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DEPARTMENT OF THE ARMY
HEADQUARTERS 19TH ENGINEER BATTALION (COMBAT)(ARMY)
APO San Francisco 96492

EGD-BE-OP

11 August 1969

SUBJECT: Operational Report Lessons Learned (RCS CSFOR-65) for Quarterly Period Ending 31 July 1969.)

THRU: Commanding Officer, 45th Engineer Group (Construction),
APO 96308

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

Commanding General, USARV, ATTN: AVHGC-DST, APO 96375

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

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

SECTION I. OPERATIONS: SIGNIFICANT ACTIVITIES

A. Battalion Narrative

The 19th Engineer Battalion (Combat)(Army) was transferred from the 937th Engineer Group (Combat) to the 45th Engineer Group (Construction) on the first day of this reporting period (1 May 1969 through 31 July 1969). As a consequence the battalion area of operations was reduced considerably, missions were altered to some extent, and a shift in battalion assets was required. This change was accomplished with minimum loss of engineer effort.

During this reporting period the 19th Engineer Battalion continued its primary mission of upgrading National Highway QL-1 from the I/ICTZ border to the sea. The 19th Engineer Battalion also provided combat and operational support for the 11th Light Infantry Brigade, MACV team at Duc Pho, and for other US and Vietnamese units in the AO.

The 19th Engineer Battalion, organized under TOE 5-36G, consists of Headquarters and Headquarters Company and four (4) line companies. Attached

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to the battalion are the 137th Engineer Company (Light Equipment) and the 73rd Engineer Company (Construction Support). The 39th Engineer Battalion was assigned operational control of the 137th Engineer Company (LE) during the first week of June.

Because of an extreme increase of enemy activity in the 19th Engineer Battalion's AO during the month of May the 19th Engineer Battalion reorganized two companies, A Company and D Company, as infantry in order to secure work parties and critical areas along the highway, as well as conduct other infantry operations consisting of combat sweeps, night ambushes, and patrolling. These two companies continued in an infantry role to the end of the reporting period, however in each company one platoon has been assigned to engineer missions. This reorganization necessitated the movement of A Company from LZ Max to LZ Charlie Brown and LZ Lowboy.

Changes in the command and staff elements of the 19th Engineer Battalion during this period included the Battalion Commander, Battalion Adjutant, Battalion S-2 Officer, Battalion S-3 Officer, Battalion S-4 Officer, Battalion Maintenance Officer, Battalion Chaplain, Battalion Personnel Officer, and Company Commanders of Headquarters Company, Company C, 73rd Engineer Company (CS), and the 137th Engineer Company (LE). LTC Wilson P. Andrews assumed command of the 19th Engineer Battalion on 11 July 1969 from LTC Gilbert L. Burns. On 14 May 1969 Cpt Bernard A. Corcoran Jr. assumed the duties of Battalion Adjutant replacing 1Lt Dan O. Turner who subsequently assumed the duties as Battalion S-2 upon the departure of 1Lt Robert L. Portney. On 21 July 1969 1Lt John B. O'Neill assumed the duties as Battalion Adjutant replacing Cpt Bernard A. Corcoran Jr. On 7 July 1969 Cpt Frederick J. Smith became the Battalion S-3 replacing Major Will M. Remington. Cpt Arthur F. Kepoo assumed the duties as Battalion S-4 on 11 June 1969 replacing Cpt Leonard L. Good. Cpt Edward D. Haggerty became Battalion Maintenance Officer on 13 June 1969. On 19 June Cpt Gerald L. Phillips, the Battalion Chaplain, completed his tour leaving his position vacant until 16 July 1969 when Cpt Gary B. Anderson was assigned as Battalion Chaplain. On 6 July 1969 CWO George R. Burden, Battalion Personnel Officer, completed his tour leaving his position vacant until 16 July 1969 when WO John C. Hylton was assigned. On 5 May 1969 1Lt Donald R. Hucceby assumed command of Headquarters Company from Cpt Alvin T. Bradley. 1Lt Irwin L. Eggers assumed command of the 137th Engineer Company (LE) from 1Lt Frank Rigg. On 3 May 1969 Cpt Thomas W. Skelton assumed command of the 73rd Engineer Company from Cpt Kenneth E. Johnson. On 12 June 1969 Cpt William W. Obley assumed command of Company C replacing Cpt Frederick J. Smith.

At the end of the reporting period, total assigned strength was 1140 of 1141 authorized. During the period 424 new personnel were assigned to the battalion and 191 rotated. High morale continued as indicated by a total of 42 extensions during the period.

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Other pertinent personnel actions occurring during this period include 3 re-enlistments, 3 summary courts martial, 3 special courts martial, and 23 field grade Article 15's administered.

During the reporting period the reconnaissance section of S-2 completed several missions including photographing and obtaining technical data on the four damaged or destroyed drainage structures.

The intelligence collection and dissemination efforts of the S-2 were augmented by receipt of daily intelligence summaries from the 173rd Airborne Brigade and from the 11th Light Infantry Brigade. Intelligence agent reports which affected elements of the battalion were gathered from MACV advisors in Mo Duc, Duc Pho, Tam Quan, and Hoi Nhon along with agent reports from the 172nd and 52nd Military Intelligence Detachments and the 41st ARVN Regiment and 4th ARVN Regiment. This gave a comprehensive study of enemy activity throughout the battalion area of operations. The S-2 section through the use of interpreters has been able to extract information from the local populace through the use of agent nets and under the BIP program in the battalion AO.

There were 276 enemy incidents recorded during this report period. Seven ambushes, sniper fire, automatic weapons fire, M-79 grenades, and B-40 rockets accounted for 73 of these incidents. Equipment, vehicles, personnel, and one water buffalo detonated a total of 22 mines and booby traps ranging from the plastic M-14 mine to the average 35-40 lb mine. The line companies detected 37 mines and booby traps along QL-1, a mine detecting average of 62%. The enemy activities resulted in 11 US KIA, 46 US WIA, 16 VC/NVA KIA, 7 VC/NVA WIA, and 8 VC/NVA CIA. The enemy constructed 28 obstacles which ranged from rocks in the road to banana trees planted in the road to 2 incidents of double apron barbed wire fences used as an obstacle.

The battalion's VIP program continues to receive enthusiastic support from the Vietnamese. Funds are obtained from 52nd Military Intelligence Detachment. During this reporting period the Vietnamese have turned in 470 rounds of 40mm or greater and 26 mines of all types. 111,885 piasters were spent this reporting period.

The NLF is still distributing propaganda leaflets in the Battalion AOR although the frequency of occurrence is not as high as in previous quarters.

The primary mission of the 19th Engineer Battalion has been the upgrading of QL-1 from I/IICTZ border to Mo Duc, a total of 46.7 km. During this reporting period a total of 19.2 km of highway has been paved and the base course has been completed to the 36 km point.

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During this period, B/19 and D/19 have completed construction of 3 bridges at BS857319, BS840330, and BS815359 respectively. All of these bridges had been destroyed by enemy action earlier this year. Popular force security had been arranged before construction because of heavy enemy activity. Nevertheless, the bridge at BS840330 was burned the night of 16 July 1969. It is now under construction once again. In place of timber piles which have been driven for at least 3 previous bridges at this site, concrete footers are being placed to provide a firm foundation and speed reconstruction of the bridge if it is again destroyed at a future date.

During this reporting period the 19th Engineer Battalion has constructed a RF-PF camp at BS919259, cleared 550 acres of land in this AO providing at least 150 meters of cleared area from National Highway QL-1, provided demolition teams to support local infantry operations, essentially completed construction of 2 projects for MACV advisors at Phu My, operated water points at LZ English and LZ Debbie, and provided a safety patrol to cover QL-1 from LZ Lowboy to Duc Pho.

During this reporting period, the battalion has consumed approximately 148,941 board feet of lumber from 1 to 6 inches in thickness, 8,763 pounds of nails and spikes, 1,912 pieces of culvert ranging from 18" to 72", 2,782 barrels of asphalt, 575 sheets of corrugated tin, 5,214 bags of cement, 1,808 rolls of concertina and 286 rolls of barbwire.

Shortage of several types of critical equipment has seriously hampered operational capability. The following list gives the status of critical items of equipment.

<u>NOMENCLATURE</u>	<u>AUTH</u>	<u>O/H</u>	<u>SHORT</u>
Crane 20T RF	5	2	3
Distributor bituminous	5	1	4
Distributor water	4	1	3
Lowbed 25T	20	15	5
Lowbed 60T	5	1	4
Tractor 10T	22	15	7
Truck $\frac{1}{2}$ T	40	21	19

Another major problem continues to be the long haul distance from Japan. Materials have to be transported from Qui Nhon to LZ Lowboy and then hauled to the companies.

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The 19th Engineer Battalion will be transferred to the 35th Engineer Group (Construction) during the months of August and September. This movement has caused the Battalion S-4 section to accomplish an extensive amount of planning and preliminary activities. This planning falls into the categories of inventory, turn-in, lateral transfer and movement of battalion property. Additionally the movement of personnel and equipment by land, sea, and air has required detailed planning. To date planning and instructions have been implemented, and the battalion is expecting a successful move.

B. Headquarters and Headquarters Company Narrative

During this reporting period Headquarters and Headquarters Company continued to support the battalion in all areas. Operations continued to function despite the large turn over in key personnel and split of Headquarters components between LZ Lowboy and LZ Debbie.

The Battalion Heavy Equipment Section was committed throughout the battalion AOR in support of battalion projects primarily providing dozers, graders, cranes, and loaders. The existing perimeter at LZ Lowboy was reinforced with the installation of an apron fence, tanglefoot, and additional trip flares. A berm was constructed for additional fighting positions and bunkers were constructed.

The Battalion Medical Section continued its excellent medical support throughout the reporting period. The number of malaria cases has increased throughout the battalion. Skin and respiratory diseases remain the majority of cases treated. Treatment of injuries caused by hostile action was started immediately and with great care. During this period, injections were given to keep battalion personnel current in their immunization status. Inspections were also conducted of living, working and eating areas as well as water supply in the various units. Inspections were also conducted of urinals and latrines for proper maintenance.

The communications section worked daily against natural and enemy forces to maintain constant communications within the battalion and with higher elements. The communications section has maintained radio contact with all elements throughout the reporting period.

During this reporting period, the battalion maintenance section continued its mission of support to the companies of the battalion by providing constant maintenance assistance, centralized evacuation to direct support units and overall inspection and supervision of company maintenance programs. A concentrated program of repair parts supply management has resulted in an increase in the stockage levels of company prescribed loads.

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C. A Company Narrative

During this reporting period A Company performed daily minesweep and road construction operations while based at LZ Max, effected a partial reorganization as infantry, redeployed to LZ Charlie Brown, LZ Lowboy, and commenced the turn-in of equipment and other preparations for the move to B'SAR.

During the month of May A Company performed two minesweep operations daily from LZ Max. In addition, 422 feet of culvert was implaced on QL-1, a 100 foot Bailey Bridge was recovered and the upgrading of the defenses of LZ Max was continued to include the construction of 9 supplementary fighting positions and 3 living bunkers, the installation of 3,950 feet of various wire obstacles, and the removal of 700 meters of wire obstacles which was replaced as channelizing wire. During this reporting period two personnel were WIA.

Company A completed operations at LZ Max, retrained as infantry, and moved to LZ's Charlie Brown and Lowboy during the month of June. All of the platoons acquired training in the various infantry skills of movement relative to terrain, patrolling, ambush, and small unit tactics, and were refreshed in their knowledge of care and use of assigned weapons. Third Platoon, while operating with B Company, 3rd of the 1st Infantry, took part in two operations resulting in negative friendly casualties with five (5) NVA/VC suspects captured by A Company. Upgrading facilities at LZ's Charlie Brown and Lowboy required the construction of numerous bunkers and supplementary fighting positions utilizing 15,000 sandbags, 487 fifty-five gallon drums, and 210 ammo boxes. In addition 26,000 square meters of area adjacent to the defensive wire was cleared and 1600 meters of defensive wire installed. Daily reinforced platoon strength patrols were performed in the area of LZ Charlie Brown and nightly ambushes were set up adjacent to this installation. Engineer missions were completed to include the pouring of 99.6 cu yds of concrete into two turn-pads on QL-1 and one slab to be utilized by the rock crusher at LZ Lowboy, and the installation of 2,000 bd ft of 3"x12" lumber to replace the treadway on bridge 262. More than 75% of A Company's equipment and tools have been turned in on preparation for the move to B'SAR.

D. B Company Narrative

Several major projects were undertaken by this unit during the current reporting period. This work included the construction of the B Company area at LZ Debbie, the construction of a new RF-PF compound, extensive land clearing operations, the rebuilding of three bridges, and the maintenance of National Highway QL-1 between LZ Lowboy and LZ Debbie.

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During the construction of the new company area, a total of twenty-two bunkers were built. All but the communications center and the aid station are living bunkers with twelve of those also functioning as fighting bunkers. Auxiliary facilities include a shower, latrine, grease rack, POL point, shop pad, and two tent frame buildings for the orderly room and supply room. To provide defense for the compound, a system of wire barriers consisting of triple concertina and tanglefoot was emplaced. Six guard positions, two hillside towers, and a front gate post also added to twenty-four hour security. Twenty-one supplemental positions were also emplaced around the perimeter. This construction was begun on 17 April 1969 and was essentially completed by 21 June 1969.

On 3 June 1969 this unit began work on a new RE-PF compound located at BS919254. The operation started with land clearing and road building. When the area was cleared sufficiently, four bunkers were constructed as guard posts and a Tactical Operation Center. A triangular berm was added for protection against enemy fire and the area was turned over to local forces on 16 June 1969.

Land clearing operations have occupied a good part of this unit's resources in the past two months. On 11 and 12 June, a platoon from the 687th Land Clearing Team aided in efforts to clear along National Highway QL-1. During this period 45 acres of land were cleared in the vicinity of BS895270. For two weeks before and several weeks after this time, organic equipment was also working in this area. After an ambush further north, all available equipment was shifted to BS820345 for two more weeks of clearing. Finally, as the month drew to a close, clearing operations were shifted to the vicinity of BS84305. During this period a platoon was normally used to secure from one to three dozers and up to twenty local national workers engaged in the clearing operations. Clearing operations ranged from clearing hedgerows and bamboo to clearing out scrub brush and knocking down trees. A total of 115 acres of land were cleared.

Two bridges were completely rebuilt and the piles placed for a third during this period. Bridge 255 (BS837319) was completely rebuilt, beginning on 8 July 1969. Deadmen were used to anchor both abutments and wingwalls. Tarpaper was used as backing on the wingwalls and abutments. 14"x14" caps were utilized on both abutments and the pier. The bridge, completed on 23 July 1969, was 40 feet long with two spans, a 24 foot travelway, and 30 inch walkways on either side meeting MACV road and bridge standards. Piles were driven for Bridge 251 (BS840330) and some work was done on the abutments before the mission was turned over to D Company for completion. B Company worked on this bridge from 28 June until 7 July 1969. Work began on Bridge 249 (BS815359) on 22 June 1969. Partial wingwalls and abutments were left unchanged from the previous bridge, enabling materials to be saved by incorporating the existing structure into the new bridge.

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This bridge was completed on 11 July 1969 in accordance with MACV standards. The completed bridge was 60 feet long with three equal spans. The roadway was 24 feet wide with a 30" walkway on either side. On both bridge 255 and 249 shelters were built and barrier material provided for the local national forces who were to secure the bridges.

This unit has functioned effectively through this period despite some personnel problems. In June, fifteen men, most of them experienced, were transferred from this unit. This included three squad leaders, a platoon sergeant and a platoon leader who though still assigned to this unit, are effectively lost. These men are functioning as a platoon in the 73rd Engr Co (CS) in order that they may operate on a 24 hour basis. New personnel were acquired to take the place of these men but the level of experience for the unit dropped sharply for a time. To solve this problem, experienced personnel were taken from the remaining platoons and formed into a new platoon under Platoon Sergeant Jeffers who was newly arrived in this unit. This platoon still has no platoon leader and the company is short an Executive Officer. Enemy action played a factor in company operations throughout the reporting period, especially during minesweep. The critical NCO shortage became even worse when SSG Roman and then Sgt Ward, both taking over as platoon sergeant, were wounded and evacuated to Japan.

Planning for the upcoming unit move to Camp Smith began in the latter part of June. As the reporting period closed, preparations were becoming finalized and most company equipment had been turned in to the S-4 section.

E. C Company Narrative

During the reporting period C Company has been primarily concerned with the operations of preparing the base and hauling the asphalt for QL-1.

C Company has prepared the base of QL-1 a total of 29 km during this period. For the three month period a total of 29,344 cubic yards of base course and 935,000 gallons of water was used. The haul was made by 5 ton dump trucks from all of battalion resources; it presently takes approximately 1½ hours for a truck to complete one haul cycle. Other equipment support was provided by HHC and the 137th Engr Co (LE). Graders from both companies were used and the 137th Engr Co (LE) provided a water point and a 40 ton roller and 290 tractor with full pan for compaction.

C Company has completed, except for minor details, two projects located in the vicinity of Phu My. The projects include the construction of living facilities for two advisor teams, one for the MACV Advisors of the 41st ARVN Regiment and one for Phu My District Advisors. The team houses are

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complete with showers, electricity, kitchens and latrine facilities. These projects were assigned to the 1st Platoon. Problems encountered on these projects included maintaining a platoon at a distance of nearly 50 miles from our company area with adequate living quarters, food, and building materials.

C Company assisted the 73rd Engineer Company (CS) in the paving operation by hauling the asphalt. For the reporting period a total of 14,872 tons of asphalt were hauled.

A land clearing platoon from the 687th Engr Co (LC) was attached to C Company for the purpose of clearing areas on both sides of QL-1 north of LZ Lowboy. From 9 June to 13 June 1969 the land clearing platoon cleared over 240 acres of ground and destroyed several ambush locations that the enemy had used. From LZ Lowboy to LZ Debbie over 65% of QL-1 is cleared at least 150 meters from the road. The remaining 35% was not cleared due to the terrain. This area has been defoliated and some additional clearing by burning has been accomplished.

C Company completed the headwalls for 268 and 263, culverts along QL-1, and repaired mine damage to those culverts.

During July C Company established a patch team of five (5) men, a 250 cfm air compressor with pneumatic tools and a 5 ton dump truck. When asphalt was being produced, this team repaired breaks in the pavement surface. When asphalt was not being produced, this team repaired small pot holes which had developed in the base course.

During July C Company began accepting equipment, primarily 5 ton dump trucks, and operators from the other elements of this battalion. The reason for this is that C Company will be the last element to relocate in the new battalion area and will need the equipment to continue work on QL-1. In addition preparations are being made for the movement of the unit to 35th Engineer Group.

F. D Company Narrative

During this reporting period D Company was involved in a variety of projects. Due to the increase of enemy activity in the battalion AO, D Company was given the mission to reorganize as infantry and conduct search and destroy missions within the AO in order to help secure QL-1. In the reporting period D Company had a minimum of seventy (70) men per day on infantry search and destroy operations. During the infantry operations, D Company wounded and captured four NVA, captured three VC, killed five VC, captured seven weapons, destroyed three weapons, and captured numerous enemy grenades, rockets, and documents. D Company also conducted twenty-one (21) operational support demolition missions with the 3rd of the 1st Infantry which resulted in 133 enemy bunkers and tunnels destroyed. On

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three different occasions, classes in demolitions were given to the 4th of the 21st Infantry Battalion by D Company personnel.

D Company was also involved in numerous construction projects during the reporting period. Two 60" culverts destroyed by the enemy were replaced by D Company. Approximately forty 5 ton loads of laterite fill was used to repair the culverts. An 81 foot timber trestle bridge was built by D Company but was again destroyed the day it was completed. D Company is now reconstructing the bridge. D Company used its equipment to clear an area to build a new Vietnamese school house. Over twenty-four (24) safety road signs were constructed and placed in the Battalion AO by D Company. A mountain road connecting two compounds on LZ Debbie is under construction at the present time by D Company.

All brush and foliage around or near the compound was burned or removed. A ten meter band of tangle foot and two bands of triple strand concertina were installed completely around the compound and 45 meters of cyclone fence was installed at critical areas on the perimeter. An observation bunker to house a large starlight scope was constructed. The mess hall received a direct hit from a 82mm mortar and extensive work was required to repair the damage. One of D Company's major projects during the month of July was the turn-in of vehicles and equipment in preparation for the company move. To date over 50% of all vehicles and equipment has been turned in and accepted. 90% of all other TOE equipment and installation property has been turned in.

Enemy activity during the months of May, June, and July dropped significantly from previous months. The minesweep team detected nine mines and found numerous road blocks and propaganda leaflets. Two men were wounded by an enemy M-79 during minesweep operations. Mortars and 105mm rounds hitting the compound accounted for four men WIA and sniper and harrassing automatic weapons fire directed into the compound resulted in one man KIA. One man was killed on a search and destroy mission when he tripped a booby trap.

G. 73rd Engineer Company (CS) Narrative

During the reporting period 73rd Engineer Company (Construction Support) continued to operate a quarry, crushing site, and asphalt plant. The combined output from these operations provided most of the base course and all of the asphalt used by our paving crew on QL-1 during this quarter. The following production information is submitted:

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2½"(-) base course		Cu. Yds.
May		7,317
June		13,665
July		<u>15,670</u>
	Total	36,652

¼"(-) asphalt rock		
May		7,127
June		7,334
July		<u>2,766</u>
	Total	17,227

Hot mix asphalt		Tons
May		5,994
June		6,146
July		<u>2,732</u>
	Total	14,872

Paving crew paved 12.5 miles on QL-1.

73rd Engr Co (CS) crushing equipment, which consists of a 75 TPH primary, a 153 jaw unit, and the 54, 42 and 300 units is kept operational round the clock to provide rock for the base course of QL-1 and asphalt rock for the asphalt plant. Although production has been greater this quarter than the previous one, machinery break-downs and the scarcity of parts for repair have prevented crushing operations from running at 100% efficiency. In an attempt to minimize machinery break-downs, a considerable effort was directed toward improving preventive maintenance procedures. A preventive maintenance guide was formulated from a consolidated technical evaluation made by 45th Engineer Group, 18th Engineer Brigade, and USARV Engineer Section Technical advisors who visited the crusher site. Copies of this guide were distributed to all of the operators of the crushing equipment and they were thoroughly briefed on its application. Also, more time is now being allocated to the preventive maintenance of all rock crushing equipment. Another attempt toward increasing the efficiency of crushing operations, by reducing shut-down time, was the acquisition of a 1952 rebuilt model 153 jaw unit which replaced a 153 jaw unit which was difficult to maintain in operational status.

Another acquisition made this quarter by the 73rd Engineer Company (CS) was a Stooddy Automatic Welder. The new welder will greatly reduce the time spent on welding operations.

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In the quarry, a more effective method of drilling was innovated. It facilitates the blasting of rock into smaller pieces than possible by previous methods employed. Less of a strain is placed on the 75 TPH and 153 jaw unit with the use of smaller rocks.

The asphalt plant underwent extensive renovation this period, including:

1. Replacement of the asphalt pump on the pug mill.
2. Rebuilding the programers on the two hot oil heaters.
3. Replacement of the Allis-Chalmers engine on the dust collector with a new D-133 engine.
4. Replacement of the universal joint on the drive assembly to the gradation control unit.
5. Realignment of the drive belts on the counter-weight assembly of the gradation control unit.

Along with crushing and paving operations the 73rd Engineer Company (CS) has also devoted a great deal of time and effort toward improving the security of LZ Lowboy. Participating in a joint effort with the other companies on the compound, this unit was instrumental in the re-evaluation of the compound security SOP. During this quarter, this unit placed 4,000 additional meters of concertina wire to fortify the perimeter, approximately 102 additional firing positions were constructed, existing bunkers received additional sandbags, and the entire perimeter was cleared of obscurant foliage. A listening post was constructed on the crest of a hill 150 meters outside of the southeast section of the perimeter. It was built to compensate for the adverse geographical conditions which exist in the area.

Several incidents of enemy activity occurred this quarter. At approximately 0100 hours, 10 June 1969, LZ Lowboy was attacked by an undeterminable sized enemy force with a 75mm recoilless rifle, resulting in the death of one man and injury to another. The fourth of four exploding rounds from the recoilless rifle hit a guard bunker which was occupied by the two men, both of the 73rd Engineer Company (CS). The same area, the southeast corner of LZ Lowboy, again received enemy fire on 12 June 1969. Ten to fifteen rounds of small arms fire were directed at the maintenance guard bunkers. Also during the night of 12 June 1969, sporadic small arms fire was received in the vicinity of the quarry, the southwest corner of the compound. Neither of these incidents resulted in any damage or casualties. It was suspected that enemy action was responsible for a fire which resulted in the destruction of approximately 1,000 barrels of MC-30. On 23 June 1969 the fire broke out on the west side of the compound, just beyond the entrance gate to LZ Lowboy. By the time water tankers and dozers arrived on the scene, the blaze was far too intense for either to be of any avail. The fire was allowed to burn itself out.

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The only adverse weather condition which affected production this quarter was rain. Because of rain, the rock crusher was shut down 86 hours during the period 1 May to 31 July 1969.

SECTION II. LESSONS LEARNED: COMMANDER'S OBSERVATION, EVALUATION, AND RECOMMENDATIONS

A. Personnel: none.

B. Operations:

1. Replacement Parts:

a. OBSERVATION: Replacement parts are often difficult to obtain and awaiting parts can seriously delay projects.

b. EVALUATION: Substitutions are necessary when repair parts cannot be easily obtained.

c. SOLUTION: While performing maintenance on the Rockford PTO, it was discovered that 5 ton wheel bearings can effectively replace main shaft bearings on the power take off.

2. Tanglefoot Wire:

a. OBSERVATION: The tanglefoot wire initially placed was not a thick enough concentration of wire because of the large area which had to be covered. In some places the wire was lying on the ground even after being tightenend because of irregularities in the surface.

b. EVALUATION: A tanglefoot over very uneven terrain must be supplemented in order to be effective.

c. SOLUTION: Five more strands of barbed wire were used, placed parallel to each other atop the existing tanglefoot and along the line of the perimeter. However, these strands were not unwound from their spools, but allowed to slip off sideways, creating coils on the ground. These barbed wire coils were tied to the existing tanglefoot to keep them from moving. This created a barrier with a much greater concentration of wire with a height from the ground of six inches to over a foot. This pattern of regular tanglefoot topped by coiled barbed wire creates an effective obstacle against either crawling or running attackers.

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3. Water Storage:

- a. OBSERVATION: An estimated 30,000 gallons of potable water was needed. An increased storage capacity was needed due to the shortage of regular water storage tanks.
- b. EVALUATION: In order to provide for a smooth issuing of potable water within a minimum time, additional water storage containers were needed. This would not only increase the storage capability, but would reduce the operation time of the emulater, which was affecting its maintenance program.
- c. RECOMMENDATION: That two (2) 3,000 gallon fuel bladders be utilized as storage tanks. These increase the storage capability from 9,000 gallons to 15,000 gallons, just 50% short of the daily output.

4. Crusher Operations:

- a. OBSERVATION: Dirt and other impurities were being picked up along with $\frac{1}{2}$ "(-) asphalt rock which was stored in stockpile.
- b. Evaluation: Stockpiles must be separated from impurities to prevent unnecessary hampering of asphalt plant operations.
- c. RECOMMENDATION: A 60'x40' concrete pad was constructed at the crusher site for stockpiling of $\frac{1}{2}$ "(-) rock. The pad prevents scoop loaders from gathering dirt and debris when loading the aggregate.

5. Infantry Operations:

- a. OBSERVATION: Mission assigned to reform an Engineer Platoon to function as a USARV MTO&E Infantry Platoon.
- b. EVALUATION: Reorganizing three under strength Engineer squads into three Infantry squads of sufficient size and with sufficient equipment is impossible.
- c. RECOMMENDATION: Reorganize the platoon into two Rifle Squads numbering at least ten men each. The two M-60 Machine Guns and three PRC-25 radios will allow these squads to function properly equipped in their proper tactical perspective.

C. Training: none.

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D. Intelligence: none.

E. Logistics: none.

F. Organization: none.

G. Other: none.



WILSON P. ANDREWS

LTC, CE

Commanding

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