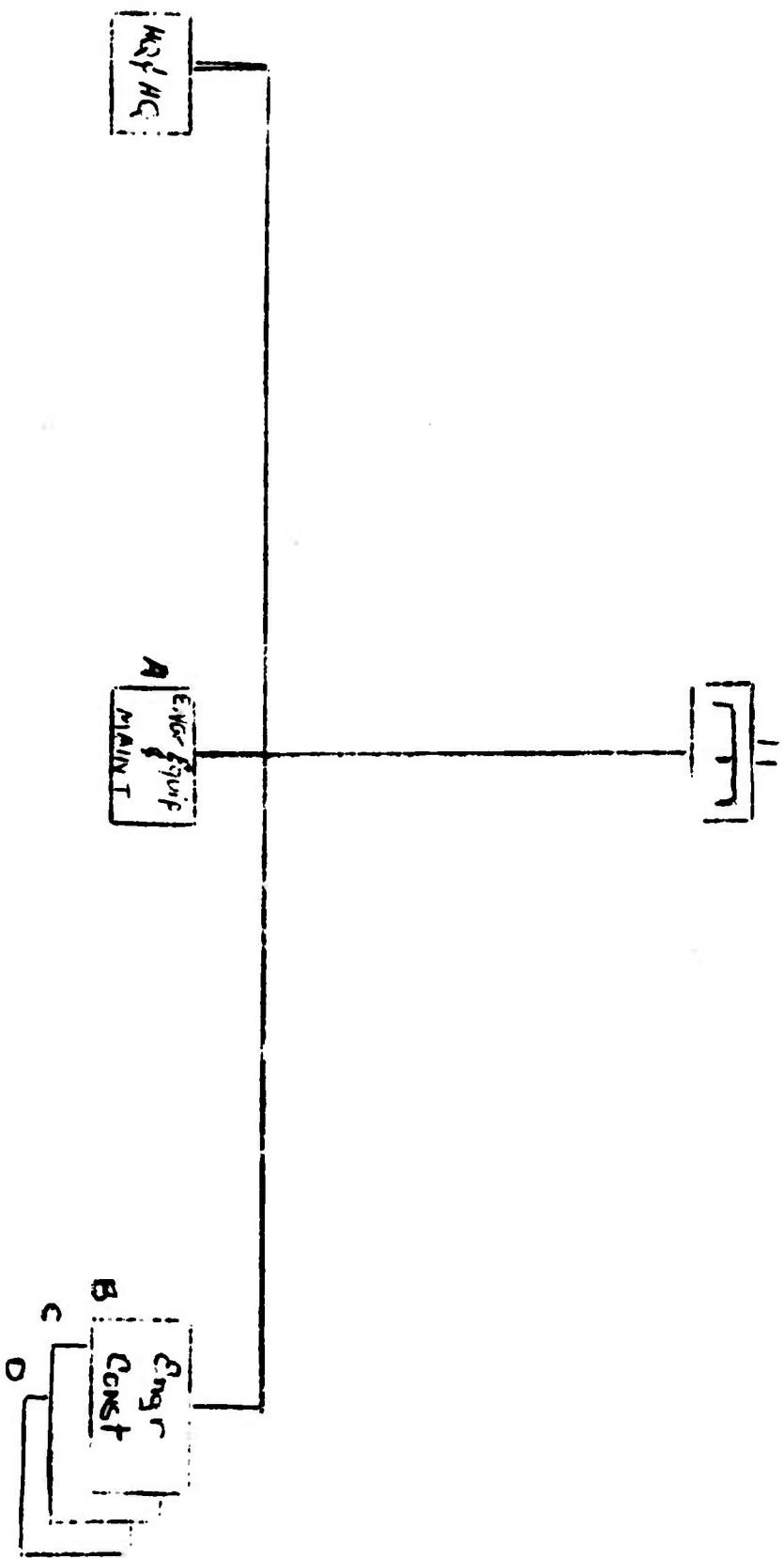
CHARLES A. BYRD
Major, AGC
Assistant Adjutant General

Copy furnished:
HQ, 34th Engr Bn (Const)
HQ, USAECV (P)

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34TH Engineer Battalion (Construction)



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DEPARTMENT OF THE ARMY
HEADQUARTERS, 34TH ENGINEER BATTALION (CONSTRUCTION)
APO San Francisco 96384

EBD-XO

20 January 1968

SUBJECT: After Action Report - (Operation KICKOFF)

TO: Commanding Officer
79th Engineer Group
ATTN: EGE-3
APO 96491

The following is an after action report for Operation KICKOFF (a part of Operation San Angelo) in which this unit participated during the period 9-11 Jan 68.

- a. Name of Operation: KICKOFF
- b. Dates of Operation: 9-11 Jan 68
- c. Location: Phuoc Vinh, RVN
- d. Command Headquarters: 3d Brigade, 101st Abn Div
- e. Task Organization:
 - (1) Organic Units: 2/506 Inf Bn, 326 Engr Bn (-)
 - (2) Attachments: A Brty 2/319 arty.
 - (3) Detachments: N/A
 - (4) Supporting Forces:
 - (a) 34th Engr Bn (-), using elements of Co C, 34th Engr Bn.
 - (b) Co A, 27th Engr Bn (Op Con to 34th Engr Bn)

f. Intelligence: area of operation included 14.8 Km of road (Route 1A) from XT973495 (Gate #2, Phuoc Vinh base camp) to a lake vic XT998597 plus terrain adjacent to both sides of road, i.e. approx 500 m strips on east and west sides. Knowledge of the enemy situation in this area was limited. Last known contact was 30 Dec 67, when a VC reinforced

Incl 2

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20 January 1968

SUBJECT: After Action Report - (Operation KICKOFF)

company was sighted vic XT995569. For details concerning weather and terrain see Incl #1 (Intelligence).

g. Mission:

(1) Inf - clear and secure route 1A from Phuoc Vinh base camp to XT999598.

(2) Engr - upgrade existing route 1A from Phuoc Vinh base camp to XT997594 to carry division load, single lane four (4) meter nominal traveled way.

h. Concept of Operations:

(1) 2/506 Inf was to move out of Phuoc Vinh base 090700 clear and secure route 1A north to XT993535 using two organic companies (Co B, D), one recon platoon and supporting engr platoon of Co A, 27 Engr Bn. At this location they were to establish a night defensive position (NDP) and remain overnight. On the second day the same elements plus Co A, C 2/506 were to continue north on route 1A, clearing and securing the road to XT996588, where a fire support base (FSB) would be established. Co D and the recon platoon with supporting mortar and engineer elements were to dig in and hold the FSB. Co C, B were to occupy and hold the NDP. Each morning mine sweep teams and security elements were to cover the entire length of road from Gate #2 to the north side of a causeway across the lake vic XT998597. Co A would assist from Phuoc Vinh base camp by sweeping north to link up with Co C, who was to sweep south from the NDP. Similarly, Co B would sweep and secure the road north from the NDP to link up with Co D who was to sweep south from the FSB. Co D was also to sweep and secure the causeway north to XT998597. Elements of Co A, 27th Engr Bn were to be used to lead and supplement the mine sweep teams organic to the infantry companies. As soon as the road was reported clear each day, the engineer elements were free to work on the road, repair the causeway, etc.

(2) The engineer support was to consist of Co A, 27th Engr Bn (Cbt) and necessary elements of Co C, 34th Engr Bn (Const), who was also responsible for Class I, III, V logistic support for all engineer elements engaged in the operation. Engineer direct support maintenance was to be supplied by a contact team from Co A, 34th Engr Bn. The engineer concept was to work on the road as soon as it was cleared each day. Engineer estimates were made without benefit of on-the-ground recon. It was estimated that 1000 cy of rock would be needed so existing Phuoc Vinh stocks of 250 cy of 4" minus (Co C, 34th Engrs) and 125 cy (Co B, 326 Engrs) was augmented by a total of 560 cy of 4" minus rock and 160 cy of blast rock hauled into Phuoc Vinh in convoys on 7, 9, and 11 Jan. Locally available laterite was also to be used in conjunction with the rock to repair and restore the road.

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20 January 1968

SUBJECT: After Action Report - (Operation KICKOFF)

i. Execution:

(1) A complete briefing for all elements involved in the operation was conducted by the 2/506 Inf 1900 hrs, 8 Jan 68. At this time tactical operating procedures were reviewed and the operations plan was distributed. CO, Co A, 27th Engr Bn presented his concept for the employment and support of the initial mine sweep elements. Direct coordination was effected with the infantry units concerned.

(2) At 090700 the initial sweeping and clearing began with Co B, D, 2/506, Hq, 2/506, recon platoon and mine sweep support from Co A, 27th Engr Bn, consisting of a platoon minus. These elements screened and secured the road, reaching XT995544 o/a 091200 Jan 68, where a night defensive position (NDP) was established (This was 1000 meters north of planned location due to the rapid progress made). Sweep continued that afternoon, reaching YT003560 o/a 091430 Jan 68. Both companies secured for the night in the NDP with the engineer elements (platoon (-), A 27 with two bulldozers plus two other bulldozers (with ripper) from Co A, 34th Engr Bn). The ripper dozers were employed to rip a single furrow about 18"-24" deep, parallel to the road in order to pickup buried wires which might be used to detonate command mines. All four bulldozers were used to clear and develop an area approx 200 m in diameter, which was used for the NDP. At 091200, the road was clear as far as the NDP and A 27 began working on soft spots in that portion of the road vic XT978502, XT991512 and XT993522. Using 5 ton dump trucks, approx 100 cy of laterite were hauled and compacted to improve the road surface. Approx 900 m of road was graded and shaped. At 091500 hours the 2/506 began to recall their security elements and close the road. All engineer elements returned to Phuoc Vinh base camp for the night except for the platoon (-), A 27 with two bulldozers and operators and two bulldozers with operators from C34 which spent the night at the NDP. During the first day three possible enemy contacts were made:

(a) 090810 - one hand grenade lying on handle with pin pulled was discovered vic XT983506. A, 27 Engr blew it in place with detonating cord.

(b) At 090935 4 men were sighted just east of small hamlet of Nuoc Vang vic XT997517. They disappeared into jungle without further action and they were not seen again.

(c) At 090950 claymore mines were discovered NE of hamlet of Nuoc Vang vic XT996522. These were determined to belong to an ARVN unit, which had used them for security reinforcement.

(3) No contact or significant events occurred at the NDP during night of 09-10 Jan 68.

(4) At 100700 road clearing and mine sweeping commenced to the north from the NDP and Phuoc Vinh base camp as planned. The road

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was cleared to the NDP by 101100 and to the causeway across the lake by 101300. At this time the complete engineer requirement became known and additional planning began concurrent with repair. The largest engineer task was the repair of the causeway in two locations, i.e. XT995588 (Site #1), which required a 36" culvert and extensive fill (est 370 cy) to repair large bomb or mine craters and XT997595 (Site #2) which required a 36" culvert and fill (est 100 cy) to restore to original grade. No enemy contact was made on 10 Jan, and engineer operations were unrestricted on the road except for the congestion caused by the influx of logistics vehicles moving Class I, III, and V supplies to the NDP and FSB, which was established just south of the lake at XT995585. The road remained open until 101630 during which time the engineer elements accomplished the following:

(a) Site #1 - hauled and placed 95 cy 4" minus rock and 76 cy laterite. Installed 36" culvert 22 foot length, 50% complete.

(b) Site #2 - not accessible (except on foot) until Site #1 could pass traffic.

(c) Completed repair of three soft spots by placing, compacting and shaping additional 144 cy laterite, i.e. repairs at XT998500, XT991512 and XT993522 - 100% complete.

(d) Latched pot holes between hamlet of Núi Vang and lake using approx 30 cy laterite.

(e) Graded approx 3 Km of road.

(f) Cleared jungle area approx 200 meters in diameter for use as the FSB.

(5) No contact or significant events occurred at NDP or FSB during night of 10-11 Jan 68.

(6) At 110700 road clearing and site sweeping commenced concurrently from base camp north, from NDP north and south and from the FSB north and south as planned. The road was cleared and secured by 110915 and engineer operations commenced primarily on the causeway across the lake. At Site #1 the 36" culvert was opened to limited traffic at 111100 and work began on the Site #2 culvert. The compacted rock base already in place gave resistance to fast removal by equipment available, so the culvert slot was blasted out using 25 lbs of TNT. By 111500 both sites #1 & 2 could pass a division load, but additional laterite fill was programmed to restore the fill to the original grade and to give a smooth surface that could be penneprimed. (The penneprime was to be placed on the road surface over the metal culverts, so that during future operations in this area it would be possible to detect the disturbance of the soil over

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the culvert, where mines are apt to be installed). At 111635 all engineer operations ceased and with the remaining security elements, moved back to Phuoc Vinh base camp, mission completed. During this day the following tasks were accomplished:

(a) Site #1 - placed, compacted and shaped 185 cy 4" minus rock and 100 cy of laterite. Completed 36" culvert with sandbag headwalls and extended it to 26 feet in length.

(b) Site #2 - Completed 30" culvert 26 feet in length, no headwalls required. Placed, compacted and shaped 60 cy 4" minus rock and 40 cy of laterite. Sprayed road surface vicinity of culvert with 2 barrels of peesprime.

(c) Continued to shape and improve drainage on entire length of road between Phuoc Vinh and the lake.

j. Results:

(1) Enemy personnel losses: none.

(2) Friendly personnel losses: 1 EM, from Recon Plt, 2/506 injured ligaments in left ankle by falling in large crater on causeway at Site #1 prior to commencement of engineer operations.

(3) Enemy equipment captured: none.

(4) Friendly equipment losses: none.

(5) Enemy structures destroyed, tunnels destroyed: none. Approximately 62,800 sq meters of jungle cleared to accommodate one night defensive position (NDP) and one fire support base (FSB).

(6) Significant Engineer accomplishments: 14.8 Km. of route 1A cleared and opened from XT973495 to XT998597, single lane and capable of carrying division load.

(a) Repaired three soft areas in road surface with 244 cy of compacted laterite.

(b) Re-built 150 meters of single-lane causeway, which included the installation of 2 - 36" culverts. Approx 340 cy of 4" minus rock and 216 cy of laterite were used to re-construct the causeway fill, which crossed the existing lake. See Incl #2 (overlay Sketch).

(c) Repaired potholes between hamlet of Nuoc Vang and lake using 30 cy of laterite.

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(d) Recapitulation of major items of equipment utilized during period 9-11 Jan 68:

<u>ITEM</u>	<u>NO.</u>	<u>UNIT</u>	<u>PURPOSE</u>
Tractor, D7E w/winch	2ea	A27	Clear jungle areas; spread & shape fill.
Tractor, D7E w/ripper	3ea	C34	Dig furrough parallel to road; clear jungle areas; spread and shape fill.
Tractor, D7E w/winch	1ea	C34	Strip and stockpile laterite.
Frontloader, 2½cy	3ea	A27	Load laterite and 4" minus rock.
Frontloader, 2½cy	2ea	C34	Load 4" minus rock.
Grader, mtzd	2ea	C34	Grade and shape road; shape and final grade causeway fill.
Trk, 5 ton dump	14ea	A27	Haul 4" minus rock and laterite.
Trk, 5 ton dump	12ea	C34	Haul 4" minus rock and laterite.

k. Administration and Logistics.

(1) Admin. Co A, 27th Engineer Bn was billeted in an existing company area at Phuoc Vinh.

(2) Logistics.

(a) Class I.

1. Co A, 27th Engr Bn, Phuoc Vinh ration-break down. Immediate response, set-up by Co C, 34th Engr Bn and no difficulties encountered.

2. Co C, 34th Engr Bn. No change.

(b) Class III. All elements supplied by Phuoc Vinh POL III point. No problems encountered.

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SUBJECT: After Action Report - (operation KICKOFF)

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(c) Class V. Approx 350 lbs TNT drawn for demolition work on road by Co A, 27th Engr Bn. No problems encountered.

(3) Maintenance Support.

1. Co A, 27th Engr Bn utilized organic organizational capabilities with Co C, 34th Engr Bn as backup.

2. Engr direct support maintenance was provided by an eight man contact team with contact truck, trailer mounted welder and 2 1/2 Ton Trk carrying high mortality spare parts.

3. During the operation the following items required maintenance effort:

a. D7E Tractor (A27) - damaged exhaust manifold welded.

b. D7E Tractor (C34) - damaged left front hydraulic line repaired.

c. D7E Tractor (A27) - broken fan belts replaced.

d. Scooploader (A27) - bucket damaged, not repairable and recommended for salvage due to age and previous repair expenditure.

e. Grader, mtzd (C34) - flat tire replaced.

f. Trk, 5 Ton Dump (A27, C34) - approx 32 flats repaired or tires replaced.

g. Tractor, 5 Ton (A27) - evacuated to home station for direct support ordnance maintenance to repair blown headgasket (defect developed during return convoy to Bien Hoa).

1. Special Equipment and techniques:

(1) Special equipment: none.

(2) Special techniques: part of the existing causeway was constructed of 3" minus rock mixed with a claysilt and highly compacted. To hasten the excavation of this material in order to install one of the 36" culverts, TNT charges (25 lb total) were placed and the material was blown out to make room for the culvert.

m. Commander's Analysis and Lessons Learned:

(1) It is noted that this operation was cut short of its

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original objective and that the modified mission was completed in minimal time. The working arrangement with the tactical elements was satisfactory and appeared to be successful. However, no real test of the security provided by these elements was encountered, i.e. no enemy contacts were made. For this reason a complete evaluation of the operation is not feasible.

(2) The engineer mission was delayed in time due to the particular terrain configuration and the congestion experienced with large number of infantry troops attempting to occupy the same ground that was being used as a construction site. During the last phase of the operation an entire infantry battalion passed through the engineer construction site on the causeway, creating a delay and safety hazards to troops walking among the bulldozers and dump trucks. A similar problem was encountered when clearing the jungle for the NDP and FSB, i.e. infantry troops were already trying to dig foxholes while dozers were clearing.

n. Recommendations: In future operations with foot troops coordinate closely with units concerned and emphasize the importance of keeping troops away from construction sites and equipment. When clearing jungle areas for defensive positions, the dozers should be allowed to clear before the infantry troops attempt to develop their positions.

FOR THE COMMANDER:

2 Incl
as

W. E. McConico
WILBUR E MCCONICO
CPT, CE
Adjutant

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Intelligence (Operation KICKOFF)

1. Weather and Terrain:

a. Terrain: Terrain along Route 1A consists of flat to gently rolling plains. The majority of the area is covered by dense jungle growth. The critical terrain consists of Route 1A, the causeway, crossing points in grid squares XT9958 and XT9959, and the numerous jungle trails which cross Route 1A and are apparently used as communication routes by the enemy. The majority of these trails are concealed by thick jungle canopy.

b. Climate: January is well into the dry season. Temperatures will vary from 56° to 98° daily with the maximum temperature occurring between 1200 and 1500 hours. Mean low level winds are easterly to northeasterly and generally calm.

c. Visibility: Visibility is generally good in January, varying from 7 to 10 miles. Early morning fog may restrict visibility in low and marshy areas. Visibility will normally be lifted by 0900 hrs. January is one of the foggiest months normally, 5 to 9 days during the month will have early morning fog.

d. Key Terrain Features: Route 1A is the primary key terrain feature and with engineer effort will be capable of carrying LOC traffic.

e. Agriculture: North of the hamlet of NUOC VANG (XT994515) there are friendly elements or known habitated areas until the hamlet of DONG XOAI (YT079757). All crops discovered in the area of operation north of NUOC VANG are classified as enemy and should be handled accordingly.

f. Roads: Route 1A previously mentioned is the only known marked route in the area of operation. Numerous jungle trails apparently exist.

g. Rivers and Streams: Visual recon indicates that creeks and streams are as plotted on existing maps. The only apparent water obstacle is the lake at XT9958, XT9959.

h. Government Boundaries: The area of operation consists of two political areas. BINH DONG Province (PHU GIAO District) in the south and PHUOC LONG Province in the North (DON LUAN District). PHUOC VINH is the District capitol of PHU GIAO District. DONG XOAI is the district capitol of DON LUAN District. The Special Forces A-Team commander also serves as the District Advisor of DON LUAN District.

i. Urban Areas: The hamlet of PHUOC VINH, NUOC VANG, and DONG XOAI are the only built up areas in the AO and offer no impediment to military operations.

j. Terrain Observation: Both aerial and ground observation is poor due to heavy foliage. Long range aerial observation should be generally good along the plowed portion of Route 1A. OP's in trees may be used

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Intelligence (Operation KICKOFF) Cont'd.

to good advantage in this area.

k. Obstacles, Cover and Concealment: The major obstacle will be the dense jungle found in the AO. The lake vic XT9958 and XT9959 is also an obstacle. The dense jungle is well suited to concealed fortifications and tunnels. Initial patrol activity indicates that even the previously some plowed area south of XT56 is covered at least in part with elephant grass 3-4 feet high.

l. Avenues of approach: Existing roads and trails will be the best avenues of approach. Generally, these routes should be expected to fall across ridge lines.

m. Fields of Fire: Fields of fire will be limited by dense vegetation except for the isolated open areas.

2. Essential Elements of Information (OMITTED)

INCL #1

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Overlay Sketch (Operation KICKOFF)

XT
59
94

(60 cy 4"(-) rk; 40 cy
laterite Site #2
1 ea 36" Culvert 26 ft.

(280 cy 4"(-) rk; 176 cy
laterite Site #1
1 ea 36" Culvert 26 ft.

30
XT998597

FSE

PATCHED
POTHOLES
(30 cy laterite)

NDP

ROAD REPAIRS
(244 cy laterite)

CLASS 80
Conc reinf bridge

XT YT

49
00

Phuoc
Vinh

GATE #2
XT973495

INCL #2
to
Incl 2

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