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HEADQUARTERS
18TH ENGINEER BRIGADE
APO 96307

26 August 1966

AVBC-IO

SUBJECT: Operational Report on Lessons Learned for Period 1 May 1966 to 31 July 1966 (RCS: CSFOR-65)

THRU: Commanding General
United States Army, Vietnam
ATTN: AVC (History)
APO 96307

THRU: CINCUSARPAC
ATTN: GROF-MH
APO 96558

TO: Department of the Army
Assistant Chief of Staff for Forces Development
Washington, D.C. 20315

STATEMENT #2 UNCLASSIFIED

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SECTION I

SIGNIFICANT ORGANIZATIONAL ACTIVITIES

1. Administration.

(a) Key personnel assignment included:

<u>NAME</u>	<u>POSITION ASSIGNED TO</u>	<u>ARRIVED</u>
Colonel Richard Ducote	Chief of Staff, 18th Engr Bde	July 66
Colonel Ernest Braucher	CO, 937th Engr Gp	July 66
Colonel William Starnes	CO, 35th Engr Gp	May 66
Colonel David Clymer*	CO, 79th Engr Gp	July 66
Lt. Col George Bush*	CO, 45th Engr Gp	May 66
Lt. Col Richard McConnell	CO, 159th Engr Gp	July 66

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<u>NAME</u>	<u>POSITION ASSIGNED TO</u>	<u>ARRIVED</u>
Lt. Col Richard Chidlaw	Ch Opns, 18th Engr Bde	July 66
Maj Max Noah	Asst Ch Opns, 18th Engr Bde	July 66
Maj John Anderson	S-4, 18th Engr Bde	July 66
Maj Edward Fike	Engr, 18th Engr Bde.	July 66
Maj Guy Morse	Commo Officer, 18th Engr Bde	July 66
Maj Ernest Wentzel	Chaplain, 18th Engr Bde	July 66

* Officers arrived with units they command.

(b) Distinguished visitors to the Headquarters included: Honorable Robert A. Brooks, Assistant Secretary of the Army Int., 27 Jul 66.

(c) A study was completed, during this period, on reorganization of the Brigade Headquarters. Purpose was to design an adequate staff to cope with the increase in the number of units to be assigned to the Brigade during FY 1967. A MTO&E, which is designed to accomplish this purpose, was submitted to USARV on 19 July 1966. It proposes the increase of personnel strength in the Brigade Headquarters from 32 officers, 3 warrant officers and 107 enlisted to 62 officers, 13 warrant officers and 204 enlisted.

(d) A request was submitted to USARV for an authorized overstrength totaling 15% of assigned strength. The purpose of the overstrength is both to maintain the Brigade at 100% of authorized strength, present for duty, as well as to augment the construction effort, provide additional manpower to operate augmentation equipment and provide for heavy commitments for facilities and project site security. Specific MOSs desirable for filling this overstrength have been listed. Additionally, this command has stated if personnel in the MOSs specified cannot be made available, then basic non-engineer combat fillers would be acceptable. If the latter are furnished, they would be placed in Brigade units for training in engineer skills.

(e) This command has requested that records of personnel assigned throughout USARV be screened in an effort to locate personnel who are civil school trained engineers and who are not assigned to engineer or related duties. We have further requested that incoming personnel be screened to determine the same information. Purpose is to tap another possible resource for trained enlisted or officer engineers who may be used to fill out or augment various engineer staffs.

(f) The Brigade has been granted authority to approve individual awards and decorations to include up to the Bronze Star Medal. Responsibility for this program rests with the Administrative Officer in the S-1 section. A Brigade level awards review board has been established. The board reviews submissions of the Brigade units and makes recommendations to the Brigade Chief of Staff concerning disposition of each submission.

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(g) The S-1 section assumed responsibility from the Intelligence section for control of classified documents. Responsibility in the S-1 section rests with the Administrative Officer who has a staff consisting of one non-commissioned and one enlisted clerk to control approximately 500 secret documents. Security and processing of security clearances remains an Intelligence function.

(h) Commanders conferences were held on 21 May and 24 July 1966. Participants included the Brigade Commander (absent for the 24 July conference which was presided over by the DBC) and staff and the Group Commanders of the 35th, 45th, 79th (for 24 July conference only), 159th and 937th Groups. The objective of these conferences was to discuss matters of common interest as well as to present an updating briefing for Group Commanders.

(i) A program of monthly staff visits to each Group was initiated in May. The Deputy Brigade Commander and the Brigade S-1, Chief of Operations and S-4 visit a Group Headquarters each week, receive an updating briefing on Group activities and visit units subordinate to the Group. Primary purpose is to review the activities of subordinate headquarters. It serves the added purpose of improving communication and, therefore, mission accomplishment.

(j) This Headquarters has endeavored since November 1965 to procure a Command Safety Director. Active recruitment by USAFV was begun in late July. A Safety Director and an assistant, both civilians, are expected to be assigned in September 1966.

(k) Increased efforts, during the current reporting period, to acquire a signal corps officer as Brigade Communications Officer have achieved fruition with the assignment of Major Guy Morse, Signal Corps, to that position. Effort will now be directed toward securing an authorization for Signal Corps officers to fill Group and Battalion Communications Officers' positions.

(l) Bi-Weekly staff coordination meetings between the Brigade and Engineer USAFV staff began on 2 July. Purpose is to discuss past activities and coordinate plans for the future involving both staffs. They serve the additional purpose of bringing each staff up to date on matters of general interest that may not directly involve one or the other.

(m) An insignia, distinctive to the 18th Engineer Brigade, has been approved by the Institute of Heraldry and is expected to be in use during the second quarter of FY 1967.

(n) Authorization has been received for wear of subdued insignia at the discretion of the Brigade Commander. Policy will be that combat units and other units engaged in support of tactical units as well as units operating in proximity of the enemy will wear subdued insignia. Steps toward procurement are underway.

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2. Personnel,

(a) A personnel warrant officer has been assigned to the personnel office to improve the section's capability in the area of management of personnel in this rapidly expanding organization.

(b) A Department of Army plan to ease rotational humps in Brigade units was implemented during this period. It entailed curtailing and extending personnel to one month before or to one month after the anniversary month of the units in question and delivering personnel from CONUS to replace rotating personnel at the time of their adjusted rotation dates. The program was not completely successful largely due to the limited planning time available. The latter factor was further complicated by a lack of adequate communications means between this Headquarters and subordinate commands. While instructions were reduced to writing, much of the supervision and followup had to be accomplished by telephone and hence were not completely effective.

(c) On 1 July 1966, this Headquarters assumed responsibility for assigning rotating personnel to their out of country flights.

(d) This Headquarters has in the past consolidated enlisted replacement requisitions and eliminated the unit designations. All personnel are shipped from CONUS to this Headquarters where they are further assigned based on needs of the command. This system has proven ineffective and does in fact thwart the Department of the Army replacement system. Requisitions submitted beginning July 1966 will no longer eliminate the designation of the unit requiring the personnel and this command will be operating under the normal system commencing December 1966

3. Information Program,

(a) During the reporting period, a new information officer was assigned to the Brigade Headquarters. Enlisted public information personnel were assigned to four of the five Groups in the Brigade. The Brigade Information Officer was assigned staff supervision over Operational Reports of Lessons Learned.

(b) The Brigade newspaper, the Castle Courier, which was initiated during the previous quarter, has been expanded to a six page mimeograph edition with a circulation of 4000.

4. Operations,

(a) During the reporting period the Brigade has expanded from three to five Engineer Groups. The 45th Engineer Group (Const), located at Dong Ba Thin, arrived from Fort Bragg, North Carolina, and became operational on 10 June 1966. The 79th Engineer Group (Const), located at Long Binh, arrived from Fort Lewis, Washington and became operational on 20 July 1966. The increase in number of Groups greatly assisted in the command and control of the missions assigned and materially contributed to the ability of the Brigade to meet instruction and combat support requirements (See Incl 1 for Brigade Organization).

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(b) The 169th Engineer Battalion (Const) located at Long Binh and attached to the 159th Engineer Group (Const) joined the Brigade in May from Okinawa. The 577th Engineer Battalion (Const), located at Dong Ba Thin, attached to the 45th Engineer Group (Const), arrived in July from Fort Benning, Georgia. These assignments increased the total number of battalions assigned to the Brigade to fourteen (7 construction and 7 combat battalions).

(c) Two additional Well Drilling Detachments, the 156th and 588th were assigned during this quarter increasing the total number to five. The 156th is located in Di An and the 588th is located in Cam Ranh Bay. The 171st Well Drilling Detachment was relocated to Nha Trang during this period. Army well drilling team operations during the past quarter have not proceeded as well as was hoped due to poor water production of drill holes and lack of materials such as casings, screens, pumps and tanks.

(d) The Brigade is presently attempting to augment some Combat Battalions with air-mobile, helicopter-transportable equipment. An appropriate assignment of this equipment will be made within each Field Force area of responsibility with a mission of providing immediate support to the tactical forces in hasty helicopter and C-130 airfield construction. A request for an augmentation of equipment has been made to Department of Army and a modification of TOE is being prepared at the present time.

(e) During the reporting period the Brigade completed 10 MCA, 9 AFV and 1 M&P construction projects.

(f) In order to provide for easier planning and provision of materials standard policy designs were consolidated.

(g) A number of tests and studies started on various items. Test grass plots were established at Cam Ranh Bay in June. Tests of POL effects on T-17 membrane were conducted throughout the period. A study of designs of prestressed concrete beams for bridging was started. The first of a series of airfield runways was initiated for the joint airfield evaluation team. To date six (6) airfields have been surveyed.

(h) The survey capabilities of the Brigade were increased by the addition of 18 military surveyors TDY from CONUS and Korea.

(i) A reply to our March 1966 request for modification to the Brigade Headquarters. TO&E has not been received. This MTO&E would improve the Headquarters capability in the area of communications and air transportation. These two areas are becoming increasingly problematic. Existing capability does not permit adequate communication with units which are becoming more and more dispersed as well as those which are operating in isolated areas. Further, existing TO&E does not provide aircraft to enable the command and staff of the Headquarters to visit field locations frequently for control purposes.

(j) During this reporting period, a request for reorganization of the Brigade units to the newest family of TO's was made. Headquarters, USARPAC, has again denied the issuance of a General Order for the reorganization of Brigade

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units to the E series. They have recommended that the Brigade modify each TOE as a means of implementing the E series.

(k) During this period, the Brigade Headquarters Staff has increased in size due to an increase in responsibility. The Combat Support Section was created on 18 April 1966 and has increased in size and scope during the reporting period. Initially one officer comprised the section. By the end of July, the section was expanded to include 5 officers and an E-6 Recon Sergeant to cover reconnaissance, intelligence and security functions of the Headquarters. A very important function of this section has been the force development of the non-divisional engineers in-country.

(l) In addition to coordinating and monitoring all combat support activities, the Combat Support Section has undertaken to coordinate the reconnaissance function and maintain current information on tactical bridging and other materials used in combat support. The section's Doctrine and Training Officer handles collection and dissemination of new combat support doctrines, techniques and information on new equipment as well as training items and lessons learned.

(m) The organization of the Construction Branch of the Operations Section has decidedly improved the section's ability to direct and assist the military construction program. At the present, the section has been further expanded to include one more Construction Inspection Officer and two Non-Commissioned Officers plus another officer and NCO in the Statistical branch and two officers as construction directive writers and coordinators. This increase has been required by the number of units assigned and amount of troop construction performed.

(n) The 18th Engineer Brigade is looking into methods of clearing vast areas of jungle growth and rain forests. The Rome Flow, a special cutting blade with cutting edge and stinger, has been purchased for trial use in RVN. Initial indications are that it will materially assist in jungle clearing operations.

5. TRAINING:

(a) The requirement for trained quarry operators and quarry trained Non-Commissioned Officers has tremendously increased. The entire construction program requires substantial quantities of crushed aggregate for all phases of construction.

(b) With ten quarries in operation and three additional quarries proposed to be established in the very near future, trained personnel are required to operate the TOE quarry equipment and the larger commercial equipment augmentation now available and requested. A civilian advisor on temporary duty to the Brigade from OCE has materially assisted our units in the operation and maintenance of the 225 TPH Jaw Crusher and crawler equipment.

6. CIVIC AFFAIRS

The military mission in Vietnam is deeply involved with civic activities and winning the civilian populace' trust and acceptance. During the past year

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these activities were coordinated by the Brigade Utilities Officer as an additional duty. With the increased number of troops assigned and interest in civic affairs, the coordination of materials and supplies for civic action projects has become a full time duty. The effort expended has materially assisted in winning the respect and trust of the local population within the engineer units areas of operations.

7. LOGISTICS

(a) During the past quarter, this headquarters received and is complying with letter AVLC-EN headquarters, 1st Logistical Command, dated 23 June 66, SUBJECT: Delegation of Authority to Initiate PR&C's for Engineer Construction Materials. This letter establishes the procedures for, and places the responsibility on, each supply support activity to initiate PR&C's for Engineer Construction Materials. The procedures to be employed are as follows:

(1) Each unit requiring construction supplies is to submit DA Form 2765-1 to their respective supply support agency, indicate the RDD project number and indicate that, if the supplies requested cannot be obtained through normal supply channels by the RDD, procurement action be initiated.

(2) Common hardware type items, i.e., stove bolts, hasps, hinges, and shower heads, are Class II & IV supply items and are not to be requested from Class IV supply agencies, but are to be requested through the Class II & IV supply channels.

(3) Paragraph 4 of above cited letter outlines the following items as authorized for purchase in Vietnam:

- 1 Sand
- 2 Gravel
- 3 Crushed rock
- 4 Asphalt for road surfacing
- 5 Laterite

(4) Paragraph 5, of above cited letter reveals that cement, iron and lumber are not authorized for purchase in Vietnam. However, purchase requests are to be forwarded to the U.S. Army Procurement Agency, Japan, for these items.

(b) During the past quarter approval was received from USARV, G-4, authorizing construction units safety helmets for those individuals operating heavy equipment, personnel working in and around quarry sites, and on vertical construction projects. 5,000 safety helmets have been requisitioned by 1st Logistical Command from the U.S. Army Depot, Okinawa. These safety helmets are non-standard, and are to be purchased from E.D. Bullard Co., Sausalito, California.

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(c) 50,000 18th Engineer Brigade Shoulder Insignias were received from the U.S. Procurement Agency, Korea, and distributed to all 18th Engineer Brigade units. 50,000 are on requisition in CONUS, with 20,000 to be received during the months of September or October, and the 30,000 at a later date, probably December and January. All 18th Engineer Brigade units have been instructed to requisition these shoulder insignias from their support activity.

(d) During this quarter, Confidential message, AVSFWD236212, received from 5th Special Forces, requested that equipment be requisitioned for them by S-4, 18th Engineer Brigade. The requirement to support the 5th Special Forces is outlined in message, COMUSMACV 35715 (C). Of the 33 line items of Engineer, Ordnance and Quartermaster items requisitioned, only 12 line items have been received. AFL follow up cards have been submitted to the Supply support Agency to determine the status of items not received. Message AVBC-D 0306, this headquarters, sent to USAMEC, requesting status of:

- | | |
|--|--------|
| (1) Pneumatic tool & compressor outfit | 2 each |
| (2) Chain saw, gas driven, 18" | 2 each |
| (3) Grader, road | 2 each |
| (4) Roller, towed, sheepfoot | 2 each |

(e) Many requests for equipment in excess of authorized allowances were submitted by 18th Engineer Brigade units during the quarter. These requests included the following items:

- (1) Floodlight sets
- (2) Generator sets, 100, 45, 10 & 5 KW
- (3) Level, surveying, dumpy
- (4) Rod level, Philadelphia
- (5) Compressors, 250 cfm
- (6) Loader, scoop
- (7) Fork lifts, rough terrain, 10,000 lbs
- (8) Tractors, HD16M
- (9) Mixers, concrete, 16S (6 ea per cngr combat bn)
- (10) Radios, AN/VRC10
- (11) Tents, gen purpose & maintenance

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(12) Lubricating & service units

(13) Spreader, concrete

(14) Pentrometers

(15) Weapons

Approval has been received from USAARV, G-4, and these items have been placed on the supply support activity for supply action.

(f) Received 275 shotguns, 12 gauge, for Brigade units from Saigon Support Command. The issue of these weapons to the 18th Engineer Brigade resulted from message AVD-MD 05621, Hqs. USAARV, dtd 051148Z Mar 66, Subject: Shotguns, which requested that units submit their requirements for the number of shotguns, 12 gauge, required, and number of shotguns, 12 gauge, on hand.

(g) Many Red Ball Express repair parts were shipped to units for repair of deadline equipment.

SECTION II

COMMANDER'S OBSERVATIONS AND RECOMMENDATIONS

PART I, OBSERVATIONS (LESSONS LEARNED)

1. PERSONNEL:

PERSONNEL ADMINISTRATIVE SPECIALISTS

Item: Training of Personnel Administrative Specialists.

Discussion: Many personnel specialists who have never served outside of CONUS lack sufficient exposure to such overseas administrative requirements as AOR's and replacement requisitioning techniques.

Observations: Personnel specialists assigned to deploying units should receive a block of instruction on these subjects prior to departing CONUS. Individual replacements should be advised of additional job requirements in an overseas area and be urged to review and study these subject areas through correspondence or a self-study program. An OJT program currently in effect has succeeded in minimizing the impact of the situation.

ROTATIONAL HUMPS

Item: Massive personnel losses which occur in each unit on the anniversary of its arrival in country create undue turbulence in the unit.

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Discussion: a. Massive rotation particularly among supervisory personnel destroys continuity of action in a unit.

b. Movement of several hundred rotatees and replacements in a battalion size unit creates an administrative and transportation burden that such units are not staffed to manage;

Observations: a. Continuity of action can be maintained by exchange of key personnel between Group units.

b. Other turbulence can also be reduced by exchange of lower grade enlisted personnel between Group units.

UTILIZATION OF NON-ENGINEER PERSONNEL

Item: Assignment of non-engineer officers to certain positions

Discussion: Certain positions within the Brigade headquarters have been designated as appropriate for other than engineer officers. They include:

S-1	Adjutant General Corps
Administrative Officer	Adjutant General Corps
Personnel Officer	Adjutant General Corps
Communications Officer	Signal Corps
Public Information Officer	Branch immaterial
Safety Officer	Civilian or branch immaterial

Similar positions at Group and Battalion level may also be staffed as above with the exception of the Safety Officer's position. A commissioned officer is best suited to serve in this capacity at battalion level.

Observation: Considerable economy of trained and experienced engineer talent can be realized if positions listed in 4b(1) and 4b(2) above are staffed by non-engineer officers whose experience and background are more closely associated with the duties of the positions specified.

SAVINGS PROGRAM

Item: Impact of massive input of replacements on Savings Program.

Discussion: Assignment of approximately 1000 replacements per month for the past three months has resulted in a low rate of participation in the Savings Program.

Observation: Personnel who arrive in the Brigade and who are not participants in the Savings Program should be afforded the opportunity during their in-processing to join the program. Significant improvement has been realized by this command using this technique.

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2. OPERATIONS.

UNIT DEPLOYMENTS

Item: Deployment of units in RVN.

Discussion: The current large influx of combat arms units and the corresponding build-up of supporting engineer units requires constant knowledge of tactical deployment and operational plans in order to properly advise and make sound recommendations to the commander on disposition of in-country future deployment of in-coming engineer units. The task is complicated by late decisions as to final deployment areas of tactical units.

Observations: Though time-consuming, almost daily contact must be maintained with project officers at USARV G-3 and periodic contact with FFV Engineer sections. Engineer unit deployment plans and recommendations must be under constant review and revision. This function has proved to consume nearly 50% of the combat support sections effort.

AIR-MOBILE ENGINEER UNITS

Item: Engineer Combat Battalions equipped with air-mobile engineer equipment.

Discussion: There is an increased requirement for equipping non-divisional engineer battalions in each field force with air-mobile helicopter transportable engineer construction equipment. This is required in order to support the tactical units in isolated jungle operations with hasty C-130 airfields and helipads.

Observations: Action is being taken to equip both divisional and non-divisional engineer units with airmobile equipment in the near future.

COMBAT SUPPORT

Item: Requesting of Combat Support.

Discussion: Nearly all requirements for non-divisional engineer combat support are generated by the FFV commanders through their Engineer Officers. Under current procedures, the FFV Engineer contacts the appropriate Group Commander directly, indicating that he has a bonafide combat support mission which is beyond the capability of organic engineers and requesting the needed support. The Group commander provides the combat support on the highest priority. When combat support conflicts with other high priority projects, questions of priority are resolved at Brigade headquarters. Brigade Headquarters is advised of such actions and assists where required.

Observations: The above system has worked well in that the FFV Engineers have a feeling for the enormous construction load on Brigade units and request support only as a last resort. As a first priority mission, combat support receives maximum effort from Group Commanders.

DUST CONTROL

Item: Measures to control dust.

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Discussion: No satisfactory permanent solution to the dust problem has yet been found other than the construction of a permanent surface such as concrete or asphalt pavement. Peneprime and/or peneprime mixed with diesel gives good control on unused and peripheral areas. However, peneprime, water, boat oil, etc. offer only very temporary control on areas subject to traffic.

Observation: Only temporary control of dust can be gained with present control measures, short of a paved surface.

WATER SEALS

Item: Fuel resistant water seal for parking aprons.

Discussion: Considerable spillage and boil-out of jet fuel has been experienced on some parking aprons. In one case at Phan Rang, the water seal, Griffolyn membrane, deteriorated, allowing water to pass, which caused the entire base to fail. Deterioration of both the membrane and the adhesive was caused by JP-4. Asphalt sealers cannot be used because they are soluble in petroleum distillates.

Observation: Water seals now being used for aircraft parking and maintenance areas are not resistant to JP-4. Concrete pads are being constructed for areas used for washing aircraft engines in solvents.

CONCRETE FIRING PADS

Item: Firing pads for SP Artillery

Discussion: Concrete pads were constructed for 8" and 175 mm SP Artillery. However, concrete proved to be unsuccessful because it did not absorb the impact from recoil and thereby caused excessive damage to the chassis of the vehicle.

Observation: Timber pads are being constructed on a trial basis and results will be evaluated with the aim of determining a standard design.

M-8 and M-6 PSP

Item: Failure of M-8 and M-6 PSP

Discussion: M-8 and M-6 PSP has been failing at many airfields due to sustained C-130 traffic in such volume as to exceed the design life of the matting. This problem has been particularly acute at Lai Khe, An Khe, and Vung Tau. The PSP breaks in the bottoms of the grooves in the planks and along the connecting lugs. Welding is only a temporary remedy and as the number of breaks increase, continued welding becomes too infeasible and uneconomical.

Observation: M-8 and M-6 PSP rapidly reaches and exceeds its design life under the large volume C-130 traffic in RVN. PSP should be used only for taxiways and parking areas for those airfields for which high volume C-130 traffic is envisioned (High volume = 1000 cycles). Permanent concrete or asphalt pavement runways should be constructed where high volume C-130 traffic is planned. If effort or material

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for permanent runways is lacking, AM-2 or MXL9 heavy-duty landing mat should be used for runways built to handle high volume C-130 traffic. M8AL matting should be used only for runways planned for low volume C-130 traffic.

T-17 MEMBRANE

Item: T-17 Membrane and adhesive.

Discussion: Several sets of T-17 membrane were received without adhesive. The resin provided for applying non-skid surface was successfully used as a substitute for the adhesive. Tests run by the 62nd Engineer Battalion showed that the T-17 adhesive is soluble in motor and jet fuel. Tests run by the 18th Engineer Brigade showed that T-17 membrane deteriorates when subjected to prolonged exposure to motor and jet fuel.

Observation: The resin used for applying anti-skid surface to T-17 can be used as a substitute for adhesive. T-17 and T-17 adhesive are not resistant to fuel.

LST R/MPs

Item: Inadequacy of LST Ramps

Discussion: A problem has been encountered with the concrete, inclined-slab LST ramp. An LST that is firmly grounded on a ramp at high tide will often remain in place as the tide recedes. As a result, a heavy concentrated load is applied to the ramp slab. In one case this load was sufficient to break up a 6" reinforced concrete slab and tear out a portion of the subgrade.

Observation: The inclined slab ramp appears to be the least desirable type of ramp. Since the ship must rest for a large portion of the time on the concrete slab, considerable wear on both the steel hull of the ships and the concrete deck can be expected. Redesign of the slope from 3:1 to 1.75:1 reduced the ramp length and permitted the LST to remain floating at all times.

SOIL STABILIZATION

Item: Sand-cement stabilization of road bases.

Discussion: Sand-cement stabilization has been successfully tried at Cam Ranh Bay in construction of a stabilized base for roads. A workable mixture is 1 sack of cement per 12 square feet rototilled to 10 inches depth. The mixture is 10% cement. The area is spread with cement in the proper density, tilled dry and then tilled wet to moisture content 8 - 10%. The area is compacted and sealed with asphalt. The result is a sandstone like block 8 - 10 inches thick.

Observation: Sand-cement stabilization is proving successful at Cam Ranh Bay. Soil cement stabilization will be continued at Cam Ranh Bay with variations in methods to include variation of cement content, water content and curing time. It will be tried in other areas where there is a shortage or complete lack of base course materials.

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3. TRAINING AND ORGANIZATION

QUARRY OPERATIONS

Item: Training in Quarry Operations.

Discussion: The type of operations in RVN have required the establishment and operation of large scale quarries. The amount of trained personnel in quarry development and operations is minimal due to the limited experience in this field and limited training available in our engineer schools. On-the-job training has by necessity been established by all units operating quarries in RVN. This has contributed to the low production of crushed aggregate.

Observation: A course of instruction should be established at the engineer training centers in quarry development, operation, blasting, and equipment use and maintenance. This would greatly improve production capabilities and equipment maintenance posture.

4. INTELLIGENCE

ROUTE RECONNAISSANCE

Item: Route reconnaissance reports.

Discussion: This command has found it necessary to emphasize the necessity for completeness of route reconnaissance reports. The procedures outlined in FM 5-36, when followed closely for planning, executing and reporting route reconnaissance, enable reconnaissance personnel to obtain all necessary information during the course of a mission. The fact that a route will pass a certain weight class of vehicle is only one basic reason for a route recon. The following information is normally derived from recon reports, and indicates the importance of completeness:

- a. Engineer work estimates for planning, upgrading and repair operations.
- b. Bills of materials for replacement and repair of bridges, roads, fords and ferries.
- c. Current military load classification.

Observation: Engineer Commanders should establish standards of reconnaissance reporting in accordance with FM 5-36. The opportunity to obtain information on routes not secured by friendly forces does not occur frequently. Engineers must take full advantage of these opportunities to gather the maximum amount of information to preclude additional reconnaissance in hostile areas.

5. LOGISTICS.

EXCESS EQUIPMENT

Item: Construction Equipment Excess to TOE Authorization.

Discussion: In many instances units must be augmented with construction equipment to complete their missions because of the massive horizontal construction effort. Presently this excess equipment is justified and drawn as excess to TOE authorization. This means that units increase equipment for a specific mission and retain it as authorized after the requirement no longer exists.

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Observation: A more efficient manner of controlling equipment to meet specific mission requirements would be an equipment pool at depot level.

REPAIR PARTS

Item: Basic Load of Repair Parts.

Discussion: By regulation the basic load of repair parts is a 15 day supply in the unit. Units deploying to Vietnam are authorized to bring a 30 day level of repair parts. For low density items of equipment the 30 day level of repair parts is often depleted before depots can respond.

Observation: Units deploying to RVN should be authorized to stock a 90 day level of repair parts for low density items of equipment.

WABTOC PACKAGE

Item: WABTOC Package Authorization.

Discussion: A WABTOC package has been authorized, by DA Message 755880, to units deploying to RVN. Units initially deploying after this authorization were either not aware of this authorization or received notification too late to submit requisitions in sufficient time for the supply system to react. The result during the current build-up has been to strain already limited in-theater supplies.

Observation: Maximum publicity should be given to the authority for the WABTOC package so units can react the moment that alert orders are received and prior to official notification of the authorization.

CONSTRUCTION SUPPLIES

Item: Construction Supplies Manifested to RVN.

Discussion: Current information shown on ship manifests are too general in nature to determine if the ship actually contains critically needed construction supplies. An example would be a manifest showing lumber which is either treated or untreated. A critical shortage may exist for two inch material and the ship may be called into a port to meet this need only to have heavy timbers on board that will not meet the need. This results in establishing a priority for an item that might be in excess supply.

Observation: More detailed information on ship manifest would allow more judicious unloading priorities to be established.

6. OTHER

FIREARMS SAFETY

Item: Accidental discharge of firearms.

Discussion: The Brigade has experienced several serious accidents involving discharge of firearms. In each instance, accidents resulted from improper handling

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of weapons and ammunition.

Observation: The level of training to handle weapons and ammunition is not completely adequate. Troops are not developing the necessary healthy respect for live ammunition on their person and in their weapons. An intensive training course is required.

COMMAND GUIDANCE

Item: Insuring dissemination of command guidance to newly assigned units.

Discussion: Command guidance letters are published continually. Units arriving in theater do not have the benefit of receiving all command guidance published prior to their arrival.

Observations: A system is employed whereby all command guidance letters are published on stencils. Packets of copies (sufficient for "A" distribution) of such letters are held especially for incoming units. These packets are continually updated. Upon advice that a new unit is to be assigned to the Brigade, the packet is dispatched to the unit.

OPERATIONAL EXPERIENCE

Item: Dissemination of information pertaining to in-country operational experience.

Discussion: Considerable unique experience is being gained by in-country engineer units. Information is worthy of dissemination to incoming engineer units by the most expeditious means.

Observation: Lessons learned are reproduced in sufficient quantities to provide each new unit a complete set. Copies are furnished by Brigade Headquarters upon notification that a unit is to join the Brigade from CONUS.

PART II

RECOMMENDATIONS

1. OPERATIONS:

a. Investigations should be continued in an effort to find a method of dust control with more permanent effects.

b. To find an effective JP-4 resistant water sealer for T-17 membrane, it is recommended that:

(1) R & D agencies investigate heat resistant tars which will not become tacky in the climate of RVN.

(2) R & D agencies investigate the feasibility of using tar-rubber blends for this purpose.

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c. To protect T-17 membrane from fuel spillage, R & D agencies should attempt to develop an adhesive and/or film or paint which will protect T-17 from fuel spillage.

2. TRAINING AND ORGANIZATION

Safety training on handling of weapons must be improved. This is especially required for personnel who have not been recently exposed to range and weapons safety procedures of basic training units. This should be an essential part of training for units scheduled to come in-country.

3. INTELLIGENCE - None

4. LOGISTICS - None

5. OTHER - None



R. R. PLOGER
Brigadier General, USA
Commanding

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937th Engr Gp(Cbt)
19th Engr Bn(Cbt)
70th Engr Bn(Cbt)
84th Engr Bn(Const)
299th Engr Bn(Cbt)
630th Engr Co(LE)
509th Engr Co(PB)
511th Engr Co(PB)

45th Engr Gp(Const)
20th Engr Bn(Cbt)
39th Engr Bn(Cbt)
572nd Engr Co(LE)
584th Engr Co(LE)
513th Engr Co(DT)
553rd Engr Co(FB)

35th Engr Gp(Const)
62nd Engr Bn(Const)
87th Engr Bn(Const)
864th Engr Bn(Const)
102nd Engr Co(CS)
497th Engr Co(PC)
171st Engr Det(GE)
588th Engr Det(GE)

79th Engr Gp(Const)
168th Engr Bn(Cbt)
588th Engr Bn(Cbt)
362nd Engr Co(LE)
557th Engr Co(LE)
38th Engr Det(GE)
156th Engr Det(GE)
917th Engr Det(GE)

159th Engr Gp(Const)
46th Engr Bn(Const)
169th Engr Bn(Const)
103rd Engr Co(CS)
617th Engr Co(PB)
536th Engr Plt(PC)

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SUBJECT: Operational Report-Lessons Learned for the Period Ending
31 July 1966 (RCS CSFOR-65)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96307 20 NOV '66

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

1. This headquarters has reviewed the Operational Report-Lessons Learned from the 18th Engineer Brigade and adds the following comments.

2. Reference Section I:

a. Paragraph 1(c), Page 2: The Modified Table of Organization and Equipment (MTOE) was withdrawn by the 18th Engineer Brigade on 19 September 1966 for reconsideration.

b. Paragraph 1(d), Page 2: This headquarters concurs in the requirement for additional personnel. Due to a critical shortage of engineer MOS personnel, approximately 1000 non-engineer fillers have been provided for (400 in August 1966, 600 by 15 December 1966). Requisitioning authority has been requested for an additional 221 personnel in critical Military Occupation Speciality Codes (MOSC). This provides for a total of 1221 personnel and will help eliminate the shortage.

c. Paragraph 1(e), Page 2: Nonconcur. The Office of Personnel Directorate, DA has already screened officer records for those with an engineering background. Branches were required to place lieutenants and captains on a 2 year detail to the Corps of Engineers to fill the engineer shortage. Therefore, it is not considered in the best interest of the branches concerned to divert officers with engineering degrees on a wholesale basis from positions which require a branch material fill. Concur that this headquarters continues to divert selectively personnel with engineering degrees to authorized positions in the 18th Engineer Brigade.

d. Paragraph 1(j), Page 3: Recruitment actions are continuing by this headquarters to obtain a US Civilian Safety Officer and Assistant.

e. Paragraph 4(c), Page 5: Random quantities of pipe, casing, pumps, screens and tanks have been requisitioned for the wells and are now being received in depots.

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f. Paragraph 4(i), Page 5: MTOE 5-30IR has been forwarded from USARPAC to DA.

3. Reference Section II, Part I:

a. Paragraph 1: Rotational Humps, Page 9: This headquarters encourages all subordinate commands to utilize the infusion program to reduce the effect of rotation humps. A USARV regulation is being staffed which places greater emphasis on all methods of reducing humps including advance requisitioning, more voluntary tour extensions and the extension and curtailment of tours a maximum of 30 days before or after Date of Return from Overseas (DEROS).

b. Paragraph 1: Utilization of Non-Engineer Personnel, Page 10:

(1) Nonconcur. The Brigade S1 position should be staffed with an engineer officer. The S1 should understand the functions and organization of the unit. This understanding is best gained through experience in the combat branch most closely related to the unit.

(2) The Brigade Administrative Officer and Personnel Officer positions could be staffed with Adjutant General Corps officers. This requires submission of an MTOE under the provisions of AR 310-31 in order to requisition AGC officers.

(3) The staff positions of group and battalion level excluding the S3 should be branch immaterial positions. This will allow greater flexibility in assignment of officers whose experience and training qualify them for specified staff positions.

c. Paragraph 2, Page 12: Failure of M-8 and M-6 PSP (Pierced Steel Planking): Concur. M8A1 should only be used for low cycle (less than 1000 sorties) airfields. This headquarters has requested 11.9 million square feet of MK-10 heavy duty landing mat.

d. Paragraph 5, Page 14: Equipment drawn on USARV Form 47 can be retained for up to 180 days at which time it will be turned in to the issuing agency. Equipment drawn on an approved MTOE may be retained and pooled as desired.

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SUBJECT: Operational Report-Lessons Learned for the Period Ending
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e. Paragraph 5: Page 15, Repair Parts: Nonconcur. More parts should be authorized units deploying but increase of basic load in days does not solve the problem. It is recommended that a wider range of parts be authorized, to include low demand items, and that these parts be carried with the unit.

f. Paragraph 5: Page 15, Construction Supplies: The revised MILSTAMP (Military Standard Transportation and Movement Procedures), DOD Regulation 4500.32-R, now provides for better identification of lumber shipments. It provides for a listing of treated and untreated lumber and within these categories by softwood and hardwood. Lumber is still manifested by net broad feet.

g. Paragraph 6: Page 15, Firearms Safety: USARV Regulation 350-1 and USARV Training Circular Number 3 cover safety training for personnel in-country. This correspondence is also sent to units scheduled to deploy to Vietnam.

4. Section II, Part II:

a. Paragraph 1a, Page 16: It is recommended that research and development efforts continue to find a method of dust control with more permanent effects than peneprime, water and boat oil.

b. Paragraph 1b, Page 16: It is recommended that in order to find an effective JP-4 resistant water sealer for T-17 membrane that research and development agencies investigate:

(1) Heat resistant tars which will not become tacky in the climate in Vietnam.

(2) The feasibility of using tar-rubber blends for this purpose.

c. Paragraph 1c, Page 17: It is recommended that research and development agencies develop an adhesive and/or film or paint which will protect T-17 membrane from fuel spillage.

FOR THE COMMANDER:

James R. Perry
JAMES R. PERRY
Major, AGC
Asst Adjutant General

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