DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT
WASHINGTON, D.C. 20310

AGDA-A (M) (7 Sep 71) FOR OT UT 15 September 1971

SUBJECT: Operational Reports - Lessons Learned, Engineer Units - 46th Bn, 84th Bn, 39th Bn, 34th Gp, and 36th Bn - for Period Ending 30 April 1971

SEE DISTRIBUTION

1. Section 2 of reports, subject as above, are forwarded for review and evaluation in accordance with para 4b, AR 525-15.

2. The information contained in these reports is provided to insure that lessons learned during current operations are used to the benefit of future operations and may be adapted for use in developing training material.

3. Information of actions initiated as a result of your evaluation should be forwarded to the Assistant Chief of Staff for Force Development, ATTN: FOR OT UT, within 90 days of receipt of this letter.

4. As Section 1 of the report is not pertinent to the Lessons Learned program it has been omitted.

BY ORDER OF THE SECRETARY OF THE ARMY:

VERNE L. BOWERS
Major General, USA
The Adjutant General

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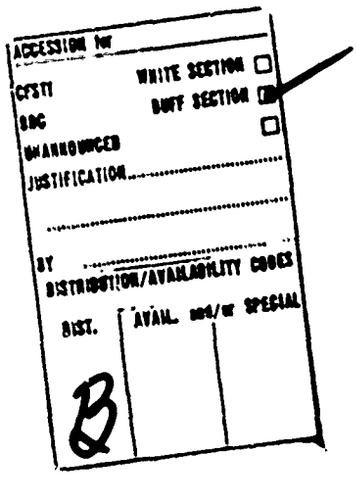

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 46TH ENGINEER BATTALION
APO San Francisco 96491

EGBB-CO 20 May 1971

SUBJECT: Operational Report - Lessons Learned, 46th Engineer Battalion (Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3).

THRU: Commanding Officer, 159th Engineer Group, ATTN: EGB-OP, APO 96491
Commanding General, USAECV, ATTN: AVCO-MO, APO 96491
Commanding General, United States Army, Vietnam, ATTN: AVHCO, APO 96375
Commander-in-Chief, United States Army, Pacific, ATTN: GPOP-DT, APO 96588

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

FOR OT UT
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EGBB-CO 20 May 1971
SUBJECT: Operational Report - Lessons Learned, 46th Engineer Battalion (Construction), Period Ending 30 April 1971 RCS CSFOR-65 (R3).

Section 2, Lessons Learned: Commander's Observation, Evaluation, and Recommendation.

1. Personnel: None.

2. Intelligence: None.

3. Operations:

a. PASCOE Building Removal:

(1) Observation: In removing a 90'x210' PASCOE building, several structural members were damaged during the disassembly stage.

(2) Evaluation: Disassembly steps followed were in reverse order of erection procedures outlined in the manufacturer's instruction manual. The building's rigid frames were removed by using two cranes with spreader bar attachments. Several rafter members bent and twisted as they were being lowered to the ground. To prevent further damage, the remaining frames were removed successfully by unbolting the rafter beams from the columns and lowering the sections separately.

(3) Recommendations: In operations involving removal of large structures, the assistance of technically qualified personnel should be solicited. Also, every effort should be made to have a well trained crew throughout the operation. This type of an operation should be done methodically, utilizing safe and proper materials handling equipment and procedures.

b. Concrete Curing:

(1) Observation: The extreme heat during the day in the dry season enhances very rapid curing of concrete. This usually results in extensive and severe cracking of the finished surface.

EGBB-CO 20 May 1971
SUBJECT: Operational Report - Lessons Learned, 46th Engineer Battalion (Construction), Period Ending 30 April 1971 RCS USFOR-65 (R3).

Section 2, Lessons Learned: Commander's Observation, Evaluation, and Recommendation.

1. Personnel: None.

2. Intelligence: None.

3. Operations:

a. PASCOE Building Removal:

(1) Observation: In removing a 90'x210' PASCOE building, several structural members were damaged during the disassembly stage.

(2) Evaluation: Disassembly steps followed were in reverse order of erection procedures outlined in the manufacturer's instruction manual. The building's rigid frames were removed by using two cranes with spreader bar attachments. Several rafter members bent and twisted as they were being lowered to the ground. To prevent further damage, the remaining frames were removed successfully by unbolting the rafter beams from the columns and lowering the sections separately.

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b. Concrete Curing:

(1) Observation: The extreme heat during the day in the dry season enhances very rapid curing of concrete. This usually results in extensive and severe cracking of the finished surface.

(2) Evaluation: To maintain good quality control on finished concrete, wet curing is preferred. Just wetting down concrete, however, was found to be somewhat inadequate. Temperature variance of water and sun baked concrete is considerable, thus resulting in shrinkage cracks when water is applied. Overcoming this problem was rather a simple matter. Proper curing can be obtained by covering the concrete surface with polyethelene plastic immediately after finishing. This prevents the water of hydration from escaping and keeps temperature of water and concrete uniform throughout the curing process.

(3) Recommendations: High quality concrete, free from surface cracks, can be obtained with the aid of polyethelene covering which assists in proper curing.

c. Use of Concrete Hardener:

(1) Observation: Too heavy an application of a chemical concrete hardener results in crystallization and flaking.

(2) Evaluation: This crystallization and flaking produces a rough surface and an unacceptable end product. The hardener must then be scraped off and reapplied, a time consuming process.

(3) Recommendations: Every effort should be made to apply hardener in thin smooth layers avoiding any puddling. Also, a knowledgeable individual should be present during the curing period and effect any corrective action deemed necessary.

d. Shoulder Base Rock Spreading:

(1) Observation: It was observed that spot dumping base rock for shoulders with 5 ton dump trucks was a laborious process requiring extensive grader work to spread it evenly.

(2) Evaluation: The use of a scraper was found to be a very expedient, but efficient, method of spreading base rock smoothly and evenly. Shoulder width was adjusted by straddling existing pavement with scraper and grading loose material unto the shoulder.

(3) Recommendations: The scraper pan is a very rapid and efficient method of spreading shoulder base rock and should be used whenever possible.

e. Patching Asphalt Surfaces - "Deep Patch".

(1) Observation: This unit was assigned repair responsibility of several main roads during this period. It was observed that numerous previous repairs were done improperly and most had failed or caused adjacent areas to fail.

(2) Evaluation: Proper repair of failures in asphalt surfaces using the "deep patch" method includes removal of material down to the cause of the failure and replacement of material with compacted layers of asphalt. Due to the continued compactive effort of traffic, initially level patches have sunk and "high patches", allowing for further settlement, have caused localized heaving because of the dynamic loading caused by the elevated patch. The "stage method" of patching consists of replacing the failed material with 3" compacted asphalt layers. Each layer is compacted with either a pneumatic or impact compactor. To prevent damage to the vertical walls, a hand tamper is used to compact the area adjacent to the sides of the "cut". Procedure is repeated until the fill is within 2" of the surface. The "cut" area is then blocked off and allowed to cure overnight. A three inch asphalt "cap", raked free of aggregate, is compacted with a 10 ton steel wheel roller. The end of the patch from which rolling begins should be slightly higher and sloped downward toward the other end. The slight wave preceeding the roller will level the patch. The "cap" will roll approximately 1/2" high and traffic will further compact the "fill" to level. The capping asphalt is to be confined to the cut itself; any overlap will result in humps around the patch. These humps in turn will create localized dynamic loading and cause heaving and eventual failure.

LGBB-CO 20 May 1971
SUBJECT: Operational Report - Lessons Learned, 46th Engineer Battalion (Construction), Period Ending 30 April 1971 RCS CSFOR-65.(R3).

7. Communications: None.

8. Materials: None.

9. Other:

a. Amnesty Program:

(1) Observation: The use of hard drugs has been a significant factor within the Battalion. The Battalion Surgeon estimates that the number of personnel who have used hard drugs (primarily heroin) on a regular basis is probably at least 25%.

(2) Evaluation: The Battalion has an Amnesty Program to help those who are willing to participate. However, in the past 6 months, less than 50% of those participating in the program made significant progress toward withdrawal. Of those who did make significant progress, those who had more than 2 months remaining on their tour usually went back to using drugs. Those who went through the program just prior to DEROS were usually able to refrain from further use of drugs prior to DEROS. Apparently, the low cost and easy availability of drugs in Vietnam is too much of a temptation for those who still have a significant length of time left on their tour. It is estimated the number of people successfully rehabilitated from drug usage is no more than 10-20%.

(3) Recommendation: Even though the Amnesty Program is not as successful as we would like it to be, it should be continued. The best way to reduce the problem would be to reduce the supply, there by increasing the cost of the drugs.

Jessie E Baldwin

JESSIE E BALDWIN
LTC, CE
Commanding

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EGB-OP (20 May 71) 1st Ind
SUBJECT: Operational Report--Lessons Learned, 46th Engineer Battalion (Construction), Period Ending 30 April 1971, RCS CSOR-65 (R3)

DA, HQ, 159th Engineer Group, APO 96491 29 May 1971

THRU: Commanding General, USAECV, ATTN: AVCC-HO, APO 96491
Commanding General, USARV, ATTN: AVHDO, APO 96375
Commander-in-Chief, USARPAC, ATTN: GPOP-DT, APO 96588

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

1. The significant activities and lessons learned have been reviewed and are an adequate reflection of the unit's operations during this period.

2. Reference Section II, Lessons Learned, subparagraph (4) "Command Action." This paragraph was not added according to AR525-15, dated 20 Nov 70. The 46th Engineer Battalion (Construction) was inactivated 22 April 1971 and the above reference could not be added.

3. Reference Lesson Learned "Pascoe Building Removal," p 25, paragraph 3a. Concur. Correct diassembly and/or assembly of Pascoe buildings cannot be underestimated. On 16 Mar 70, a Pascoe building being erected at Phu Loi collapsed due to improper erection procedures. At the very least, an erection manual for the structure being erected is a necessity. When time permits, additional data may be obtained directly from Pascoe Steel Corporation, 1301 East Lexington Avenue, P.O. Box 2628, Pomona, California 91776. No action by USARPAC or DA is recommended.

4. Reference Lesson Learned, 'Shoulder Baserock Spreading," p 26, paragraph 3d. Concur for expedient placement, however segregation often occurs using recommended scraper pans. No action by USARPAC or DA is recommended.

5. Reference Lesson Learned, 'Patching Asphalt Surfaces," p 27, paragraph 3e. Strongly concur. This headquarters observed patchwork performed by the 46th Engineer Battalion on National Highway QL-13 and found it superior, using the recommended procedure. Not only does each patch present a finished appearance, but its durability should be unmatched. Recommend DA consideration of this patching method.

FOR THE COMMANDER:

S. C. WILLIAMS
CPT, AGC
Adjutant

7

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AVCC-MO (20 May 71) 2nd Ind
SUBJECT: Operational Report - Lessons Learned, 46th Engineer Battalion (Construction) Period Ending 30 April 1971, RCS CSFOR - 65(R3)

HQ, US Army Engineer Command, Vietnam, APO 96491 4 JUN 1971

TO: Commanding General, US Army, Vietnam, ATTN: AVHDO-DO, APO 96375

1. The significant activities and lessons learned have been reviewed and are an adequate reflection of the unit's operation during this period.

2. Reference item concerning "Patching Asphalt Surfaces with Deep Patch", pages 27 and 28, paragraph 3e. Concur with recommendations and evaluation of action taken. Manuals published by the Asphalt Institute provide an excellent reference of repair methods and procedures recommended for the various types of asphalt pavement failures. No action by USARPAC or DA is recommended.

3. Reference item concerning "Coordination with USARCV Design Section", page 28, paragraph 3f. All projects are designed with two thoughts in mind: availability of material and ease of troop construction. Once the design has been initiated, various other schedules are then established. Procurement of material, construction start dates, relocation of constructing units, etc., are all based on the estimated design completion date. Minor design changes can easily be handled on an informal basis, and often are. Requests for major design changes, i.e., those which will cause a change in the design completion date, must be formally processed through the chain of command. This permits commanders and principal staff officers to adjust their schedules accordingly. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:

Charles M Peterson

CHARLES M. PETERSON
1LT, CE
Act Asst Adjutant General

Copy furnished:
159th Engineer Group

AVHDO-DO (20 May 71) 3d Ind
SUBJECT: Operational Report - Lessons Learned, 46th Engineer Battalion (Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3).

Headquarters, United States Army Vietnam, APO San Francisco 96375 10 JUN 1971

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

This Headquarters has reviewed the Operational Report-Lessons Learned for the period ending 30 April 1971 from Headquarters, 46th Engineer Battalion (Construction) and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

F.L. HONSOWETZ
CPT, WAC
Acting Asst Adjutant General

Cy furn:
USAECV
46th Engr Bn

GPOP-FD (20 May 71) 4th Ind
SUBJECT: Operational Report-Lessons Learned, Headquarters 46th Engineer Battalion (Const), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 30 JUN 197

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:

L.M. OZAKI
CPT, AGC
Asst AG

13

DEPARTMENT OF THE ARMY
HEADQUARTERS, 84TH ENGINEER BATTALION (CONSTRUCTION)
APO SAN FRANCISCO 96349

EGD-HD-OP

16 May 1971

SUBJECT: Operational Report - Lessons Learned, 84th Engineer Battalion (Construction) APO San Francisco 96349

Period Ending 30 April 1971, RCS CSFOR - 65 (r3)

THRU: COMMANDING OFFICER
45TH Engineer Group (Construction)
APO San Francisco 96317

COMMANDING GENERAL
United States Army Engineer Command, Vietnam
ATTN: AVCC-MO
APO San Francisco 96375

COMMANDING GENERAL
United States Army Vietnam
ATTN: AVHDO-DO
APO San Francisco 96375

COMMANDER IN CHIEF
United States Army, Pacific
ATTN: GPCP-DT
APO San Francisco 96558

TO: ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT
Department of the Army (ACSFOR-DA)
Washington, D.C. 20310

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15 2. LESSONS LEARNED: Commander's Comments, Observations, Evaluations and Recommendations

a. Personnel; None

b. Intelligence: None

c. Operations:

(1) Item: Repairing concrete bridge deck.

(a) OBSERVATION: Holes in concrete bridge deck are difficult to repair in such a manner as to retain the original strength.

(b) EVALUATION: A method was needed to expedite the form work, to provide an easy method of support from the underside of the bridge. The original reinforcing is often weakened and must be replaced.

(c) RECOMMENDATIONS: The first step was to widen the existing hole to explore the undamaged reinforcing bar. New re-bar was spliced across the damaged space. The weld length on the splice must be 5 times the diameter of the re-bar. Next, bolts are welded onto the re-bar such that they hang below the bottom of the bridge deck. Plywood or steel plate can then be bolted into place to complete the forming.

(d) COMMAND ACTION: None

(2) Item: Bunkers Underdesigned.

(a) OBSERVATION: In recent months incidents have occurred where bunkers have been inspected which, according to proper design, should have collapsed under their own weight.

(b) EVALUATION: Bunker failures can be traced to basic weakness in support members, or poor design. Examples of this are apparent in the use of sandbags for supporting members and timber stringers of insufficient strength to support a heavy layer of sandbags and earth.

(c) RECOMMENDATION: That increased emphasis be placed on proper design of bunkers and the design of bunkers and sizing of load carrying members. In addition to this, quality control is essential in the fabrication of bunkers. To assist units, wide dissemination should be made of explicit and detailed designs of various size bunkers which make use of a variety of materials.

(d) COMMAND ACTION: A small booklet should be developed which contains a variety of bunker designs which can be built readily by non-engineer troops using a variety of materials.

(3) Item: Low Strength of Sand Cement

(a) OBSERVATION: While constructing a road using sand cement it was observed that certain sections failed to reach the design strength.

(b) EVALUATION: An investigation revealed the sand being used had a heavy concentration of chemicals which inhibited the sand cement from attaining the design strength. The contaminated sand hadbeen obtained from the bottom of a borrow pit very near the local water table. The water filtering through the upper layer of sand had leached out salt and other compounds which had concentrated near the water table.

(c) RECOMMENDATION: During the earthwork phases of chemically stabilized base roads it is important that the soil being used for final grade be checked for unwanted chemicals and salt deposits. Borrow pit samples should be taken to determine chemical properties of the soil on the final grade.

(d) COMMAND ACTION: None

(4) Item: Reaching the optimum moisture control (OMC) in sand cement.

(a) OBSERVATION: When adding the predetermined volume of compaction and hydration water to a sand cement mixture the preparation becomes saturated and as a result unusable.

(b) EVALUATIONS: The technique for determining the total water required was to add the percent of moisture required for compaction and the percent required for hydration. After a review of this method it was concluded that the moisture for hydration would be drawn from that used for compacting the mixture.

(c) RECOMMENDATION: When determining the water needed there is no need to add additional moisture for hydration. Experience has shown that the sand cement base course constructed using the lower water content reaches the design strength.

(d) COMMAND ACTION: None

(5) Item: Excavating footers in a fill area.

(a) OBSERVATION: When building guard towers, water towers, etc., the terrain often requires an excavation to place the foundation. After completion of a project excessive settling of the footers may occur.

(b) EVALUATION: When constructing footers which require an excavation the lower levels of soil may lack the bearing capacity the footer requires. This can be especially true when a fill area is excavated.

(c) RECOMMENDATION: Deep excavations should be avoided whenever possible, especially in fill areas. The bearing capacity of the soil at the depth of the proposed footer should be investigated as well as that at the surface level.

(d) COMMAND ACTION: None

(6) Item: Joining Chain Link Fence

(a) OBSERVATION: Fence made from chain link fence often requires splicing when the end of a role is reached or short sections are used.

(b) EVALUATION: An often used splicing method is to cut the fence at the last vertical post reached before the end of the wire. This method wastes the cut off piece. Other useful techniques make use of tie wires to fasten two ends, or make the connection by welding the fence together.

(c) RECOMMENDATION: An extremely simple and by far the most desirable method of splicing cyclone fence stems from the very nature of the woven pattern. By twisting the last vertical wire at the end of a section the wire can be "unwoven". Then by placing two ends of the cyclone fence together the wire can be "rewoven" back into place forming a perfect splice.

(d) COMMAND ACTION: None

(7) Item: Jammed Auger Bits

(a) OBSERVATION: When drilling extremely long holes with auger bits a recurring problem is the sudden seizing of the bit in the hole. This forces the work progress to stop while the bit is freed, and can result in losing or damaging the bit.

(b) EVALUATION: When drilling with a long (greater than 12") bit, the chips do not rise to the surface unless the bit is raised part way out of the hole every inch. This action allows chips to be cleared from the hole. If the chips are not cleared they often will pack around the bit thereby locking it in place.

(c) RECOMMENDATION: When using auger bits the chips should be cleared from the hole as progress is made. The clearing process becomes more critical with deeper holes.

(d) COMMAND ACTION: None

(8) Item: Proof Roll in a Minesweep Operation.

(a) OBSERVATION: During a proof roll, using a five ton dump truck, a mine was hit destroying the vehicle and wounding two men.

(b) EVALUATION: The five ton dump was loaded with sand and was backing down the road. The mine was detonated, the fuel tanks were ruptured spraying fuel over the truck. The driver was leaning out the door looking backwards and the assistant driver was standing on the running board on the passenger side. Both men were sprayed with fuel and burned.

(c) RECOMMENDATIONS: The proof roll vehicle should not have an assistant driver. The driver should have the door shut and make use of the mirror when backing up. This will protect him from the blast as well as any sprayed fuel. The floor of the cab should be lined with steel plate and sand bags to include the area under the seat. Sand bags should be placed on top of the saddle tanks. Finally, the fuel tanks should contain minimum essential fuel to reduce the fire hazard.

(d) COMMAND ACTION: None

(9) Item: Seldom Used Equipment

(a) OBSERVATION: When a unit uses a truck mounted piece of equipment which may operate in one location for a long period (such as a communications van or truck mounted water purification units) the basic truck unit may not be used for an extended length of time. When the unit is eventually placed on the road, the basic vehicle often malfunctions during the trip.

(b) EVALUATION: When a truck mounted piece of equipment is used for an extended time on one site, the general reliability of the prime mover declines. This loss of reliability is due to deterioration of engine components from corosion, drying of seals, hardening of rubber boots, decay of grease in various joints, and loosening of nuts and bolts from the vibration of the mounted equipment.

(c) RECOMMENDATION: Periodic maintenance of the prime mover is absolutely essential. Canibalization should never be allowed and if it is due to operational necessity, the replacement part must be obtained, often the unused vehicle is forgotten until it is needed. Prior to operating the vehicle after a long period, a complete inspection, servicing and test drive must be performed. The inspection should include such things as brake cylinders, wheel bearings, steering, suspension, electrical system, fuel system and other necessary accessories.

(d) COMMAND ACTION: Require road tests of long dormant vehicles before road march begins.

(10) Item: Decking on Bunkers

(a) OBSERVATION: When constructing bunkers the roof deck is often made up of laminated timber with two or more layers. An often used pattern for laying the deck is to place the first layer spanning the stringers with the next layer placed at 90 degrees (parallel to the stringers).

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(b) EVALUATION: The reason for placing the decking at 90 degree angles is to promote load distribution. If the strength of the deck is analyzed for a point load it will be found that a more advantageous arrangement will be to have both layers run in the same direction (both layers spanning the stringers) the required load distribution is accomplished by the two to three feet of sand bags which the normal bunker has on the roof.

(c) RECOMMENDATION: When designing a roof deck for a bunker the first layer must span the space between the stringers. If only two layers are used, the second should run parallel to the first. For three or more layers of deck the individual layers should be arranged at 90 degree angles to each other.

(d) COMMAND ACTION: None

(11) Item: Security at a mined culvert site

(a) OBSERVATION: Repair crews dispatched to a sabotaged culvert site are found to operate in a pattern that is nearly impossible to alter, thereby making them highly vulnerable to booby traps and mines placed in the predictable work areas.

(b) EVALUATION: Saboteurs often return to sabotaged culvert sites on isolated stretches of paved highways and place mines in the crater to hinder work efforts. Recently there has been increased incidence of secondary mines placed at some distance from the original site. The secondary mines are placed in the probable areas where the road repair equipment will be forced to operate. Indications in Central Military Region I are that the saboteurs may be indicating the location of the secondary mine by a readily noticed but suspicious looking signal device. Such a device might be so suspicious looking that it is given a wide berth by the repair crew, thus retaining its value as a signal. The device may be a can or rock pile placed in the vicinity at the original explosion. Limited experience indicates that the signal may be placed across the road on the opposite side of the interdiction from the secondary mine. The distance of the signal from the interdiction may be some multiple of the distance from the interdiction to the secondary mine.

(c) RECOMMENDATION: When repairing an interdiction, the repair unit should be especially watchful for secondary mines placed in symmetry to suspicious appearing signal devices.

(D) COMMAND ACTION: Inclusion of this information in mine publications

(12) Item: Removal of M8A1 Matting

(a) OBSERVATION: Picking up M8A1 airfield matting is a difficult operation and one of the most time consuming steps is the unlocking of the panels.

(b) EVALUATION: The device for locking panels end to end consists of square bars which slide into the adjoining panel. There is no readily available tool to drive the pin back out to release the panel. One tool which can easily be fabricated makes use of one of the locking pins. The pin is ground down so it will slide easily through the locking hole. A 4 inch piece of bar stock is welded onto the locking pin so as to provide a hammering surface to strike when retracting the locking pins. 20

(c) RECOMMENDATION: Fabrication of the unlocking tools should be accomplished prior to commencing the removal of M8A1 matting.

(d) COMMAND ACTION: None

d. ORGANIZATIONS: None

e. TRAINING: None

f. LOGISTICS: None

g. COMMUNICATIONS: None

h. MATERIEL: None

i. OTHER: None

STANLEY R. JOHNSON
MAJ, CE
Acting Commander

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EGD-3 (16 May 71) 1st Ind
SUBJECT: Operational Report - Lessons Learned, 84th Engineer Battalion (Construction), Period Ending 30 April 1971

DA, Headquarters 45th Engineer Group (Construction), APO 96317
2 June 1971

THRU: Commanding General, United States Army Engineer Command Vietnam, ATTN: AVCC-HO, APO 96491

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

Subject report has been reviewed by this headquarters and is an adequate summary of significant events and lessons learned during the reporting period.

FOR THE COMMANDER:

Ernest C. Heimberg

ERNEST C HEIMBERG
CPT, CE
Asst Adjutant

18

AVCC-AO (10May71) 2nd Ind
SUBJECT: Operational Report - Lessons Learned, 84th Engineer Battalion (Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

HQ US Army Engineer Command Vietnam, APO 96491 8 JUN 1971

TO: Commanding General, US Army Vietnam, ATTN: AVHDO-DO, APO 96375

1. The significant activities and lessons learned have been reviewed and are an adequate reflection of the unit's operation during this period.

2. Reference item concerning "Bunkers Underdesigned", page 9, paragraph 2c(2). USAECV Tb 415-6, 6 Feb 71, provides guidance on the construction of permanent, uniform bunkers. DA Tb 5-15-1 has been published to provide detailed information on prefabricated concrete and steel bunkers, shelters, and fighting hole covers. FM 5-34 provides information on the construction of field bunkers using locally available material. It is not felt that additional publications are required. No action by USARPAC or DA is recommended.

3. Reference item concerning "Seldom Used Equipment", page 12, paragraph 12 c (9). Concur with the recommendation which is current D.A. doctrine. No action by USARPAC or DA is recommended.

4. Reference item concerning "Decking on Bunkers", page 12, paragraph 2c (10). Nonconcur. If only two layers of deck are used the first layer should be placed perpendicular to the stringers and the second placed at a 45 degree angle to the first. It is recommended, however, that if time and availability of materials permit, bunker roofs should be laminated, consisting of three or more layers of deck placed at right angles to each other. Additionally, a burster layer should be provided as described in FM 5-34. No action by USARPAC or DA is recommended.

5. Reference item concerning "Security at a Mined Culvert Site", page 13, paragraph 2c (11). Concur. Information will be published in next edition of USARV Mine Warfare Notes. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:

Charles M Peterson

CHARLES M. PETERSON
1LT, CE
Act Asst Adjutant General

CF:
84th Engr Bn
45th Engr Bn

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15 JUN 1971

AVHDO-DO (16 May 71) 3d Ind
SUBJECT: Operational Report - Lessons Learned, 84th Engineer Battalion (Construction) APO San Francisco 96349

Period Ending 30 April 1971, RCS CSFOR - 65 (r3)

Headquarters, United States Army Vietnam, APO San Francisco 96375

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

This Headquarters has reviewed the Operational Report-Lessons Learned for the period ending 30 April 1971 from Headquarters, 84th Engineer Battalion and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

F. J. HONSOWETZ
CPT. AGC.
Assistant Adjutant General

Cy furn:
84th Engr Bn
USAECV

24

GPOP-FD (16 May 71) 4th Ind
SUBJECT: Operational Report-Lessons Learned, Headquarters 84th Engineer Battalion (Const), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 30 JUN 1971

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:

L.M. OZAKI
CPT, AGC
Asst AG

21

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DEPARTMENT OF THE ARMY
HEADQUARTERS, 39TH ENGINEER BATTALION (COMBAT)
APO SAN FRANCISCO 96325

EGD-BA-3 15 May 1971

SUBJECT: Operational Report of 39th Engineer Battalion (Combat) for Period Ending 30 April 1971, RCS CSFOR-65 (R3)

THRU: Commanding Officer
45th Engineer Group
ATTN: EGD-3
APO 96317

Commanding General
US Army Engineer Command
ATTN: AVCC-MO
APO 96491

Commanding General
United States Army, Vietnam
ATTN: AVHDO-DO
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. 70310

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TYPE	NOV	DEC	JAN	FEB	MAR	APR	TOTAL
4.2 in. rounds	0	0	0	0	1	0	1
grenades	2	0	5	41	63	46	157
VC/BT mines	3	0	0	3	2	0	8
AP mines	0	0	7	38	6	0	51
claymores	3	0	0	0	4	1	8
bombs	0	0	0	1	0	0	1
M-79 rounds	0	2	2	19	88	28	139
SA ammunition	0	0	0	36	100	164	300
50 cal ammo	0	0	0	0	25	0	25
B-40 rockets	0	1	0	0	5	6	12
LAW	0	0	0	0	5	2	7
CBU	0	0	0	1	7	0	8
explosives	0	0	0	0	3	2	5
fuses	0	0	0	27	6	57	90
blasting caps	0	0	0	0	0	1	1
smoke grenades	0	0	0	0	0	4	4
~~Piasters paid~~	~~3,740~~	~~580~~	~~540~~	~~13,240~~	~~57,000~~	~~20,770~~	~~96,270~~

SECTION II LESSONS LEARNED

A. Personnel: None.

B. Operations:

1. Peneprining Wooden Structures:

a. Observation: The life of structures made out of untreated timber may be increased by the application of peneprime. This peneprime had been put on with brushed which involved a time-consuming and messy operation.

b. Evaluation: A more expedient way must be found to speed construction.

c. Recommendation: Thin the peneprime with diesel fuel and spray the solution on the structure with a fire extinguisher.

FOR OT UT
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Incl 3

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d. Command Action: By diluting the penoprime with diesel fuel and spraying the solution on the structures with a hand pump fire extinguisher application time was cut in half. Cleaning of the fire extinguisher with diesel fuel restored the extinguisher to its original condition.

2. Communications During Airlifts

a. Observation: During airlifts of towers and bunkers with the use of a CH-47 or a flying crane, communications between the helicopter and the ground, especially when the ship is hovering overhead, has been noted to be a big problem.

b. Evaluation: In order for an airlift to be successful the best communications possible must be maintained between the two units.

c. Recommendations: Secure a headphone set to be used with the ground radio. When the ground element is talking the microphone should be shielded behind something.

d. Command Action: Attaching a headphone to the ground radio has been used to make it easier for the ground element to hear the pilot of the helicopter better. Placing the microphone behind the windshield of the vehicle has enabled the pilot to better understand instructions from the ground. The improved communications has reduced the time required to move bunkers and towers, considerably increasing the availability of helicopters.

3. Airlift of Bunkers by CH-47

a. Observation: When airlifting a bunker with a CH-47 the bunker may turn so that the crew chief cannot determine from his ship which is the front, rear or sides of the bunker. Without knowing this information the bunker can very easily be placed incorrectly.

b. Evaluation: The helicopter pilot must have some method of knowing which is the front and back of the bunker.

c. Recommendation: Paint an arrow on the roof of the bunker showing the direction of placement.

d. Command Action: By painting an arrow on the roof of the bunkers the time required to place bunkers was reduced considerably and the job was done properly without need to redo the job.

4. Construction of Headwalls

a. Observation: Timber headwalls tend to decay, give way, or are stolen.

b. Evaluation: Properly constructed headwalls and culverts are essential. Poorly constructed headwalls give way allowing the culvert to wash out.

c. Recommendation: Large rocks cemented together or concrete should be used for the construction of all headwalls.

d. Command Action: Masonary headwalls made from large stones cemented together are being built and have proved durable during the worst weather.

5. Expedient Methods of compaction

a. Observation: When compaction equipment is deadlined a substitute method must be found or work will come to a halt.

b. Evaluation: An expedient method of compaction must be found.

c. Recommendation: Use a loaded 290M

d. Command Action: By using a loaded 290M with scraper up and down the road, it is possible to obtain the necessary compaction. The vehicle must be operated at a speed of 5 MPH or slower and the tire tracks must overlap so as to cover the entire road.

6. Positioning Driven Piles

a. Observation: Piles on a bridge must be properly positioned if the bridge is going to carry its designed load.

b. Evaluation: A method must be found to align piles driven incorrectly.

c. Recommendation: Use a jack to spread piles and a come-a-long to pull them together.

d. Command Action: A screw type jack when placed between piles can be used to separate them. When piles require to be pulled together a come-a-long and chain arangement works very well.

7. Replacement of Wooden Headwalls by Masonary Headwalls.

a. Observation: When the wooden headwalls on a culvert are removed the road caves in closing the road until the masonary headwall is built.

b. Evaluation: A method must be found to replace the headwalls while keeping the road open.

c. Recommendation: Build the masonary headwall before tearing down the wooden one.

d. Command Action: The wooden headwalls are left in place and the culvert is extended to the desired width of the masonary wall. The new headwall is then built. When the masonary wall is completed, the wooden headwall is torn down and the site back filled. This method has significantly reduced manhours and equipment hours and allowed for maximum traffic on the road during construction.

8. Applying Nonskid Paint to Airfields

a. Observation: The application of nonskid paint to an airfield with the use of brooms is a very messy and time consuming operation.

b. Evaluation: An easier method of applying the paint must be found.

c. Recommendation: Spray the paint on using a pressure vessel and an air compressor.

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d. Command Action: A 55 Gal. drum is placed in the bed of a 5 Ton dump truck to allow for gravity feed to the sprayer. A pneumatic drill with a propellor on the end is used to mix the paint in this barrel. The pressure vessel for the paint sprayer was made from the ends of a fuel filter off a Tank Truck. After the paint is charged into the pressure vessel, the vessel is pressurized forcing the paint out of the vessel and to the gun made from 3/4" pipe. Another air hose is attached to the gun which serves to atomize the spray. Using this method considerble time was saved painting the Chu Lai East Airfield.

C. Training: None.

D. Intellegance: None

E. Logistics: None

F. Organization: None

1 Incl - wd, HQ DA
as

W. R. MINN
LTC, CE
Commanding

31

EGD-3 (15 May 71) 1st Ind
SUBJECT: Operational Report - Lessons Learned, 39th Engineer Battalion (Combat), Period Ending 30 April 1971

DA, Headquarters 45th Engineer Group (Construction), APO 96317
2 June 1971

THRU: Commanding General, United States Army Engineer Command Vietnam, ATTN: AVCC-HO, APO 96491

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

Subject report has been reviewed by this headquarters and is an adequate summary of significant activities and lessons learned during the reporting period.

FOR THE COMMANDER:

Ernest C. Heimberg

ERNEST C. HEIMBERG
CPT, CE
Asst Adjutant

AVCC-MO (15 May 71) 2nd Ind
SUBJECT: Operational Report - Lessons Learned, 39th Engineer Battalion (Combat), Period Ending 30 April 1971, RCS CSFOR - 65 (R3)

HQ, US Army Engineer Command, Vietnam, APO 96491 14 JUN 1971

TO: Commanding General, US Army, Vietnam, ATTN: AVHDO-DO, APO 96375

1. The significant activities and lessons learned have been reviewed and are an adequate reflection of the unit's operation during this period.

2. Reference item concerning "Expedient Methods of Compaction", page 26, para B-5. Qualified concurrence. Expedient method of compaction is acceptable for tactical roads, but should not be utilized on permanent roads using LOC standards. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:

Charles M Peterson

CHARLES M. PETERSON
1LT, CE
Act Asst Adjutant General

Copies furnished:
39th Engineer Battalion
45th Engineer Group

33

AVHDO-DO (15 May 71) 3d Ind
SUBJECT: Operational Report of 39th Engineer Battalion (Combat) for Period Ending 30 April 1971, RCS CSFOR-65 (R3)

Headquarters, United States Army Vietnam, APO San Francisco 96375 18 JUN 1971

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

This Headquarters has reviewed the Operational Report-Lessons Learned for the period ending 30 April 1971 from Headquarters, 39th Engineer Battalion (Combat) and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

David E. Hewitt 1Lt, AGC

F. L. HONSOWETZ
CPT. AGC.
Assistant Adjutant General

Cy furn:
39th Engr Bn
USAECV

GPOP-FD (15 May 71) 4th Ind
SUBJECT: Operational Report-Lessons Learned, Headquarters 39th Engineer Battalion (Cbt) Period Ending 30 April 1971, RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 30 JUN 1971

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:

L.M. OZAKI
CPT, AGC
Asst AG

35

DEPARTMENT OF THE ARMY
HEADQUARTERS 34TH ENGINEER GROUP (CONST)
APO San Francisco 96215

EGF-OP 19 May 1971

SUBJECT: Operational Report - Lessons Learned of Headquarters, 34th Engineer Group (Const) for period ending 30 April 1971, RCS CSFOR-65 (R3)

THRU: Commanding General
United States Army, Vietnam
ATTN: AVHDO-DO
APO SF 96357

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

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

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PROTECTIVE MARKING IS EXCLUDED
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~~(4) Close cooperation between the Military and Dynalectron, the MCA/LCC Maintenance Contractor, has solved many problems in the area of MCA/LOC equipment maintenance. The MCA/LOC deadline rate has shown an increase which is attributed to the gain of some 40 pieces of used equipment from other Groups and new Dynalectron contract which caused many qualified people to resign. MCA trucks contributed heavily to the MCA deadline rate. Truck engines are now being rebuilt in the Long Binh Dynalectron CSU which will take a considerable work load off the 34th Group and reduce the truck deadline rate.~~

2. Section 2: Lessons Learned - Commander's Observation, Evaluation and Recommendation.

a. Personnel: None

b. Intelligence: None

b. Operations

(1) Clay-lime Production

(a) Observation: The close control of lime and moisture content and the complete mixing of materials in large scale clay-lime operations proved to be difficult. Also it is desirable to compact and seal the clay-lime mixture as soon as possible after placing on the road.

(b) Evaluation: It was found that the organization of clay borrow pits into well defined premixing areas was by far the most efficient method used. Areas were laid out in dimensions such that when a six inch cut of clay was mixed, the volume of material equalled approximately the desired amount to be hauled each day. By utilizing three such areas it was possible to be mixing in one, curing in the second and hauling from the third. This technique permitted accurate control of lime and moisture contents as well as allowing required curing to take place prior to placement on the road.

(c) Recommendation: Where clay-lime borrow operations can be organized in a sequential premix manner as described, significant gains in quality control and efficiency of placement can be made.

(d) Command Action: Each Battalion is now utilizing this procedure in their clay-lime operations.

(2) Quality Control Personnel

(a) Observation: The number of TOAE quality control personnel authorized in a construction Group is not adequate to meet the requirements of a unit which is as heavily committed to road construction operations as this unit has been.

SUBJECT: Operational Report - Lessons Learned of Headquarters, 34th Engineer Group (Const) for period ending 30 April 1971, RCS CSFOR-65 (R3)

(b) Evaluation: Civilian quality control teams were hired by contract to augment the unit soils testing capability. These personnel provided the technical training and equipment not available in our own units. Also they provided a longer term continuity to the jobs and a valuable disinterested view of the quality of our work.

(c) Recommendation: Where a unit's mission requirements exceed capabilities designed into the TO&E, problems in specialized areas can be very greatly eased by the use of trained contractor teams of local nationals.

(d) Command Action: Contracted civilian quality control teams are being utilized to augment units soil testing capabilities.

(3) Use of MX19 Matting

(a) Observation: An airfield surface constructed of MX19 matting during the dry season was seriously damaged and had to be removed during monsoon floods.

(b) Evaluation: Consideration of the natural buoyancy of the honeycombed structure of the MX19 matting should be taken in planning the type of airfield surface to be utilized in areas subject to inundation. The anchorage provided with the matting is not sufficient to prevent the panels from floating and any anchorage system which would do so would not be economical.

(c) Recommendation: MX19 matting should be used only in areas which are high enough elevation to insure against damage by floods.

(d) Command Action: The unit has not incorporated MX19 matting in their design.

d. Organization: None

e. Training: None

f. Logistics: Transportation of Supply

(1) Observation: 34th Engineer Group units had to devote large amounts of organic haul capabilities to transportation of supplies and construction materials from depot to units and from unit supply areas to job sites. Also since many project sites in the Delta were not accessible by road for heavy loads, much water transportation was needed.

(2) Evaluation: The dedication of organic haul assets to extensive logistic movements diverted critical equipment from construction projects. The water transportation, truck support and offload assistance provided by the Logistic Support Activity were not adequate to meet the extensive LOC requirements in the Delta.

EGF-OF
SUBJECT: Operational Report - Lessons Learned of Headquarters, 34th Engineer Group (Const) for period ending 30 April 1971, RCS CSFOR-65 (R3)

(3) Recommendation: When planning the logistical support for massive road construction projects in areas such as the Delta, sufficient land and water transportation must be provided to Engineer units. Supporting units should be immediately responsive to transportation priorities assigned by Engineer Commanders.

(4) Command Action: Request for transportation support as described have been made thru command channels.

g. Communications: None

h. Material: None

i. Other: None

2 Incl - wd, HQ DA
~~1. 1 Gp Organizational Chart~~
~~2. 1 Gp AAR Rep~~

(JAMES A. JOHNSON
Colonel, CE
Commanding

Copies Furnished:
2-CINCUSARPAC, ATTN: GPOP-DT
3-CG, USARV, ATTN: AVHDC-DC
3-CG, USAECV, ATTN: AVCC-MC

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AVCC-MO (19May71) 1st Ind
SUBJECT: Operational Report - Lessons Learned, 34th Engineer Group (Construction) Period Ending 30 April 1971, RCS CSFOR - 65 (R3)

HQ US Army Engineer Command Vietnam, APO 96491 **2 JUN 1971**

TO: Commanding General, US Army Vietnam, ATTN: AVHDO-DO, APO 96375

1. The significant activities and lessons learned have been reviewed and are an adequate reflection of the unit's operation during this period.

2. Reference item concerning "Clay-Lime Production", page 9, paragraph 2b(1). Concur with the recommendation and command action taken. The organization of clay-lime borrow pits into seperate pre-mixing, curing, and haul areas permits greater efficiency in large-scale clay-lime production and placement. This method of operation also increases effectiveness of quality control measures involved in clay-lime production. No action by USARPAC or DA is recommended.

3. Reference item concerning "Quality Control Personnel", page 9, paragraph 2b(2). Concur with the recommendation and command action taken. The use of trained local nationals as quality control personnel would be desirable. Test results would be efficient, non-biased and performed with the necessary frequency. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:

Charles M Peterson

CHARLES M. PETERSON
1LT, CE
Act Asst Adjutant General

CF:
2 - ACSFOR, DA
1 - CO, 34th Gp

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19 JUN 1971

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AVHDO-DO (19 May 71) 2d Ind
SUBJECT: Operational Report - Lessons Learned of Headquarters, 34th Engineer Group (Const) for period ending 30 April 1971, RCS CSFOR-65 (R3)

Headquarters, United States Army Vietnam, APO San Francisco 96375

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

This Headquarters has reviewed the Operational Report-Lessons Learned for the period ending 30 April 1971 from Headquarters, 34th Engineer Group (Const) and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

F. L. HONSOWETZ
CPT, WAC
Acting Asst Adjutant General

Cy furn:
USAECV
34th Engr Gp (Const)

41

GPOP-FD (19 May 71) 3d Ind
SUBJECT: Operational Report-Lessons Learned of Headquarters, 34th Engineer Group (Const) for Period Ending 30 April 1971, RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 30 JUN 1971

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:

L.M. OZAKI
CPT, AGC
Asst AG

43

DEPARTMENT OF THE ARMY
HEADQUARTERS 36TH ENGINEER BATTALION (CONST)
APO San Francisco 96357

EGFE-OP 25 May 1971

SUBJECT: Operational Report - Lessons Learned, 36th Engineer Bn (Const), Period Ending 30 April 1971 RCS CSFOR-65 (R3)

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT, APO 96588
Commanding General, US Army, Vietnam, ATTN: AVHDO-DO, APO 96307
Commanding General, US Army, Engineer Command, Vietnam (P) ATTN: AVCC-MO, APO 96491
Commanding Officer, 34th Engineer Group, ATTN: EGF-OP, APO 96215

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2. Section II, Lessons Learned, Commander's Observations, Evaluation, Recommendations and Command Action.

a. Personnel: None

b. Intelligence: None

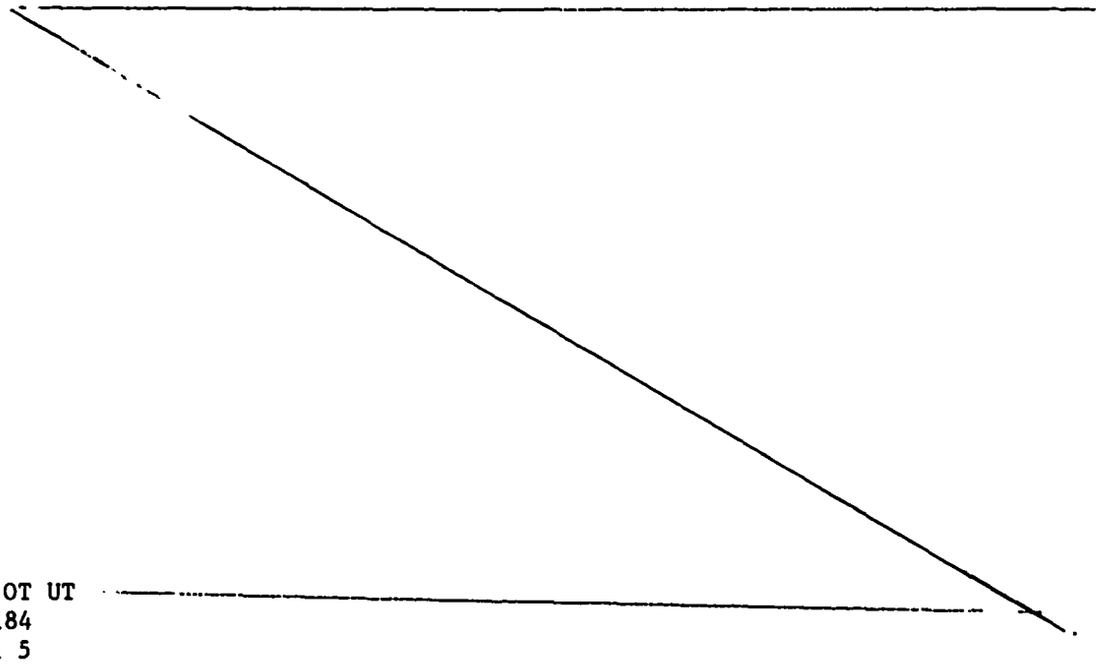
c. Operations:

(1) Windrowing to adjacent lanes.

(a) Observation: It has been found when clay liming areas, it is better to rip and windrow the material from one lane on to the adjacent lane rather than push all the earth which must be removed in to a pile at the end of the excavation. A crawler tractor (ripper cat) is necessary to loosen the soil. The remainder of the work can be done with a grader.

(b) Evaluation: This method improves visibility and reduces traffic congestion. In addition to strengthening the lane open, the excavated lane is usable in most cases. This method also reduces waste.

(c) Recommendation: That this method be adopted in areas where long stretches of subbase must be prepared.



(d) Command Action: This method has been adopted by this battalion and is presently being used in the construction of highway LTL-7A.

(2) Premixing clay-lime.

(a) Observation: Premixing clay-lime has proven much more effective than on site mixing. It is much easier to control the amounts of lime and water added to the clay and eliminates much of the traffic congestion inherent with on site mixing.

(b) Evaluation: The end product is of a much higher quality due to a set cure time and controlled moisture content.

(c) Recommendation: With proper equipment a premix operation is superior Some difficulty has been experienced with non-compatibility of pieces of equipment (i.e. fittings accessories) and the applicability of said equipment. A rototiller is quite suitable for this type work, but must be built strong enough to stand up to prolonged use.

(d) Command Action: Co B is presently operating a clay pit utilizing this method.

(3) Small Culvert Construction.

(a) Observation: During the construction of culvert LTL-7A/5A single span single lane M4T6 bulk bridge was constructed over the excavation for the culvert.

(b) Evaluation: This permitted construction of the whole culvert at one time instead of half a culvert at a time as had previously been done. Time of construction was decreased and quality control was improved.

(c) Recommendation: That this procedure be used in the future construction of small culverts.

(d) Command Action: This method has become SOP for all culvert construction in this battalion.

(4) Chamfer Strip

(a) Observation: Chamfer strips were used for the construction of abutments and pier caps at Bridge #6/LTL-7A and Bridge #8/QL-4.

(b) Evaluation: The edges of concrete pier caps and abutments are less prone to chip when chamfer strips have been used.

(c) Recommendation: That chamfer strips be included in the design of pier caps and abutments of future bridges.

(d) Command Action: Quinton Building has specified that chamfer strips be used on all bridges designed by them for the 1971 program.

(5) Pile Driving.

(a) Observation: An 8" hairpin drop hammer (See sketch) has been used to

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drive sheet pile in place of a deisel hammer w/swinging leads.

(b) Evaluation: The four (4) ton drop hammer has proven to be very efficient due to the fact that no time is wasted with leads. It is also very useful when starting long sheets where there is insufficient clearance between the top of the sheet and the tip of the boom to accomodate a deisel hammer. An extra advantage is that the hammer can be left set in place on the sheet pile should the crane be needed for another mission.

(c) Recommendation: This type hammer can be fabricated using 8" rolled steel.

(d) Command Action: A hammer of this type was used to drive sheet pile at Bridges 1 and 6 LTL-74 with much success.

(6) Prestressed Concrete Pile.

(a) Observation: It was observed that the use of a wild hammer, (hammer without leads) for driving concrete pile was not effective.

(b) Evaluation: After trying this method it was found that the second length of pile would shear very easily.

(c) Recommendation: The leads be used whenever driving prestressed concrete pile.

(d) Command Action: A set of leads has been modified to drive concrete pile on a batter which is perpendicular to the long axis of the crane.

(7) Operation: Loading of the Cedar Rapids paver on to the 25 ton low bed.

(a) Observation: When loading the Cedar Rapids paver on and off of the 25ton low bed, the screed will drag, causing possible damage to the screed. To eliminate this problem blocks were constructed from 2"x 6" to raise the end of the loading ramp.

(b) Evaluation: This procedure gives additional clearance for the screed and eliminates possible damage to the screed.

(c) Recommendation: This procedure be used whenever loading or offloading the Cedar Rapids paver.

(d) Command Action: This method has been adopted by this battalion and is used whenever the paver is moved.

(8) Perimeter Maintenance.

(a) Observation: Grass cutting in perimeter wire is extremely difficult and time consuming.

(b) Evaluation: Attempts to police the wire forming the perimeter, have been very difficult due to the growth of grass and other vegetation. This problem has required many hours of hard labor to correct and even these efforts have been limited in effectively providing a clear easily observed area.

47 EGFE-OP 25 May 1971
SUBJECT: Operational Report - Lessons Learned, 36th Engineer Bn (Const), Period Ending 30 April 1971 RCS CSFOR-65(R3).

(c) Recommendation: That when ever possible defense wires be installed over ground that has been cleared and then shot with an asphalt compound, such as pensprime.

(d) Command Action: The perimeter of Co C base camp has been cleared and grubbed and plans are to shoot the area with an AC prior to installation of defensive wire.

(9) Production Ready-Mix Concrete

(a) Observation: In producing concrete for pours a considerable distance from the batch plant it was noted that on arrival at the site heat of hydration was causing flash setting of the mix. To eliminate this problem a percentage of water was removed from the mix. The water that was removed was replaced by ice. By utilizing ice the mix was kept at lower temperatures over the long haul and eliminated flash setting of the mix. Up to 120 lbs of ice were added to each truckload.

(b) Evaluation: This procedure eliminates the possibility of flash set in the mix over a long haul distance. Consequently more accurate slumps were obtained at the job site.

(c) Recommendation: That this method be utilized in the future where the job site necessitates a long haul from the batch plant.

(d) Command Action: This method was used in the construction of bridge # 11/LTL-7A where the travel time from plant to site was approximately one hour and was very successful.

(10) Constructing Turn-arounds.

(a) Observation: Dump truck operators are reluctant to go very far to turn around and consequently try to turn around on the road.

(b) Evaluation: Turning around on the road causes traffic congestion and tears up the shoulders.

(c) Recommendation: That turn around points be constructed at 1 km intervals. This would expedite the process at turning around by avoiding traffic congestion and most important, it would prevent the shoulders from being torn up.

(d) Command Action: Co B has been instructed to construct turn-arounds at one Km intervals along the road.

WILLIAM R. POTTER
LTC, CE
Commanding

2 Incl
1 Drawing
~~1 Comments 1st Ind~~ wd, HQ DA

(c) Recommendation: It is when ever possible defense wires be installed over ground that has been cleared and then shot with an asphalt compound, such as pelegrime.

(d) Command Action: The perimeter of the C & C base camp has been cleared and grubbed and plans are to shoot the area with an AC prior to installation of defensive wire.

(9) Production Ready-Mix Concrete

(a) Observation: In producing concrete for pours a considerable distance from the batch plant it was noted that on arrival at the site heat of hydration was causing flash setting of the mix. To eliminate this problem a percentage of water was removed from the mix. The water that was removed was replaced by ice. By utilizing ice the mix was kept at lower temperatures over the long haul and eliminated flash setting of the mix. Up to 120 lbs of ice were added to each truckload.

(b) Evaluation: This procedure eliminates the possibility of flash set in the mix over a long haul distance. Consequently more accurate slumps were obtained at the job site.

(c) Recommendation: That this method be utilized in the future where the job site necessitates a long haul from the batch plant.

(d) Command Action: This method was used in the construction of bridge # 11/LTL-7A where the travel time from plant to site was approximately one hour and was very successful.

(10) Constructing Turn-arounds.

(a) Observation: Dump truck operators are reluctant to go very far to turn around and consequently try to turn around on the road.

(b) Evaluation: Turning around on the road causes traffic congestion and tears up the shoulders.

(c) Recommendation: That turn around points be constructed at 1 km intervals. This would expedite the process at turning around by avoiding traffic congestion and most important, it would prevent the shoulders from being torn up.

(d) Command Action: Co B has been instructed to construct turn-arounds at one km intervals along the road.

WILLIAM R. POTTER
LTC, CE
Commanding

2 Incl
1 Drawing
~~1 Consecutive Bn Orgs~~ wd, HQ DA

AVCC-MO (28May71) 2nd Ind
SUBJECT: Operational Report - Lessons Learned, 30th Engineer Battalion (Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

HQ US Army Engineer Command Vietnam, APO 96491 5 JUN 1971

TO: Commanding General, US Army Vietnam, ATTN: AVHDO-DO, APO 96375

The significant activities and lessons learned have been reviewed and are an adequate reflection of the unit's operation during this period. No action by USARPAC or DA is recommended.

FOR THE COMMANDER:

Charles M Peterson

CHARLES M. PETERSON
1LT, CE
Act Asst Adjutant General

CF:
CO, 30th Engr bn
CO, 34th Engr Gp

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AVHDO-DO (25 May 71) 3d Ind 5 JUN 1971
SUBJECT: Operational Report - Lessons Learned, 36th Engineer Bn (Const), Period Ending 30 April 1971 RCS CSFOR-65(R3)

Headquarters, United States Army Vietnam, APO San Francisco 96375

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

This Headquarters has reviewed the Operatio[illegible]port-Lessons Learned for the period ending 30 April 1971 from H[illegible]ers, 36th Engineer Battalion (Const) and concurs with comment[illegible] orsing headquarters.

FOR THE COMMANDER:

F. L. HONSOWETZ
CPT. AGC.
Assistant Adjutant General

Cy furn:
USAECV
36th Engr Bn

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GPOP-FD (25 May 71) 4th Ind
SUBJECT: Operational Report-Lessons, Headquarters 36th Engineer Battalion (Const), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 30 JUN 1971

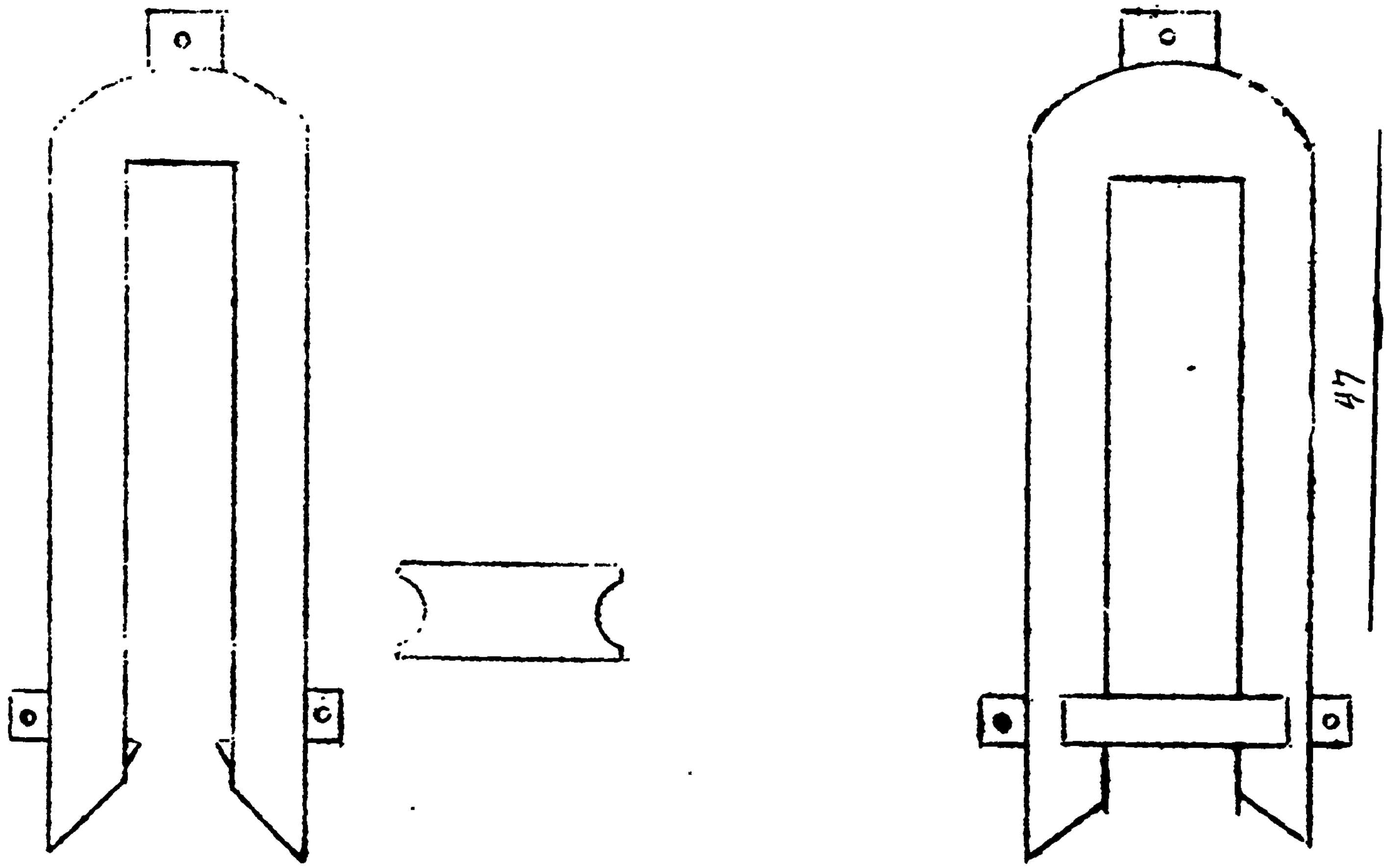
TO: Assistant Chief of Staff for Force Development, Department of the Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

L.M. OZAKI
CPT, AGC
Asst AG

4-TON DROP HAMMER



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