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AUTHORITY
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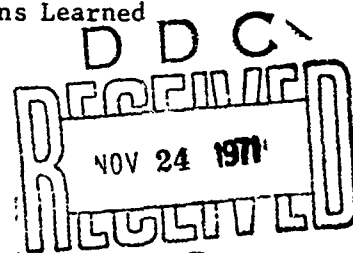
8 November 1971

SUBJECT: Operational Reports - Lessons Learned, 815th Engr Bn (Const),
14th Engr Bn (Cbt), 20th Engr Bn (Cbt), 589th Engr Bn (Const) -
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: DAFD-OTT, 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
VERNE L. BOWERS
Major General, USA
The Adjutant General

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ECAC-OP

30 April 1971

SUBJECT: Operational Report - Lessons Learned for the 815th Engr Bn (Const)
Period Ending 30 April 1971. RCS CSFOR-65(R3)

SECTION II: Lessons Learned: Commander's Observations, Evaluations, and Recommendations

- a. Personnel: None
- b. Intelligence: See Operational Report, Section I.
- c. Operations:

1. Crusher Operations:

(a) Observation: It was discovered that rock dust was being drawn into the air intakes of the diesel engines of the Pioneer 225 rock crusher even though the stacks were 40 feet high. Short engine life was the result.

(b) Evaluation: To improve industrial site rock productions, either the amount of rock dust in the air had to be reduced or the air intakes on the 225 crusher engines had to be placed in a position such that dust pickup would be minimum. To reduce rock dust, water must be introduced into the system. Water transportation shortages made this solution infeasible.

(c) Command Action: Rather than raise the stacks further, an underground air induction system utilizing corrugated metal culvert pipe was constructed. This pipe was carried out to an area well away from the rock dust, thereby allowing clean air to be supplied to the engines. Longer life and cleaner air filters resulted.

(d) Recommendations: That consideration be given to installation of such a system underground in the development stage of industrial site installation in the future.

2. Shoulder Construction:

(a) Observation: Upgrading shoulders with base course and applying double surface treatment required equipment critically needed for other roadbuilding tasks, consumed much time and effort, and resulted in a non-durable product.

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SUBJECT: Operational Report - Lessons Learned for the 815th Engr Bn (Const)
Period Ending 30 April 1971, RCS CSFOR-65(R3)

(b) Evaluation: The old method of constructing shoulders required a grader, water distributor, 10 ton roller, sweeper, asphalt distributor, choppers and dump trucks. By applying much effort, we were able to complete only about .5 to 1.0 kilometer per week. In addition, the shoulder surface was not very durable as traffic overrun caused ravelling and deterioration. A new shoulder surfacing method must be obtained.

(c) Command Action: A new method involving paving the shoulders with 1½" of asphaltic concrete meeting Asphalt Institute Specification IIC was initiated. A paver, modified to pave 8 feet wide, both upgrades and surfaces the shoulder in one pass. Not only does this method provide a far superior shoulder surface, but it requires far less effort. We pave 3 kilometers per week with this method.

(d) Recommendation: That units consider paving shoulders rather than upgrading and surfacing with DBST.

3. Poor Soil Conditions (Case 1)

(a) Observation: Several areas of extremely soft, wet, "soupy" material were found underlying the road.

(b) Evaluation: Application of blast rock and other coarse rock failed to stabilize the soft in-place material. Compaction effort placed upon the rock caused "pumping" and a quick condition resulted. Since no sand or laterite was available, and the wet material went too deep for draining, an alternate solution was necessary.

(c) Command Actions: A friable sandstone containing numerous fines was hauled to the site and dumped from the firm road into the soft material. A dozer was used to spread the sandstone blanket over the soft material. Care was taken to keep wheeled traffic off the blanket and the dozer operator kept at least 1.5 meters of material under his tracks at all times. After the uncompacted blanket was completed, an additional 1.0 meters of material was properly compacted above the blanket.

(d) Recommendation: That this method be used where appropriate blanket material is available.

4. Poor Soil Conditions (Case 2)

(a) Observation: A 150 meter long section of existing road along a hillside had failed. Construction excavation revealed a water-bearing stratum approximately 105 meters long and 6 feet below the proposed finish grade.

(b) Evaluation: In view of the extent of the water-bearing stratum and because water was flowing under considerable head, sealing with impervious material or conveying the water under the road was not feasible. An alternate method of draining the water had to be established.

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SUBJECT: Operational Report - Lessons Learned for the 815th Engr Bn (Const)
Period Ending 30 April 1971, RCS CSFOR-65(R3)

30 April 1971

(c) Command Action: An extensive French drain 150 meters long, 10 feet wide, and from 8 feet to 3 feet deep was constructed of blast rock along the face of the stratum and parallel to the road. The drain conveyed water throughout the dry season.

(d) The French drain should be considered in places where an open ditch is impractical.

5. Cement Stabilization:

(a) Observation: A 40 meter stretch of base course continued to pump after repeated scarifying and rolling.

(b) Evaluation: One platoon expended an inordinate amount of time trying to bring a short stretch of base course to compaction. Rather than continue to waste large amounts of equipment and man hours, cement stabilization brought the area to proper density in a few hours.

(c) Recommendation: That cement stabilization be used when small trouble areas are holding up progress of large amounts of equipment.

6. Quarry Development

(a) Observation: The Hanson-Gowers Quarry at Dillard Industrial Site is running out of rock.

(b) Evaluation: The quarry in question was located based upon a ground reconnaissance by military and civilian engineers, but without the benefit of a qualified geological opinion or core drilling. The Industrial Site and cantonment were then sited relative to the quarry, thereby "locking in" the quarry location. Since beginning the development of the quarry, considerable effort and funds have been expended in order to obtain sufficient quantities of rock. The quantity of overburden removed greatly exceeds the amount of blast rock obtained.

(c) Command Action: Vertical mining was resorted to in order to obtain blast rock. Drainage and traffic patterns were greatly complicated.

(d) Recommendations: That future quarry sites be thoroughly explored and analyzed. Exploration should be conducted by an experienced geologist with the benefit of a core drill. Although this will entail considerable initial cost, much money would be saved in the long run.

7. Organization:

1. Table of Organization and Equipment:

(a) Observation: The construction battalion Table of Organization and Equipment is inefficient when the unit is primarily committed to road construction.

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SUBJECT: Operational Report - Lessons Learned for the 815th Engr Bn (Const)
Period Ending 30 April 1971, RCS CSFOR-65(R3)

(b) Evaluation: As mentioned earlier in the Operational Report section, this unit found the TOE inefficient in that it is based upon a broad mission. Road construction intensifies the need for certain skills.

(c) Command Action: The battalion was reorganized to make each platoon and company a specialist in one function, i.e., rock production, earthwork, subbase, base course, paving, haul, etc. This functional organization, shown in Inclosure 2, increased our production in all areas at least 100%.

(d) Recommendations: That all construction battalions involved primarily in LOC work consider functional organization.

e. Training: None

f. Logistics: None

g. Communications: None

h. Material:

(1) XM747, 52½ ton heavy equipment transporter.

(a) Observation: Premature failure of suspension system has occurred on all 52½ ton HET's in the battalion.

(b) Evaluation: Continued use of the 52½ ton trailer over rough roads has caused damage to the rear piston and spring assembly on the suspension system.

(c) Command Action: Analysis of the problem revealed the necessity to maintain air pressure in axles 7 and 8 at all times even when travelling unloaded. In this way a cushion is always maintained between the fastening plate of the spring assembly and the top of the piston.

(d) Recommendation: An EIR has been submitted. Axles 7 and 8 should only be lifted when maneuvering or making sharp turns in order to prevent wheel scruff.

(2) Dozer Blade End Bits.

(a) Observation: End bits frequently fail on dozers due to extreme surface wear.

(b) Evaluation: An increase in the time between end bit replacement, as well as more complete material utilization would be possible if the new end bit could have a protective surface.

(c) Command Action: The old end bit is used as a protective surface.

(d) Upon replacing the old end bit with a new bit, do not discard the old end bit, rather affix the new bit in the usual manner and weld the old end bit over the new in such a manner as to afford a protective wearing surface.

7.

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30 April 1971

SUBJECT: Operational Report - Lessons Learned for the 815th Engr Bn (Const)
Period Ending 30 April 1971, RCS CSFOR-65(R3)

1. Other: None



G. K. WITHERS
LTC, CE
Commanding

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BOEGA-C (30 April 1971)1st Ind
SUBJ:CT: Operational Report-Lessons Learned of the 815th Engineer Battalion
(Const) Period Ending 30 April 1971, RCS CSFOR-65 (A3)

DA, Headquarters, 35th Engineer Group (Const) APO 96312, 10 June 1971

TO: Commanding General, United States Army Engineer Command, Vietnam
ATTN: AVCC-MO APO 96491

This Headquarters has reviewed the Operational Report-Lessons Learned for
the period ending, 30 April 1971 from the 815th Engineer Battalion (Const)
and concurs with the comments and observations of the Commander:

FOR THE COMMANDER:

Richard A. Palm
RICHARD A. PALM
CPT, CE
Adjutant

AVCC-MO (30Apr71) 2nd Ind

SUBJECT: Operational Report - Lessons Learned, 815th Engineer Battalion
(Construction), Period Ending 30 April 1971, RCS CSFOR-65(h3)

HQ US Army Engineer Command Vietnam, APO 96491

20 JUN 1971

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

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

2. Reference item concerning "Crusher Operations", page 6, Section II, paragraph C1 and 1st Indorsement. Concur on installation of underground induction system where no water source is available. A prime reason that the 40 foot intake stack was ineffective was the number of holes perforating it, from 3 feet above the filter element on up the stack (result of blasting). No action by USARPAC or DA is recommended.

3. Reference item concerning "Quarry Development" paragraph c(o), page 8. Concur. This practice has been adopted by USA-ENGRCOMDV. No action by DA or USARPAC is recommended.

4. Reference item concerning "52½ Ton Heavy Equipment Transporter", page 9, para h(1). Concur. Recommend action be taken by National Maintenance Point on previously submitted FIR.

FOR THE COMMANDER:

Charles M. Peterson

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

CF:
815th Engr Bn
35th Engr Gp

11-
AVHDO-DO (30 Apr 71) 3d Ind
SUBJECT: Operational Report - Lessons Learned for the 815th Engineer
Battalion (Construction), Period Ending 30 April 1971, RCS
CSFOR-65(R3)

Headquarters, United States Army Vietnam, APO San Francisco 96375


10 JUL 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, 815th Engineer Battalion (Construction) and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

Cy furn:
815th Engr Bn
USAECV


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

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GPOP-FD (30 Apr 71) 4th Ind
SUBJECT: Operational Report-Lessons Learned, HQ 815th Engineer
Battalion (Construction), Period Ending 30 April 1971,
RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 11 AUG 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:

M. L. Mah
M. L. MAH
2LT, AGC
Asst AG

EGD-BB-3

30 April 1971

SUBJECT: Operations Report - Lessons Learned, 14th Engineer Battalion
(Combat), Period Ending 30 April 1971

2. Lessons Learned: Commanders Observation Evaluations and Recommendations

A. Personnel: None

B. Intelligence: None

C. Operations:

1) Convoy Movement.

a. Observation: Vehicles in convoy have great difficulty in moving up wet mountainous roads.

b. Evaluations: Vehicles chained together, approximately five in a group can pull each other up extremely wet slippery roads.

c. Recommendations: The first vehicle in the "Daisy Chain" should be a dozer. The vehicles should be attached by 14 foot lengths of logging chains. Also, trucks gain a definite advantage when the tire pressure is between 35 and 40 psi.

d. Command Action: All units in the 14th Engr Bn have been informed on the procedures of convoy movement on wet mountainous roads.

2) Cutting Corrugated Metal

a. Observation: A welding set, needed to cut corrugated metal, is not always available.

b. Evaluation: Using a skill saw was found to be fast and effective.

c. Recommendation: By using an old blade and reversing it, smooth and fast cuts can be made. Goggles and gloves are needed to prevent eye damage and minor cuts.

d. Command Action: All units in the 14th Engr Bn have been informed of the method of cutting corrugated metal using a skill saw.

3) Peneprime Shute

a. Observation: A fast method of loading peneprime trucks in the field was needed.

b. Evaluation: A half section of 60" culvert in diameter 20' long would handle a sufficient amount of peneprime.

c. Recommendations: A 4' by 6' piece of sheet metal was welded at each end of the culvert section. A four inch valve was installed at one end in the sheet metal close to the bottom of the half tube. The other end was jacked up slightly to allow the peneprime to gravity feed.

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30 April 1971

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SUBJECT: Operational Report - Lessons Learned, 14th Engineer Battalion
(Combat), Period Ending 30 April 1971

d. Command Action: All units in the 14th Engr Bn have been informed as to the use of the penneprime shute. Shutes on hand will be used as needed.

4) Delivery of Culvert & Bridging

a. Observation: Numerous helicopter sorties of culvert tubes would be arriving the same time at many different locations.

b. Evaluation: A means to assure that the correct amount of culvert would be delivered at the location was needed.

c. Recommendation: Marker Panels were made with paint on bed sheets. Each sheet had the bridge site number painted on it. The loads to be airlifted were designated with a corresponding number. Each Pilot assumed that the call sign of the site and the receiving crew were identical. In this manner, both a visual and radio means of communication were established and the right loads were delivered to the right locations.

d. Command Action: all units in the 14th Engr Bn have been informed of the method of using marker panels.

D. Organization: None

E. Training: None

F. Logistics:

a. Observation: Construction materials delivered from the rear to the forward were sometimes delivered to the wrong project.

b. Evaluation: A more reliable system was needed.

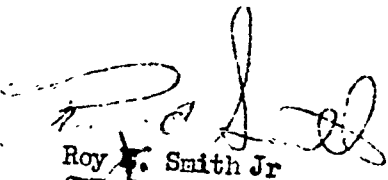
c. Recommendation: For more efficient delivery, loads were arranged according to project requirement. Then the driver of each truck was given a card which listed the contents of the load and the projects they were supposed to go to.

d. Command Action: All units in the 14th Engr Bn have been informed of the above procedure.

FOR THE COMMANDER

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Roy F. Smith Jr
CPT
Adjutant

2

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EGD-3 (30 Apr 71) 1st Ind
SUBJECT: Operational Report - Lessons Learned, 14th Engineer
Battalion (Combat), Period Ending 30 April 1971


DA, Headquarters 45th Engineer Group (Construction), AFO 96317
19 June 1971

THRU: Commanding General, United States Army Engineer Command Vietnam,
ATTN: AVCC-MO, AFO 96491

TO: Assistant Chief of Staff for Force Development, Department of
the Army, Washington DC 20310

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

FOR THE COMMANDER:


JOHN F LANGOWSKI JR
CPT, CE
Asst Adjutant

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AVCC-MO (30 Apr 71) 2nd Ind
SUBJECT: Operational Report - Lessons Learned, 14th Engineer Battalion
(Combat), Period Ending 30 April 1971, RCS CSFOR-65 (R3).

HQ US Army Engineer Command Vietnam, APO 96491 24 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 units 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

Copies Furnished:

14th Engr Bn (Cbt)
45th Engr Gp

17

AVHDO-DO (30 Apr 71) 3d Ind
SUBJECT: Operational Report-Lessons Learned, 14th Engineer Battalion
(Combat), Period Ending 30 April 1971, RCS CSFOR-65 (R3) (U)

Headquarters, United States Army Vietnam, APO San Francisco 96375 28 JUL 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, 14th Engineer Battalion and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:


FOR L. HONSOWETZ
CPT. AGC.
Assistant Adjutant General

Cy furn:
14th Engr Bn
USAECV

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GPOP-FD (30 Apr 71) 4th Ind
SUBJECT: Operational Report-Lessons Learned, HQ 14th Engineer
Battalion (Combat) Period Ending 30 April 1971
RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 17 AUG 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:

M. L. Mah

M. L. MAH
2LT, AGC
Asst AG

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EGCB-OP

SUBJECT: Operational Report - Lessons Learned, 20th Engineer Battalion
(Cbt), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

2 Lessons Learned: Commander's Observations, Evaluations, and Recommendations

a. Personnel: None

b. Intelligence:

(1) Use of Mine Dogs

a. OBSERVATION: While using Mine Dogs on minesweeps it became apparent that mine dogs were not as rapid or effective as mechanical minesweeps.

b. EVALUATION: It has been observed that the rate at which mine dogs covered a set distance of highway is slower than that of a well trained minesweep team. There is also a tendency for mine dogs to go for the larger of several mines in a cluster and thereby miss anti-personnel mines surrounding anti-tank mines.

c. RECOMMENDATIONS: That mine dogs training schools endeavor to teach dogs to go for all types and sizes of mines and to work at a faster rate of speed.

d. COMMAND ACTION: None

c. Operations:

(1) Removal of failure areas in completed Roadway surface.

a. OBSERVATION: When performing major/minor repairs to existing road surface, problems were encountered in trying to efficiently remove large failed sections of the road.

b. EVALUATION: In repairing failed section of an existing road where the damage was too extensive to be potholed the failure areas had to be removed completely down to the subbase. In doing this it was found that a 290M Scraper could provide the most efficient means of removing the failed section without damaging the existing subbase. The first step of the removal was to use the "Ripper" blades to cut the old pavement into ribbons being careful not to lower the blades too much to where they would excessively damage the subbase. The final step was to use the pan to scoop up the old pavement and haul it away.

c. RECOMMENDATION: That this method be disseminated to other Engineer Battalions who are doing similar projects.

d. COMMAND ACTION: All units in this command were trained in the use of this technique.

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EGCB-OP

SUBJECT: Operational Report - Lessons Learned, 20th Engineer Battalion
(Cbt) Period Ending 30 April 1971, RCS CSFOR-65 (R3)

(2) Improved Soils Stabilization Plant Operations

a. OBSERVATION: During road construction operations, over-sized rock and other foreign materials were found in blackbase (stabilized soil) which caused delays and hampered operations.

b. EVALUATION: Large sized rock and other foreign materials should not be allowed to pass through the soils stabilization plant and emerge in the finished product.

c. RECOMMENDATION: Have a monitoring team composed of three men, observe feeder conveyor and remove all foreign materials and large rocks before they go into the pug mill of the plant.

d. COMMAND ACTION: A monitoring team composed of foreign nationals was placed along feeder conveyor to remove foreign materials and large rocks before they were dumped into the pug mill.

(3) Increasing the Wearing Ability of Blackbase.

a. OBSERVATION: Whenever blackbase is exposed to heavy traffic, for some time before it is overpaved with asphalt, the surface rapidly deteriorates.

b. EVALUATION: The RC-800 content in blackbase is usually 4.5% which is not adequate to enable the blackbase to withstand traffic wear for any length of time. By increasing the RC-800 content to 6% the durability is increased while maintaining the same compaction standards.

c. RECOMMENDATION: Whenever additional wear resistance is required for blackbase increase the RC-800 content to 6%.

d. COMMAND ACTION: Whenever additional wear resistance is required the RC-800 content is increased to 6%.

(4) Application of RC-800 as a Tac Coat.

a. OBSERVATION: When applying RC-800 as a Tac Coat on a dusty or dirty surface proper application was hindered due to lack of penetration.

b. EVALUATION: To achieve the proper penetration of the Tac Coat the area to be "Shot" must be saturated with water if you are "Shooting" on subbase or it must be swept clean if you are "Shooting" on an asphalt surface.

c. RECOMMENDATION: It is recommended that the surface to be "Shot" be properly prepared to allow for maximum penetration.

d. COMMAND ACTION: All units using black base in this command were instructed to use this technique.

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EGCB-OP
SUBJECT: Operational Report - Lessons Learned, 20th Engineer Battalion
(Cbt), Period Ending 30 April 1971, RCS CSFOR (R3)

(5) Spreading Blackbase on Shoulders

a. OBSERVATION: Blackbase was to a great extent wasted when the load was dumped entirely on the shoulders of the road and later spread with a grader. It was also difficult to keep the shoulder width to the specifications required.

b. EVALUATION: It was found that if the load was dumped on the hard surface and leveled out with a bucket loader it could then be windrowed to the edge of the pavement by a grader. Utilizing this process the grader could then manipulate the material to the required shoulder width with very little waste.

c. RECOMMENDATION: It is recommended that the above process be utilized in order to eliminate waste to future shoulder projects.

d. COMMAND ACTION: All units using blackbase in this command were instructed to use this technique.

(6) Gun Pads for 155mm and 8" Self-propelled Artillery Pieces

a. OBSERVATION: Frequently Artillery units need hasty, all-weather, semi-permanent, type gun pads.

b. EVALUATION: In order to construct a gun pad rapidly but yet also provide a good stable surface which will withstand heavy wear and hold up well in monsoon weather, compacted blackbase was used.

c. RECOMMENDATIONS: That blackbase be used to construct hasty gun pads using as a minimum two 6" compacted lifts.

d. COMMAND ACTION: All units within this command received instructions on how to use this new technique.

(7) Squaring Asphalt at the end of a days paving

a. OBSERVATION: When completing a days operation of asphalt laydown, it was found that the end of the lane tapered under the weight of the roller and it required an excessive amount of time to square the joint before resuming operations.

b. EVALUATION: It was found that by squaring the joint before rolling and then laying a 2X4 parallel to the joint with a strip of dirt beneath it made a good square joint and decreased the time required for paving preparation the following morning.

c. RECOMMENDATIONS: That when completing a days production of asphalt the above method of squaring the lane be used.

d. COMMAND ACTION: Units who have run paving trains in this command were instructed to use this technique.

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SUBJECT: Operational Report-Lessons Learned, 20th Engineer Battalion
(Cbt), Period Ending 30 April 1971, RCS CSFOR (R3)

(8) Driving of Pickets with a Bucket Loader

a. OBSERVATION: When a large amount of pickets need to be driven, such as the installation of perimeter defences, many manhours and broken sledge hammer handles were the end result.

b. EVALUATION: It was found that, by utilizing the bucket on a bucket loader to push in the pickets rather than pound them in with a hammer, more pickets could be installed in fewer hours.

c. RECOMMENDATION: That whenever large amounts of pickets are to be driven that a bucket loader be used to expedite the process.

d. COMMAND ACTION: Units in this command were instructed to use the above technique when driving large amounts of pickets.

(9) Building of Check Dams

a. OBSERVATION: Due to heavy rains the check dams constructed in the single block design would tend to deteriorate.

b. EVALUATION: By constructing the check dams using dual block design the elimination of the deterioration of the dam can be achieved.

c. RECOMMENDATION: That check dams built in RVN be of the dual block construction.

d. COMMAND ACTION: This unit used the dual block form of construction when building check dams.

d. Organization; None

e. Training:

(1) ARVN Training

a. OBSERVATION: Training of ARVN for eventual turn-over of an industrial site presents many problems.

b. EVALUATION: Most of the problems are encountered due to the language barrier and the differences in the working times and maintenance programs of the ARVN and US Army personnel.

c. RECOMMENDATIONS: That working times of the two armies be standardized for all joint operations such as training of personnel in industrial site operations. Also that an adequate amount of english speaking ARVN Leaders be assigned to aid in the control and training of ARVN soldiers.

d. COMMAND ACTION: This unit has attempted to coordinate with ARVN advisors to correct the problems encountered in ARVN training programs.

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EGCB-OP

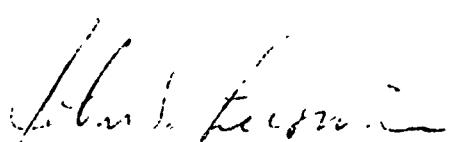
SUBJECT: Operational Report - Lessons Learned, 20th Engineer Battalion
(Cbt), Period Ending 30 April MCS CSFOR (R3)

f. Logistics : None

g. Communication: None

h. Materials: None

i. Other: None


JOHN S. LISSMAN
LTC, CE
Commanding

25

BCEGA-C (30 April 1971) 1st Ind

SUBJECT: Operational Report-Lessons Learned of the 20th Engineer Battalion (Combat), Period Ending 30 April 1971, RCS CSFOR-65 (R3).

DA, Headquarters, 35th Engineer Group (Construction) APO 96312, 1 June 1971

TO: Commanding General, United States Army Engineer Command, Vietnam

ATTN: AVCC-MO APO 96491

1. This Headquarters has reviewed the Operational Report-Lessons Learned for the period ending, 30 April 1971 from the 20th Engineer Battalion (Combat) and concurs with the comments and observations of the Commander, with the following exceptions.

Reference paragraph 2e(i).

A. The problem of obtaining ARVN interpreters in sufficient numbers has always been a problem and has not been alleviated by the increasing number of training, affiliation, and mutual assistance programs. This headquarters and the 20th Engr. Gp (ARVN) are making every effort to identify and train prospective ARVN and Vietnamese civilian interpreters.

B. MACV Adv. Tm.21 and this headquarters have discussed difficulties encountered in maintenance training, particularly with respect to varied US and ARVN working hours. Considerable progress has been made in this area since training was initiated on 9 March 71. However, room for improvement exists.

FOR THE COMMANDER:

Richard A. Palm
RICHARD A. PALM
CPT, CE
Adjutant

26 :
AVCC-PAO (15 May 71) 2nd Ind
SUBJECT: Operational Report - Lessons Learned, 20th Engineer Battalion
(Combat), Period Ending 30 April 1971, AFS GDFOR-05 (R3)

US Army Engineer Command Vietnam, APO 96491

22 JUN 1971

TO: Commanding General, US Army Vietnam, ATTN: AVHDC-DO APO 96575

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

2. Reference item concerning "Use of Mine Dogs," page 10, paragraph 2b(1). Mine dogs can work at a rate of speed which enables them to cover the entire area being swept. Use of additional dogs could increase the speed of a sweep. Mine dogs are trained to alert on the odor of explosives. If several mines and/or booby traps are close together, the dog, through instinct and ability, alerts on the strongest odor. At this time, sweep teams should use their detector equipment to make further checks. No action by USARPAC or DA is recommended.

3. Reference item concerning "Increasing the Wearing Ability of blackbase", page 11, paragraph 2c(3). Nonconcur with recommendation and command action taken. An AC-800 content of greater than 4% will not permit proper curing of blackbase. No action by USARPAC or DA recommended.

FOR THE COMMANDER:

Charles M Peterson

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

CF:
20th Engr Bn
35th Engr Gp

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AVHDO-DO (15 May 71) 3rd Ind
SUBJECT: Operational Report-Lessons Learned, 20th Engineer Battalion
(Cbt), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

Headquarters, United States Army Vietnam, APO San Francisco 96375 10 AUG 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, 20th Engineer Battalion and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

Cy furn:
20th Engr Bn
USAECV



T. L. CHILDRESS
CPT AGC
ASSISTANT ADJUTANT GENERAL

28
GPOP-FD (15 May 71) 4th Ind
SUBJECT: Operational Report-Lessons Learned, 20th
Engineer Battalion (Cbt), Period Ending 30 April 1971,
RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 13 SEP 1971

TO: HQ DA (DAFD-ZA), WASH DC 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

M. L. Mah

M. L. MAH
1LT, AGC
Asst AG

29

EGAE-CO

30 April 1971

SUBJECT: Operational Report - Lessons Learned, 589th Engineer Battalion
(Construction), Period Ending 30 April 1971, RCS CSFOR-65(R3)

2. SECTION 2. Lessons Learned: Commanders Observations, Evaluations and Recommendations.

a. Personnel

(1) Individual Awards

(a) OBSERVATION: Many enlisted men who are eligible for awards DEROS without receiving their awards.

(b) EVALUATION: Processing time for awards seems to be too long. With the large drops being received by some EM, it has been nearly impossible to provide proper recognition of outstanding effort.

(c) RECOMMENDATION: That either the time it takes to process the awards be shortened or, if this is impossible, that the companies be provided with a set of "token" awards to be used for presentation in front of the unit. These "token" awards could be retained by the unit for repeated use and the individual's actual award and orders could follow by mail, as is now done.

(2) Inaccurate EM PMOS

(a) OBSERVATION: Many EM arrive in the unit with a PMOS in which they have never worked and cannot be assigned into without either training or retraining.

(b) EVALUATION: This situation often causes problems when an individual carries an initial MOS and then cannot perform in the MOS. Generally, the individuals PMOS and what he has actually done, does not agree.

(c) RECOMMENDATIONS: That a more reliable system of designating PMOS for EM be developed and that EM be allowed to pick up a new PMOS or SMOS which actually reflects their skills.

(3) Disciplinary Problems

(a) OBSERVATION: There is still no satisfactory method of dealing with hard-core substandard soldiers.

(b) EVALUATION: These individuals are impervious to disciplinary action. Most realize that little can be done to them for repeated misconduct. Presently the only recourse for the Company Commander is to give these individuals a discharge for unsuitability with a general discharge which is more than they deserve.

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SUBJECT: Operational Report - Lessons Learned, 589th Engineer Battalion
(Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

(c) RECOMMENDATION: Make Court-Martials with meaningful sentences more available to the Company Commander. Simplify the procedures required for separation IAW AR 635-212 for Unfitness.

b. Intelligence: None

c. Operations:

(1) Work Schedule

(a) OBSERVATION: The 6½ day per week work schedule is more detrimental than good.

(b) EVALUATION: This long work week gives the troops very little to look forward to on the weekend. The work rate also slows down to offset for the length of the work week.

(c) RECOMMENDATION: That the work week be reduced to 6 days.

(2) Downtime for MCA - LOC Equipment

(a) OBSERVATION: Much time is lost on MCA - LOC equipment waiting for a contract mechanic to arrive to make relatively minor repairs.

(b) EVALUATION: Time is lost waiting for the mechanic to arrive and diagnose the problem. Many times equipment can be repaired on site and in a short time.

(c) Increase contract personnel to allow a mechanic to be present on site of a large concentration of MCA - LOC equipment.

(3) Operations Sergeant

(a) In the A Company TO&E there is no slot for an operations NCO.

(b) EVALUATION: This position is needed to prepare the necessary operational reports and to monitor the industrial equipment status. This individual could also handle the Local National permanent hire record keeping.

(c) RECOMMENDATION: An operations NCO slot be included in the future TO&E for A Company of a construction battalion.

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EGAE-CO

SUBJECT: Operational Report - Lessons Learned, 589th Engineer Battalion
(Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

(4) Two aggregate inputs for asphaltic concrete

(a) OBSERVATION: For an aggregate set-up using 3/4" and 1/2" minus aggregate and sand, these separate feeder systems are needed. This necessitates more maintenance and man hours to efficiently operate than an aggregate set up composed of a lesser number of feeder systems.

(b) EVALUATION: In the operation of a system as complex as asphaltic concrete production, especially with a relatively inexperienced crew, the goal should be both production of the desired end product and simplicity of operational procedures. Using a two aggregate mix for asphaltic concrete, when feasible, greatly simplifies operation and maintenance.

(c) RECOMMENDATION: Whenever feasible (correct aggregate gradation must be maintained, a two aggregate (1" minus and sand) asphaltic concrete should be used to effect better production efficiency.

(5) Modification to TO&E of earthmoving platoons involved in large scale horizontal work.

(a) OBSERVATION: One of the biggest problems in the LOC program is that of obtaining proper compaction of earthen embankments. Probably the largest factor in this failure to obtain proper compaction is the inability to bring the soil to its OMC. This inability is a direct result of the shortage of water pumping and hauling units within the engineer construction company.

(b) EVALUATION: Under present TO&E the earthmoving platoon of a construction company has no significant capacity to haul water to its fill and base course sites, but must depend upon the vertical construction platoons to supply their air compressor - water pump units and the 5000 gal tank truck units organic to the company. In a project as large as the LOC program this "borrowing" of tank and pump units becomes impractical due to the need to haul fuel and water from central supply points to separated base camps and the need for compressed air to operate pneumatic tools. The inclusion of at least two 5000 gal tank truck units and two independent mobile water pumps into the TO&E of the earthmoving platoon would eliminate this need for "borrowing" and would improve the quality of the compacted earthwork. To remain flexible it is necessary that the tanks and pumps remain segregated instead of integrated into one tank and pump unit. With separate tanks and pumps when the need for still greater water hauling capacity arises "homemade" tank units can be fabricated and filled by means of the independent pumps.

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SUBJECT: Operational Report - Lessons Learned, 589th Engineer Battalion
(Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

(c) RECOMMENDATION: That the earthmoving platoons of units involved in large scale horizontal work be supplemented by the addition of at least two 5000 gal tank trailer and tractor units and at least two independent pumping units.

d. Organization: None

e. Training: None

f. Logistics:

(1) Repair parts Shortages

(a) OBSERVATION: Repair parts shortages resulted in items of equipment being deadlined for excessive time.

(b) EVALUATION: Following is a list of critical repair parts:

<u>FSN</u>	<u>NOMENCLATURE</u>
2520-884-4833	Transmission 2½ ton
3110-186-5037	Bearing ball thrust 5 ton
2815-929-5449	Engine 830 MB
EU-31-A (76534)	Spring Assy trk 20 ton
2520-476-1064	Drive, member 440 grader
2520-448-5188	Drive, clutch 440 grader
2920-971-4195	Generator trk 20 ton
2520-971-5016	Transmission 5 ton
2520-971-5016	Clutch disk 10 ton
2815-010-5169	Engine 2½ ton
2530-345-0051	Brake shoes 5 ton
6140-057-2554	Battery 2½ ton, 5 ton
2610-051-9450	Inner tube 5 ton
2610-262-8653	Tire 5 ton
2610-262-8653	Grader
2610-554-6222	290 MB
2920-800-7218	Regulator Automotive
2610-262-8677	Tire 2½ ton
2610-269-7383	Inner tube 2½ ton
2530-353-3038	Wheel Cyl 5 ton (rear)

(c) RECOMMENDATION: Improve supply of these items.

(2) Ten-ton Tractor Power Steering Pumps

(a) OBSERVATION: Power steering pumps for 10 ton tractor M123A1C appear to have an excessively high failure rate.

(b) EVALUATION: On several instances this unit had tractors deadlined for power steering pumps. It appears that the pump may be poorly designed.

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EGAE-CO

SUBJECT: Operational Report - Lessons Learned, 589th Engineer Battalion
(Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

(c) RECOMMENDATION: Improve these pumps as necessary.

(3) Euclid 20-ton Dump Truck Parts

(a) OBSERVATION: All parts for the Euclid 20-ton dump trucks are extremely difficult to obtain.

(b) EVALUATION: The availability of the trucks is something less than 25% due to shortages of almost all repair parts.

(c) RECOMMENDATION: Either replace the trucks with a substitute for which there are adequate repair parts or improve repair parts availability for the Euclids.

(4) Burnout of Electric Motors

(a) OBSERVATION: This unit has experienced several failures of electric motors due to excessive loading.

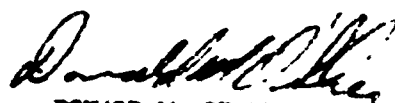
(b) EVALUATION: The heater coils usually found on the magnetic starters are extremely difficult to obtain. Non-use of these coils allows expensive, hard to obtain motors to burn up.

(c) RECOMMENDATION: Take immediate steps to make various sizes of heater coils available through supply channels.

g. Communications: None

h. Material: None

i. Other: None



DONALD M. O'SERI
LTC, CE
Commanding

35

BCEGA-C (30 April 1971) 1st Ind
SUBJECT: Operational Report-Lessons Learned of the 589th Engineer
Battalion (Construction); period ending 30 April 1971, RCS CSFCK-65 (R3).

DA, HEADQUARTERS, 35th Engineer Group (Construction) APO 96312, 1 June 1971

TO: Commanding General, United States Army Engineer Command, Vietnam
ATTN: AVCC-MO APO 96491.

This Headquarters has reviewed the Operational Report-Lessons Learned for the period ending 30 April 1971 from the 589th Engineer Battalion (Construction) and concurs with the comments and observations of the Commander.

Connelly Sanders Jr.
CONNELLY/SANDERS JR.
LTC, CE
Acting Commander

AVOC-10 (30 Apr 71) 2nd ind
SUBJECT: Operational Report-Lessons Learned, 589th Engineer Battalion
(Construction) Period Ending 30 April 1971, LGS OLFOR-05 (AS)

US Army Engineer Command Vietnam, AFO 90471

21 JUN 1971

TO: Commanding General, US Army Vietnam, AFTH: AVHDC-DC, AFO 90570

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

2. Reference Section II, Lessons Learned, sub-paragraph (4) "Command Action." This paragraph was not added according to LGS 525-15, dated 20 Nov 70. The 589th Engineer Battalion was drawdown April 1971 and the above reference could not be added.

3. Reference item concerning "individual awards", page 12, paragraph 2a(1). Nonconcur. To counter the early drop, this command requires submission of recommendations for awards and decorations 90 days prior to scheduled DLRDS (message 0551014Z Apr 71, 231055Z May 71, this HQS). Had this time frame been followed, EM would have received awards prior to departure. Additionally, drops presently are 7 days or less and current procedures since 20 May have streamlined processing within this HQS so that the April situation no longer applies. Use of token awards in those rare instances now required is permissible for meritorious service awards of DSM and ACM. No action by USARVAC or DA is recommended.

4. Reference item concerning "inaccurate EM FPOS", page 13, paragraph 2a(2). Concur. The situation described developed from an Army wide problem of personnel utilization and assignment without regard to LGS. The Army (DA, OGC) has recently placed restraints on the award of certain FOS and at present, has withdrawn authority from the field to change FOS in most circumstances. Upon completion of the ongoing OGC study, more restraints and guidelines are expected to assist in remedying this situation. No command action can be taken to avoid receiving personnel without correct FOS but OGC DA is expected to implement corrections within the Army wide personnel system to remedy the situation.

5. Reference item concerning "discipline problems", page 15, paragraph 2a(3). The OBSERVATION discussed is an Army-wide problem in Vietnam of which higher headquarters are well aware. Trial by court-martial is available and appears as effective a disciplinary tool as possible under existing limitations. Elimination for unfitness under AR 635-212, where the subject actually is a "hard-core substandard soldier", can and is being accomplished by many units. "Unsuitability" is a term that should not be used in terms of a soldier who can soldier but will not do so. (See generally paragraph 6(b), AR 635-212, 15 July 1960) "Drug abuse" is a grounds for separation for unfitness (paragraph 6(a), AR 635-212 per change 7, 20 Nov 1969). No action by USARVAC or DA is recommended.

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AVCC-MO (30 Apr 71) 2nd Ind (cont)

SUBJECT: Operational Report - Lessons Learned, 589th Engineer Battalion (Construction), Period Ending 30 April 1971, RCS CSFOR - 65 (r3)

6. Reference item concerning "Work Schedule", page 13, paragraph 2c (1). Nonconcur. Considering the large cost of maintaining a construction battalion in a theater of operations coupled with the fact that the TOE allows ample personnel for 24 hour operations, the present work schedule is deemed satisfactory. No action by USARPAC or DA is recommended.

Reference item "Downtime for MCA/LOC Equipment", page 13, para 2c (2). Nonconcur. Mechanics are provided at all sites that have a large concentration of MCA/LOC equipment. The proposal for the FY72 Dynalelectron contract includes not only an increase in personnel to provide a more responsive service but an increase in salaries to attract and retain the more highly skilled worker. No action by USARPAC or DA is recommended.

8. Reference item concerning "Operations Sergeant", para 2c (3) page 15. Concur. If the units require an Operations Sergeant they need only submit an MTOE change with full justification IAW AR 310-49 and identify a tradeoff space. No action by DA or USARPAC is recommended.

9. Reference item concerning "Modification to TOE of earthmoving platoons", page 15, para 2c (5). Concur. If the unit is not certain if its requirement will last longer than 6 months it should request a temporary loan for the additional equipment. When an MTOE change can be submitted if a requirement for an extended period of time exists. It will be easier to obtain approval for an MTOE change if the equipment is already available on temporary loan. No action by DA or USARPAC is recommended.

10. Reference item "Repair Parts Shortages", page 16, para 1. Concur. Supply of repair parts is a matter of continuing interest. Lack of stock of repair parts for engineer equipment has continued to be a major problem within this Command. Further action by depot, ICCV and USARPAC is recommended.

11. Reference item "Ten-ton Tractor Power Steering Pumps", page 17, para 2. Concur with evaluation. MWO requiring the application of power steering modification kit is in existence to improve this mechanism. No further action required by USARPAC or DA is recommended.

12. Reference item "Euclid 20-Ton Dump Truck Parts", page 17, para 3. Nonconcur with substitution of new end item. Difficulty in obtaining parts for the Euclid 20-ton dump truck is attributed in part to the extremely poor fill action on non-standard repair parts. The bulk of repair parts for this truck are non-standard. Further action by the depot, ICCV and USARPAC is recommended.

13. Reference item "Burnout of Electric Motors", page 17, para 4. Concur. Some heater strips are obtainable as FSN items, however many of the strips required are non-standard. Fill action on requisitions for non-standard heater

AVCC-MO (30 Apr 71) 2nd Ind (cont)

SUBJECT: Operational Report - Lessons Learned, 589th Engineer Battalion
(Construction), Period Ending 30 April 1971, MCS CSFOR - 65 (R3)

strips has been unsatisfactory. Further action by depot, ICCS and USARPAC is recommended.

FOR THE COMMANDER:

Charles M Peterson

CHARLES M. PETERSON

1LT, CE

Act Asst Adjutant General

C.F.

589th Engr Bn

35th Engr Gp

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AVIDO-DC (30 Apr 71) 3d Ind
SUBJECT: Operational Report - Lessons Learned, 589th Engineer Battalion
(Construction), Period Ending 30 April 1971, RCS CSFOR-65 (R3)

Headquarters, United States Army Vietnam, APO San Francisco 96375 10 JUL 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, 589th Engineer
Battalion and concurs with comments of indorsing headquarters.

FOR THE COMMANDER:

for [Signature] HONSO WETZ CPT
CPT ACC
Assistant Adjutant General

Cy furn:
589th Engr Bn
USAECV

4)
GPOP-FD (30 Apr 71) 4th Ind
SUBJECT: Operational Report-Lessons Learned, HQ 589th
Engineer Battalion (Construction), Period Ending
30 April 1971, RCS CSFOR-65 (R3)

HQ, US Army, Pacific, APO San Francisco 96558 7 AUG 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:

M. L. Mah

M. L. MAH
2LT. AGC
Asst AG

41 UNCLASSIFIED

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