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SUBJECT: Operational Report - Lessons Learned, Headquarters, 168th Engineer Combat Battalion, Period Ending 31 July 1968

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2. Information contained in this report is provided to insure that the Army realizes current benefits from lessons learned during recent operations.

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168th Engineer Combat Battalion
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DEPARTMENT OF THE ARMY
HEADQUARTERS, 168TH ENGINEER COMBAT BATTALION
APO US Forces 96289

EBA-CO

3 August 1968

SUBJECT: Operational Report of the 168th Engineer Combat Battalion for Period Ending 31 July 1968, RCS CSFOR-65 (R1)

THRU: Commanding Officer
79th Engineer Group
APO US Forces 96491

Commanding General
20th Engineer Brigade
ATTN: AVBI-OPN
APO US Forces 96491

Commanding General
United States Army Engineer Troops, Vietnam (P)
APO US Forces 96375

Commanding General
United States Army, Vietnam
ATTN: AVHGC-DH
APO US Forces 96307

Commander-in-Chief
United States Army, Pacific
ATTN: GPOP-OT
APO US Forces 96558

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

Inclosure

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EBA-CO

SUBJECT: Operational Report of the 168th Engineer Combat Battalion for
Period Ending 31 July 1968, RCS CSFOR-2 (RL)


   a. General. The 168th Engineer Combat Battalion, beginning its third
      year in Vietnam, continued its dual mission of combat support and base
      construction throughout the III Corps Tactical Zone. The Battalion re-
      tained its normal disposition with Headquarters, Headquarters Company,
      Company A, Company D, the 557th Engineer Company (LE), the 168th Land
      Clearing Task Force located at Di An; Company B and one equipment platoon
      from the 557th Engineer Company (LE) at Lai Khe; and Company C supported
      by one platoon of the 557th Engineer Company (LE) at Quan Loi. From this
      disposition, operational support missions were conducted for the 1st
      Infantry Division, 25th Infantry Division, 11th Armored Cavalry Regiment,
      199th Light Infantry Brigade, II Field Force Artillery, Korean Construc-
      tion Group and 5th Special Forces Group. The battalion continued to
      perform diversified and challenging combat support missions. Increased
      emphasis was placed on missions requiring specialized, air mobile tech-
      niques. Construction effort was directed toward the 1st Infantry Division
      base camps at Di An, Lai Khe, and Quan Loi, RVN.

   b. Command. Lieutenant Colonel John E. Schweizer assumed command of
      the battalion on 7 May 1968, replacing Lieutenant Colonel John R. Manning,
      who departed on normal rotation to CONUS. Major Robert C. Riese, Executive
      Officer, departed for assignment to Headquarters, II Field Forces, on 10
      June 1968, and was replaced by Major Francis L. Hanigaa who was assigned
      to the battalion on 26 June 1968. CW3 Donald F. Lane, Major Peter J.
      Offrinka, and LIT Alfred E. Archibald continued in their assignments as
      S-1, S-3, and S-4 respectively. LIT Gordon Nelson, who rotated to CONUS,
      was replaced as S-2 by LIT William T. Jones on 2 May 1968. LIT William
      D. Howell was replaced as Engineer Equipment Maintenance Officer by LIT
      Melvin C. Lynch, Jr. Captain Wayne W. Marsh departed the command on 18
      July 1968 and gave his command of Headquarters Company to LIT Rodger V.
      Warren on 15 July 1968. LIT William L. Navas arrived from Germany to
      replace Captain Douglas E. Helen as the commander of Company A on 12
      June 1968. LIT James D. Dornberg assumed command of the 168th Land
      Clearing Task Force 17 June 1968, and was replaced in his former command
      of Company D by LIT Robert O. Redder on 15 June 1968. Captain Lucien E.
      Dornberg, LIT Floyd G. Willoughby, and Captain William F. Allison, Jr.
      remained in command of Company C, Company D and the 557th Engineer Company
      (LE), respectively during the entire quarter. A current or unauthorized
      chart is attached as Inclosure 1.

   c. Personnel. Administration, Morale, and Discipline.

   ... Throughout the quarter, the battalion's strength remained rela-
   tively stable with no rotational hump occurring during the period. The
reduced turnover of personnel has had a stabilizing effect on work production by the individual soldiers. The continuing problem of lack of experience in the middle NCO grades is chronic, and the outlook for the near future shows little improvement. Officer strengths show stability, with a general shortage of captains and a influx of lieutenants who lack both experience and engineering schooling or degrees.

3) The 166th Engineer Battalion Open Base operations have received considerable command attention, and operation of the base is considered satisfactory. As of 25 June 1968, total assets of the Open Base were $84,000 with a gross income during June of approximately $27,500. The command goal is to return a maximum of the net profit to the membership by increased benefits and entertainment.

3) The following is a list of significant personnel actions accomplished in the battalion during the past quarter:

(a) Summary Courts Martial: 1
(b) Special Courts Martial: 4
(c) Foreign Service Tour Extensions: 79

1. Legion of Merit: 2
2. Air Medals: 16
3. Bronze Star (Valor): 3
4. Bronze Star: 21
5. Army Commendation Medal (Valor): 6
6. Army Commendation Medal: 49
7. Purple Heart: 41

4. Intelligence: The S-2 Section conducted continuous reconnaissance throughout the battalion's area of responsibility. Reconnaissance of forward airfields was conducted monthly. Work estimates and priorities were compiled to assist Company D in its maintenance mission for 14 forward airfields. Lines of communications were continuously surveyed to ensure that work estimates remained current. A comprehensive reconnaissance of Route 13 from Lai Khe to Xa Loc assisted Company D and Company C in programming effort for LOC maintenance. The S-2 Section provided two non-commissioned officers to assist the Special Forces in tactical demolition.
missions near the Cambodian border during the period 17 May - 4 June. The battalion defensive perimeter was refined by the installation of additional tactical wire, perimeter lighting, claymore mines and dip flares.


(1) Plans: The battalion S-3 planned and organized all major operations. In addition, plans were formulated for twelve new "design and construct" directives received from the 79th Engineer Group. Facilities designed included two dog kennels, a theater-chapel, one 20-ton ice plant, a brigade headquarters, and a 7222-foot electrical distribution system. In addition, plans were developed for the upgrading of forward airfields at Katum, Thien My, and Tan Ho Chon; the construction of a C7, type II airfield at Tra Cu and an infantry defensive position and refueling and resupply complex at Song Do.

(2) Operations:

(a) Combat Support: The battalion's combat support effort was expended principally in the areas of forward airfield construction and upgrading, land clearing, and construction and repair of roads and lines of communications. Air mobile equipment of Company D was committed to major operations for the first time during this quarter. Major combat support operations included:

1. Forward Airfield Repair - Lunard (26 March 1966 - 2 May 1966). The Second Platoon, Company D, was airlifted to Lunard Special Forces Camp from Chi Lai Special Forces Camp on 26 March 1966. The airfield was graded and recompacted. The parking apron was partially resurfaced utilizing 1,720 cubic yards of laterite. In early April 1966, equipment support base adjacent to the Special Forces Camp. The runway, parking apron, and turnaround were sealed with ponolite. Personnel and equipment were extracted to Di An on 2 May 1966 (See Enclosure 2, After Action Report - Lunard)

2. Forward Airfield Repair - Duc Phong (10 April 1966 - 4 July 1966). On 10 April 1966, the Third Platoon, Company D, began upgrading the airfield supporting Duc Phong Special Forces Camp. A 215' x 300' parking apron was constructed utilizing 7,660 cubic yards of laterite. The turnpounds were widened and drainage provided. In early May, erosion of the runway caused by heavy rains necessitated a major upgrading of the southern 600 feet of runway. Additional equipment was airlifted to the site. Seven hundred-fifty cubic yards of laterite were used to improve the runway drainage. The runway, parking apron and turnaround were sealed with ponolite.
3 August 1968

SUBJECT: Operational Report of the 168th Engineer Combat Battalion for Period Ending 31 July 1968, RCS CSFOR-65 (R)

The task force was extracted on 9 July 1968. (See Inclosure 3, After Action Report - Duc Phong)

3. Land Clearing - Operation Giant Swath (1 May 1968 - 11 June 1968). The 168th Land Clearing Task Force returned to the 1st Infantry Division Area of Operations to provide jungle clearing support during Operation Giant Swath. The objective of Giant Swath was to provide surveillance lanes from the Michelin Plantation to the Song Be River, clear access lanes into the area of the "Iron Trapezoid" and construct an overland line of communications from Route 13 into the Michelin Plantation. Two land clearing teams were employed, the 168th Land Clearing Task Force and the 86th Land Clearing Team. Security was provided by the 3d Brigade, 1st Infantry Division. The Land Clearing Task Force initially cleared a 1000 meter wide surveillance strip east of Route 13 toward the Song Be River. An area was cleared for future use as a fire support base. The Task Force was then moved to the "Iron Trapezoid" where a series of 200 meter wide swaths were cut to provide access for heliborne assaults into the area. The operation was plagued by maintenance problems caused by the heavy jungle and excessive age of the tractors. Enemy activity, though light initially, increased as the task force penetrated deeper into the area. During the final week of clearing, 3 tractors were declared combat losses as a result of enemy mines. The operation was terminated on 11 June 1968 with 4096 acres cleared. (See Inclosure 4, After Action Report - Giant Swath)

4. Road Construction - Lau Linh Province Road (1 May 1968 - 3 June 1968). During Operation Giant Swath, Company D assisted the 1st Engineer Battalion in the construction of an all-weather road from Route 13 to the Michelin Plantation. Initially, a platoon from Company D, augmented with six 290M tractors with scrapers, expended a pioneer road, constructed by the 1st Engineer Battalion, into a two lane all-weather road. After 6.3 kilometers were completed, heavy rains made use of the 290M tractors impractical, and Company D assumed responsibility for construction of portions of the pioneer road utilizing dump trucks. During the course of the operation, 2660 cubic yards of laterite were placed. The road was completed on 3 June 1968.

5. Forward Airfield Construction - Tra Cu (15 May 1968 - in progress at end of reporting period). The Second Platoon, Company D, was airlifted by rotary wing aircraft from Di An to the Special Forces Camp at Tra Cu. The platoon's mission was to construct a C7A, type II airfield. Because no source of fill was available, lime-stabilization of the available delta clay was chosen as the method of construction. Heavy Monsoon rains severely hampered construction during the first 60 days. Utilizing one D5 dozer, two D2 dozers, two graders and one MRS 100 scraper, the airfield was shaped and crowned. Drainage was established by construction

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of a series of lateral ditches. The saturated soil conditions necessitated a large amount of hand work. At the close of the reporting period, the airfield was filled and crowned to grade. Lime stabilization of the field by 100-foot sections will commence during the next quarter and a wearing surface of M8A1 matting will be placed. Completion date is set for 20 September 1968.

5. Forward Support Base - Song Be (4 June 1968 - in progress at end of reporting period). The Third Platoon, Company D, was airlifted to Song Be by C-130 and CH-47 aircraft on 4 June 1968. Construction was begun on a new night defensive position for the infantry security battalion, a ten point refueling system, a five point rearming system, and a new ammunition supply point. Concurrently, the C-130 runway was repaired and the parking apron and turnarounds repaved. By 31 July 1968, the defensive position was completed and the refueling system was 85% complete. Completion date for the entire project is 20 August 1968.

6. Land Clearing - Operation Lam Sara (5 July 1968 - in progress at time of report). The 168th Land Clearing Task Force continued supporting the 1st Infantry Division in land clearing operations along T13B and L136 west of Tuy Chi. Jungle is being cleared for 1000 meters parallel to the roads. Production has been unusually high. The Task Force has averaged better than 400 acres each day. Security is being provided by a troop from the 11th Armored Cavalry Regiment. Enemy action has been light. Three tractors have been damaged by mines, and three men have been WIA.

7. LOC Maintenance. The battalion retained responsibility for maintenance of 264 kilometers of Route 13, the main supply route for the 1st Infantry Division. Both scheduled maintenance and emergency repair of enemy interdiction were accomplished. The bypass around the Lai Khe base camp was upgraded in early May. More than 5000 cubic yards of laterite were placed, shaped and compacted. The portion of Route 13 within the Lai Khe base camp was resurfaced using 1720 cubic yards of laterite. On two occasions, Company B moved platoon-sized task forces to fire support bases along Route 13 for extended upgrading efforts. During the reporting period, 6.2 kilometers of Route 13 were upgraded utilizing 5,870 cubic yards of laterite. Company B responded to reaction force missions on Route 13 on 11 occasions. Eight craters were filled, four blown culverts were replaced, and 16 kilometers of road were swept for mines.

8. Local Security. The battalion retained responsibility for two kilometers of defensive barriers at the Bi in base camp. The companies at Quan Loi and Lai Khe serve as ready reaction forces for their respective base camps. Twice weekly, Company C provided a platoon-sized security
force to the Quan Loi perimeter to free infantry troops for night ambush patrols. The battalion frequently provided its own job site security since tactical elements were often committed to higher priority missions.

10. Other Combat Support. The battalion provided equipment support, technical assistance, and on-call combat support to tactical units within its area of operations. Company D and Company C provided nine sweep teams, expedient road repair crews, and equipment support as required to all 1st Infantry Division operations in the vicinity of Lai Khe and Quan Loi. The Ammunition Supply Point at Lai Khe was expanded under an operational support directive. During Operation Giant Swath, dozers, loading equipment, and dump trucks were provided by Company D to assist the 1st Engineer Battalion in their road construction mission. Company C constructed four revetments for gunpads for the 175mm gun battery at Quan Loi. The battalion maintained a ready reaction force capable of accomplishing emergency repairs to forward airfields within its area of responsibility. A squad-sized repair force from Company A affected emergency repair of the airfield at Katum Special Forces Camp from 10 - 21 June 1966. The work force then flew to Thien Gion Special Forces Camp where the rutted condition of the runway had closed the airfield. The airfield was repaired within two days and the task force extracted (See Inclosure 5, After Action Report - Thien Gion, Katum). On 5 May 1966, Company L provided demolitions support to the 5th Special Forces Group by destroying unexploded ammunition. Six hundred-fifty items of ordnance were demolished. The battalion's ready reaction force at Di An removed roadblocks and filled craters interfering local roads. A platoon from Company A was airlifted on two hours' notice to assist the 1st Engineer in the construction of a 350-foot floating bridge at Ben Luc (See Inclosure 6, After Action Report - Ben Luc Bridge). Equipment support was provided at all base camps for bunker construction, clearing fields of fire, opening and closing night defensive positions, and hauling fill to weatherproof fire support bases.

(b) Centennont Construction. During the reporting period, construction continued at the Di An, Lai Khe and Quan Loi base camps. No additional centennont directives were received. The battalion inducted construction on housing for SVN advisory teams at 8 locations within its area of operations. Significant progress was made at the Di An and Quan Loi base camps, and assistance was rendered to the 34th Engineer Battalion at Lai Khe.

1. Di An. Companies A and D continued construction of the main base camp for the 1st Infantry Division Support Command and the adjacent camp for the 2nd Brigade, 1st Infantry Division. On the main base, production included one 21,000 water point with four fill stands, 610 grease racks, 54,000 square yards of hardstand, 6.2 kilometers of interior road, 380
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3 August 1968

SUBJECT: Operational Report of the 16Gth Engineer Combat Battalion for Period Ending 31 July 1968, CSR 03 SP04-65 (R1)

linear foot of culvert, and 6,200 feet of drainage ditches. The main base is now 94% complete, up 4% from the previous quarter. In the 2nd Brigade area, construction completed during the reporting period included one 10,500 gallon water point with four fill stands and one 6 run dog kennel. The 2nd Brigade area is now 98% complete. The DI in construction program is scheduled for completion during the next quarter.

2. Lai Kho. Company D, supported by a platoon of the 557th Engineer Company (LE), assisted the 3rd Engineer Battalion on base construction projects for the 3rd Brigade, 1st Infantry Division. During the period 1 May 1968 to 31 July 1968, the following construction was completed: One 40'x25' Post Exchange, five 30'x32' maintenance buildings, 62,200 square feet of hardstand, 11.3 kilometers of interior roads and 740 feet of culvert. Minimum essential requirements (MER) were provided for the 1st Military Police Detachment, 1st Military Intelligence Detachment and Division Artillery.

2. Quan Loi. Significant progress was made by Company C on the base construction program for the 1st Brigade, 1st Infantry Division. Facilities constructed to date include one 40'x25'1 post exchange, two 40'x56' wreathes, one 30'x26' theater-chapel, one 32 run, 20'x10' dog kennel, twenty-five 16'x32' mess halls, one 25'x52' comissary-crypto building, one 40'x96' enlisted men's club, one 20'x52' HQ, three 30'x32' maintenance buildings, 13.2 kilometers of interior roads, 3200 foot of ditches and 460 feet of culvert. The base construction program is now 72% complete. Construction is underway on maintenance buildings, service club, brigade headquarters and 7200 foot of electrical distribution lines. The project is scheduled for completion on 1 October 1968.

3) Training:

(a) The 16th Land Clearing Task Force conducted a three day training program to enable their new operators to gain proficiency in the operation of the Rare Flow. The program consisted of instruction in the operation and maintenance of the M70 tractor and one day of supervised operation of the Rare Flow in a tactical operation. Twenty-four new operators were trained during the three day program.

(b) Company A was the first company of the battalion to undergo the 79th Engineer Group's training program in construction of the M476 bridge. The first day of training was classroom instruction devoted to site organization, composition of work parties, and techniques of bridge construction. The second day was a practical exercise consisting of tower construction, truss erection, and float and raft construction. Two more line companies will undergo training in the M476 bridge during the next quarter.

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Period Ending 31 July 1960, ROCS FOR-65 (R1)

(c) A series of maintenance training periods were conducted for each company by the battalion maintenance section. A thirty-minute course of instruction on maintenance characteristics of specific types of engineering and ordnance equipment was given weekly to each company. A different piece of equipment was covered each week. This program will continue through the next reporting period.

(d) The battalion continued to conduct training courses in accordance with USAF Regulation 350-1. Replacement training was accomplished through Replacement Training Schools conducted by the 1st Infantry Division. Weapons familiarization was accomplished utilizing 1st Infantry Division facilities.

f. Logistics. During the closing quarter of the Fiscal Year 1969, the 166th Engineer Combat Battalion continued to receive excellent support from the 506th Field Depot on issue of both major items of TO&E equipment and construction material. The 506th continued to move supply agencies from Saigon to Long Binh, making those agencies more easily accessible to individual engineer units. Some ten-ton-wheel tractors were released for issue during this period, but D7E crawler tractors and pioneer electric tool sets are still not available. One quarter-ton utility trucks have arrived in-country in large shipments in which three were issued to the 166th Engineer Combat Battalion. Twelve additional pieces of air mobile engineer equipment were received during the quarter giving the battalion 62% of the major items authorized by the "Air Mobile Package". Engineer Construction Material Yard (ECMY), an agency of 506th Field Depot, showed a general increase in issue of Class IV material. Such items as large diameter culvert, penstock, and heavy timber became readily available, but 2" thick lumber in 4" to 10" widths, creosote poles of 40' length and longer, ¾" plumbing fixtures, and 6½x6½ wire mesh for reinforcing concrete have been increasingly difficult to obtain. A new automatic data processing system has enabled ECMY to cut the time required to release material available at the depot. The following table shows the time normally required for construction material to be released once a requisition has been submitted:

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<tr>
<td>02 (Hand Carried)</td>
<td>2 days</td>
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<tr>
<td>02</td>
<td>1 week</td>
</tr>
<tr>
<td>05</td>
<td>2 - 3 weeks</td>
</tr>
<tr>
<td>12</td>
<td>4 - 52 weeks</td>
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3 August 1960

SUBJECT: Operational Report of the 166th Engineer Combat Battalion for Period Ending 31 July 1960, RCS CSFUS-65 (H1)

First Logistical Command's policy of shipping all construction material by rail has reduced the transportation and manpower requirements of the battalion. Material shipped by rail is unloaded one quarter mile from the storage yard. Two trucks are then able to haul the same quantity of materials in a twelve hour period as twenty trucks could transport from Long Binh during the same time frame. This releases drivers and trucks for other missions, but it seriously overworks this unit's one forklift.

A request for temporary loan of one additional forklift has been submitted. Class IV storage facilities are being upgraded in anticipation of the coming Monsoon Season. Excess items were turned in and unserviceable items were disposed of. Low areas were filled with laterite, graded, and shaped as material was redistributed within the yard. Items sensitive to water damage which could not be placed in the limited warehouse facilities were placed on well drained pads and covered with available salvage canvas and salvage T-17 membrane. The S-4 Section published 166th Engineer Combat Battalion Regulation Number 735-1 requiring closer control of all construction material handled by line units. During the reporting period, S-4 directed the movement of 19,324 tons of Class IV supplies. All resupply of forward elements was accomplished by armed convoy, fixed wing airlift from Bien Hoa Air Base, and rotary wing airlift from the battalion helipad at Di An. The following figures indicate the volume of construction material moved:

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<th>REMARKS</th>
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<tr>
<td>Saigon to Di An</td>
<td>103</td>
<td></td>
</tr>
<tr>
<td>Long Binh to Di An</td>
<td>7527</td>
<td></td>
</tr>
<tr>
<td>Long Cai to Di An</td>
<td>974</td>
<td>By Rail</td>
</tr>
<tr>
<td>Lai Khe to Di An</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Di An to Lai Khe</td>
<td>440</td>
<td></td>
</tr>
<tr>
<td>Di An to Quan Loi</td>
<td>1567</td>
<td></td>
</tr>
<tr>
<td>Di An to Local Areas</td>
<td>2550</td>
<td></td>
</tr>
<tr>
<td>Di An to Phu Loi</td>
<td>5534</td>
<td></td>
</tr>
<tr>
<td>Di An to Doc Hoa</td>
<td>71</td>
<td>For fixed wing airlift to Song Da</td>
</tr>
<tr>
<td>Di An to Doc Hoa</td>
<td>195</td>
<td>For fixed wing airlift to Doc Phong</td>
</tr>
<tr>
<td>Di An to Tra Cu</td>
<td>144</td>
<td>By rotary wing airlift</td>
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During the reporting period, the S-4 Section produced 630,000 gallons of potable water in support of two combat operations, one forward airfield construction site, and one training site. The training site at Di An is operated to familiarize operators with water purification equipment and operations, to keep equipment in peak operating condition, and to supplement the FAC-ocorated "deep well" water points. Most problems involved with field operations of water purification units stemmed from poor raw water sources. In some cases, the source used was the only available; but many problems could have been eliminated had supported units allowed the purification unit operators to conduct an engineer reconnaissance and select the best available site (See Enclosure 7, Memorandum for Record, Field Operation of the 1500 GPH Water Purification Set).

g. Force Development. The battalion continued the development of new organizational and operational techniques to meet the requirements of its unique mission. During the reporting period, the Air Mobile Company and the Land Clearing Task Force were refined; and those innovations already introduced were developed more fully.

(1) Company D was fully committed to air mobile operations during the reporting period. Missions included the upgrading of a forward airfield at Duc Phong, construction of a refueling system and battalion night defensive position at Song De, and the construction of a CA-70 type II airfield at Tra Cu. The air mobile equipment has been proven well suited to this type of mission. The mission at Tra Cu was particularly suited to use of the air mobile equipment since the area was accessible only to rotary wing aircraft. Integration of the equipment into a line company has provided adequate supervision, skilled operators and sufficient specialized equipment. Company D currently has sufficient missions programmed to keep it fully committed for the next year.

(2) The Land Clearing Task Force underwent minor modifications during the reporting period. Missions included the upgrading of a forward airfield at Duc Phong, construction of a refueling system and battalion night defensive position at Song De, and the construction of a CA-70 type II airfield at Tra Cu. The air mobile equipment has been proven well suited to this type of mission. The mission at Tra Cu was particularly suited to use of the air mobile equipment since the area was accessible only to rotary wing aircraft. Integration of the equipment into a line company has provided adequate supervision, skilled operators and sufficient specialized equipment. Company D currently has sufficient missions programmed to keep it fully committed for the next year.

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h. Command Management. The magnitude and scope of the battalion's mission demanded the application of sound management techniques. The Battalion Executive Officer monitored the battalion's command management program. Significant areas are listed below.

(1) Daily operations meetings were conducted at battalion and company level to organize projects and insure efficient allocation of the battalion's resources.
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ELA-60 3 August 1966

SUBJECT: Operational Report of the 165th Engineer Combat Battalion
Period Ending 31 July 1966, HCS CSFOR-65 (R1)

(2) The battalion's command management team conducted periodic
inspections of subordinate units. Frequent staff visits to outlying
companies were encouraged.

(3) At the completion of Operation Giant Swath, all D7E tractors
belonging to the 165th Land Clearing Task Force underwent a thorough
technical inspection by the 610th Maintenance Battalion. The objective
of this inspection was the determination of serviceability criteria for
D7E tractors. It was determined that tractors having the following
characteristics should be removed from land clearing teams:

(a) More than 250 hours of operation.

(b) More than two replacements of major assemblies, i.e., engines,
transmissions, etc.

(c) Inoperative major assemblies that are not available in Vietnam,
i.e., torque converters.

Using these guidelines, 15 tractors were declared unserviceable for land
clearing operations and were replaced with newer tractors.

1. Inspector General: Major Francis L. Hanigan was appointed as
acting IG for the battalion as a replacement for Major Riese. This
headquarters received no formal IG complaints during this period. How-
ever, two such complaints were presented to the USAREUR IG during his annual
General Inspection 3-7 June 1966. Both complaints were resolved to the
satisfaction of the individual and the Army.

2. The battalion information program provided coverage for major
accomplishments of the battalion. Individual performances were recognized
through the submission of hometown news releases. During the reporting
period, 116 news releases were submitted to the 79th Engineer Group.
Each company of the battalion submits a weekly information report to
the battalion concerning significant events taking place in the individu-
al company. The weekly information reports are reviewed and edited by
the battalion FIC. Those reports containing news worthy information are
prepared and submitted to 79th Engineer Group in the form of a news ar-
ticle. During the reporting period, 15 articles were submitted. The
battalion received news coverage in several military publications. The
Land Clearing Task Force was interviewed by Time Magazine in late July
1966. Publication of the battalion newspaper, The Five Star Review, was
resumed to give local news coverage to the members of the battalion.
Em-Co

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3 August 1966

SUBJECT: Operational Report of the 16th Engineer Combat Battalion for Period Ending 31 July 1966, AGO CSFOR-65 (K)

k. Civic Affairs: During the reporting period, the battalion continued to assist and support the Go Vap II Orphanage, the Xuan Truong Orphanage, and the Saint Therese School. Assistance rendered consisted of distribution of excess foodstuffs from unit mess halls, MEDCAPS by the battalion surgeon, and English classes by the battalion chaplain. Total amount of foodstuffs collected was 2300 pounds. In addition, approximately 40,000 pounds of edible garbage were distributed for livestock use. Voluntary contributions totaling $4,600 have been given to the Tan-Hai refugee village for the construction of a new church. 40,000VM were contributed to the Di An District for the construction of tables and desks for the three-room addition to the Di An High School. The addition was completed by the battalion on 20 April 1966. The battalion surgeon and a member of the 257th Medical Detachment distributed 300 dental kits to the Go Vap II Orphanage. The children were instructed in dental hygiene and use of the dental kits. Clothing and scrap materials were distributed to the orphanages. Company C, 16th Engineer Combat Battalion is now maintaining an underprivileged children's day-care clinic in the village of An Loc. The clinic provides supervision for 32 children whose parents are separated or missing. The men of Company C have collected $50 for the purchase of soap and beds for the children. Company C is now constructing a cooking shelter, and an outdoor kitchen. Medical care is provided twice weekly by qualified medical corpsmen. The men of Company C also take time out to teach the youngsters baseball and children's games.

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

c. Personnel: Awards and Decorations:

(1) 0.S.ATION: A.R. 672-5-1 restricts award of the Combat Medical Badge to members of the Army Medical Corps who are permanently assigned to infantry units of a brigade, regimental, or smaller unit.

(2) EVALUATION: The criterion for the award is that the infantry unit to which the individual is assigned must have been in contact with the enemy. Experience in Vietnam shows that units other than infantry units are frequently under hostile fire. One unit of this battalion received a total of 41 wounded personnel during the past quarter. A considerable number of these were the result of direct enemy fire. The medical corpsman assigned to this unit worked side by side with the medical corpsman of the infantry security element treating engineer and infantry soldiers wounded in the same action. The medical corpsman assigned to the 1st Infantry Division is eligible for award of the Combat Medical Badge. The medical corpsman assigned to this Engineer Battalion is not, creating an inequity of award eligibility, even though the service rendered was identical.
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(3) RECOMMENDATION: It is recommended that performance requirements for award of the Combat Medical Badge be reviewed to insure that present criteria are not outdated by the style of warfare encountered in this present conflict.

b. Operations:

(1) Sealing Prefabricated Water Tanks

(a) OBSERVATION: Obtaining a uniform setting of sealing compound is one of the principle problems in assembly of prefabricated water tanks.

(b) EVALUATION: During daylight hours, the steel panels of the tank become heated by sunlight. This heat retards setting of sealing compound.

(c) RECOMMENDATION: Application of sealing compound in the late evening will eliminate non-uniform setting.

(2) Construction of Prefabricated Water Tanks.

(a) OBSERVATION: During the construction of prefabricated water tanks, difficulty was experienced in getting the bolts and holes to line up.

(b) EVALUATION: A significant number of man-hours were lost during water tank construction when nuts were tightened as soon as they were installed. Leaks resulted from improperly fitted joints.

(c) RECOMMENDATION: All nuts should be loosely installed until the tank is completed. They should be tightened only after all bolts are in place.

(3) Construction of Mine Booms

(a) OBSERVATION: Bulk sections of M476 bridging are an acceptable component for construction of mine booms.

(b) EVALUATION: When constructing floating bridges in built-up areas, suitable materials for fabrication of mine booms frequently are in short supply. Logs or timbers are normally not available or are utilized for cribbing approaches.

(c) RECOMMENDATION: Large bulk sections from M476 bridging can be effectively used for an expedient mine boom.
(4) Fabricated Hinges

(a) OBSERVATION: Strap hinges or butt hinges cannot be effectively fastened to pipe or bricks.

(b) EVALUATION: In construction of a dog kennel at Quan Loi, a simple hinge was fabricated from two 12 long pieces of 3/4" diameter pipe and one 3/8" bolt. One piece of pipe was welded to the door frame, the other piece was welded to the door. The 3/8" bolt connected the two pieces of pipe.

(c) RECOMMENDATION: This hinge provided the required strength and installation simplicity for pipe or brick structures.

(5) Assembly of D-5 Dozer at Forward Locations.

(a) OBSERVATION: Assembly of D-5 dozers at forward locations is difficult and time consuming.

(b) EVALUATION: Assembly of D-5 dozers after airlift to forward locations usually requires two to five hours. A major portion of the time is expended in jacking the dozer up and placing the tracks under the track frame.

(c) EVALUATION: By proper planning of airlift sorties and CH-47 aircraft sortie, the tracks can be lifted out first. The tracks can then be positioned so that the CH-54 skycrane can place the track frame onto the tracks. Proper application of this procedure will eliminate two hours of assembly time.

(6) Fabrication of a Skid System for the MRS 100 Tractor.

(a) OBSERVATION: Since all overpacks for air mobile equipment are not presently available in Vietnam, there is no skid for disassembly and airlift of the MRS 100 tractor.

(b) EVALUATION: Disassembly of the MRS 100 tractor for airlift requires the removal of the large rubber wheels. To prevent the chassis from rusting on the ground, a skid must be placed under the main axles. Without this skid, airlift and reassembly are impossible.

(c) RECOMMENDATION: Using the figure in the manual as a guide, a skid can be fabricated from sheet steel. This skid proved effective in the airlift of the MRS 100 tractor to Tra Cu.

(7) Additional Screening for Sump Pump.
SUSPECT: Operational Report of the 166th Engineer Combat Battalion for Period Ending 31 July 1966, RCS GSPO-65 (RI)

(a) OBSERVATION: Additional screening is required when using sump pumps to drain water where much foreign matter is present.

(b) EVALUATION: During pumping operations in water containing a large amount of debris, pumps frequently become clogged. Increased maintenance time greatly reduces operational efficiency.

(c) RECOMMENDATION: By cutting numerous 1" holes in the side of a 55-gallon drum and covering the sides with ordinary window screen, the required additional screening is provided. In addition, a stable base for the pump is provided.

(c) Drainage Ditches

(a) OBSERVATION: Vee ditches often fail during heavy monsoon rains.

(b) EVALUATION: A grader is usually not able to cut a ditch capable of carrying the large volume of water from major storms. Experimentation at Lai Khe indicated that wide, flat-bottomed ditches were superior to Vee ditches in areas where a large water flow is anticipated.

(c) RECOMMENDATION: Drainage plans for areas of heavy rainfall should include wide, flat-bottomed ditches cut with a dozer or scraper.

(g) Land Clearing

(a) OBSERVATION: Excessive "walking" of D7E tractors has a detrimental effect on the operational condition of the tractors.

(b) EVALUATION: During Operation Giant Swath, overland movements of up to 7 kilometers each way were required by the Tactical Commander. It was found that after each long overland movement, the deadline rate increased considerably.

(c) RECOMMENDATION: Land Clearing Operations should be planned so that all cutting takes place within four kilometers of each established base camp.

(10) Land Clearing

(a) OBSERVATION: When a base camp has been cleared, it should be occupied immediately.

(b) EVALUATION: During the latter part of Operation Giant Swath, a
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base camp area was cleared in a heavily jungled area. The security then
withdrew to another base camp for the night. The next day, while reenter-
ing the cleared base camp, four D7E tractors struck mines.

(c) RECOMMENDATION: All base camps should be occupied immediately
after clearing.

(11) Land Clearing

(a) OBSERVATION: Rope Plows should not be used as recovery vehicles.

(b) EVALUATION: During Operation Giant Swath, a shortage of recovery
vehicles in the field necessitated the use of D7E tractors to recover
incapacitated APC's, tanks, and VTR's. Tractors used for this purpose
usually suffered damage.

(c) RECOMMENDATION: When planning a land clearing operation, suffi-
cient recovery vehicles should be programmed so D7E tractors do not have
to perform this mission.

(12) Land Clearing

(a) OBSERVATION: Air control is essential to effective jungle clearing.

(b) EVALUATION: A shortage of aircraft during Operation Giant Swath
caused many cuts to be made without air guidance. In almost all cases, the
initial cut was made improperly; cutting time was lost rerouting tractors;
and control of the plows was difficult.

(c) RECOMMENDATION: When planning a land clearing operation, one
aircraft should be made available exclusively to the Land Clearing Task
Force for the initial cut in the morning, the final acreage estimate in
the afternoon, and two or three other times during the cutting day.

(13) Airlift of Dozer Blades

(a) OBSERVATION: Dozer blades tend to rotate when slung from rotary
wing aircraft.

(b) EVALUATION: Excessive rotation of airlifted cargo causes abrasion
of the sling and possible failure. In addition, a safety hazard is
created, since rotating cargos make aircraft more difficult to control.

(c) RECOMMENDATION: A parachute, 5' in diameter, attached to each
corner of the upper end of the blade significantly reduces rotation.
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(14) Installation of Masonite

(a) OBSERVATION: Masonite, when subjected to the air, will expand 1/8 inch.

(b) EVALUATION: During construction of the Lai Khe Post Exchange, the masonite placed on the walls and ceilings expanded.

(c) RECOMMENDATION: When installing masonite, the bundle should be broken and the sheets separated. The separated sheets should stand for at least 24 hours prior to installation.

c. Intelligence

(1) Compaction of Road Shoulders

(a) OBSERVATION: Enemy mines are frequently found buried in the shoulders or roads.

(b) EVALUATION: During road upgrading on Route 13, it was found that the Viet Cong were burying mines in the uncompacted shoulders of the road. Vehicles would occasionally drive on the shoulders. At least two vehicles were damaged by mines placed in the shoulders.

(c) RECOMMENDATION: Compaction of road shoulders made burying of the mines more difficult. Detection was simplified because disturbance of the compacted shoulder was more easily recognized.

(2) Mounting Crew-Served Night Vision Devices.

(a) OBSERVATION: There is no effective means of mounting the crew-served night vision device in observation towers.

(b) EVALUATION: For base camp defense, night vision devices are required to be mounted in 36-foot observation towers.

(c) RECOMMENDATION: A mount for a helicopter door gunner's machine-gun can be modified to mount the sight. To the swivel head and bolt used for the M-60 machinegun mount weld a 1/4"x2"x3" plate. This plate will then fit the slot on the bottom of the scope.

d. Logistics

(1) Increasing Sandbag Life

(a) OBSERVATION: Climatic conditions in Vietnam cause rapid deterioration of sandbags.

(b) EVALUATION: The average life of untreated sandbags in Vietnam is approximately eight months. Frequent replacement of sandbags wastes money and manpower.

(c) RECOMMENDATION: A light coating of peneprine will more than double the useful life of sandbags.

(2) Expedient Radiator Repair

(a) OBSERVATION: Radiators in forward locations that develop leaks must usually be evacuated for repair.

(b) EVALUATION: Since new radiators are not readily available through direct exchange, equipment is often deadlined two or three days until a suitable replacement radiator is obtained. The leak can be repaired expediently by cutting the upper radiator between the water jackets, bending the ends and clamping them together with a pair of pliers. Then apply a generous coating of tubeless tire cement to the cut ends. The radiator is then usable until replaced or evacuated for repair.

(c) RECOMMENDATION: A supply of tubeless tire cement should be maintained at forward locations for emergency repair of radiators.

(3) Substitution of Parts for Air Mobile Equipment

(a) OBSERVATION: Repair parts for air mobile equipment are in short supply.

(b) EVALUATION: It has been found that some parts for regular engineer equipment can be substituted when air mobile parts are not available. The oil filter from a 4-ton truck is interchangeable with the oil filter of the pneumatic roller. Hydraulic lines from a 5-ton dump truck can be used to replace the hydraulic lines of the backhoe. A non-pressure gasket can be substituted for the injection pump drive shaft pressure gasket on the D-2 dozer. When front and rear tires for the backhoe were not available, 4-ton Mack tires could be used for the front and grader tires for the back.

(c) RECOMMENDATION: Interchangeable parts should be used whenever possible to avoid extended deadlimes.

(4) Repair of Wheel Cylinders on the 440 HA Grader

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SUBJECT: Operational Report of the 168th Engineer Combat Battalion for Period Ending 31 July 1968, RCS CSFOR-65 (R1)

(a) OBSERVATION: There is a shortage of wheel cylinders for the 440 HA grader.

(b) EVALUATION: Resupply through normal channels for the 440 HA grader is very difficult because most parts carry a manufacturer's stock number and not a FSN.

(c) RECOMMENDATION: The cups and pistons of the M52, 5-ton dump truck are identical to those on the 440 HA grader. These wheel cylinder kits are of equal quality to the original parts.

(5) Land Clearing

(c) OBSERVATION: Performance of scheduled maintenance at the proper time reduces deadline.

(b) EVALUATION: The climatic conditions in Vietnam require periodic maintenance services to be performed more frequently. For example, quarterly maintenance should be performed every 125 hours, rather than every 500 hours. To accomplish these services on schedule, otherwise operational D7E tractors must be kept in the base camp.

(c) RECOMMENDATION: Three plows should be left in base camp every day for scheduled maintenance. During this time a complete servicing should be accomplished to include cleaning belly pans, flushing radiators, and a full technical inspection.

c. Organization:

(1) OBSERVATION: Additional maintenance equipment is required by the 168th Land Clearing Task Force.

(2) EVALUATION: During Operation Giant Slath, it became apparent that additional equipment was necessary to cope with the maintenance problems caused by heavy jungle, rough terrain and enemy mines. The Land Clearing Task Force was augmented with two additional contact trucks, a 3-ton crane to provide additional lifting capability, eight PRC 25 radios, and one arc welder. This additional communications equipment provided the necessary flexibility in command and control. The maintenance equipment enabled more expeditious repair resulting in a decreased deadline rate.

3. Section 2, Part II, Recommendations

a. The operation support missions performed by the battalion during
this reporting period have presented unique challenges resulting in the lessons learned and recommendations included in Part I of this section. These are several significant, specific recommendations that can be derived from the experiences of the past quarter.

b. The experiences derived by the 168th Land Clearing Task Force during Operation Giant Swath resulted in reassessment of several areas of Rome Plow doctrine. The operation was unique in its employment of Rome Plows to cut wide swaths through virgin jungle to provide access for heliborne infantry assaults. The importance of maintenance as the key to high productivity was again apparent. The importance of maintaining a rigidly controlled and closely supervised maintenance program, in spite of pressures to put every plow in the field every day, was illustrated by the decreased acreage and increased deadline during Operation Giant Swath. As a result of land clearing operations during the past quarter, the following recommendations are made.

(1) A Standard Operating Procedure (SOP) for land clearing operations is needed to guide tactical commanders in the uses and limitations of the Rome Plow. A proposed SOP is attached as Inclosure 6.

(2) D7E tractors engaged in land clearing receive twice the wear that tractors in other uses receive. A program of tractor rotation, in which a D7E is used in land clearing until it no longer meets serviceability criteria and then is rotated to normal construction work, will provide more efficient land clearing operations. In addition, the useful life of these D7E tractors will be extended.

(3) The key to efficient jungle clearing is good maintenance. Scheduled maintenance must be conducted as required even if otherwise operational plows must remain in the base camp. High daily acreages at the cost of long term maintenance are self defeating.

c. The operations conducted by Company D, the air mobile company, have proved the effectiveness of air mobile equipment for the battalion's missions in Vietnam. The construction of the Tra Gu airfield would have been impossible without the air mobile equipment. Air mobile missions for Company D are currently programmed through 1 January 1969. There is every indication this specialized equipment will continue to be in demand. Integration of this equipment into a company, rather than maintaining a "pool" for special missions, has avoided proper maintenance and control of the equipment. The deadline rate for air mobile equipment approximates that for the battalion's standard equipment. One of the few limitations
of the air mobile packet is the 3/4-ton dump truck. Weak axles and limited hauling capacity are the key limiting factors. Due to the weak axles, a load is unable to be spread without causing excess stress on the rear axles. On several occasions, the axles have snapped while attempting to spread a load. The limited hauling capacity limits the expeditions completion of operational support missions. Organic loading equipment is a 2½-cubic yard scoop loader which has a bucket larger than the bed of the truck, lending to overloading and safety hazards to the driver. In general, the air mobile company is an unqualified success whose knowledgeable personnel, specialized equipment, and expertise in equipment airlift is much in demand. Therefore, I recommend:

1. The air mobile MTOSC proposed in last quarter's ORLL be reconsidered as the practical way to accomplish air mobile missions, while properly maintaining the equipment.

2. The air mobile company be utilized exclusively for specialized missions in isolated locations.

3. The company continue to be committed to no more than two separate construction sites.

4. Dump trucks be of 2½-ton type in place of the 3/4-ton type dump.

John E. Schweizer

LTC, CE

Commanding
SUBJECT: Operational Report of the 168th Engineer Combat Battalion for Period Ending 31 July 1968, RCS CSPCR-65 (E1)

DA, HEAD-quarters, 79TH ENGINEER GROUP, APO 96491, 20 August 1968

TO: Commanding General, 20th Engineer Brigade, ATTN: AVBI-06, APO 96491

The Operational Report of the 168th Engineer Battalion (C) for the period ending 31 July 1968 has been reviewed. It is considered to be an adequate summary of the battalion's operational experience during that period.

RICHARD L. WEST
Colonel, CE
Commanding
AVNIOS (3 Aug 68) 2nd Inf

SUBJ: Operational Report of the 168th Engineer Combat Battalion
       for Period ending 31 July 1968, AGS CONOP-65(4)

DA, Hq. COMMANDS, 20TH ENGINEER BRIGADE, APO 96491


2. Reference Section 2, paragraph g(2): Concur; however, solder should be used if available.

3. Reference Section 2, paragraph g(3): Concur with the exception of the gasket substitution for the injector pump drive shaft. A non-pressure gasket could allow fuel oil to leak into the crankcase resulting in possible engine failure. This recommendation should be checked by a qualified technical representative.


FOR THE COMMANDER:

[Signature]

[Name]

LT, AGC

Assistant Adjutant

Copies Furnished:

C2, 8th US Army

C2, 168th Engr Bde

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AVHGC-DST (3 Aug 68) 3d Ind
MAJ Klingman/ds/LBN 4433
SUBJECT: Operational Report of the 168th Engineer Combat Battalion for
Period Ending 31 July 1968, RCS CSFOR-65 (R1)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375
TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT, APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 July 1968 from Headquarters, 168th Engineer Combat Battalion.

2. Comments follow:

   a. Reference item concerning criteria for award of the Combat Medical Badge, page 13, paragraph 2a: Nonconcur. This headquarters queried DA in January 1967 for clarification of paragraph 97A(1)(2), AR 672-5-1. DA’s response, contained in unclassified message 29002, 19 January 1967, specifically states that Army Medical Service personnel assigned to Engineer, Artillery, Aviation, Armor or Cavalry units, are not eligible for award of the Combat Medical Badge.

   b. Reference item concerning substitution of parts for airmobile equipment, page 19, paragraph a(3); and 2d Indorsement, paragraph 3: Concur with 2d Indorsement, paragraph 3.

FOR THE COMMANDER:

F. S. TAYLOR, JR.
Major, AGC
Asst Adjutant General

Cy furn:
HQ 20th Engr Bde
HQ 168th Engr Cbt Bn
GPOP-DT (3 Aug 68) 4th Ind
SUBJECT: Operational Report of HQ, 168th Engr Cbt Bn for Period Ending
31 July 1968, RCS GSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 14 NOV 1968

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

1. This headquarters has evaluated subject report and forwarding
endorsements and concurs in the report as indorsed.

2. Reference paragraph 2a, 3d Indorsement: The criteria for award
of the Combat Medical Badge in AR 672-5-1 are considered appropriate.

FOR THE COMMANDER IN CHIEF:

[Signature]

C. L. SHORTT
CPT, AGC
Asst AG

Cy furn:
CG USARV
# Operational Report - Lessons Learned, HQ, 168th Engineer Combat Battalion (U)

Experiences of unit engaged in counterinsurgency operations, 1 May - 31 Jul 68

**CO, 168th Engineer Combat Battalion**

**3 August 1968**

**683376**

**N/A**

**OACSFOR, DA, Washington, D.C. 20310**

**N/A**
The following items are recommended for inclusion in the Lessons Learned Index:

ITEM 1

* SUBJECT TITLE

** FOR OT UT #

*** PAGE #

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SUBJECT TITLE

FOR OT UT #

PAGE #

* Subject Title: A short (one sentence or phrase) description of the item of interest.

** FOR OT UT #: Appears in the Reply Reference line of the Letter of Transmittal. This number must be accurately stated.

*** Page #: That page on which the item of interest is located.
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