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**Report date:** 2 March 1967

**Title:** Combat Operation After Action Report

**Author:** Department of the Army, Headquarters 1<sup>st</sup> Engineer Battalion

**Abstract:** From cover: general information of the report - Command Headquarters for the Engineer portion of Operation Cedar Falls was Headquarters, 1<sup>st</sup> Engineer Battalion, acting in accordance with 1<sup>st</sup> Infantry OPORD 30-66 dated 318100H December 66 and 1<sup>st</sup> Engineer OPORD 1-67 dated 5 January 1967. The 1<sup>st</sup> Engineer Battalion provided combat engineer support to the 1<sup>st</sup> Infantry and Division, 173<sup>rd</sup> Brigade (ABN) and the 11<sup>th</sup> ACR during their Search and Destroy operations in the Iron Triangle. The primary missions accomplished were tunnel and base camp destruction, clearing with subsequent opening of VC dominated areas, construction of landing zones, road repair to include the construction of a 160' D.S. Bailey Bridge, and water-borne seal of the confluence of the Saigon and Thi Tinh Rivers.

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DEPARTMENT OF THE ARMY  
HEADQUARTERS 1ST ENGINEER BATTALION  
APO 96345

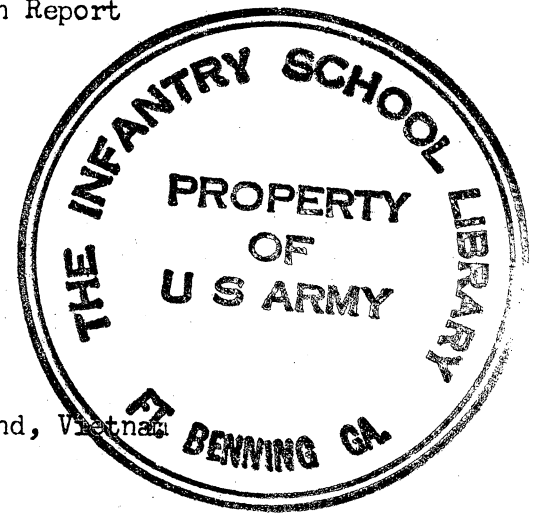
AVDB-CE-3

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THRU: Commanding General  
1st Infantry Division  
ATTN: AVDB-T  
APO 96345

TO: Commander  
US Military Assistance Command, Vietnam  
ATTN: J321  
APO 96307



- 1. NAME OF OPERATION: Operation Cedar Falls.
- 2. DATE OF OPERATION: 080700 Jan 67 to 262400 Jan 67.

3. GENERAL: The command headquarters for the Engineer portion of Operation Cedar Falls was Headquarters, 1st Engineer Battalion, acting in accordance with 1st Infantry OPORD 30-66 dated 318100H Dec 66 and 1st Engineer OPORD 1-67 dated 5 Jan 67. The 1st Engineer Battalion provided combat engineer support to the 1st Infantry Division, 173rd Brigade (ABN) and the 11th ACR during their Search and Destroy operations in the Iron Triangle. The primary missions accomplished were tunnel and base camp destruction, clearing with subsequent opening of VC dominated areas, construction of landing zones, road repair to include the construction of a 160' D.S. Bailey Bridge, and water-borne seal of the confluence of the Saigon and Thi Tinh Rivers.

- a. Reporting Officer: LTC J.M. KIERNAN, JR.  
Commanding Officer  
1st Engineer Battalion

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b. Task Organization:

HQ's, 1st Engr Bn - LTC KIERNAN

- (1) Company A - WAYNE L. LUCAS, CPT, CE
- (2) Company B - ROBERT C. LEE, CPT, CE
- (3) Company C (-) - LARRY A. BLAIR, CPT, CE
- (4) Company D - ROGER M. MILLAR, CPT, CE
- (5) Company E - ROBERT R. OLSON, CPT, CE

HQ's, 168th Engr Bn - LTC PELOSKY

- (1) Company B - DUANE LEE, CPT, CE
- (2) 1st Platoon, Co C - SHELFORD E. WILSON, 1LT, CE
- (3) Dozer Team #1 - MSG WILLIAM POLLACK
- (4) Dozer Team #2 - LT JOSEPH DURUSAU
- (5) Dozer Team #3 - LT ROBERT STONECITHER
- (6) Dozer Team #4 - LT DWAYNE KIETH

4. INTELLIGENCE:

a. Intelligence Prior to Operation:

- (1) Numerous base camp, supply installations, and medical facilities in area.
- (2) Supply points protected by extensive, well constructed bunkers.
- (3) Indications that portions of MR4 located in area.
- (4) 2 VC battalions can reinforce immediately.
- (5) 3 VC battalions can reinforce within 24-36 hours.
- (6) Complex tunnel system in area (one possibly 8 kms long).

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b. Intelligence During Operation: From an intelligence viewpoint, Operation Cedar Falls was without exception the most successful operation of the war. Intelligence reports, which under most circumstances would be regarded as important, were overshadowed. As indicated by paragraphs 8d and 8e (4), the 1st Engineers definitely performed more than its share of intelligence collection. The most important find of the whole operation was the discovery of the Intelligence Section Military Region IV by the 1st Engineers. Slick loads of documents, records, and plans were found, and forwarded to G2, 1st Infantry Division. The discovery was of such value that the operation was extended for three days. The documents described in detail the activities of MR IV from 1962 through 1966. They contained strength of VC units, names of their members, towns and villages in which they operate, some of their meeting places, and a great amount of information on exactly how they operate and what their future plans are.

5. MISSION: The 1st Engineer Battalion reinforced with elements of the 79th Engineer Group clears jungle, conducts road repairs, construct LZ's and destroys base camps and tunnel complexes in support of the 1st Infantry Division, 173rd Brigade, and 11th ACR operations.

6. CONCEPT OF OPERATION: The 1st Engineer Battalion prepares for Operation Cedar Falls by constructing a D.S. Bailey Bridge over the Thi Tinh River west of Ben Cat. E Company constructs pile bent and constructs bridge. D Company 1st Engineer Battalion improves bridge approaches on East and West side of river. E Company constructs 2 "gun floats" at Phu Cuong, positions floats at confluence of Saigon and Thi Tinh Rivers, and conducts waterborne patrols. A Company, 1st Engineers, provides one dozer team in D.S. 1/28 Infantry Battalion to assist in their search and destroy operations in the north-eastern sector of the Iron Triangle and clears jungle, opens and improves the east-west road through the Triangle from its intersection with Rt 14 east. B Company 1st Engineers provides one dozer team in D.S. of 1/18 Infantry Battalion, clears jungle, opens and improves route 14 north to Ben Suc with dozer and demolitions. D Company provides a dozer team in D.S. 1/503 Inf, 173rd Bde. to assist in their search and destroy operation in the southern portion of the triangle, and clears jungle, opens and repairs east-west road from Ben Cat west. B Company, 168th Engineer Battalion clears jungle, opens and improves Rt 14 south from the intersection of the East-West Road.

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7. EXECUTION:

21 Dec: 1st Platoon, E Company departed Di An at 0930 for Lai Khe with pile driving crane from A Company, 169th Engineer Battalion attached. Forward C.P. established at Lai Khe at 1226 hours.

22 Dec: E Company, 1st Platoon, constructed four float raft at XT 736331. Construction completed at 1400 hours and pile driving crane positioned on raft at 1425 hours. D Company demo men began to break up the remains of the concrete bridge resting on the west bank of the river.

23 Dec: Blasting of concrete bridge was completed and D Company started construction of headwall on east bank. Steel piling (14H73) arrived on site from Di An at 1430 hours for the construction of an 8 pile intermediate support for the two 80' D.S. Baileys.

24 Dec: Pile driving commenced at 1000 hours. At 1230 hours pile number 1 had been driven with a capacity of 19 tons being obtained. Breakdown of crane precluded further work. 1st Platoon flown to Di An for Christmas.

25 Dec: Christmas.

26 Dec: Skeleton pile driving crew airlifted to bridge sight at 0700 hours to resume pile driving operations. Pile number 5 was driven; capacity of 21 tons obtained. Crane deadlined at 1100 hours because of broken hammer cable. Cable was replaced by 1600 hours.

27 Dec: Two piles, numbers 2 and 6, were driven with capacities of 16 tons and 19 tons, respectively.

28 Dec: Pile 3 and 4 driven with 21 ton and 18 ton capacities. Two trucks borrowed from C Company, 86th Engr Bn, hauled 28 loads of laterite to west abutment. Ben Cat sector advisors picked up a VC suspect who appeared to be measuring the existing Eiffel bridge by pacing.

29 Dec: Final piles, 7 and 8 were driven with 17 and 18 ton capacities. Welders began cutting piles to final grade in preparation for placing caps. Bailey Bridge arrived at Lai Khe at 1600 hours.

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30 Dec: Cutting of piles to final grade completed at 1300 hours. Raft was removed from bridge site and crane off-loaded to drive posts for headwall on east bank.

31 Dec: Pile driving crane loaded on lowbed and returned to Lai Khe at 1030 hours. Using a wrecker positioned on the Eiffel bridge, the caps, corbels, and common caps were placed. At 1100 hours, site layout was initiated on east bank. Construction of panel bridge commenced at 1400 hours.

1 Jan: Construction of bridge was completed, and launched with assistance of TD15 on east bank. The 160' bridge was then broken in the middle and partially jacked down.

2 Jan: Bridge completely jacked down and E Company personnel disassembled and loaded M4T6 raft. Pile driver and panel bridge trucks were returned to their home station. Welders started welding "X" bracing on the pier at low tide.

3 Jan: E Company personnel returned to Di An with exception of 2 boat operators, welder, and supervisor. Twenty more loads of laterite were hauled by C Company, 1st Engineers, and placed on the approaches. At 1500 hours E Company was directed to load up materials for two each 2-float M4T6 rafts which were to be mounted with Quad 50 machine guns. The rafts would be pushed up the Saigon River to the confluence of the Saigon and Thi Tinh Rivers where they would be positioned as a blocking force against VC fleeing west from Tan An area during Niagara Falls and south from the Iron Triangle during Cedar Falls.

4 Jan: 2nd Platoon of E Company moved to the Vietnamese Engineer School at Phu Cuong to construct M4T6 floats. One officer and 8 EM from the 2/5th Artillery arrived at Phu Cuong at 1030 hours. The two rafts were completed and the quad 50's mounted at 1645 hours.

5 Jan: At 0730 hours, with Diehard 6 overhead, the flotilla moved up the Saigon River. In the vicinity of XT 748190, the lead elements experienced sniper fire which was immediately countered with M4 fire from the rafts and the helicopter, accounting for 4 VC (BC). By nightfall the rafts were in position at the confluence with one raft being tied off at the east bank and the other anchored in mid-stream. Meanwhile the Bailey bridge was 100% complete, with the final welding being accomplished on this date.

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6 Jan: A Company reinforced with dozer team #4, departed Di An at 0845 and established a CP at XT 785225 at 1030 hours. Work was immediately initiated on clearing fields of fire around the perimeter, constructing defensive positions and clearing the Cau Dinh Jungle on both sides of Rt 13. Speed trials were held on the river by E Company and the quad 50's were test fired. Limited patrolling was conducted with one sampan being sunk in a small cove.

7 Jan: A Company continued to clear Cau Dinh jungle and began to clear jungle around four selected sites along Thi Tinh River for Quad 50 and Twin 40mm gun positions. At 1130 hours Headquarters, 1st Engineer Battalion, Headquarters, 168th Engineer Battalion, B Company and D Company, 1st Engineer Battalion, B Company, 168th Engineer Battalion and dozer teams 1,2 and 3, departed Di An for XT 785225. All elements closed at 1330 hours. Defensive positions were prepared, fields of fire around the perimeter were cleared, and jungle clearing was begun. Tunnel destruction personnel explored and destroyed a tunnel at XT 789161. This tunnel was 135 meters long with 7ft of overburden and was destroyed by the acetylene method.

8 Jan: All units were employed in clearing and windrowing Cau Dinh jungle. A total of 330 acres of jungle was cleared. At 1600 hours the heavy maintenance support section moved via Route 13 to Lai Khe to set up base of operation. Aerial recons were flown over the Iron Triangle. At 1800 hours dozers were loaded in preparation for the move to the Iron Triangle. E Company, following air strikes at XT 754198 ferried 2 platoons of 1/503rd Inf. into village at XT 750200. River patrols made negative contact.

9 Jan: Bivouac area was struck and convoy departed for Cedar Falls Operational area at 0915. Dozer team #4 was placed in D.S. of 1/4 Cav to prepare six additional firing positions along the east bank of the Thi Tinh river for Quad 50's and Twin 40's. All units closed their respective bivouac areas at 1400 hours. Three Engineer camps were set up south of the east-west road cutting through the Triangle, at XT 672303 (B Co, 1st Engr Bn), XT 699307 (HQ's, 1st Engr Bn and 168th Engr Bn, A Co, 1st Engr Bn, and B Co, 168th Engr Bn) and XT 727318 (D Co, 1st Engr Bn). All units began clearing fields of fire and constructing defensive positions.

A Company - Began clearing a swath through the rubber trees along the road leading to Artillery Base III from XT 671328 to XT 664324. At 1500 hours Task Force Alpha, consisting of 30 EM, one officer, 2 tank dozers, and 6 bulldozers, linked up with Cav security at XT 695311, cut through the jungle to XT 687342, and then moved along the road cutting a swath on both sides to XT 676350.



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B Company - 1st Platoon repaired 2 kilometers of road north of their RON position, cleared and windrowed 50 meters of jungle on each side of Route 14 from XT 668304 to XT 656320.

D Company - At approximately 1500 hours a VTR from the 11th ACR, pulling a disabled M48 tank out of the Iron Triangle, crashed through the western span of the Bailey Bridge, stopping all traffic. This emergency bridge repair was assigned to D Company, which was rapidly organized to remove the vehicles from the Thi Tinh River and replace the Bailey Bridge span temporarily with an AVLB. When the bridge collapsed, it also damaged the Eiffel Bridge next to it. The Eiffel Bridge was reinforced and opened to class 16 traffic at 1630 hours. The damaged Bailey span had to be removed immediately from the pile bent in the middle of the river and disassembled to preclude obstructing the AVLB launching. This work was tedious and time consuming. Using a second VTR with several block and tackle combinations the broken span was pulled from the pile bent without causing additional damage to the pier. The western approach was extended 20' to permit an AVLB to span the shorter (60') gap. Earth work combined with the use of damaged Bailey parts to bolster the fill was completed by 100515 Jan. By 0600 hours an AVLB was successfully launched to the center pier and by daybreak the completed bridge was opened to traffic.

E Company - Limited patrolling with negative contact.

10 Jan:

A Company - Clearing of rubber trees was continued around Artillery Base III (XT 664324). Task Force Alpha moved across country from XT 676350 to XT 639368 cutting a swath 50 feet wide and 2,000 meters long, and a 100 meter resupply LZ at XT 639368.

B Company - Constructed a 4 kilometer by-pass on Route 14 in grid square XT 6432. 2nd Platoon, relocated to XT 613337 and RON with 1/4 Cav.

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C Company - At 1240 hours the 1st Platoon was lifted by CH47 to XT 619372 to cut a resupply LZ for the 1/28 Infantry. The CH47 hovered over the LZ area for 22 minutes allowing all personnel to descend the 70' ladder. At 1430 hours the LZ was ready to receive UH-1 aircraft. The platoon remained with the 1/28 Infantry until 11 Jan, clearing access roads to rice caches and enlarging LZ to accommodate 4 UH-1's.

D Company - Evacuated damaged Bailey Bridge parts to Lai Khe, and continued to improve the western bridge approach by placing 17 loads of laterite. The road was repaired for 1.5 KM west of the Bailey Bridge.

E Company - Limited patrolling with negative contact.

B Company, 168th - The road between XT 695311 and XT 713317 was shaped, graded, and ditched, and the jungle on both sides of the road was cleared for 100 meters from XT 695311 to XT 697313.

11 Jan:

A Company - Using Rome Plows, bulldozers, chainsaws, demolitions and axes, a 200 meter wide strip was cleared of rubber trees between XT 708315 and XT 724315. A 400 meter by 200 meter area was also cleared at XT 706315. 2nd Platoon leveled and then burned 50 houses vicinity XT 705315. Task Force Alpha cleared a 50 foot swath in moving from XT 639367 to XT 626378 to XT 621372 to XT 620374 (total of 2900 meters), and cleared a 100 meter by 200 meter LZ at XT 620374. During the day they also destroyed 40,000 lbs of rice at XT 622374, and a five bunker base camp and hospital complex containing one trillion units of antibiotics at XT 621371.

B Company - 1st Platoon improved existing ford enroute to Ben Suc at XT 605346, and constructed both approaches making it passable to wheeled vehicles. Chain saws and demolitions were employed by 1st Platoon to fell rubber trees along road to Artillery Base III. Task Force Bravo in D.S. of 2/18th Infantry penetrated the jungle cutting a 50' wide swath and destroying a base camp and 30 tons of rice at XT 613367.

D Company - Performed road maintenance on East-West road through the Triangle from XT 730322 to XT 738327. Thirty loads of laterite were hauled and used to shape the road. Task Force Delta in D.S. of the 4/503rd Infantry cleared a 50' swath from XT 712317 to XT 724296 and a 75 meter by 75 meter LZ at XT 722302.

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E Company - Returned to Phu Cuong at 1045, disassembled rafts and returned to Di An.

B Company, 168th - Performed road maintenance and cleared jungle on both sides of the road from XT699311 to XT730322. At 1230 hours the S-2 section, 168th Engr Bn, apprehended 3 VC ralliers vic XT 679285.

12 Jan:

A Company - 20,000 square meters of jungle were cleared vic XT 716317 and XT 693312. Task Force Alpha was split into two segments; one cutting a swath, and one destroying a total of 50 tons of rice at coordinates XT 619371, XT 619369 and XT 620373. A 40' swath was cut from XT 620373 to XT 618371 where an expedient LZ was cut. The Zippo Platoon from the 1/4 Cav burned four windrows, each 50 meters in length, using 2600 gallons of diesel, 1500 gallons of mogas and 1500 lbs of chemicals.

B Company - 2nd Platoon linked up with the main body of Bravo proceeding North on Route 14 to ford site for RON. Under OPCON of Dagger, elements of 1st and 2nd Platoon arrived at Ben Suc. Task Force Bravo slashed through the jungle cutting a 50' path from XT 613357 to XT 625352. A 150 meter by 100 meter LZ was cut, and 3 huts and 4 bunkers were destroyed at XT 625352.

C Company - At 1320 hours, the 3rd Platoon lifted off at Lai Khe by CH47 and descended via 70' ladder into thick jungle at XT 595370 to cut a resupply LZ for 2/28th Infantry. All Engineers were on the ground at 1350 hours, and the LZ was ready at 1715 hours.

D Company - An area adjacent to the bridge site was cleared for the water point section to set up. Fields of fire were improved around the bivouac site. Task Force Delta cleared a 50 foot swath to XT 715290, and destroyed a base camp at XT 725300.

B Company, 168th - While clearing jungle along Route 14, a base camp was discovered at XT 679289. The Tunnel Rats were called to investigate the tunnel complex. While convoying south on Route 14, B Company was ambushed at XT 694258. The ambush was sprung by a command detonated mine, and small arms fire followed. Three VC were sighted, and fire was returned with unknown results. Another mine was located at XT 722242 and blown in place. At 1635 hours dozer team #3, working with B Company, was involved in a fire fight at XT 694242. Gunships were called to suppress the fire. Engagement ended at 1717 hours with no casualties or damages to friendly units. Although harrassed all day, B Company managed to repair 5½ kilometers of Route 14 from XT 682273 to XT 738231.

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13 Jan:

A Company - Employing all available means, all platoons continued to clear jungle with the 1st Platoon clearing a 300 meter by 100 meter swath from XT 699312 to XT 671303, the 2nd Platoon clearing a 100 meter by 900 meter swath vic XT 671303, and the 3rd Platoon clearing a 150 meter by 50 meter swath vic XT 695325. Task Force Alpha proceeded to XT 617367 where they discovered and destroyed 40 tons of rice. The team then continued to XT 636359 where the "Big Red One" LZ was cut. A report was received that A Co, 1/28th Infantry was receiving incoming artillery rounds at XT 634360. One tank dozer and one bulldozer were immediately dispatched to construct an emergency LZ. The LZ was constructed in 15 minutes, and approximately 30 severely wounded infantrymen were evacuated. In the process of cutting this life saving LZ, the HD-16 bulldozer broke a fuel line and caught fire. The burning dozer was further destroyed by firing 3 HEAT rounds from the tank dozer. The destroyed dozer was then buried near the "Big Red One" LZ.

B Company - 1st Platoon supported B troop, 1/4 Cav, and cleared jungle around their base camp. The 2nd Platoon started their destruction of Ben Suc, and captured 4 VC in the process. Task Force Bravo cut a swath through the jungle from XT 625352 to XT 635345, stopping at XT 629347 to cut the "Iron Cross" LZ, and a 100 meter by 100 meter LZ at their final destination.

C Company - The 1st Platoon lifted off at Lai Khe at 1300 hours by CH47 to cut an LZ at XT 594360. Descending via the ladder at 1330 hours, the LZ was completed at 1715 hours.

D Company - Continued to clear jungle around their perimeter. Task Force Delta slashed through the jungle from XT 715290 to XT 722286, leaving a 50' path, and constructed a 100 meter by 100 meter LZ at XT 722286 in order to extract 35 tons of rice.

B Company, 168th - Road repair and jungle clearing was continued on Route 14. A base camp with tunnel complex was discovered at XT 719284, and the tunnel rats from the 168th Engineer Battalion were sent to investigate. Twenty tons of rice was found in the base camp and evacuated. The base camp was destroyed by dozers.

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14 Jan:

A Company - Clearing was begun on Route 14 south of the East-West road splitting the Triangle. The jungle was cleared for 100 meters on each side of the road for a distance of 2.5 kilometers. Task Force Alpha, having an uneventful day, slashed through the jungle to XT 678345.

B Company - Jungle clearing in support of B Troop, 1/4 Cav continued, as did the destruction of houses and trees in Ben Suc. Task Force Bravo cut a 50' swath through grid square XT 6434 and cut a 100 meter by 100 meter LZ at XT 650347.

D Company - Moved out of their bivouac area at 0930 hours and relocated to 1st Engr CP at XT 699307, moving into positions vacated by B Company, 168th Engr Bn. Immediately after opening their CP at 1100 hours, they began clearing jungle from XT 722286 to XT 728290. Task Force Delta proceeded from XT 732277 to XT 725279 destroying 5 tons of rice at the latter location.

B Company, 168th - Departed their bivouac area at XT 699307 at 0800 hours and moved south along Route 14 with elements of the 11th ACR. Three mines ranging in size from 40 to 200 lbs were found by the mine sweepers at XT 698289. All mines were blown in place. After closing their new CP at 1305 hours, clearing of jungle around the perimeter was begun.

15 Jan:

A Company - Cleared trees and brush from XT 677294 to XT 677289, and cleared approximately 1180 rubber trees at XT 686336. Task Force Alpha broke out of the jungle at XT 676350 and moved south clearing jungle on both sides of the road.

B Company - The 2nd Platoon, working in Ben Suc, uncovered large quantities of rice which were subsequently, turned over to the ARVN Airborne task force and evacuated. Destruction of Ben Suc and support of B Troop, 1/4 Cav, continued.

D Company - Using 2400 pounds of demolition and 300 feet of det cord, rubber trees were cleared in the following locations, 50m X 100m area at XT 670303, 25m X 200m area at XT 675317, and a 50m X 150m area at XT 670306. Two dozers placed in D.S. of the 173rd Bde cut a path 8m wide and 2000m long in vic XT 724274.

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B Company, 168th - Cleared jungle on both sides of Route 14 from XT 709250 to XT 690260. A tunnel entrance was discovered at XT 709245, and investigated with negative results. The tunnel entrance was sealed using demolitions. The tunnel destruction team destroyed a tunnel 75 meters long, using 200 lbs of conventional demolitions in Ben Suc.

16 Jan:

A Company - Task Force Alpha emerged from the jungle at XT 710315 at 1000 hours. The five bulldozers and two tank dozers were sent to Lai Khe for maintenance. Jungle clearing on both sides of Route 14 was continued by 1st Platoon.

B Company - 1st Platoon relocated to Diehard CP at 1130 hours. Huts, rice, and trees, were still being leveled and destroyed by the 2nd Platoon in Ben Suc. Task Force Bravo, breaking out of the jungle, cut their final 50' swath from XT 660340 to XT 682343. At 1200 hours the bulldozers and tank dozers were sent to Lai Khe for maintenance. The remaining elements of the task force RON at the Diehard CP.

D Company - In conjunction with B Company's move into Diehard CP, D Company moved out at 0930 hours to XT 725248. Route 14 was swept from XT 668303 to their new location at XT 725245.(8.5 kilometers). The remainder of the day was spent clearing the bivouac area and fields of fire. Task Force Delta cleared 4 LZ's, totaling 10 acres vic XT 726270. While clearing the last LZ, the task force was attacked by a squad size VC force. The squad was driven off with no injuries or damage to equipment.

B Company, 168th - Continued to clear jungle on both sides of Route 14. At 1100 hours elements working on Route 14 received small arms fire at XT 708250. While clearing jungle from the road, 2 VC base camps were discovered at XT 698253 and XT 696258 and destroyed. The tunnel demolition team in Ben Suc destroyed 175 meters of tunnel expending 160 lbs of demolitions.

17 Jan:

A Company - 1st Platoon cleared secondary growth from coordinates XT 679296 to XT 686266, cutting a 2700 meter by 200 meter strip along Route 14. Using chain saws and demolitions. the 3rd Platoon downed 1200 rubber trees in an area 300 meters by 50 meters at XT 692322. The 2nd Platoon stood down for maintenance and held a two hour demolition class.

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B Company - 1st Platoon began clearing a 400 meter strip of jungle and rubber trees around the town of X U Tau. At the end of the day 40 acres had been cleared. In Ben Suc the 2nd Platoon dug a 30 foot deep hole with dozers. The hole was then filled with 10,000 lbs of demolitions and 1000 gallons of napalm. The hole was then backfilled with approximately 10 feet of overburden. Chemical fuzes were used to provide a 2½ hour delay. At 1730 hours the fuzes were actuated, and at 1953 hours detonated occurred. The purpose of the exercise was to confine the explosion underground as much as possible in order to destroy any undiscovered tunnels in the area.

D Company - Transportation was furnished to the 11th ACR to haul captured rice out of the Iron Triangle. An 8 meter by 1250 meter swath was cut from XT 726270 to XT 732256, and the jungle was cleared for a distance of 175 meters, 50 meters on each side of the road vic XT 725248.

B Company, 168th - Cleared jungle along Route 14 vic XT 730235. While clearing, a base camp was found at XT 739216. Tunnel rats were called to investigate. The tunnel was destroyed after the tunnel rats had explored 250 meters with negative results.

18 Jan:

A Company - Working south on Route 14, 100 meters of jungle on each side of the road were cleared from XT 686263 to XT 691261. A small base camp was discovered and destroyed at XT 689263. The 2nd and 3rd Platoons blew and cut a total of 1600 rubber trees at XT 692318 and XT 689329 respectively.

B Company - Started road repairs on the east of the Triangle in addition to clearing the 400 meter strip around X U Tau. A 36 foot, 24 inch culvert was put in at XT 733324 by the 1st Platoon. The 2nd Platoon repaired the road south from X U Tau for one kilometer.

D Company - Transportation for evacuation of rice was again supplied to the 11th ACR. The jungle was cleared for 50 meters on each side of the road for 2000 meters vic XT 725248. Task Force Delta cut an eight acre LZ at XT 736254.

B Company, 168th - Clearing jungle from south to north on Route 14, a platoon size base camp was discovered at XT 698258. After investigation with negative results, the camp was destroyed. The tunnel rats searched a tunnel complex at XT 732222. After

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searching 1000 meters of tunnel, the rats encountered five VC and pulled out. The tunnel demolition team arrived and destroyed the tunnel by the acetylene method. Approximately 2100 meters of tunnel was destroyed.

19 Jan:

A Company - 1st Platoon cleared jungle along Route 14 from XT 691261 to XT 694258. Eight VC were captured at XT 679284, interrogated initially by Diehard S-2 Section and then evacuated to 173rd Bde. The 2nd and 3rd Platoons stood down for maintenance.

B Company - Jungle clearing continued along the east road in the Triangle, and around X I Tau. 2nd Platoon started construction of the "1st Engineer Castle" at XT 6929. An 800 meter base was cut and the outline was completed. The cutting of the outline was supervised and directed from a helicopter hovering overhead. Communication was maintained between the helicopter and the tank dozer.

B Company, 168th - Concentrated their jungle clearing efforts along the roads in the south western portion of the triangle. Dozers uncovered and subsequently destroyed a small base camp located vic XT 7124. Tunnel rats explored an extensive tunnel system discovered by elements of the 11th ACR. 1800 feet of tunnel were destroyed by the acetylene method.

20 Jan:

A Company - Finished clearing jungle along Route 14. The jungle was cleared for 800 meters to XT 697257. 2nd and 3rd Platoon continued to pull maintenance.

B Company - Continued to shape, grade and ditch the eastern road in the triangle. Jungle clearing along the road also continued. The 2nd platoon also continued cutting the jungle for the "Castle".

D Company - The jungle for 50 meters on each side of the road was cut from XT 725250 to XT 735255. The road between the coordinates was widened to two lanes, shaped, and ditched.

B Company, 168th - Continued to clear jungle along roads in the southwestern portion of the Iron Triangle. At 1055 hours 11 VC suspects were apprehended at XT 690261, questioned by the Diehard interpreter and turned over to 173rd Bde. At 1100 hours elements clearing jungle made contact with a VC in a hut at XT 744255. The VC entered a tunnel when fired upon. The tunnel rats were called to search the tunnel. After searching 1100 meters, the tunnel rats were extracted, and the tunnel was destroyed using the acetylene method.



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21 Jan:

A Company - While the 2nd and 3rd Platoons stood down for maintenance, the 1st Platoon cut a 50 foot swath through the jungle from XT 699262 to XT 735265.

B Company - 3rd Platoon continued to cut the "1st Engineer Castle", and at 1400 hours work was stopped as an air strike was called into the vicinity of the castle.

D Company - Cleared jungle 25 meters on each side of the road and widened, shaped, and ditched the road between XT 735255 and XT 737247.

B Company, 168th - Cleared 25 meters of jungle on each side of the road in the extreme south-western sector of the Triangle from XT 735218 to XT 735233. At 0830 hours 8 VC suspects were apprehended on Route 14 at XT 699256. The VCS were brought to the Diehard CP and interrogated. One VC confessed knowledge of a tunnel complex he helped dig at XT 695248.

Headquarters, 1st Engr Bn - A patrol was organized from personnel from the staff sections and accompanied the VCS to the tunnel complex. The VCS led the patrol to the tunnel area and pointed out several air holes and firing ports. Further exploration of the area uncovered a base camp with several tunnel entrances. Due to the late hour, the tunnels were not investigated and the patrol returned to their RON position.

22 Jan:

A Company - Cut another swath 25 meters wide from XT 699271 north to XT 684307. Work ceased at 1500 hours, the equipment was loaded, and they departed the Iron Triangle at 1630 hours to RON at Ben Cat with 173rd Bde.

B Company - Completed clearing the inside of the castle and cut the "1" (1st Engineers) above the castle. Equipment and personnel were brought into the CP at 1600 hours in preparation for the next day's move.

D Company - Proceeded south clearing jungle and repairing the road between XT 737247 and XT 747226. At 1600 hours they closed into their CP to prepare for the following day's move.

B Company, 168th - Cleared jungle along the road in the south-west section of the Triangle, 50 meters wide from XT 733218 to XT 723225. The tunnel destruction team destroyed 400 meters of tunnel at XT 720740 using 240 lbs of carbide with the acetylene method.

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HQ's, 1st Engr Bn - The 1st Engineer "tunnel rats" moved out at 0800 hours to further investigate the tunnels found the day before. After posting security around the base camp, a thorough search was initiated. At first, results were negative. A breather hole was blown open revealing 600 meters of tunnel. Upon exploring the 600 meters, many documents were discovered. 1st Infantry Division tunnel rats were called to assist when CS gas was encountered approximately 600 meters into the tunnel. The documents were immediately evacuated to G2, 1st Division where they were evaluated. Because of the importance of these documents, G2 directed that the search be continued.

23 Jan: At 0900 hours, D Company departed their bivouac area and proceeded north on Route 14 to link up with the other 1st Engineer units. At 1030 hours link-up was completed and Headquarters, 1st Engr Bn, Headquarters, 168th Engrs Bn, and B Company departed the Iron Triangle. B Company, 168th Engrs remained behind to support the 11th ACR. The 1st Engr tunnel rats returned to the base camp with the tunnel rats from the 242nd Cml Platoon. After exploring 800 meters of tunnel, a trap door was located. The trap door was removed and the additional tunnel was explored with more documents being found. The documents were evacuated through a tunnel entrance approximately 1100 meters from the base camp. Investigation of the area around this newly found exit (XT 699253), revealed another base camp. After limited exploration of this new base camp the tunnel rats RON'd with Dragoon Bravo.

24 Jan: The tunnel rats departed Dragoon Bravo CP with security and traveled by APC to the tunnel complex and base camp discovered the day before. The tunnels were investigated, yielding more documents which were immediately evacuated to G2, 1st Infantry Division. While searching the tunnels, voices were heard, and a CS grenade was thrown. Five VC were captured as they emerged from the tunnel. The security elements discovered still another hospital base camp complex 300 meters north of the second base camp. Toward the end of the day preliminary investigation of this complex was begun. Tunnel exploration was stopped at 1630 hours and all personnel returned to Dragoon Bravo CP.

25 Jan: Departing Dragoon Bravo CP at 0700 hours, the tunnel rats returned to the hospital complex. Approximately 5 huts were discovered and investigated. All huts were dug in the ground so that the roofs were at ground level. Approximately 300 meters of the hospital complex were explored. Medical textbooks and notebooks, small quantities of medicine, and medical instruments were discovered. The Chemical Tunnel Rats returned to the second tunnel complex, where 5 VC were previously flushed out, hoping to investigate further. The presence of CS in the tunnel prevented any further exploration. No additional information was discovered in the hospital complex. Tunnel destruction personnel from 168th Engineers

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married up with tunnel rats at the ROM position.

26 Jan: At 0800 hours, tunnel destruction team departed for hospital complex, and the tunnel rats returned to the CS tunnel complex. The tunnel destruction team began setting up the conventional demolitions and the acetylene equipment. Meanwhile the tunnel rats explored the tunnel which contained CS gas. The hospital complex was destroyed at 1200 hours after receiving word that no additional information had been found by the tunnel rats. Results of the tunnel destruction were excellent; cracks could be seen on the surface for approximately 200 meters. The tunnel destruction team then proceeded to the second tunnel complex. Again using a combination of conventional demolitions and acetylene, the tunnels were destroyed. The results of this second tunnel complex were even better than the first one. (Cracks in the form of a room could be seen on the surface). After using claymore mines to close the entrance of the first tunnel explored, the tunnel rats and demolition team departed the Triangle.

#### 8. RESULTS:

a. Personnel: 1st Engineer Battalion sustained 1 KHA and 7 WHA during the operation. Supporting Engineer units sustained 7 WHA during the same period.

b. Awards: 1st Engineer Battalion personnel received 2 Distinguished Flying Crosses, 6 Bronze Stars with "V", 36 Bronze Stars, 11 Army Commendation Medals with "V", and 132 Army Commendation Medals for their actions in Operation Cedar Falls. Supporting Engineers from the 79th Engineer Group received 6 Bronze Stars with "V", 40 Bronze Stars, 8 Army Commendation Medals with "V", and 50 Army Commendation Medals. These awards were personally presented by the Commanding General of the 1st Infantry Division, the Assistant Division Commanders, the CO, 79th Engineer Group and the CO, 1st Engineer Battalion at two awards ceremonies held in the Iron Triangle on 20 Jan, and Di An Base Camp on 8 Feb. Many of the personnel were recommended for awards by the Commanding General, 1st Infantry Division.

c. Equipment: One HD-16 medium dozer, combat loss.

d. Enemy Losses: 1st Engineer Battalion was credited for 27 VC KIA's (BC) and 38 PW/CHIEU HOIS.

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e. Construction:

(1) Roads and Bridges

- road.
- (a) Repaired and maintained 34 kilometers of
  - (b) Constructed a 4 kilometer by-pass on Route 14.
  - (c) Installed one 36 foot culvert.
  - (d) Constructed one ford.
  - (e) One 160 foot double single bailey constructed.
  - (f) 60 foot AVLB installed to replace one damage span of D.S. Bailey Bridge.

(2) Field fortification: Individual and command protective emplacements were constructed for several infantry units as well as those constructed for our own use.

(3) Landing Zone: Three Heliborne LZ's, and 31 Ground LZ's were constructed.

(4) Reduction of enemy obstacles:

(a) The following mines were discovered and destroyed:

- 1. 45 ea - Anti-tank mines.
- 2. 10 ea - Anti-personnel mines.
- 3. 19 ea - Claymore mines.

(b) The following ordnance items were discovered and destroyed:

- 1. 8 ea - 25-250 lb bombs.
- 2. 11 ea - 105-175 mm Artillery rounds.
- 3. 49 ea - Mortar rounds.
- 4. 24 ea - Grenades.
- 5. 103 ea - Butterfly bombs.

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(5) Denial Activities:

- (a) 2711 acres/10.9 sq km of jungle cleared.
- (b) 9445 meters of tunnel destroyed.
- (c) 1 - town destroyed (Ben Suc).
- (d) 6 - villages destroyed.
- (e) 27 - base camps destroyed.
- (f) 60 - miscellaneous bunkers destroyed.
- (g) 4 - rubber factories destroyed.
- (h) 1 - hospital and 1 dispensary destroyed.
- (i) 10 - sampans destroyed.
- (j) 672 tons of rice destroyed.

(6) Engineer Reconnaissance - Numerous aerial, ground, and waterborne recons were performed by 1st Engineer Battalion elements daily.

(7) Water Supply; Ben Cat: Approximately 18,000 gallons of water distributed daily for a total of 270,000 gallons. Water was trucked to bivouac areas where approximately 1200 men were showered daily.

9. ADMINISTRATIVE:

- a. Average strength in the field during the operation - 725.
- b. Supply: Normal supply channels were used for resupply of units in the field with all units being resupplied by road convoys from Lai Khe. Emergency resupply was effected by air. One S4 representative was at the Battalion Forward location, and one was at Lai Khe.
- c. Maintenance: Company maintenance personnel maintained and repaired vehicles and equipment in the field. They were assigned by the Battalion Maintenance Section which stayed with the Battalion Forward CP during the entire operation and provided technical advice and assistance, and assisted in obtaining repair parts. Non-organic heavy maintenance support was supplied by elements of the 79th Engr Group, who set up shop in Lai Khe. Maintenance problems which could

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not be remedied quickly were sent into Lai Khe, where they worked on a 24 hour basis to repair the piece of equipment.

d. Transportation: With the exception of occasional low boy support from D.S. units, organic transportation was used.

e. Communications: TOE FM radios were principle means of communications.

f. Medical: The Battalion Aid Station was operational in the field with the aid station set up with Battalion Forward. The Battalion Surgeon and his medics conducted roving patrols to the work sites daily, both by air and ground, so as to be close to areas of possible trouble.

#### 10. SPECIAL EQUIPMENT AND TECHNIQUES:

a. Jungle Clearing: During Operation Niagara and Cedar Falls an effective method for clearing jungle was developed. Clearing was done using a dozer task force consisting of tank dozers and bull dozers. A tank dozer led the way in order to detonate booby traps in the area. The bull dozers followed cutting swaths approximately 30 meters wide perpendicular to the road and extending the desired distance from the road, normally 100 meters. A similar swath was cut parallel to the initial swath approximately 100 meters away. The jungle between these two swaths was then cleared by operating the dozers from both swaths and parallel to the road. A windrow of cut material was pushed up midway between the two swaths. The windrow was doused with fuel and napalm and burned, thereby reducing its value as an ambush site.

b. Heliborne LZ Missions: Electrically initiated demolitions were used in LZ construction, increasing positive control to reduce delays. M1 chain demolition blocks and bangalore torpedos were used very effectively against bamboo thickets and thick underbrush. The time required for placement of demolition is also reduced by using M1 chain. Also, absolute control and coordination must be constantly maintained with infantry security during use of demolitions to prevent injuries.

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c. Tunnel Destruction: The length of tunnel destroyed and extent of destruction was increased by using conventional demolitions in conjunction with acetylene. Thirty pound charges of TNT and forty pound cratering charges were placed at critical places (rooms, junctions, exits and entrances) in the tunnel complex. These charges were dual primed, connected in series by det cord and fired electrically. When detonated these conventional charges acted as a booster charge for the acetylene.

d. Dozer LZ Teams: During Operation Cedar Falls infantry battalions were given search and destroy missions. In order to successfully accomplish their missions, several problems had to be resolved: How would the infantry battalions be resupplied? How would they be reinforced? How would they destroy any fortifications and base camps they found? A dozer team in D.S. of each battalion provided the answers. The dozer team consisted of two tank dozers and six bulldozers. Secured by the infantry the dozer teams slashed through the jungle clearing swath as they moved. - When the infantry stopped, the dozers cleared resupply LZ's for present and future use and destroyed fortifications and base camps as they were found. Since a resupply LZ could be constructed in a matter of minutes, the infantry could continue their search and destroy operations until late afternoon. Faced with an emergency, the dozers cleared a dustoff LZ in 15 minutes evacuating 30 seriously wounded infantrymen, and saving several lives.

e. Gun Floats: The Quad 50's with platform were mounted on 2 float M4T6 rafts during Operation Cedar Falls. Two floats were mounted with the Quad 50's and positioned at the intersection of the Thi Tinh and Saigon Rivers to control, search and seal the river traffic. The rafts were propelled by 27 foot erection boats and patrolled the rivers during daylight hours.

f. Refueling of Dozer Teams: Refueling of dozer teams was accomplished daily by CH-47. At first, 600 gallon pods with hand pumps were airlifted into the resupply LZ cut by the dozer team. Due to a lack of hand pumps, which had to be shuttled between dozer teams, it took 3 hours to refuel 4 dozer teams. A quicker process was needed. The solution was to gravity feed the fuel. The dozers cut a hole approximately 8 feet deep, and the CH-47 dropped the fuel next to the hole. A hose was connected from the fuel pod, and the dozer was refueled in the freshly dug hole. A further improvement was the use of 55 gallon drums of diesel instead of the 600 gallon pod, thus eliminating the recovery problem.

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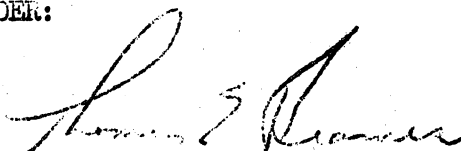
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11. COMMAND ANALYSIS:

Starting with the construction of the D.S. Bailey Bridge at Ben Cat on 21 Dec 66, and ending with the demolition of the tunnel complexes on 26 Jan 67, Operation Cedar Falls was without exception the most significant combat engineering operation of the war to date. New concepts of jungle warfare using dozers to open heretofore inviolable VC strongholds, the emergence of a new "Secret Weapon", the dozer-infantry teams, and combined acetylene and HE tunnel demolitions, all have proven unique, successful, and of tremendous value to future operations. Operations Niagara Falls and Cedar Falls introduced massive jungle clearing in conjunction with tactical infantry operation on a scale never attempted before. A total of 54 bulldozers were under the OP-CON of the 1st Engineer Battalion. Senior Commanders including MG De Puy, LTG Seaman, and GEN Westmoreland have expressed the opinion that an entire new concept of warfare has been inaugurated. Additionally, the need for a greater number of bulldozers in divisional engineer battalions was dramatically shown. Indeed, the 1st Engineer Battalion lived up to its motto:

"ALWAYS FIRST"

FOR THE COMMANDER:



THOMAS E. BEAMES  
CPT, CE  
Adjutant

DISTRIBUTION:

Special