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

IN REPLY REFER TO
AGAM-P (M) (8 Mar 68) FOR OT RD - 674132 12 March 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 34th Engineer Group (Const), Period Ending 31 October 1967

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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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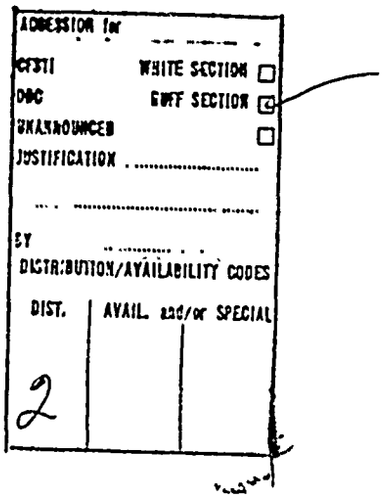

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HEADQUARTERS
34TH ENGINEER GROUP (CONST)
APO San Francisco 96291

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

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

Commanding General
US Army Vietnam
ATTN: AVHGC-DH
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Commander-in-Chief
US Army, Pacific
ATTN: GPOP-OT
APO 96588

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

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Office of the Assistant

Section 1, Significant Organization or Unit Activities.

1. Command:

a. During the reporting period, Headquarters 34th Engineer Group (Const) remained located at Vung Tau, Vietnam (YS 295465). The

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major activities of the Group included: Base construction, quarry operations, combat support to Second Field Force Vietnam (II FFORCEV) and IV ARVN Corps, and airfield and land lines of communication (LOC) upgrading.

b. The Group continued to be commanded by Colonel Joe M. Palmer.

c. Organizational Structure:

(1) During the quarter ending 31 October 1967, the following new units were assigned to the 34th Engineer Group:

UNIT	LOCATION	EFFECTIVE DATE
36th Engr Bn (Const)	Vung Tau	22 Sep 67
544th Engr Co (CS)	Vung Tau	18 Sep 67
591st Engr Co (LE)	Vung Tau	16 Aug 67

(2) Quarry Platoon, 103d Engineer Company (CS) was transferred to Long Binh and rejoined its parent company 25 Sep 67. The quarry platoon of the 544th Engr Co (CS) assumed missions in the Vung Tau quarries.

(3) 34th Engineer Group organizational chart as of 31 October 1967 is attached as inclosure 1.

(4) The 20th Engineer Brigade arrived in-country during the reporting period. The 34th Engineer Group (Construction) was assigned to the 20th Engineer Brigade on 5 August 1967.

d. Area of Responsibility: The Group area of responsibility remained unchanged during the period. Inclosure 2 graphically portrays the area.

2. Personnel, Administration, Morale and Discipline.

a. At the end of the reporting period, the personnel strength was:

	O	WO	EM	TOTAL
Auth	211	35	5371	5617
Asgd	219	31	5195	5445

b. During the reporting period both assigned combat battalions, the 27th and 86th, rotated approximately 65% of their total personnel, including officers. Replacement personnel have not been assigned in sufficient numbers to maintain satisfactory unit strengths, and severe shortages have developed in some skill areas (particularly junior non-commissioned officers and senior maintenance specialists). Following indicates the significant shortages, as of 31 October 1967:

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Grade	Job Description	MOS	Auth	Asgd
NCO E5	Motor Sergeant	63C40	11	4
NCO E5, E6	Commo Sergeant	31G40	14	9
NCO E6	Const Sqd Ldr	51H40	59	27
NCO E5 & E6	Cbt Sqd & Asst Sqd Ldr	12B40	152	83
SP5 E5	Demolition Specialist	12B30	149	26

c. During September, 560 enlisted personnel were transferred between Group units to correct rotational hump problems. Planning was completed during the period for transfer of additional personnel during November and December. This action, when completed, will correct rotational hump problems within the Group.

d. Extreme personnel turbulence was experienced during the reporting period as a result of the rotation of personnel in the 27th and 86th Engr Bns, and the infusion of 560 personnel between Group units. An aggregate of over 2000 personnel changes occurred. Additionally, the 36th Engr Bn and 544th Engr Co, a total of 1069 personnel, arrived from CONUS and were assigned during the period.

e. A seminar was conducted at this HQ by the Group Adjutant for all battalion adjutants, and by the Group Personnel Officer for the battalion personnel officers. The purpose of the seminars was to orient new personnel on the mechanics of their duties. These seminars were found to be highly beneficial, and have improved the quality of administrative procedures and enhanced the effectiveness of all assigned units.

f. During the period 140 personnel extended their foreign service tours.

g. The following awards were presented to 34th Engineer Group personnel:

Silver Star	1
Soldiers's Medal	1
Bronze Star "Valor"	38
Army Commendation "Valor"	18
Air Medal	1
Bronze Star	39
Army Commendation	55
Purple Heart	14
Certificates of Achievement	102

h. An average of 695 Local National Permanent Hire personnel were employed on projects throughout the Group area. Additionally, an average of 307 Local National Daily Hire unskilled personnel were employed on more menial tasks. The average daily wage has been 219 $VN for Permanent Hire personnel, and 112 $VN for Daily Hires. Both categories continue to serve a useful function by relieving soldiers for more specializ

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tasks. Their utilization is a valuable resource, easily exploited, and fully worth the expenditure of time and effort necessary to administer the program.

i. On 19 Sep 67, 34th Engr Gp served as host for a 20th Engr Bde Chaplains' Conference which was attended by 14 Chaplains assigned to the 20th Engr Bde. Areas of particular interest related to chaplain activities including character guidance, civic action, military correspondence, and administration were primary topics of discussion. The 34th Engr Gp Chaplain (Major Harold L Alexander) presented "The Blank Card Theory of Morale Analysis" which is being instituted throughout the Group. A detailed explanation of this theory is at inclosure 3.

j. Additional emphasis was given to the overall Group Career Counseling and Reenlistment Program during the period. Full-time Reenlistment NCOs were appointed in each battalion to provide increased surveillance of the program and assist unit supervisors in this important task.

k. No unusual disciplinary problems characterized the period. Nonjudicial punishment for minor infractions was widely used in lieu of courts-martial.

3. Intelligence and Counterintelligence: Nearly all intelligence concerning enemy activity continued to be obtained by direct liaison between battalions and the local tactical unit having area responsibility. Engineer Reconnaissance of LOC's and airfields were performed on a continuous basis by units of the Group. During this period detailed route reconnaissance was made of the following roads:

a. Route QL 20 from junction with Route QL 1 to the II/III Corps boundary.

b. Route QL1 from Xuan Loc to the II/III Corps boundary.

c. Route QL 4 from Can Tho to Vinh Long.

d. Route QL 4 From Saigon to My Tho.

e. Route LTL 15 for its entire length.

f. Route QL 15 from Long Binh to Vung Tau.

4. Plans, Operations and Training:

a. Operational Support:

(1) During the period, 20% of the total Group effort was expended on operational support missions. There were basically three types of operational support missions during the period:

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(a) Direct Support of combat operations.

(b) Deliberate construction to support future operations.

(c) Miscellaneous troop and equipment support to MACV and II FFORCEV units for construction and maintenance of existing roads and airfields.

(2) Operation Enterprise: This operation, conducted by the 9th Inf Div, continues in Long An Province just south of Saigon. The major engineer effort was provided by the 86th Engr Bn during the period and consisted of installing and repairing artillery firing pads, rock hauling, airfield construction, maintenance of Route QL 4 and maintenance of access roads. Also, movement of large quantities of rock by barge for fill material and LOC maintenance continued to be a large part of the engineer support to the operation. Work at specific operational bases included:

(a) Tan An: At this location, a barge unloading facility continued to operate, and work continued on an airfield. At the airfield, a helipad access road, a C-123 runway and a parking area were completed.

(b) Bon Luc: Artillery firing pads for a II FFORCEV 175mm and 8 inch composite artillery battery are being constructed in accordance with a design site adapted to the Delta clay base. Two of 6 pads have been finished with good results.

(c) Binh Phouc: Eight artillery firing pads were constructed for 105mm and 155mm howitzers.

(d) Tan Tru: Construction of 8 pads for 105mm and 155mm howitzers was initiated.

(3) Operation Paddington: This operation was conducted by the 9th Inf Div, reinforced by the 1st ATF in the Phouc Tuy Province. During this period, engineer effort for the operation consisted of completing the rehabilitation of a C-130 parking apron. The 69th Engr Bn worked on this project.

(4) Operation Emporia: This was a series of land clearing operations conducted by the 86th Engr Bn employing the 86th Land Clearing Platoon. The operation was divided into four phases.

(a) Phases I and II: Jungle clearing along both sides of Route QL 20 to the II/III CTZ boundary. A total of 1586 acres were cleared and the operation was completed on 15 August 1967.

(b) Phase III: Jungle clearing along both sides of Route QL 1 between Xuan Loc and Gia Ray. A total of 1005 acres were cleared and the operation was completed on 31 August 1967.

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(c) Phase IV: Jungle clearing along both sides of Route LTL 2 from Long Giao to Baria. A portion of this clearing - near Baria - was accomplished by a small land clearing task force (from the 27th and 86th Engr Bns (C) (A) which was in support of the 1st ATF in Operation Ainslie. Approximately 1740 acres were cleared by the end of the operation, 16 September 1967.

(5) Operation A-O Plow: This operation conducted by the 86th Engr Bn consisted of clearing 341 acres of jungle in support of the 9th Inf Div Base Security Plan. The operation was initiated on 21 September 1967, terminated 23 September 1967 and was conducted west of Route QL 15 near Long Thanh North.

(6) Operation Akron III: This operation, conducted by the 86th Engr Bn, consisted of jungle clearing along selected trails east of Route QL 15 between Long Thanh and Baria. The operation was initiated on 25 September 1967 and completed on 19 October 1967. A total of 1326 acres were cleared. Two large bunker and tunnel complexes were discovered; one of which contained a large quantity of supplies and weapons. A total of 1,140 weapons (including four 75mm howitzers - the first artillery pieces US Forces have seized from the Viet Cong), 3,634 grenades, 2,373 recoilless rifle shells, 452 mortar rounds, and nearly 95,000 rounds of small arms ammunition were captured. Also captured were enough drugs and medical supplies to treat 1,000 patients for a month and large quantitites of rice.

(7) Airfields: During the period the 34th Engr Co worked on eight deliberate operational-support airfields in addition to the one at Tan An mentioned earlier.

(a) Vinh Long Airfield: This airfield consisted of a loose cobblestone runway which was rehabilitated to a Type III, C-130 capability. The present runway consists of M8A1 matting overlaying cement stabilized sand. The airfield was completed by the 27th Engr Bn during this period.

(b) Xuan Loc Airfield: This airfield is presently being upgraded to a Type II C-123 capability by the 27th Engr Bn. It is being constructed in such a manner as to facilitate future expansion to a Type II, C-130 capability. The construction has been complicated by rains. The airfield has a laterite base and is being surface - sealed with asphalt.

(c) Ham Tan Airfield: On this project, the 27th Engr Bn is rehabilitating an existing Type III, C-130 airfield. A single surface treatment was applied to the existing runway. The project includes a parking apron to accommodate five C-130 aircraft.

(d) Long Giao Airfield: On this project, the existing O-1/C-7 strip will be converted to a taxiway and a Type II, C-123 runway

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will be constructed parallel to it. Drainage work has been initiated by the 27th Engr Bn on the new runway.

(e) An Thoi Airfield: On this airfield, the existing 4,000 foot PSP runway has deteriorated. The PSP is being taken up, and the construction of a runway, consisting of M8A1 matting overlaying an asphalt sand base, has been initiated by the 27th Engr Bn.

(f) Long Hai Airfield: On this airfield, the 86th Engr Bn has initiated construction to upgrade a 1,500 foot sand cement runway to a Type II. C-123 capability. The new runway will consist of asphalt stabilized sand overlayed with M8A1 matting.

(g) Can Tho and Vi Thanh Airfields: These two airfields are presently in the planning phase and are both to be upgraded to a C-130 capability. The 69th Engr Bn will upgrade both of these airfields.

(8) Cau Muong Bridge: The original Eiffel Bridge spanning a 350 foot gap was damaged by enemy action and eventually collapsed. A substructure designed for two-way Class 35 or a one-way Class 50 is being constructed. The substructure consists of two midstream piers of wide flange piles. The original Eiffel span will be used as superstructure, the substructure being constructed to allow for future expansion. The piles have been driven and the abutments constructed. Work in progress consists of fabricating bracing for the piles and back filling the abutments. The 86th Engr Bn supported by the 536th Engr Det (PC) is responsible for this project.

(9) Miscellaneous construction and maintenance projects in support of MACV and II FFORCEV units include:

(a) Ham Tan: An O-1 airstrip was constructed by elements of the 27th Engr Bn during this period. Work is presently in progress to rehabilitate 300m of access road.

(b) Long Hai: Construction of berms for two Special Forces Camps has been completed by elements of the 86th Engr Bn. Technical assistance in building construction is also being provided.

(c) Luong Hoa: Technical assistance was given in the construction of a self-help drainage system by HQ, 34th Engr Gp at this Special Forces Camp.

(d) Vo Dat: Elements of the 27th Engr Bn made emergency repairs to a C-130 airfield.

(e) Nui Chua Chan Mountain: Elements of the 27th Engr Bn are installing a water system and mess hall for a signal facility.

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(f) VC Hill, Vung Tau: Removal of four abandoned masonry gun emplacements in support of 1st Signal Bde is being accomplished by elements of the 36th Engr Bn.

(g) Nui Dat: A small provisional Rome Plow team from the 27th Engr Bn is currently supporting the 1st ATF in clearing jungle for a refugee camp and farm land. Although the team is assigned to the 27th Engr Bn, it consists of men and equipment from three separate battalions, one of which is outside 34th Gp. One of these battalions has four companies represented in the land clearing team.

(h) Bear Cat Access Road: This road is cleared for mines every morning by elements of the 86th Engr Bn prior to being opened to traffic. Results to date have been negative.

(i) Union Town Artillery Position: The 86th Engr Bn constructed a fire support base, drainage structures and an access road for the 2nd Battalion, 34th Artillery.

(10) The 27th and 86th Engr Bns have conducted ambush patrols continuously throughout the period. A total of 43 patrols were conducted with negative contact.

b. Lines of Communication (LOC): During this period an extensive program has been developed to restore and upgrade important land lines of communication to quality standards as set forth by MACV. Also, emergency repairs and deliberate restoration of various sections of road have been accomplished within the 34th Engr Gp area of operation to allow traffic flow to continue for both civilian and military type vehicles. During the period, 16% of the total group effort was expended on LOC's. Work accomplished on lines of communications included:

(1) Operation Long Haul: (Route QL 15 - Bear Cat to Baria): Route QL 15 is presently being upgraded to full MACV standards. During this period the 86th Engr Bn has installed and reconstructed numerous culverts between Bear Cat and Baria. Emergency repairs have been made where needed to allow a continuous flow of traffic.

(2) Route QL 15 (Baria to Vung Tau): This route is presently in the planning phase for upgrading to full MACV standards. Work accomplished during this period included:

(a) Cau Cav Khe Causeway: A causeway has been constructed across a 415 foot gap by elements of the 69th and 36th Engr Bns. The causeway is presently being widened prior to opening to traffic. It replaces an Eiffel Bridge.

(b) Cau Co May Causeway: Construction has been initiated on a causeway bridge combination, crossing an 840' gap. The construction

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of the causeway is currently being accomplished by the 67th Engr Co (DT). Design of an 80 foot bridge consisting of caisson abutments and prestressed concrete T-beam stringers has recently been completed. The bridge will be constructed by the 36th Engr Bn assisted by the 536th Engr Det (PC) and is scheduled to be completed during the next reporting period.

(3) Routes QL 1 and LTL 2: These routes are currently in the planning phase for upgrading to full MACV standards. Work accomplished this period included clearing, widening, shaping and overall repair of QL 1 and LTL 2 from Blackhorse to Xuan Loc.

(4) Route QL 4: Maintenance of this main supply route from My Tho to Saigon has been accomplished by elements of the 86th Engr Bn (C) (-). The upgrading of Route QL 4 from Vinh Long to Can Tho is presently in the planning phase. Upgrading along this route will be accomplished by the 69th Engr Bn (Const). Also, the 34th Engr Gp reviewed the designs and provided the materials for the Long Dinh Bridge. Construction of this bridge was completed by RVN engineers during this period.

(5) Operation Union Town (Phase II): On this operation a trail was upgraded to carry division loads. The new road lies between Route LTL 24 and Route QL 1 and extends from the vicinity of Tan Dinh on Route LTL 24 to the junction of Route 316 and Route QL 1. Work began in mid July and was completed on 3 September 1967. The completed road, constructed by the 86th Engr Bn is a 22 foot wide all-weather road.

(6) Operations Thau Mau Le (TML) and Encore: On these operations, the 86th Engr Bn accomplished emergency repairs on Route QL 20. The emergency repairs were required as a result of heavy monsoon rains. The chief objective was to keep the road open to civilian traffic. Operation TML was a 4 day operation with emergency repairs being made from junction QL 1/QL 20 to the II/III CTZ boundary. Operation Encore was a 7 day operation with repairs being made from the Song La Nga River to the II/III CTZ boundary. Both of these operations took place in September.

c. Base Construction:

(1) During the reporting period, elements of the 34th Engineer Group (Const) continued base construction at Bario, Bear Cat, Can Tho, Dong Tam, Ham Tan, Long Giao, Long Thanh North, Vinh Long and Xuan Loc. In addition to the standard cantonment construction at Long Thanh North, a major permanent C-130 airfield and related supporting facilities are being constructed by the 93rd Engineer Battalion (Const). This airfield will relieve some of the air traffic at Tan Son Nhut Air Base. The USARV Flight Detachment will be based at this airfield.

(2) An increase in cantonment and aviation support construction requirements in the Delta has necessitated relocation of elements of the 69th Engineer Battalion (Const) from Vung Tau to Can Tho. This movement

resulted in a full construction battalion being committed to construction in the Delta. During this reporting period, Soc Trang was added to the increasing list of areas supported in the Delta. A cantonment is currently being constructed there by the 69th Engineer Battalion (Const). Previous construction at Soc Trang was accomplished by contract.

(3) During this reporting period a base camp was constructed in virgin territory adjacent to Bear Cat for a regiment from Thailand. Extensive horizontal effort was required during the monsoon season to construct numerous access roads and building pads. Minor vertical construction was also required to provide MSR for the incoming unit. The construction schedule was met. Upon arrival of the Thailand regiment they initiated an energetic, effective self-help program to further develop their cantonment area.

(4) Uncompleted RMK-BRJ contracts assigned to the Group for completion are still active. Basic problems indicated during the last reporting period still exist. Non-availability of some construction materials has delayed completion of these projects. Problems of material shortages are compounded by the fact that many items are non-standard in the Army supply system. The completion of the Game Warden Facilities at Cat Lo was recently assigned to the Group. This $835,000 project is an uncompleted RMK-BRJ project being constructed by the 36th Engineer Battalion (Const). It is currently in the planning/mobilizing stage.

(5) The Vinnell Corporation project of installing power ships and primary and secondary electric distribution systems in Vung Tau, which started in June 1967, continues. The power source consists of two T2L tankers which are moored in Vung Tau Harbor. Each tanker is capable of generating approximately 5,000 KW at 3.61 KV. The 3.61 KV is stepped up to 13.8 KV for primary distribution. The project is currently 90% complete with an EDC of 25 November 1967. Currently, 83,400 feet of primary and 17,300 feet of secondary distribution systems have been installe Quantity and size of transformers which have been installed are as follows: 122 - 10KVA, 148 - 25 KVA, 34 - 50KVA, 6 - 75KVA and 3 - 167KVA for a total of 7,571 KVA installed. The Vinnell system will provide electric power to all US and Free World Military Forces facilitites as well as to some Vietnamese Government facilities in Vung Tau.

(6) A construction directive for the power distribution system at Can Tho was received during this reporting period. This system will be constructed by the 69th Engineer Battalion (Const). The existing distribution system is 50 cycles. Upon completion of this project a 2,000 KW, 60 cycles power plant with secondary system will be constructed.

(7) Installation master planning is an area in which this Group is actively involved. The assigned Battalions assist their respective base development boards and installation commanders in the preparation of master plans. The Battalions submit monthly updated base development reports which reflect completed and current construction, as well as current requirements. The monthly update reports are combined with the consolidated Group base development and master planning

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files for each installation in the Group's area of responsibility. With this data, it is possible to forecast and prepare future requirements for engineer effort and materials.

(8) Elements of the 34th Group continue to monitor contract dredging within the Group's areas of responsibility. Dredging of the outer and inner channel of Vung Tau Harbor has been completed. The Corps of Engineers Dredge Hyde completed the outer channal. Dredging of a POL tanker turning basin and berth in Vung Tau Harbor has also been completed. Dredges at Dong Tam continue to pump hydraulic fill to increase the usable land area. Approximately 10 million cubic meters of hydraulic fill have been pumped, creating an area of approximately 500 acres. Dredging at Vinh Long has recently started. Purpose is to provide additional usable area for airfield facilities and cantonment expension. Plans are being formalized to commence dredging at Can Tho in order to provide additional usable real estate for programmed construction.

d. Design and Construction Engineering:

(1) During the reporting period, the engineer section has continued to encounter the unique and difficult problems associated with construction during the tropical monsoon season. As the Group has become more and more involved in an ever increasing number of construction projects, the engineering section has encountered a growing number of problems. Most unique, and occupying a major portion of the engineer effort, are the problems faced in the Delta regions where the entire land mass is composed of low bearing capacity soils. Compounding the problem during this period has been the extremely large amount of rainfall which hampered efficient construction operations.

(2) The engineer section still has vital equipment shortages. Concrete and asphalt test sets authorized by TOE have still not been received. Due to the monsoon season, large scale asphalt and concrete surfacing projects have not yet commenced; however, several projects are planned during the coming dry season which will involve extensive asphalt paving operations. The Group's ability to insure quality control by frequent testing and analysis is limited by the non-availability of TOE testing equipment.

(3) A factor which has significantly influenced engineering design effort is the shortage of construction materials, particularly the shortage of steel piles and commonly required WF steel beams for bridge and port construction. On numerous occasions, US designs, and ARVN bridge designs which are submitted to this headquarters for review, have had to be redesigned due to non-availability of particular items of supply. In addition to the time required by design modifications, this shortage of construction materials has further slowed construction effort in that, on many occasions, particular items must be trans-shipped from supply depots at great distances. This results in untimely deliveries and causes

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unnecessary delays in construction operations. Although the material shortage is now being alleviated, many designs are still predicated upon material availability. One outstanding example of this has been the use of 36 WF 230 beams as stringers for a Class 35, 2 way bridge being constructed by an ARVN engineer unit.

(4) The continuing build-up throughout the Group area has caused the engineer section to devote a large percentage of its effort to soils investigation, survey and airfield design. During the reporting period, the section has performed analysis on and has designed no less than ten airfields. The great majority of these have been located in the Delta area. In each case, the airfield upgrading required the use of matting because of the non-availability, in quantity, of base course material. Based upon experience, standard procedures have been established for installing typical matting features such as runway and turnaround patterns, anchorage patterns, taxiway patterns and parking areas (Inclosures 4 and 5). In addition, a standard asphalt-treated sand layer has been developed which will provide a watertight seating layer for matting over the rock or sand/cement base course. A problem in Delta soils has been detected in providing secure anchorage for the matted airfields. The soil, normally a ML or CH, has very little inherent strength. The normal procedure of bending half of a long panel on both ends of every fourth row of M8A1 matting into a ditch, then back filling with the natural soil, has revealed problems during this wet season. The Delta soil will allow the buried portion of the panel to work itself loose, this creating a buckling problem. The solution has been to backfill the ditch with cement-stabilized soil which will bond and secure the matting. Most Delta soils will react favorably with a 10 percent, by weight, mixture forming a stabilized runway shoulder which will prevent buckling of the matting. During the monsoon season when the moisture content of the soil is increased, higher percentages of cement are required.

(5) The engineer section continued to be involved in redesign of the Cau Mount Bridge. Driving of sixteen piles indicated that the tolerances required for the designed underwater bracing system were not being met due to stream conditions and the use of timber, in lieu of steel, as a template for the pile driving operation. A redesign of the underwater bracing system was necessary wherein the inherent inaccuracies in the pile-driving operation at Cau Mount could be accommodated. Still lacking a reliable underwater welding capability, the solution was to go to prefabricated steel bracing components, bolted into final position underwater. A shortage of steel plate and bolts has been overcome and construction of the underwater bracing system is now underway.

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(6) Another area of significant engineering interest has been the repair and projected re-surfacing of the Vung Tau Airfield. The present runway consists of DBST surface over 24" - 36" of rock and earth fill. The runway has had a high volume of traffic for several months. This high traffic volume, compounded by the high loading found in C-130 and C-124 aircraft, has caused fatigue of the DBST surface (Indicating the expected life of DBST is about 6 months). Soon after the monsoon season began, it was found that the airfield surface was rutting. Investigation revealed that the surface failure had permitted water to enter the upper part of the base course. A bond failure between the surface treatment and the base resulted. Constant maintenance of the runway was instituted. Badly rutted areas were removed and the areas patched. The entire runway is being given a seal coat in an attempt to seal and rejuvenate the fatigued surface and prevent any further infiltration of water into the base. These methods have reduced the deterioration rate and will permit continued operation of the airfield until the dry season; at which time, the entire runway is scheduled to be paved with a two inch asphaltic-concrete surface.

(7) Expansion of cantonments and continued growth of troop strength in the Group area has created a need for design work in many unique areas. The engineer section has designed dog kennels for scout dog platoons, an airport terminal, support framework for an inflatable MUST hospital and a barracks designed to withstand direct hit by enemy mortar fire. In addition to these facilities, the engineering section is heavily involved in port design, review of contract designed electrical distribution systems, as well as review of designs and bills of material for subordinate units.

(8) Shortly after the beginning of the monsoon season, it was found that the artillery gun pad emplacements (175mm and 8" self-propelled) at a Delta location were failing. The failure was due to the very high ground water level, resulting in a saturated sub-soil (clay-silt). Repeated shocks of the gun recoil pushed the rock which is used as the shock absorbant, into the saturated sub-soil. The very weak soil would not support the weight of the rock and the force of the recoil. As a result the rock continually had to be replenished, often after relatively few minutes of firing at maximum charge (3). A redesign of the artillery pad was made, providing a wooden mat of

3" x 12" timbers, supported by 8" x 8" posts. The post is then filled with rock as a method of absorbing the recoil force. Indications to date are that this method of providing an artillery firing emplacement in Delta areas is satisfactory; however, periodic maintenance is still required. Further field observations will be made to determine the final adequacy of the design.

(9) Airfield construction experience at Vinh Long has revealed a problem in the installation of M8A1 matting. Several hundred bundles of Pickard manufactured M8A1 were received for use as airfield surfacing material. It was found that due to an inherent manufacturing defect, the matting would not properly lock. It is therefore unacceptable for construction of airfields or other hardstand areas. Tests to determine the exact cause of the locking failure are being made by the 36th Engineer Battalion (Const).

(10) With the advent of another dry season and the inherent dust control problems in large cantonment areas, the engineer section has investigated various methods of reducing the dust problem to acceptable levels. Several methods will provide acceptable dust control; however, based upon availability of equipment, time and products, it is concluded that the use of penaprime on heavily-travelled areas on a weekly basis, and on light traffic areas or on helipads on a bi-weekly basis, would provide good dust control (Inclosure 6). As the use of penaprime continues, areas will build up an effective, cohesive surface, and the application rate and/or frequency can be reduced. Experience gained in the coming months concerning these procedures, as well as the results of planned dust control test strips, will further increase the section's knowledge of efficient dust control measures.

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e. Training: During the reporting period there were eight training programs which affected the Group.

(1) A welders test-training program was conducted in preparation for the 50,000 barrel POL steel tank project at Vung Tau. A total of 29 welders were tested from within 20th Engineer Brigade units. Of this total, 13 were certified to perform welding on the tanks. The tests were conducted in accordance with chapter 10 of TM 9-237 under the supervision of an Army Material Command representative.

(2) An electrical power distribution school was completed in the month of August. The personnel were assigned to the 69th Engineer Battalion, as they have the majority of the primary power distribution construction in the group area. What began as a two week school was extended to six weeks, and ended on 26 August.

(3) Personnel from 34th Engineer Group units attended an Eiffel Bridge School on 6-7 September. The school covered the parts of the Eiffel bridge and it's construction, and consisted of one-half day of classroom lectures and a day and a half practical exercise in erection and disassembly of Eiffel Bridges. Personnel are now confident of their ability to erect or dismantle the bridge.

(4) A mine and booby trap confidence course conducted by the 173d Airborne Brigade was attended by Group personnel on 16 September 1967.

(5) Euclid twenty ton dump trucks arrived in-country in the month of August. A course of instruction was conducted by US Army Engineer Command Vietnam (P) to familiarize personnel in the operation and maintenance of these vehicles.

(6) A staff training program (series of colloquims) was conducted from 18 September thru 8 October. The Group staff prepared and presented to their battalion staff counterparts a program of instruction, concentrating on specific problems and trouble spots unique to Vietnam, the Group area, and Group operations. The purpose of the training program was to preclude loss of continuity from personnel rotation and the infusion program. A system of frequent visits by all members of the Group staff to help the new battalion staff officers overcome any "continuity" gap has been initiated.

(7) Personnel from 34th Engineer Group attended a 10 ton tractor driver training and organizational maintenance course 15-19 October. The training was conducted for the 93d Engineer Battalion (Const) at Long Thanh North. Personnel who attended will further train Group personnel in the operation and maintenance of the 10 ton tractors.

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(8) 34th Engineer Group replacements to be stationed within the Vung Tau Special Zone attended replacement training classes given by the 53d General Support Group. Classes were given on VC tactics, mines and booby traps, field sanitation, convoy procedures, immediate action drills and weapons familiarization. These classes are held once every month for all local replacements.

5. Logistics:

a. Supply

(1) The 36th Engr Bn and 544th Engr Co (CS) arrived in-country on 20 September and 2 September respectively. Both units had relatively few TOE shortages, however, the 544th arrived without its TOE asphalt plant and auxillary asphalt equipment.

(2) The majority of TOE shortages of the 94th Quarry Detachment which were identified in last quarters' report have been filled with the important exception of TOE rock drilling equipment. Lack of this ecuipment has hampered the unit from accomplishing its assigned mission.

(3) Haul of bulk construction material by barges assigned to the Group continued during the report period. Conferences held at HQ MACV to discuss tug support for this operation resulted in: (a) A scheduled tow to Dong Tam three times per week, (b) Agreement by Transportation Management Agency (TMA) to establish a scheduled tow to Can Tho when required, and (c) Withdrawal by this HQ of a request for a contract tug. Approximately 20,000 tons of bulk construction material were moved into the Delta during the period 1 August thru 31 October 1967.

(4) During the construction of the Vinh Long Airfield, the 27th Engr Bn encountered problems in the placement of "Pickard" M8A1 matting. After approximately 12-15 rows the adjacent panels of the matting would not lock together. Extensive tests were conducted; however they failed to identify the cause of the problem. At the request of higher headquarters, Mr Alvin, the Chief of the Expedient Pavements Branch, Vicksburg Waterways Experiment Station, and Mr Hendron, a representative from Office Chief of Engineers, observed placement of this matting by the 36th Engineer Battalion under controlled conditions at Vung Tau. They could not identify what was preventing the matting from locking. After a temporary freeze, Pickard matting is again being released by 1st Log Comd for issue. The 34th Engr Gp is continuing to conduct random sampling and testing of this matting.

(5) Two 10,000 lb rough terrain forklifts were received by the group during this report period. Although additional forklifts have been available in depot stocks for issue since mid-August, all

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efforts to obtain them have been unsuccessful. Basis of authorization is 2 per Const Bn and one per Combat Bn. Receipt of these items would significantly increase the efficiency of operation of Battalion Class IV yards.

b. Maintenance.

(1) The deadline rate for the group continued to increase during the reporting period. Rotation and replacement of approximately 65% of the two combat battalions and intra-group transfer of 560 personnel to reduce future hump problems were contributing factors to the increased deadline rate. Increased command emphasis on maintenance and operator training resulted in a decreased deadline rate at the end of the period.

(2) Land clearing operations were conducted on a continuous basis during the period. This type of operation requires an extensive maintenance section that is responsive. Maximum repair of equipment on the trace was necessary as evacuation of equipment for repair resulted in excessive down time. A Direct Support maintenance contact team was provided by the 185th Maintenance Battalion, as directed by 1st Log Comd; it consisted of a contact truck, three mechanics and an NCO in charge. It has become apparent that the maintenance section of the Land Clearing Platoon is inadequate even with the addition of the DSU contact team. It was necessary, on the most recent operation, to augment the platoon with considerable personnel from the parent Battalion and the attached 595th Engineer Company (LE), creating a shortage of maintenance personnel for the remaining TO&E equipment. An MTO&E is presently being staffed which will increase the Land Clearing Platoon's maintenance section so it will be capable of accomplishing required maintenance. Depending on the type of land clearing operation the platoon is engaged in, it is necessary to increase the maintenance section with one maintenance Warrant Officer and ten to twenty mechanics.

(3) Repair parts for the new model D7E full track tractor have been, and still are, critically short. Even though there has been considerable emphasis in this area the problem is still a critical one. As a result D7E tractors are down an excessive period of time awaiting parts.

(4) The lack of repair parts and PLL for RMK equipment is still critical. There have been eleven purchase order requests submitted to CONUS for PLL of the RMK equipment on hand, but as of this date there have been few parts received. A program was established for obtaining repair parts from RMK depots but the parts required for the deadlined RMK equipment are not available in these depots. As a result the deadline rate of RMK equipment has not improved during this period.

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(5) During this period, the Group received fifteen new 20 ton Euclid Dump Trucks. This equipment is being used at the quarry sites (eleven at Gia Ray and four at Vung Tau). While there has not been sufficient time to determine if the quantity of repair parts provided with the trucks is adequate, difficulty has already been experienced on tires. None were provided with the one year supply of parts. A very limited number of rear tires (1600x25) have been found but not in sufficient quantities to sustain quarry operations for a long period of time. The front tires (1300x25) are the most critical. To date none have been located in country. A Federal Stock Number for this size tire is not available.

6. Force Development:

a. The 544th Engineer Company (CS) was located in Vung Tau upon arrival in Vietnam in order to provide equipment and personnel to operate the two major quarries located there. In addition, the company has taken over the operation of the Vung Tau barge loading facility. The company lacks its complete asphalt capability. When this equipment becomes available, it will be used to surface the Vung Tau airfield (4500 feet by 60 feet) and highway QL15 from Vung Tau to Ba Ria.

b. The arrival of the 36th Engineer Battalion (Const) permitted the relocation of the entire 69th Engineer Battalion (Const) into the Delta. The 36th Engineer Battalion is located entirely in Vung Tau but will have one full company committed to the LOC upgrading of QL15.

c. HHC, 69th Engineer Battalion (Const) relocated to Can Tho in order to consolidate the command and control of Group elements in the Delta; and to co-locate with the IV CTZ Senior Advisor. This will permit close advanced planning for the anticipated increase in base construction requirements in Vinh Long, Can Tho and Soc Trang as well as the LOC program on QL4. The available construction effort in Dong Tam was doubled when Company C, 69th Engineer Battalion moved to Dong Tam to join Company B, 69th Engineer Battalion which has been working there since the base began. Company A, 69th Engineer Battalion and Company D, 69th Engineer Battalion are both located with HHC in Can Tho. In addition, a platoon of the 41st Engineer Company (PC) was placed in support of the Group to construct the Dong Tam Port Facilities.

d. The 591st Engineer Company (LE) was attached to the 27th Engineer Battalion (C)(A) and collocated with it at Long Giao (Blackhorse). This addition materially added to the Battalion's capability. Each of the Group's Combat Battalions now has a Light Equipment Company attached.

e. The Group Force Structure is well balanced to accomplish its assigned missions in a timely manner with the exception of shortages in hot mix asphalt, large batch concrete, rock drilling equipment and port construction capability. The only organic port construction asset is the 536th Engineer Detachment (PC) which presently has upwards of three years scheduled work.

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f. A Group study completed on 10 October 1967 indicated that as of that date (Inclosure 7), the Group had a total of 8 Group-Months (in terms of man hours) of directed work "on the books". New projects are continuing to be received at a faster rate (in terms of manhours) than work is being completed. No additional units are expected to join the Group. Hence, it is anticipated that the project backlog will continue to increase.

g. A complete analysis of all TOE's within the Group was conducted in October and numerous MTOE actions were recommended. Final action on these recommendations is pending.

7. Command Management: The lack of sufficient aviation support continues to hamper efficient command and control. This is compounded by the widely separated missions, not only within the Group as a whole, but also within the individual battalions. The 27th Engineer Battalion (C)(A), for example, has elements dispersed over a 250 mile front and the young, inexperienced officers and enlisted men are not receiving the close guidance and supervision from the Battalion Commander and Staff that is required.

8. Communications:

a. During the reporting period the group communications section continued operation of the group FM administrative radio net to all major subordinate units. The section also operated an AM voice radio net, between group headquarters in Vung Tau and B Company, 27th Engineer Battalion, located on Phu Quoc Island in the Gulf of Thailand.

b. The major achievement in the communications area during the last quarter has been the establishment of secure on-line radioteletype communications within the 34th Engineer Group. In all cases existing radioteletype equipment had to be modified for installation of electronic teletypewriter security equipment TSEC/KW-7. This required locating modification kits in country (accomplished through Saigon Support Command) and then installing the kits and the security equipment itself.

(1) The KW-7 security equipment necessary for the operation of four stations was requisitioned against the TOE authorizations in the respective units. However, all equipment was picked up on the group headquarters crypto account. All responsibility for cryptoaccounting and cryptosecurity rests with the group communications officer.

(2) At the present time, the 27th, 86th, and 93d Engineer Battalions are operating in the group secure radioteletype net, with the group station acting as NCS. Headquarters, 20th Engineer Brigade, will enter the net in the near future.

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(3) The individual battalions were issued security equipment on hand receipt and assigned the responsibility for local physical security and cryptosecurity. All reports, accounting records, and files relating to the equipment are maintained at group headquarters. Personnel in operating and supervisory positions at each unit were instructed by the group communications officer in the proper operating procedures.

(4) The secure radioteletype net provides the group commander with organic teletype transmission capability with the means of handling messages of up to and including SECRET classification over ranges exceeding 100 miles. Because of the delays encountered in message handling time through the area teletype networks of the 1st Signal Brigade, it was necessary to establish a system under group control. The net has proved to be a success, particularly in rapid handling of messages pertaining to urgent combat support missions.

9. Information:

a. The information program of the 34th Engineer Group expanded considerably during the reporting period by the publication of the group newspaper, the Delta Developer.

(1) The Delta Developer is published twice each month and contains command information material, stories of significant events throughout the group, awards, promotions, and other items of interest to the command. The newspaper is printed on mimeograph and is supported with material from the Armed Forces Press Service.

(2) Present circulation of the Delta Developer is 1500 copies. The present size of the newspaper is ten pages in length.

b. Additional expansion of the group information program was made with the recording of taped interviews with Engineer Troops in the field on operation AKRON. Taped material was released to the Armed Forces Vietnam Network and the soldiers' hometown radio stations. The 34th Group was the first unit in the US Army Engineer Command Vietnam to prepare and forward its own taped interviews.

c. Considerable coordination was made with the DA Special Photo Team in preparing motion picture coverage on Engineer projects in Vietnam of interest to Department of the Army. In addition, support was given to an Army motion picture team working with The Big Picture.

10. 536th Engineer Detachment (Port Construction).

a. Command: CPT Donald J. Siglin was replaced by CPT John Carey as Detachment Commander on 25 September 1967.

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b. Operations:

(1) During this quarter the unit continued its support of the 86th Engineer Battalion (C) (A) in the buildin of the Cau Nuong Bridge. The piles for the main bents were completed on 10 September 1967. The unit is presently fabricating the underwater bracing for the bents.

(2) Upon completion of pile driving at Cau Nuong the work barge returned to Vung Tau and built two steel pile dolphins for protection of the aggregate barge loading pier.

(3) The unit is assisting the 36th Engineer Battalion (Const) in the design of the Vung Tau PCL Jetty and the form bracing of the Cau Co Hay Cofferdams.

c. Logistics:

(1) The supply of welding electrode is still a major problem. The 86th Engineer Battalion (C)(A) was required to purchase from the Vietnamese economy to obtain electrode for the Cau Nuong project.

(2) The unit was notified by the 53d General Support Group on 14 September 1967 that a requisition for four power winches dated 6237 had been approved. On 20 October 1967 no record of this requisition could be found in the support units. The winches have since been ordered on Red Ball. The shortage of winches is critical to proper anchorage and movement of work barges.

11. 573d Engineer Company (Float Bridge).

a. Command: On 24 October 1967, 1Lt Paul B. Cassell Jr succeeded CPT Lester H. White Jr as Company Commander.

b. Personnel: In the infusion program personnel were exchanged with the 93d Engineer Battalion (20 Aug), 69th Engineer Battalion (25 Aug), 617th Engineer Company (10 Sep) and the 100th Float Bridge Company (25 Oct).

c. Operations: The unit continued the assigned mission of hauling supplies from the Long Binh depot to the 27th Engineer Battalion (Long Giao) and the 86th Engineer Battalion (Bear Cat); and, from the Vung Tau depot to the 93d Engineer Battalion (Long Thanh North). A total of 14,895 tons of engineer construction materials were hauled 131,290 miles in 2896 truck days during the quarter. From 29 August to 1 October the company provided the 41st Engineer Company (PC) with a M4T6 bulk roadway which was used as a working road and platform for pile driving operations in a swampy river area near Saigon on the bank of the Song Dong Nai River at its junction with route 1A. One hundred

and thirty-six feet of M4T6 roadway was built. From 16 August to 23 October the company supported the 87th Engineer Company of the 199th Infantry Brigade with 472 feet of foot bridge for Operation Shelby. The foot bridge was air lifted to the site in Long An Province and returned by CH-47 helicopters. Three personnel accompanied the equipment.

d. Logistics: The unit still cannot perform its primary mission because it has only one bridge erection boat of the ten authorrized.

12. 617th Engineer Company (Panel Bridge).

a. Command: No change.

b. Personnel, Administration, Morale, Discipline: Unit is kept at adequate strength to perform its mission. 34th Engineer Group Branch personnel office in this area continues to be effective; eliminating personnel and finance problems. Morale continues to be excellent.

c. Plans, Operations, and Training: During this quarter, the unit continued its primary mission of bridge support and its secondary mission of hauling with its 5 ton dump trucks. During this period, the Unit delivered and assisted in the construction of 510 feet of Bailey Bridge. The trucks traveled approximately 85,000 miles. All training, in addition to mandatory training, that is deemed necessary to keep the Unit at a high level of proficiency, is conducted at Unit level. The status of training is considered to be excellent. From 1 August 1967 to 31 October 1967, this company supported the 93d Engineer Battalion with all available trucks on construction support at Bear Cat. From 12 October 1967 to 30 October 1967, the 27th Engineer Battalion was supported by hauling 1000 yards of sand from Long Binh to Xuan Loc.

d. Logistics: Bailey Bridge is in adequate supply. Unit has 1200 feet of bridge in bridge park.

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Section 2, Part I, Observations (Lessons Learned).

1. Personnel.

SAVINGS PROGRAMS

Item: Uniformed Savings Deposit Program

Discussion: Class "S" allotments for this savings program cannot be processed until arrival in-country. Usually two pay periods pass before first deduction is made.

Observation: Procedures should be developed for initiating Class "S" allotments in CONUS to be effective the first pay period in-country.

SAVINGS BONDS

Item: US Savings Bonds

Discussion: Facilities are not available at which to cash US Savings Bonds.

Observation: Cashing of US Savings Bonds at finance offices and/or post offices should be allowed.

ADMINISTRATION

Item: Publications

Discussion: Availability of publications produced by in-country headquarters is extremely limited.

Observation: A centralized stocking facility should be established for USARV and MACV publications, and accounts should be established for each battalion and higher headquarters.

2. Operations.

ELECTRICAL DESIGN CRITERIA

Item: Untimely Information Concerning Electrical Equipment and Requirements.

Discussion: Power requirements and electrical hardware available in RVN are considerably different from the requirements and hardware upon which most military design has been based in the past. Knob and tube wiring has been replaced with cable, and flourescent lighting is now popular because of its higher efficiency. There are an increasing number of

electrical items of equipment available for use at all levels. Consequently, wiring sizes, number of outlets, and, in particular, interior lighting requirements have made it necessary to design new systems for many of the facilities being constructed in RVN.

Observation: All electrical design should conform with the National Electrical Code, and, when necessary, civilian texts should be consulted for complete and timely information on hardware, current standard practices, and design data.

BRIDGE MATERIAL FORECASTS

Item: Estimates of Long-Range Materials Requirements

Discussion: Several detailed estimates of material requirements for future construction operations have been required by higher headquarters. With a minimum amount of information, it has been necessary to estimate in detail the material required for all Group bridging operations for various periods. Using the knowledge gained to date concerning the soil and river conditions throughout the Group area, a typical BOM for convenient span lengths has been developed using timber and steel construction. Total estimates of bridging by site are then computed by using combinations of span lengths to provide the required, or estimated, total span length.

Observation: Long range forecasts which must be based upon very incomplete knowledge can be rapidly and accurately made by using the method described above.

BRICK MANUFACTURE

Item: Delta brick construct.

Discussion: Construction blocks of clay, mixed with cement or lime have been made with excellent results. Cement contents of 8 - 12% have yielded bricks with excellent compressive properties. Experiments with bricks 4" x 12" x 18" are presently being conducted to determine economical and feasible means of protecting a stabilized clay brick wall from the hard driving rains encountered during the monsoons. Deterioration of constructed walls hopefully will be prevented by the application of a surface membrane. Large scale production of these bricks would provide a building block utilizing the locally available soil found in the Delta region.

Observation: Manufacture of chemically stabilized Delta clays into building bricks is feasible and shows excellent promise.

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ALIGNMENT OF FORMS

Item: Proper alignment of steel paving forms.

Discussion: To properly align steel paving forms, survey grade stakes should be placed at 25' intervals. A stringline over 25' long tends to be unreliable. Forms must be straight and right on grade.

Observation: Stringlining over stakes at 25' intervals allows for very accurate alignment of steel paving forms.

BEDDING FOR FORMS

Item: Sand seating layer for concrete paving forms.

Discussion: Setting steel paving forms to grade on a compacted laterite pad is difficult. Since the laterite must be chipped out to lower the form to grade, voids are often created below the form when agglomerates come out. Excellent results were achieved when a shallow shelf about 1" to 2" deep was cut out along the form line and filled with sand prior to setting forms. The forms are then placed and very easily settled to grade in the sand layer.

Observation: Placing 1" - 2" of sand under steel paving forms greatly reduces effort required to level forms on laterite pads.

REBAR SUBSTITUTE

Item: Use of U-shaped pickets ILO rebar.

Discussion: On small footers or pads, U-shaped pickets can be used to provide the required moment steel when steel rebar is not available. Use of hard aggregate under the picket will give it the required ground clearance.

Observation: U-shaped pickets can be used as reinforcing steel in small footers.

COLUMN BASE PLATES

Item: Use of steel plates in column construction.

Discussion: Timber posts and columns rested directly on concrete slabs and pedestals will absorb moisture from the slab by capillary action. Rapid, severe weathering results in tropical climates, requiring replacement of members. To eliminate the capillary action, a steel plate, 1/8" - ¼", is placed between the slab and the post.

Observation: Use of a steel plate beneath a column exposed to moisture and air will reduce replacement of columns due to weathering action.

SPLIT RING CONNECTOR

Item: Split ring shear connectors.

Discussion: The use of split rings in shear connections requires the fabrication of a grooving tool to cut the slot in the timber. Proper alignment of groove and bolt hole of the two different pieces to be joined is often difficult to achieve. To facilitate proper alignment, the grooving tool should have a steel rod, a slightly smaller diameter than the bolt to be used, attached to the center of the grooving tool. The rod should be about 2" long. If the timbers are aligned, then pre-drilled, the grooving tool can utilize the bolt hole for proper alignment. (The tool described is similar to the civilian item used for this purpose.)

Observation: Fabrication of a split ring tool greatly assists in proper alignment of split rings.

UNDERWATER DEMOLITION

Item: Underwater shape charges.

Discussion: An experimental shape charge fabricated from C-4, steel pipe and sheet metal was used to cut a 5" diameter solid steel section of an Eiffel pier which obstructed pile construction at the Cau Muong Bridge Site.

Observation: Locally fabricated shape charges utilizing C-4 and a suitable form can be used underwater.

PILE EXTRACTION

Item: Removal of piles.

Discussion: In constructing the sheet pile dolphins at the Vung Tau aggregate loading pier, two 14" H beams were utilized as template piles. In attempting to recover these beams it was discovered that the TOE pile extractor was unable to dislodge the piles. Two of the units barges were placed along side the piles at low tide. Steel sections were placed across the decks of the barges and lashed to the H pile. As the tide rose, tension was placed on the H pile. The extractor was then able to remove the pile.

Observation: The buoyancy exhibited by work barges can be utilized to create large lifting pressure for removal of piles.

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AIRLIFT OF FOOTBRIDGE

Item: Airlift of footbridge into insecure areas.

Discussion: The airlift of footbridge to forward areas by armed UH-1 helicopters is the fastest and most practical method of transportation. CH-47s and CH-54s are volnerable in the insecure areas where footbridge is required.

Observation: Footbridge can be airlifted into insecure areas by UH-1 armed helicopters.

M4T6 ROADWAY

Item: Expedient roadway for swampy river banks.

Discussion: The 41st Port Construction Company was required to extend a pipeline from the river to a fill point several hundred feet inland. A pile supported pump-station platform had to be constructed on the same swampy river bank. The area where the piles had to be driven was inaccessible by boat or tracked vehicle and it would not support a temporary fill road, yet a 20 ton crane with pile driver had to be moved to the project site. An expedient road was constructed with an M4T6 balk roadway resting on timber cribbing.

Observation: A M4T6 roadway built on cribbing will support a 20 ton driving rig. When the rig is driven onto the balk, the cribbing sinks; however, the balk has enough floatation in the swamp mud to support up to class 45 loading.

3. Logistics.

RMK PROJECT MATERIALS

Item: Cross reference list for RMK materials.

Discussion: Bills of materials required to complete RMK projects turned over to the 34th Engr Gp reflect only RMK Stock Numbers. When items cannot be obtained from RMK Depots a suitable substitute with a FSN must be identified in order to complete the project. This identification of appropriate FSN requires a significant amount of time.

Observation: Possession by construction units of a cross-reference list furnished by RM... of RMK stock numbers versus FSN's would greatly reduce time required to develop shortage lists for those items that are not available from RMK Depots.

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RMK EQUIPMENT

Item: Acceptance of RMK Equipment by Army units.

Discussion: Upon demobilization of the RMK contract at Vung Tau and Can Tho a number of major items of construction equipment were transferred to the 34th Engineer Group (inclosure 8). The weekly average deadline rate of this equipment has been 30%. Although RMK equipment has in some cases been beneficial to the construction effort of the 34th Group units, the time and effort required of maintenance personnel to obtain necessary repair parts and keep the equipment in operating condition has detracted from the overall maintenance operation of assigned units.

Observation: In addition to standards established by acceptance criteria, availability of repair parts should be considered in the future before transferring RMK equipment to Army units.

CONSTRUCTION MATERIALS

Item: Construction Material Shortages

Discussion: Although procedures are established for expediting the release or procurement of construction materials which delay construction or create work stoppages, in most cases two to four weeks are required for this system to function.

Observation: All construction units must identify possible critical shortages well in advance of the time materials will be required, and place this demand on the system at the earliest possible date.

EQUIPMENT SHORTAGES

Item: Shortage of Rock Drilling Equipment.

Discussion: The 34th Engr Gp operates 3 major quarries. Approximately 4100 yds of blast rock must be produced daily to fulfill current commitments. A total of 20 crawler drills (200 cu yds per drill per day) are required to fulfill this requirement. Units of the 34th Group are authorized 10 drills by T&E. The 94th Quarry Detachment, which arrive in-country in Jan 67 is still short four TO&E drills. In addition to the 6 TO&E crawler drills on hand in units of the 34th Group, 14 additional drills are required. All efforts to obtain this mission essential equipment have been unsuccessful.

Observation: Sufficient rock drilling equipment is not available in-country to support the 34th Group rock quarry operations.

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EQUIPMENT SHORTAGES

Item: Shortage of 10T Tractors and 60T Trailers.

Discussion: Only one 60T Trailer is currently on hand although the Group is authorized 124-10T Tractors and five 60T Trailers. Lack of this equipment precludes movement of such items as 40T Cranes, D9 Dozers, and Rock Crushing equipment. Although 5 Ton Tractors and 25T Trailers have been used for moving rock crushing equipment on a "mission essential" basis, 34th Group response to operational requirements in some instances has been delayed.

Observation: 5T Tractors and 25T Trailers issued inlieu of 10T Tractors and 60T Trailers are not adequate for moving heavy construction equipment-primarily 40T Cranes and D9 Dozers. In-country assets are not available to fill 10T Tractor and 60T Trailor TOE shortages.

MAINTENANCE FOR LAND CLEARING PLATOON

Item: Excessive down time of D7E tractors, full track, of the Land Clearing Platoon.

Discussion: Numerous problems have been encountered in the maintenance field. Down time has been excessive because of lack of maintenance personnel, lack of security and evacuation equipment in removing equipment from the trace, and lack of transportation for getting parts to the equipment on the trace.

Observation: Minimum down time is essential tothe operation of the Land Clearing Platoon. The maintenance section will be increased so as to maintain the equipment assigned. Also security and evacuation equipment must be furnished. The main maintenance base camp must also be kept as close as possible to the location where the equipment is employed.

REPAIR PARTS FOR RMK EQUIPMENT

Item: Lack of PLL repair parts for RMK equipment.

Discussion: During this reporting period the deadline rate for RMK equipment has exceeded 33% during the entire period. The problem can be isolated into one area, Repair parts. Even though a program was established for obtaining parts from the RMK depots it has become evident that they no longer stock the parts for the equipment on hand. Normal requisitioning procedures are then used but because of the fact that RMK equipment is non-standard this system is also very slow in responding.

Observation: Repair parts backup is essential to the operation of equipment. Unless the supply system is made responsive, the high deadline rate of RMK equipment that now exists will continue to rise.

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EGF-CO 1 November 1967

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for the Quarterly Period Ending 31 October 1967

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Section 2, Part II, Recommendations:

1. Personnel: None

2. Operations: None

3. Training and Organization:

a. The TOE Aviation Section should be restored to this headquarters.

b. A Port Construction Company should be assigned to the Group.

4. Intelligence: None

5. Logistics: None

6. Others: None

Joe M Palmer

JOE M PALMER
Colonel, CE
Commanding

8 Incl
1. Gp Organization Chart
2. Gp Sector Map
~~3. Blank Card Theory~~ Withdrawn, Hqs, DA
4. Std M8A1 Mat Turnaround
5. Std M8A1 Mat Runway
~~6. ECI - Use of Peneprime~~
~~7. Gp Commitment Study~~ Withdrawn, Hqs, DA
~~8. RMK Equipment Density~~

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AVBI-OPN (31 Oct 67) 1st Ind
SUBJECT: Operational Report - Lessons Learned (RCS-CSFOR-65) for Quarterly Period Ending 31 October 1967

DA, Headquarters, 20th Engineer Brigade, APO 96491, 24 Nov 67

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

1. The subject report submitted by the 34th Engineer Group has been reviewed by this Headquarters and is considered comprehensive and of value for documentation and review of the reporting unit's activities and experiences.

2. This Headquarters concurs with the submitted report, with the following comments:

SECTION 1

Ref Para 5a(3):

Requirements for crushed rock in the delta region have been estimated by MACV at 80,000 tons per month. This includes USAID, US Armed forces, Government of Vietnam and Republic of Vietnam Armed Forces requirements. Quarry rock sources in the Delta are very limited. No less than 75% or 60,000 tons of crushed rock per month must come from Vung Tau and vicinity quarries, then barged to twelve unloading sites in the Delta. To move this quantity of crushed rock, about 75 barges of an effective cargo capacity of 200 tons are required. The 34th Engineer Group presently has 25 barges.

Ref Para 4a(9)(g):

This is not recommended as a means of creating a provisional land clearing team. It consisted of 7 Rome Plows initially, and as maintenance problems arose and equipment was evacuated, there were no replacements. The maintenance and logistical support was provided by the 34th Engineer Group and was considerable for the number of plows being employed. The team is to be disbanded on 10 November and similar teams will not be formed. If similar requirements for small land clearing operations arise, either an element of the 27th or 86th Land Clearing Team will be employed or the entire Land Clearing Team will be utilized over a shorter period of time.

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SECTION 2, PART I

Para 2 Operations:

Electric Design Criteria:

The unprecedented growth of Army Aviation in Vietnam operations has created an unforeseen requirement for well lit, well grounded maintenance facilities. The problem has been partially resolved by the use of pre-engineered metal buildings with large floor space. However, commonly available electrical supplies proved to be insufficient to illuminate the floor space adequately. Also, aircraft and building grounding problems could not be solved using common electrical grounding supplies. Interior lighting requirements for more mundane structures have also increased beyond theater of operations planned sophistication. As a result, most electrical design is now done following the guidelines of the National Electrical Code. This has opened a gap between requirements and resources available. A hard and long range look at this situation is definitely in order.

Bridge Materials Forecast:

There is very little background information on which to base bridge materials forecasts. Many empirical methods are now being used to estimate long range forecasts. The method described by the 34th Engineer Group is as reliable as any other in developing useful data.

Bedding of Forms:

Sand seating of metal forms is a common practice which achieves excellent results. Since these forms are usually set in groves made in compacted surfaces, the use of a sand leveling cushion is highly recommended.

Pile Extraction:

Extraction of piles is very difficult with equipment available to Army troops. In the case of reference, the buoyancy force of the rising tide created sufficient upward thrust to dislodge the piles. This solution can be applied in waterways and swampy areas subjected to large tidal action. There is another related problem, that of driving piles to considerable depths using pile driving equipment available to Army troops, namely a light weight drop hammer of a low impact diesel driven hammer. A comprehensive study of pile driving requirements is needed to determine what additional pile driving capability should be provided to Port Construction units, Construction Battalions or equipment support companies.

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AVBI-OPH (31 Oct 67) 1st Ind 24 November 1967
SUBJECT: Operational Report - Lessons Learned (BCS-CSFOR-65) for Quarterly Period Ending 31 October 1967

Maintenance for Land Clearing Platoon:

This problem is under close observation by Brigade personnel. An MTOE has been submitted to improve the land clearing team capability to support its own operation. This headquarters concurs with observations made by the 34th Engineer Group.

Para 3 Logistics:

Shortage of Rock Drilling Equipment:

Track drills for the 94th Quarry Detachment have arrived and are on hand in the unit. These additional track drills have been issued to the unit and an Emergency MTOE has been submitted for additional track drills and air compressors.

Shortage of 10T Tractors and 60T Trailors:

Units have been notified of the scheduled arrival of 10T tractors in country. One shipment has arrived and issue is expected in the near future.

Training and Organization: Section 2 Part II

a. The 34th Engineer Group area of responsibility includes large expanses of waterlogged ground. In addition, the few roads that cross this area are constantly exposed to enemy interdiction, requiring exvessive travel preparations and much loss of time. The result is reduction in effective field supervision. To a large extent, this problem can be resolved by restoring to the 34th Engineer Group the Aviation Section authorized by TOE.

b. As the war in Vietnam swing into the Delta region, which includes the most developed areas of the country, the logistical problems increase. Nearly all logistical traffic is waterborne, requiring port facilities of various types to fully exploit the situation. There is one Port Construction Company in the 20th Engineer Brigade. This company is currently assigned to the 159th Engineer Group which operates in the Delta region around Saigon. This company is fully committed now and has a long list of future commitments. The 34th Engineer Group has a Port Construction Detachment which has already proved to be insufficient to handle commitments in their area of responsibility. Another Port Construction Company is fully justified in the light of Brigade's current and future commitments.

AVBI-OPN (31 Oct 67) 1st Ind 24 November 1967
SUBJECT: Operational Report - Lessons Learned (RCS-CSFOR-65) for Quarterly Period Ending 31 October 1967

FOR THE COMMANDER:

CECIL D. CLARK
Major, CE
Adjutant

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AVCC-P&O (1 Nov 67) 2d Ind
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1967

HEADQUARTERS, UNITED STATES ARMY ENGINEER COMMAND
VIETNAM (PROV), APO 96491 7 DEC 1967

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

The subject report, submitted by the 34th Engineer Group, has been reviewed by this headquarters and is considered adequate.

FOR THE COMMANDER:

PAUL A. LOOP
Colonel, CE
Chief of Staff

Info Cys Furn:
CG, 20th Engr Bde
CO, 34th Engr Gp

AVHGC-DST (1 Nov 67) 3d Ind
SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1967

HEADQUARTERS, UNITED STATES ARMY VIETNAM, APO 96375 27 JAN 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 October 1967 from Headquarters, 34th Engineer Group (Construction) (DXPA) as indorsed.

2. Pertinent comments follow:

a. Reference item concerning uniformed savings deposit program, page 23, paragraph 1. Members are encouraged to initiate Class S allotments for deposits to the Saving Deposit Program as part of overseas processing. The allotment document should be skeletonized in the United States except for member's unit to enable immediate completion and forwarding upon arrival in the overseas command, reference paragraph 12a, AR 612-35.

b. Reference item concerning U. S. savings bonds, page 23, paragraph 1. Cashing of U. S. savings bonds is currently authorized at military banking facilities in Vietnam. Finance offices are not authorized to cash U. S. savings bonds, reference paragraph 3-171, AR 37-103. Army post offices are governed by postal regulations which do not allow the cashing of U. S. savings bonds.

c. Reference item concerning publications, page 23, paragraph 1: Both Headquarters, MACV, and Headquarters, USARV, have publications sections which stock their respective directives and blank forms. All requisitions submitted by units down to company level are filled from available stocks. Distribution of new publications is made automatically to the appropriate level based upon the distribution formula concerned. Intermediate stockage points are undesirable since they would add to inventories and generate additional space, equipment, and personnel requirements.

d. Reference item concerning electric design criteria, page 23, paragraph 2 and 1st Indorsement, paragraph 2, section 2, part I: Concur in part. Action is being taken by this command to promulgate electrical wiring and lighting standards to all units. Designs should be completed in accordance

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AVHGC-DST (1 Nov 67) 27 JAN 1968
SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 October 1967

with Army electrical design manuals in lieu of the National Electrical Code. These manuals are specified as a part of the standards.

e. Reference item concerning cross reference list for RMK materials, page 27, paragraph 3: Concur. The following action has been taken by 1st Logistical Command:

(1) Preliminary run-offs of the cross reference have been completed.

(2) Final distribution will be made after a review is accomplished and accuracy is verified.

f. Reference item concerning aviation support for engineer units, page 30, paragraph 3a. Concur with requirement for aircraft for engineer units; however, current DA policy is that nondivisional Combat Support (CS) and Combat Service Support (CSS) units deploying to RVN will have their aviation sections at zero strength and no aviators or aircraft will be requested for these units. Therefore, CS and CSS units request aviation support from the 210th Combat Aviation Battalion, I and II FFORCEV, III MAF, or SA, IV Corps Tactical Zone based upon geographical location.

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

FOR THE COMMANDER:

JOHN V. GETCHELL
Captain, AGC
Assistant Adjutant General

Copy furnished:
HQ, 34th Engr Gp (Construction)
HQ, US Army Engr Comd

PROTECTIVE MARKINGS WILL BE CANCELLED 25 JANUARY 1969

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GPOP-DT(1 Nov 67) (U) 4th Ind
SUBJECT: Operational Report for the Quarterly Period Ending 31 October 1967 from HQ 34th Engr Gp (Const) (UIC: WDXPAA) (RCS CSFOR-65)

HQ, US ARMY, PACIFIC, APO San Francisco 96558 29 FEB 1968

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

1. This headquarters has evaluated subject report and forwarding indorsements and concurs in the report as indorsed.

2. Reference paragraph 2f, 3d Indorsement. Concur and fully support the requirement for the TO&E Aviation Section. It is not DA policy that CS and CSS units have their Aviation Sections reduced to zero strength; rather, it is DA policy that all TO&E aviation units be filled with personnel and equipment. The present zero strength of this and comparable aviation sections are imposed through necessity due to the present critical shortages of aircraft and aviation personnel and not because of a DA policy.

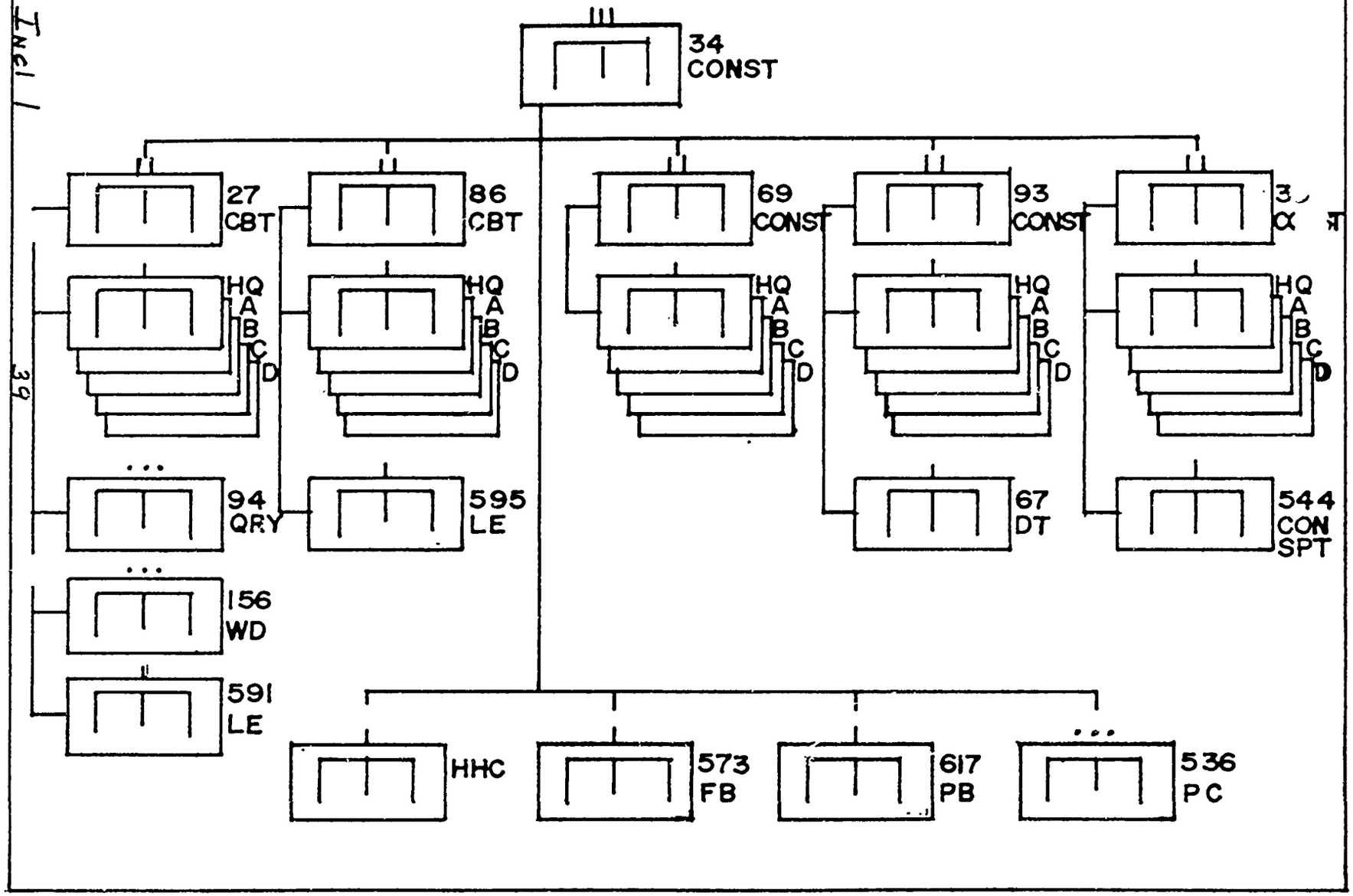
FOR THE COMMANDER IN CHIEF:

for K. F. Osbourn

K. F. OSBOURN
MAJ, AGC
Asst AG

Encl 1

ORGANIZATION



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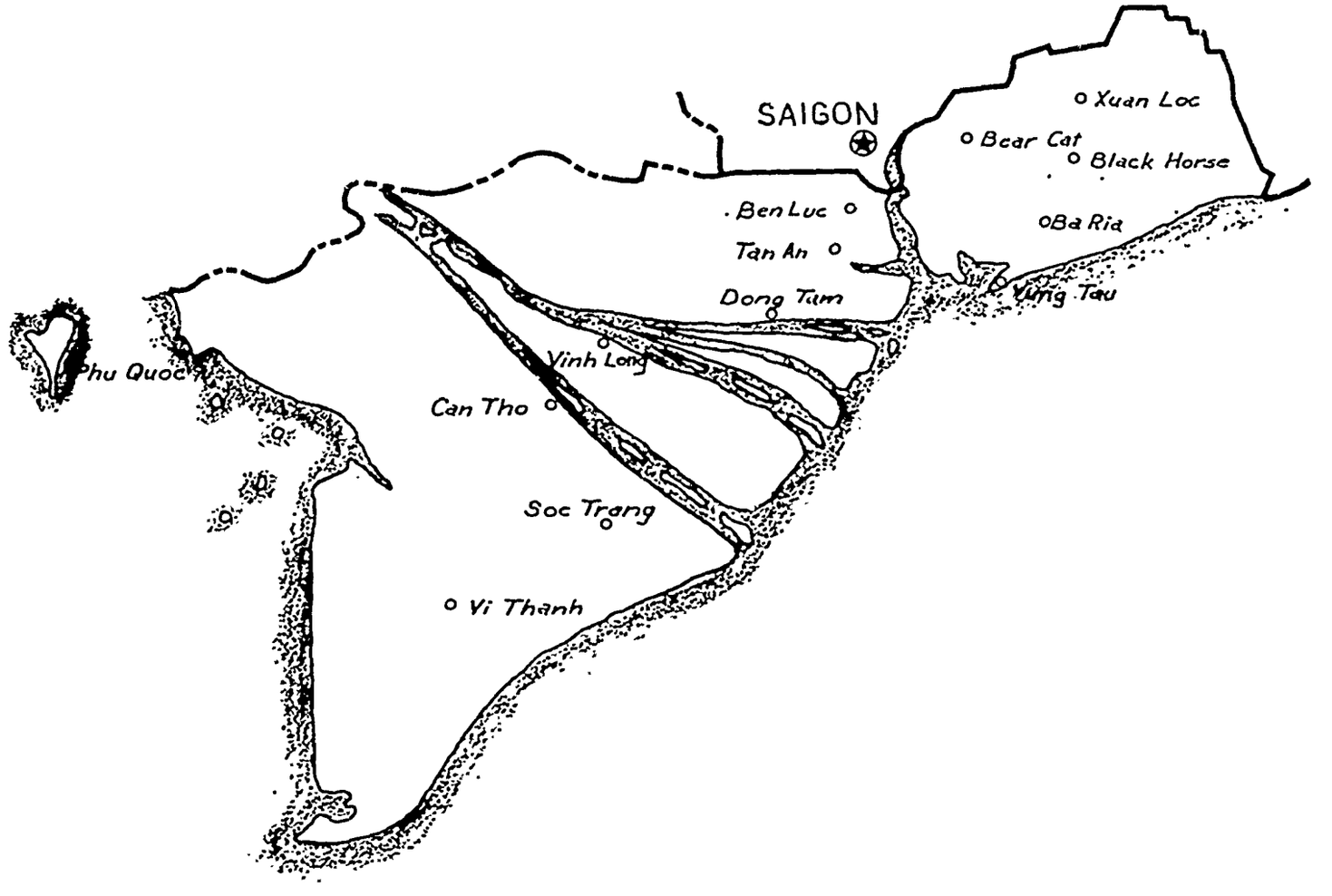

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UNCLASSIFIED
Security Classification

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DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author) OACSFOR, DA, Washington, D.C. 20310	2a. REPORT SECURITY CLASSIFICATION For Official Use Only 2b. GROUP FOUO Cancelled 25 Jan 1969

3. REPORT TITLE

Operational Report - Lessons Learned, Headquarters, 34th Engineer Group (Const)

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

Experiences of unit engaged in counterinsurgency operations, 1 Aug - 31 Oct 1967

5. AUTHOR(S) (First name, middle initial, last name)

CO, 34th Engineer Group (Const)

6. REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
1 November 1967	44	

8a. CONTRACT OR GRANT NO. b. PROJECT NO. N/A c. d.	9a. ORIGINATOR'S REPORT NUMBER(S) 674132 9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)

10. DISTRIBUTION STATEMENT

11. SUPPLEMENTARY NOTES N/A	12. SPONSORING MILITARY ACTIVITY OACSFOR, DA, Washington, D.C. 20310

13. ABSTRACT

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DD FORM 1 NOV 65 1473

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