

UNCLASSIFIED

AD NUMBER

AD879564

LIMITATION CHANGES

TO:

Approved for public release; distribution is unlimited.

FROM:

Distribution authorized to U.S. Gov't. agencies and their contractors;  
Administrative/Operational Use; 31 JUL 1970.  
Other requests shall be referred to Assistant Chief of Staff For Force Development (Army),  
Attn: FOR OT UT, Washington, DC 20310. This document contains export-controlled technical data.

AUTHORITY

OAG D/A ltr, 29 Apr 1980

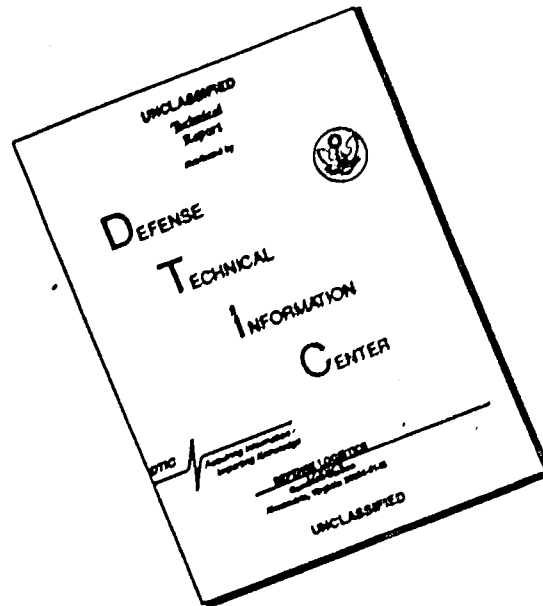
THIS PAGE IS UNCLASSIFIED

**THIS REPORT HAS BEEN DELIMITED  
AND CLEARED FOR PUBLIC RELEASE  
UNDER DOD DIRECTIVE 5200.20 AND  
NO RESTRICTIONS ARE IMPOSED UPON  
ITS USE AND DISCLOSURE.**

**DISTRIBUTION STATEMENT A**

**APPROVED FOR PUBLIC RELEASE,  
DISTRIBUTION UNLIMITED.**

# DISCLAIMER NOTICE



THIS DOCUMENT IS BEST QUALITY AVAILABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.



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

2

IN REPLY REFER TO

AGDA (M) (13 Jan 71) FOR OT UT 703088

18 January 1971

SUBJECT: Operational Report - Lessons Learned, Headquarters, 84th  
Engineer Battalion, Period Ending 31 July 1970

AD879564

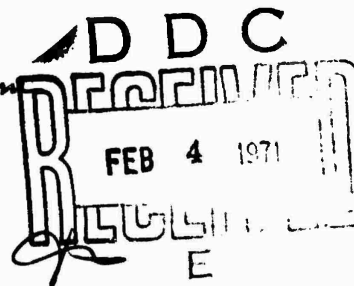
SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation in accordance with paragraph 4b, AR 525-15. Information of actions initiated as a result of subject report should be forwarded to ACSFOR OT UT within 90 days of receipt of covering letter.
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



1 Incl  
as

DISTRIBUTION:

Commanding Generals

US Continental Army Command  
US Army Combat Developments Command

Commandants

US Army War College  
US Army Command and General Staff College  
US Army Armor School  
US Army Aviation School  
US Army Engineer School  
US Army Field Artillery School  
US Army Infantry School  
US Army Ordnance School  
US Army Transportation School

STATEMENT #2 UNCLASSIFIED  
This document is subject to special export controls and each transmittal to foreign governments or foreign nationals may be made only with prior approval of

UNCLASSIFIED REPORT

DISTRIBUTION NO FOREIGN WITHOUT APPROVAL OF  
ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT  
(ARMY) ATTN FOR OT UT, WASHINGTON, D.C. 20310

Protective marking cancelled when  
separated from inclosure.

FOR OFFICIAL USE ONLY

AD NO. 1-3 COPY

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

EGCC-QP

31 July 1970

SUBJECT: Operational Report-Lessons Learned, 84th Engineer Battalion  
(Construction), for the period ending 31 July 1970 RCS CSFOR-65

THRU: Commanding Officer  
937th Engineer Group (Combat)  
APO 96226

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

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

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

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

FOR OT UT  
703088  
Inclosure

(1)

FOR OFFICIAL USE ONLY

EGCC-CP

SUBJECT: Operational Report-Lessons Learned, 84th Engineer Battalion  
(Construction), for the period ending 31 July 1970 RCS CSFOR-65

1. Operations

- a. Command: Assigned and attached units are listed in Inclosure 1.
- b. Unit Operation:

(1) The Bong Son Bridge: One of the largest and most demanding projects ever undertaken by the 84th Engineer Battalion (Const) is the construction of the Bong Son Bridge. At the end of this reporting period, this project was approaching completion as the last deck slab was set in place. Two major tasks in the construction of the Bong Son Bridge were the fabrication of the deck slabs and the splicing of the stringers. Incorporated into the fabrication of the slabs was the assembly of rebar cages to be used in the concrete. A total of 205 exterior cages and 95 interior cages were fabricated during the reporting period. This operation was accomplished by employing two 12 hour shifts enabling the task to be completed on 9 July 1970. By 15 July 1970 a total of 230 exterior and 115 interior deck slabs were cast. The fabrication process was mastered to the point that 3 spans of deck slabs were being cast each week. The second major task of the project, stringer splicing, became fully mobilized during this report period enabling all splicing to be completed by 20 July 1970. A total of 142 stringers were spliced. Sand blasting operations began on 5 July 1970 in preparation for the painting of the stringers and pier piles with red lead base paint. At the end of the reporting period 2 spans were finished and an additional 8 spans were sandblasted and ready for painting. Installation of the pier bracing system began on 8 July 1970 and at the end of this report period 13 piers were complete and 21 partially completed. One of the major contributing factors to the rapid completion of this project was the operation of the concrete batch plant. 1836 cubic yards of concrete were produced for the construction of pile caps, abutments, curbs, retaining walls, and riprap at the bridge abutments. A total of 15 caps were constructed, grouted, and had bearing plates installed during this report period. The final cap was completed on 10 June 1970. The far shore abutment construction was begun on 10 July 1969 and was completed on 26 July 1970. As with the near shore abutment, six separate formings and placements were required approximately 275 cubic yards of concrete. The installation of curbing began on 3 July 1970. The work moved along smoothly, and 26 spans of curbing, an average of 1½ spans a day, were completed. During May 1970 the near shore approach was constructed of 6450 cubic yards of fill material and 400 cubic yards of base course material. The near shore abutment approach way was stabilized using blast rock riprap. A retaining wall was constructed on the far shore approach way containing 35 cubic yards of concrete. Backfilling of the far shore approach way began on 5 July and was completed on 29 July 1970 using 3000 cubic yards of fill. The construction of the lighting system began on 13 July with the installation of 3/4" conduit. As of the end of this reporting period, 18 spans of the bridge have conduit with junction boxes ready for accepting the necessary wire.

(2)

FOR OFFICIAL USE ONLY

EGCC-OP

SUBJECT: Operational Report-Lessons Learned, 84th Engineer Battalion  
(Construction), for the period ending 31 July 1970 RCS CSFOR-65

(2) Revolutionary Development Roads: The 84th Engineer Battalion (Construction) in support of the 173rd Airborne's Pacification Program was assigned the task of up-grading Route 505 which links several coastal villages in the Phu My district with QL-1. Work was hampered at times due to heavy harassment from the Viet Cong. This was overcome with the help of the 173rd who provided security during the construction phase of the mission. During this period a total of 9775 CY of laterite was hauled, spread, and compacted to complete the subgrades for both Routes 505 and 84 on 4 July 1970. The extensive drainage construction necessary for these two routes was accomplished by the installation of the following culverts;

18" culvert - Three (3) each  
24" culvert - Three (3) each  
30" culvert - Four (4) each  
36" culvert - Nine (9) each  
48" culvert - Twenty one (21) each

A reinforced concrete ford is being constructed at one drainage site where a culvert would not be adequate. This portion of the project was begun on 10 July 1970 and is still under construction.

(3) MACV Hoai Mon: On 9 February 1970 the 536th PC Det, 84th began construction of the MACV Facility. The scope of this project included the construction of one 10'x60' billet, a 10'x20' shower/latrine, a septic tank, and a launch field. These facilities had to be constructed within the limits of the existing MACV compound. The only site available within the compound was in a very confined area which had virtually no access roads leading to the main artery. The 536th overcame these limitations by using cranes from the Bong Son Bridge project to lift construction materials into the site and by adjusting the construction plans so that the layout could be adjusted for this site. The project was completed on 30 May 1970.

(4) Ammunition Base Depot: Work in the AED located in Phu Tai was started in January 1970 and completed in mid June 1970. A "U"-shaped berm, 11 feet high with a 3'-6" top width was constructed around the pads to complete the 26 berms required for this project. These berms provide protection against blast and sympathetic detonation in the event ammunition on any pad explodes. The completed berms were stabilized with liquid asphalt applied with a 5000 gallon asphalt distributor especially fabricated by C Co, 84th Bn for the project.

(5) Major/Minor Repairs of QL-19: The 84th Engr Bn has the mission to repair QL-19 along the 100 KM sector between the Maing Giang Pass and its intersection with QL-1. The scope of work includes cutting and shaping ditches along the entire 100 KM length; bringing shoulders to proper grade and width using compacted select fill; stabilizing the shoulders with MC 70; repair of more than 350 potholes, installation of 26 drainage structures, and the complete rebuild of more than 14.5 KM of road that had completely failed.

(3)

FOR OFFICIAL USE ONLY

EGCC-OF

SUBJECT: Operational Report-Lessons Learned, 84th Engineer Battalion  
(Construction), for the period ending 31 July 1970 RCS CSFOR-65

The concept of operation for ditches, shoulders, and pothole work employs an earthmoving platoon and pothole crew from each of two companies; one starting at each end of the road and working toward the other. One company is tasked with all the drainage structures. The source of construction materials are:

- a. Borrow pits established at convenient points along the route for select fill.
- b. A 75 TPH crusher operated by the 299th Engr Bn at An Kho, and an RMK industrial site near the intersection of QL-1 and QL-19 for basecourse.
- c. The RMK plant is the only source of asphalt.

Quality control on all construction materials is performed by the 84th Engr Bn materials testing laboratory. Since there is only one source of asphalt, and since it is located at the extreme eastern end of the assigned sector, the average one way haul distance is 50 KM. That factor coupled with the limited ability of the contractor to supply asphalt, identifies paving on rebuild sections as the critical task. The concept is to work rebuild from west to east in order to complete work in the highlands prior to the coming monsoon. That concept required modification since the road in the sector between the Maing Giang pass and An Kho pass experienced more rainfall than anticipated. The planning factor was 33% adverse weather days but the real experience factor was in excess of 50%. It became necessary to prepare sections for rebuild east of the An Kho pass in order to take advantage of good weather there when it rained west of the pass. Approximately 50% of the required work on this project was accomplished during this reporting period.

(6) Phu Hiep Airfield Upgrades and Resurfacing: During this period, 1600 linear feet of cement stabilized sand was prepared to complete the base course on runway and overruns. A total length of 3110 linear ft of runway was paved with asphaltic concrete to complete the resurfacing portion of the project. The overrun and shoulders were stabilized with MC-70, and an area 20' feet wide around the entire runway was sprayed with pemprimo as a dust control measure. The runway was marked as requested by the user and the unserviceable matting was cleared from the work site. Work was completed on this project on 4 July 1970.

(7) Replacement of Culvert; Phu Tai: The final drainage structure was installed at the Ammo Base Depot on 15 July 1970. The scope of this project included the installation of two 48" culverts, each approximately thirty feet in length. In addition materials were supplied by the 84th Engr Bn (Const) for the installation of five 48" culverts of equivalent length which were installed by the 184th Ordnance.

NOT REPRODUCIBLE

(4)

FOR OFFICIAL USE ONLY



EGOC-OP

SUBJECT: Operational Report-Lessons Learned, 84th Engineer Battalion  
(Construction) for the period ending 31 July 1970 RCS CSFOR-65

(8) POL Tank Repair, Qui Nhon: A great deal of difficulty has been experienced in attempting to seal the leaks in these two POL tanks. Initially, concrete floors were constructed inside these tanks, but later tests proved additional measures would have to be taken to eliminate the leaks. Liners for both tanks were prefabricated from T-17 membrane and sealed with a mastic compound. Tests showed that leaks were still present in the floors of both tanks and additional leaks were present in the horizontal and vertical seams. After reapplication of the mastic compound and further tests, the mastic was found to be ineffective. 30 gallons of better mastic was obtained and used to seal tank 14. An additional 100 gallons of the same mastic was found and is presently being used to seal tank 15. At the close of this reporting period tank 14 was completely sealed with the exception of two minor leaks which were detected in the vertical seams near the top of the tank.

(9) Dog Kennels, Camp Humpor: On 6 July 70, C Co, 84th Engr Bn began construction of a kennel complex that will eventually accommodate 70 dogs. The layout and excavation of the work site was completed. All corner poles establishing the framework of the pens were cemented in place, and the flooring for all the pen areas was poured. Forty interior walls were constructed and ten of them were completed with a stucco coating. A water tower and sewage lagoon were partially constructed. A protective berm and access road were near completion at the close of this reporting period.

(10) ROK Valley Revetment: This project involves the construction of a 13 foot high revetment around the power generating station. The walls of the structure are made of unserviceable M5A1 matting which was salvaged from the Phu Hiep Runway Resurfacing project and the interior is filled with sand. At the end of the reporting period, one entire side of the square shaped revetment was complete and the remaining three sides were approximately 70% complete. Problems resulting from the use of this M5A1 matting have caused a delay in the completion of this project. The configuration of the matting is such that, when employed, gaps occur at joints between individual pieces and between tiers. The revetment would not retain the sand until these gaps were eliminated. Attempts to close these gaps with cable were unsuccessful. At the end of this reporting period, the plan in effect required welding additional pieces of M5A1 matting over the gaps.

(11) Aircraft Maintenance Hangers, An Khe: The installation of the electrical facilities for two helicopter maintenance hangers located at Golf Airfield, An Khe was begun on 15 June 1970. This project involves the installation of 60 high bay floodlights and 132 low bay fluorescent lights in the existing Butler structure (75'x202'), necessary receptacles and exterior lighting in both buildings. The installation of the high bay lighting fixtures in the Butler Building and the installation of all the high bay lighting facilities in the Pascoe building was the only remaining work to be accomplished at the close of the report period.

NOT REPRODUCIBLE

(5)

FOR OFFICIAL USE ONLY

EGCC-OP

SUBJECT: Operational Report-Lessons Learned, 84th Engineer Battalion  
(Construction), for the period ending 31 July 1970 RCS CSFOR-65

(12) LOC Maintenance and Repair: The Phu Lam Culvert on QL-1 south of Tuy Hoa was repaired this quarter. The work included excavating both ends of the culvert so that 10' extensions could be installed. Concrete head walls and retaining walls were constructed at both ends of the culvert.

c. Intelligence and Counterintelligence: Enemy activity for the reporting period has been light. There have been 14 scattered incidents involving engineers reported: Five convoy ambushes, one work site ambush, three sniper incidents, two mortar attacks, one mining incident, one satchel charge incident and one sapper attack. Results of these incidents included three men wounded (MINOR); one ton ton vehicle, one asphalt spreader, one five ton dump, two five ton tractors, two generators and three 2½ tons damaged slightly; one five ton tractor damaged heavily; and one project delay incident. Principal sources of intelligence were Capitol ROK infantry division, 22nd ARVN Division, 173rd Airborne Brigade, and MACV Advisors of Binh Dinh, 4th Infantry Division, and IFFORCEV Intelligence summaries.

d. Plans and Training: Plans and schedules were made in detail for the repair of QL-19 and the construction of the Dog Kennels at Camp Humpor, Phu Tai including the preparation of Gantt Charts, Progress Schedule Charts, and CPMS. Sunday morning CI classes emphasized safety, weapons familiarization, first aid, drug abuse, sapper defense, prevention of venereal disease, rules of engagement, and maintenance procedures.

e. Personnel Administration Morale, and Discipline: During the past quarter 125 men were recommended for awards. This represents an increase of 149% from last quarter. 237 EM were promoted to the next higher grade. 46 EM voluntarily extended their foreign service tour in the Republic of Vietnam. 65% of the Battalions strength is enrolled in the Savings Bond Program. There were 9 congressional investigations and 3 complaints registered with the Inspector General. There were 162 disciplinary actions to include 158 Article 15's and 4 Special Courts Martial.

f. Logistics: During the past quarter, the S-4 Section gave logistical support to organic companies and attached units of the 84th Engr Bn (Const). The areas of logistical support include;

- (1) Procurement and distribution of Class A rations for 700 personnel daily.
- (2) Operation of two water points producing 45,000 gallons of potable water daily.
- (3) Supply of Class II TO&E equipment. An average of 30 equipment requisitions were processed weekly by the Property Book Section. During the quarter, 50 pieces of TO&E and MCA equipment were required.
- (4) Supply Class IV Construction Materials to all units for MCA funded projects. An average of 100 requisitions for construction materials were processed weekly by the S-4 section.

NOT REPRODUCIBLE

(6)  
FOR OFFICIAL USE ONLY

EGCC-OP

SUBJECT: Operational Report-Lessons Learned, 84th Engineer Battalion  
(Construction), for the period ending 31 July 1970 RCS CSFOR-65

(5) Supply material for the construction of QL-19 Bridge No 241, a class A steel and concrete highway bridge being constructed by the 201st ARVN Engineer Bn at Tuy Hoa. This project is currently 50% complete. When completed, it will be the largest bridge in Vietnam.

g. Civic Action: During the past quarter, emphasis was shifted from civic action to ARVN Affiliation because of the Vietnamization Program. During the past quarter, voluntary contributions for orphanages amounted to \$VN 41,226. Voluntary support was given by the 84th in the construction of the Holy Family Hospital, Qui Nhon.

h. ARVN Affiliation: A liaison Team has been working continuously with the 201st ARVN Engineer Bn in the construction of a 3600 ft Bridge on QL-1 over the Son Da Rang River at Tuy Hoa. The team has provided contact with US specialists in supply, equipment, steel structure, concrete, and quality control work. Problem solving in concrete prefabrication, pile driving, and steel work has been expedited by this team. The CO of the 84th Engr Bn (Const) met with the CO of the 201st Bn on several occasions at Bridge 241. The topic of their discussions included the outstanding requirements for materials and the deployment of critical equipment. The 84th Engr Bn, offered support in the removal of a 300' inoperative communications tower located at the Phu Yen province headquarters. This tower was a danger to the compound because it was being used as a mortar stick by the Viet Cong in stand off attacks. The personnel of the province were unable to devise a plan to remove the tower. When briefed of the problem, men of the 84th solved it by using demolitions to drop the tower while observing all safety precautions. Salvageable material was given to the ARVN. The 84th Engr Bn (Const) has begun a program to help the 62nd ARVN Engr Bn (Const) to develop its engineering capability. Initial organizational meetings were held to include a weekly Battalion Staff meeting which was attended by the CO of the 62nd ARVN Engr Bn (Const) and members of his staff. All staff officers of the 84th Engr Bn (Const) have met with their counterparts with the 62nd has been established. In addition a training program has been arranged to familiarize the operators with the various pieces of earth-moving equipment.

NOT REPRODUCIBLE

(7)

FOR OFFICIAL USE ONLY

**EOCC-OP**

**SUBJECT:** Operational Report-Lessons Learned, 84th Engineer Battalion  
(Construction), for the period ending 31 July 1970, MCS CSFOR-65

**2. Lessons Learned: Commander's Observations, Evaluations, & Recommendations.**

- a. Personnel: None
- b. Intelligence: None
- c. Operations:

**(1) Item: Shoulder Stabilization**

**OBSERVATION:** Several kilometers of road shoulders had to be stabilized with MC-70. A TO&E asphalt distributor with a capacity of 800 gallons can only stabilize short lengths of shoulders before being refilled. This means a considerable loss of effort in turnaround time. Also, the TO&E distributor must travel on the shoulders while operating, thereby exposing the equipment to mines.

**EVALUATION:** An asphalt distributor had to be developed that would have a greater capacity and could stabilize shoulders without traveling over them.

**RECOMMENDATION:** A salvaged 5000 gal tanker was converted to an asphalt distributor. A spray bar was attached to the nozzle of the tankers standard pump. The spray bar was constructed of 2 inch pipe, 9'6" in length with 22 standard asphalt spray nozzles tapped into it. The spray bar was supported by a chain and could rotate through an arc of 90 degrees to the side of the tanker making it capable of avoiding all obstacles. The operator, positioned on a chair attached to the side of the tanker, could control the outlet valve on the spray bar.

**(2) Item: POL Tank Repair**

**OBSERVATION:** The 84th Engr Bn (Const) was assigned the task of repairing two POL tanks which were leaking due to deteriorating gaskets.

**EVALUATION:** Replacement of the gaskets was unfeasible at this time because new gaskets were unavailable. In addition the task would require considerable time, man power, and equipment without any assurance that the leaks would be eliminated.

A seal had to be developed that could be installed rapidly with the least amount of equipment and manpower. It must completely seal the tank without dismantling any portion of it.

**RECOMMENDATION:** A Bladder can be constructed inside POL tanks by cementing WX - 17 membrane with mastic FSN 5680-267-1668. Care must be used to insure that all edges are well sealed and have no wrinkles in them. The bladder can be attached to the sides using the same mastic. The mastic cures in 24 hours and the result is a lasting, leak free, tank impervious to all POL items.

EGCC-CP

SUBJECT: Operational Report-Lessons Learned, 84th Engineer Battalion  
(Construction). for the period ending 31 July 1970, RCS CSFOR-65

(3) Item: Cutting Torches

OBSERVATION: Cutting torch set components have a high attrition rate when in constant use.

EVALUATION: A study of the attrition rate had to be made so that replacement parts could be ordered according to scheduled requirements.

RECOMMENDATION: For each torch set that is to be committed to a large steel cutting project, at least one cutting tip should be requisitioned for each three (3) weeks of expected use. Planning factors should include replacing gauges and regulators every two months. Barrel assemblies should be replaced every two to three months as should hoses.

(4) Item: Mixing Soil With a Rotary Tiller

OBSERVATION: When mixing cement with a rotary tiller, excess concrete accumulates on the teeth and rear housing.

EVALUATION: Some method had to be devised which would eliminate the formation of these concrete deposits.

RECOMMENDATION: A light coat of OE-10 oil should be sprayed on the rear housing and mixing drum. This keeps the concrete from hardening and forming such deposits.

(5) Item: Sand Cement Stabilization Operations

OBSERVATION: A recent project called for the preparation of cement stabilized sand for use as a base course. The stabilization operation was done by raking the cement evenly over the sand surface and mixing the components with a rotor tiller. As operations progressed, soft spots began to appear in several areas.

EVALUATION: The ratio of cement to sand had been taken directly from the manual. This percentage was based on the factors of constant sand depth, uniform distribution of cement at all points of the surface, and 100% mixing of all components. In operation, however, the sand depth often varied by an inch or more, the cement could not be raked equally at all points and the mixing was not always exactly 100% complete. Therefore, some areas contained less cement than allowable, while other areas were overly rich in cement.

RECOMMENDATION: It was much more desirable to have all areas rich in cement than to have some areas weak. Therefore, the bag spacing on the runway was decreased, thereby increasing the ratio of cement to sand. This produced a uniformly rich mixture and eliminated soft spots. The cement sand ratio taken from the manual is good for plant mixing or for ideal field conditions, but should be increased slightly for less than ideal field conditions.

(9)

FOR OFFICIAL USE ONLY

EGCC-CP

SUBJECT: Operational Report-Lessons Learned, 84th Engineer Battalion  
(Construction), for the period ending 31 July 1970 RCS CSFOR-65

(6) Item: D-7E Cutting Edges

OBSERVATION: The cutting edge on a D-7E dozer is subject to a great deal of wear. Since this part is not always readily available through normal supply channels, this piece of equipment could remain idle for extended periods of time.

EVALUATION: A substitute had to be found that could take the place of worn out cutting edges.

RECOMMENDATION: With certain adaptations a 290M Scraper cutting edge could be used on a D-7E dozer. By cutting three to four inches from either side of the cutting edge, it will fit perfectly on a D-7E dozer.

- 1 Incl  
1. List of Units



RICHARD M. WELIS  
COL. CE  
Commanding

DISTRIBUTION:

- 5 Copies to 937th Engr Gp (C)  
3 Copies to 18th Engr Bde  
3 Copies to USARV  
2 Copies to USARPAC

EGC-OP (31 Jul 70) 1st Ind

SUBJECT: Operational Report - Lessons Learned, 84th Engineer Battalion  
(Construction), for the period ending 31 July 1970 RCS CSFOR-65

DA, Headquarters, 937th Engineer Group (Combat), APO 96226, 25 August 1970

TO: Assistant Chief of Staff for Force Development, Department of the  
Army (ACSFOR-DA), Washington, D.C. 20310  
Commanding General, 18th Engineer Brigade, ATTN: AVBC-CG, APO 96377

1. The Operational Report - Lessons Learned from the 84th Engineer Battalion (Construction) is forwarded IAW 18th Engineer Brigade Regulation 525-15. Reporting period is 1 May through 31 July 1970.

2. This headquarters has reviewed paragraph 1, Operations: Significant Activities and considers it to be an accurate account of 84th Engineer Battalion (Construction) activities for the reporting period.

3. This headquarters concurs with all recommendations in paragraph 2 of basic letter. For clarification, the observation in paragraph 2. c. (4) should read "when mixing cement and soil with a rotary tiller, excess cement...".

4. The contents of this indorsement have been brought to the attention of the 84th Engineer Battalion (Construction).

  
JAMES C. DONOVAN  
COL, CE  
Commanding

AVBC-CG (31 July 1970) 2nd Ind

16 September 1970

SUBJECT: Operational Report - Lessons Learned, 84th Engineer Battalion  
(Construction), Period Ending 31 July 1970, RCS CSFOR-65 (R2)

DA, HEADQUARTERS, 18TH ENGINEER BRIGADE, APO 96377

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

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

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



H. C. SCHRADLER  
Brigadier General, USA  
Commanding

NOT REPRODUCIBLE



NOT REPRODUCIBLE

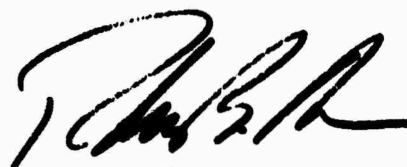
AVCC-30 (31 Jul 70) 3rd Ind  
SUBJECT: Operational Reports - Lessons Learned for 24th Engineer Battalion  
(Construction), for the Period Ending 31 July 1970, ACS CSFOR-65 (R2)

DA, HQ, US Army Engineer Command Vietnam (Prov), APO 96491

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

Subject report is under review in this Headquarters. Comments for  
inclusion in the Headquarters, USARV indorsement to CINCPACAFAC will  
be forwarded to your Headquarters by separate cover.

FOR THE COMMANDER:



ROBERT E. SIZEMORE  
CPT, USAR  
Assistant Adjutant

AVHDO-DO (31 Jul 70) 4th Ind

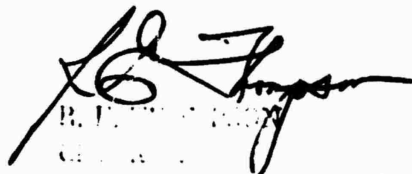
SUBJECT: Operational Report-Lessons Learned, 84th Engineer Battalion  
(Construction), for the period ending 31 July 1970 RCS CSFOR-65

Headquarters, United States Army Vietnam, APO San Francisco 96375 19 000 1070

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

1. This Headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 July 1970 from Headquarters, 84th Engineer Battalion (Construction) and comments of indorsing headquarters.
2. Reference item concerning "Sand Cement Stabilization Operations," page 9, paragraph 2c(5): nonconcur. Sand-cement ratio should be established by quality control personnel in accordance with standard tests. A limit should be placed on additional cement added to compensate for wind loss and incomplete mixing. Unit has been so advised. No action by DA or USARPAC is recommended.

FOR THE COMMANDER:

  
R. E. Thompson  
Colonel  
Assistant Adjutant General

Cy furn:  
USAECV(P)  
84th Engr Bn

GPOP-DT(31 Jul 70) 5th Ind  
SUBJECT: Operational Report-Lessons Learned, HQ, 84th Engineer  
Battalion (Construction), for the Period Ending  
31 July 1970, RCS CSFOR-65 (R2)

HQ, US Army, Pacific, APO San Francisco 96558 4 NOV 1970

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

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

*for Daniel J. McLaughlin*  
G. R. McLAUGHLIN *Col*  
COL, AGC  
Adjutant General

ASSIGNED AND ATTACHED UNITS OF THE 84TH ENGINEER BATTALION (CONSTRUCTION)

1. Headquarters and Headquarters Company, APO 96238
2. Company A, APO 96226
3. Company B, APO 96238
4. Company C, APO 96238
5. Company D, APO 96294
6. 536th Engr Det (PC), APO 96238
7. 23rd Engr Det (WD) attached to 84th Engr Bn (Const) Effective  
13 April 1970, APO 96226

Inclosure I

(11)

UNCLASSIFIED

Security Classification

## DOCUMENT CONTROL DATA - R &amp; 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) HQ DA, OACSFOR, Washington, D.C. 20310		2a. REPORT SECURITY CLASSIFICATION FOR OFFICIAL USE ONLY	
		2b. GROUP	
3. REPORT TITLE  Operational Report - Lessons Learned, HQ, 84th Engineer Battalion			
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Experiences of unit engaged in counterinsurgency operations 1 May to 31 July 1970.			
5. AUTHOR(S) (First name, middle initial, last name)  CO, 84th Engineer Battalion			
6. REPORT DATE 31 July 1970		7a. TOTAL NO. OF PAGES 19	7b. NO. OF REFS
8a. CONTRACT OR GRANT NO.		9a. ORIGINATOR'S REPORT NUMBER(S)  703088	
b. PROJECT NO.  N/A		9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
c.			
d.			
10. DISTRIBUTION STATEMENT			
11. SUPPLEMENTARY NOTES  N/A		12. SPONSORING MILITARY ACTIVITY  DA, OACSFOR, Washington, D.C. 20310	
13. ABSTRACT			