

DELTA COMPANY

169th Engineer Battalion
159th Engineer Group
20th Engineer Brigade

VIETNAM

June 1969 - July 1970

This collection lists company personnel and official document information during June 1969 -July 1970 in Vietnam. Also included are excerpts from 159th Engineer Group Operations Report-Lessons Learned Reports.

The Unit Rosters are from the National Personnel Records Center (Military Personnel Records), 9700 Page Avenue, St. Louis, MO 63132-5100. The ORLLs and Field Notes are from the National Archives.

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PERSONNEL & UNIT ROSTERS

D Company TOE 5-118G

CPT James G. Frost
CPT James P. Ryan
CPT Richard L. Glassen

D Company's First Company Commander in Vietnam
Company Commander July 1968
Company Commander Aug 1968

PRIMARILY PERSONNEL DURING JUNE 69 TO JULY 70

CPT Robert E. Matthews	Company Commander Nov 68 until 13 September 1969
LT Dennis F. Salomone	Operations Officer, D Company until July 69
CPT William T. Harvey	Company Commander 14 September 69 to 16 March 1970
CPT Bruce McKinley	Company Commander March 1970 to ?
1LT Roger Knight	Operations Officer, then 2d Platoon Leader (Vertical)
1LT Edward Hopkins	Battalion S-1, then 1st Platoon Leader (Vertical)
1LT Thomas Stephens	2d Platoon Leader, then Operations Officer
1LT Byron (Butch) Brown then 1LT William Brodsky	EM Platoon Leader (Horizontal)
1LT Richard A. Magno then 1LT Jim Bowman	43rd Engr Company (Dump Truck) Platoon Leader
1LT Douglas Harry	Platoon Leader assigned from EM Pltn (Horizontal), Co. B, 92nd Engr Bn
1LT Richard Reiley	Platoon Leader, then BN S-2
CW2 Arquez	Maintenance- then CW2 Gordon Wessels
First Sergeants	1SG Adolphus Christopher / 1SG Fuller / 1SG Davidson
SFC George Thompson	Operations Sergeant, then First Sergeant after Fuller?
SFC Joseph Alonzo	Operations Sergeant
SFC Sam Harris	1st Platoon Sergeant
SFC Kiyosmi Tougichi	2nd Platoon Sergeant
SFC Joe Brown	EM Platoon Sergeant

UNIT ROSTERS

List of D Company Personnel on the date of **31 October 1969** from DA FORM 306-4 unit designation: WBALDO (A). Five names at the end of the list are out of alphabetical order. List retyped in the original format.

HARVEY	WILLIAM T.	CPT
BROWN	BYRON B.	1LT
KNIGHT	ROGER LEE	1LT
STEPHENS	THOMAS E.	2LT
WESSELS	GORDON E.	CW2
REILLY	RICHARD C	1LT
ABBREESE	JOHN	E-4
ALONZO	JOSEPH	E-7
BELL	MICHAEL	E-3
BERBINE	ED	E-4
BILL	DONALD	E-3
BIRLE	STANLEY	E-4
BROOKE	MICHAEL	E-1
BROWN	MICHAEL B.	E-3
BROWN	JOE E.	E-7
BURNS	STEPHEN L.	E-3
BUTLER	JOSEPH R.	E-3
CARMAN	RALPH	E-4
CASTILLO	ANDREW A.	E-4
COLE	RICHARD B.	E-5
CONLER	MICHAEL L.	E-2
CONVERY	WILLIAM F.	E-4
CRAWFORD	KENNETH	E-3
DENDY	WAYNE	E-4
DENTRO	ALLAN W.	E-4
DIOSUIS	HARRY D.	E-3
DDAN (?)	HAROLD D.	E-3
EDDY	GEORGE	E-3
EDWARDS	ED L.	E-3
ENGDAHL	DALE	E-5
FIELDS	GARY E.	E-3
FOREHAND	EARL	E-3
FHALEY	WILLIAM J.	E-4
FHALEY	ROBERT F.	E-3
FRANKS	CHARLES D.	E-5
FULLER	JAMES	E-8
GODWIN	RALPH T.	E-3
GRAMAX	BYRON K.	E-3
GREEN	JIMMIE L.	E-4
GRIFFIN	MARTIN J.	E-4
HALLAS	MICHAEL	E-5
HAMBLE	LEE D.	E-4
HARRISON	ANTHONY L.	E-2
HARRIS	ROBERT E	E-4
HARRIS	SAM	E-7

HARRIS	CHARLES E	E-6
HAYFORD	GERALD L.	E-4
HERNANDEZ	MARCOS	E-4
HINES	STEPHEN D.	E-3
HOLLINAY (?)	TOM C JR.	E-4
HOLLIE	HAROLD E.	E-3
HOOKS	JIMMIE E.	E-4
HUSTON	HARVEY L.	E-4
JENNEN	TERRY	E-5
JORDAN	PERRY	E-4
JORDAN	HOWARD	E-4
KEAVENY	TERRAENCE J.	E-4
KETCHUM	GARY P.	E-3
KING	EDWARD	E-5
KIVERIS	JUCZAS	E-7
LAKEY	WILLIE JR.	E-4
LEASE	TIMOTHY G	E-5
LEKIS	DARRELD	E-4
LUETH	ALBERT L.	E-3
MAC LADUHLA	JAKE	E-4
MACIAS	ARNULFO	E-4
MARDUSEK	JOHN B.	E-4
MARTINZ	JOSE	E-4
MATTINGLY	ROBERT	E-4
MAUCK	WILLIAM E.	E-4
MAURY-VELAZQUEZ	S.	E-4
MC BR_ _ _	GARY D.	E-3
MC DONALD	WILIE N.	E-4
MILLER	JAMES E.	E-3
MONTGOMERY	ROBERT	E-4
MOORE	LAVELLE JR	E-5
MORLOCK	GARY	E-3
MORRISON	ROY D.	E-5
MORS	LARRY D.	E-4
NELSON	DAVID R.	E-4
NELSON	JAMES F	E-4
NOVAK	CLEM	E-4
MUCKLES	LARRY A	E-3
OTT	RONALD	E-4
SCHAEFER	RAYMOND L.	E-5
SCHAFFER	ARNOLD D.	E-4
SCHMITT	JAMES M.	E-4
SCHROEDER	ROBERT	E-4
SEMUSH	JOHN J. JR.	E-3
SIMPSON	GEORGE	E-4
SMITH	TOMMY E.	E-4
STAFFORD	WILLIAM	E-6
STE_R	DONALD P.	E-5
STRICKLAND	TEDDY R.	E-5
TAYLOR	RICHARD	E-4
TAYLOR	REX A.	E-4
TEMES	DAVID E.	E-3
THOMPSON	DARRELL E.	E-4
TRAVIS	TOMMY R.	E-4
TRUKVANT	JOHN JR.	E-3
VAN NOTE	TIMOTHY L.	E-1

WARD	JAMES R.	E-5
WEAVER	JAMES M	E-5
WEBER	RICHARD E.	E-4
WEMER	JAKE	E-5
WHITE	MAC ARTHUR	E-4
WHITFIELD	CLARENCE	E-5
WILLIAMS	ARLIE A.	E-5
WOODARD	JACK T.	E-3
CAIN	BURBY R.	E-3
FURMAN	PHILLIP J.	E-4
PARKS	ARTHUR	E-5
JOHNSON	JUBUR	E-5
SPEVENS	WILLIAM W.	E-5

Morning Report strength: 124 enlisted and 6 officers. Personnel records were verified by Thomas E. Hawkins, CW2, USA, Asst Adjutant.

JEMINEZ		E-4
JENNER	TERRY L.	
KEY	FRANK	E-1
LACKEY		E-4
McDONALD	ROBERT	E-2
NAY	DONALD	E-1
NELSON	DAVE	E-4
PARKS	ARTHUR	
PRISI	WART	E-4
ROSTAN	AUGUST J.	
SAUCIER	REYNOLD	E-1
SCHAEFFER	RAYMOND	
SCHMITT	JOE	
STAFFORD		E-6
TEMES	DAVID E.	
THOMPSON	GEORGE	E-7
TOUGICHI	KIYOSMI	E-7
WEAVER		E-6

From the Operational Report of Company D dated 5 Dec 1969:

Authorized Strength: 197
Assigned 145

NOTE: THE UNIT ROSTER FOR MAY 1970 WAS NOT LEGIBLE. However some members were identified through other records in Nov. 69.

HARVEY	WILLIAM	CPT
BRODSKY	WILLIAM	1LT
HARRY	DOUG	1LT
HOPKINS	EDWARD	1LT
KNIGHT	ROGER L.	1LT
STEPHENS	THOMAS	1LT
WESSELS	GORDON	CW2

ABBRUZZESE	PERRY	
ALONZO	JOSEPH	E-7
BERBINE	EDWARD J.	
BROWN	MICHAEL	E-4
BROWN		E-4
BURNS	MICHAEL L.	
BUSTAD	JAMES	E-1
CONVERY	BILL	E-4

CRAWFORD	KENNETH	E-4
DALLY	WILLIAM	E-1
DAVIDSON		1SG
DENTRO	ALLEN W.	
DIUGUIO	HARRY D.	
GONZALES		E-4
HARRIS	SAM	E-7
HARRIS	"Pee Wee"	E-4
HUSTON	HARVEY L.	

List of D Company Personnel on the date of
30 November 1970 from DA FORM 306-4
unit designation: WBALDO (A)

MC KINLEY	BRUCE A.	CPT
BEVOY	BERNARD W.	1LT
GREEN	MICHAEL G.	1LT
HENREVELD	LEELIS	1LT
ZWICKL	MICHAEL D.	1LT
DAVIS	JULIAN M JR.	CW2

ANDERSON	BERT L.	E-4
ANDERSON	MICHAEL	E-4
BEATO	DAVID	E-4
BEDKELL	JOHN R.	E-5
BEDDUM	BRIAN L.	E-4
BELL	RONALD E.	E-5
BOMAN	JOSEPH D.	E-4
BOOKER	MARVIN E.	E-4
BOW	DENNIS P.	E-4
BRILEY	MAX. M.	E-3
BROWN	OTIS	E-4
BUCHHOLZ	DONALD M.	E-7
BUSTAD	JAMES E	E-5
BULSMA	KENNETH R.	E-4
CHASCO	MATIAS	E-2
CHILDREY	LOUIS A.	E-4
CHISWELL	DAVID	E-7
COLANGELO	MARTIN	E-5
COLBY	RUSSELL M.	E-3
CONTC	PAUL E.	E-4
COOK	JAMES R.	E-5
COOPER	N.C.	E-5
COZAD	KEITH I.	E-4
CROSS	DAVID A.	E-4
DALLY	WILLIAM F	E-4
DAULEY	GEORGE W.	E-4
DAVIS	JOHMMY	E-4
DE CLERCO	VERNON	E-5
DODSON	LARRY W.	E-2
EDWARDS	GEORGE	E-7
ELLIS	JOHN	E-4
ENGDAHL	DALE W.	E-5
FERNANDERS	HOLLIS	E-4
FERNHOLZ	LEO J.	E-4
FIELDS	GEORGE	E-7
FIELDS	GARY E	E-5
FIGUEROA	IRVING P.	E-5
FRITTS	MICHAEL A.	E-4
GAMBER	JOHN F.	E-5
GARDNER	BA	E-4
GERLACH	MATTHEW J.	E-4
GOODELL	DONALD E.	E-5
GRIFFIN	HERMAN B.	E-5
GUARINO	RICHARD	E-5
HAGEY	DANNY L.	E-4

HALL	FREDERIC I.	E-4
HARDIN	FRANKSE E.	E-4
MARPSTRIETH	ROGER	E-4
HARRIS	FREDRICK	E-3
HARTMAN	PAUL	E-3
HARVEY	EUGENE M. J.	E-3
HAYES	CHRISTOPHER	E-3
HIGAR	JOHN W. JR.	E-4
HIGGINS	LEON	E-6
HOGAN	NATHAN C.	E-4
HORVATH	LANZLO	E-3
HUEY	ALAN J.	E-3
HUGHES	TROY V.	E-3
JOHNSON	ROY J.U.	E-2
JONES	RANDOLPH C.	E-4
KASSELMAN	LARRY L.	E-4
KASTEN	LEWIS A.	E-5
KE A	EDWARD K. JR.	E-4
KING	JAN C.	E-5
KLINGMAGEN	LAWRENCE	E-4
KOON	MICHAEL D.	E-4
KOUTZ	JAMES E.	E-5
KRANTZ	WILLIAM	E-5
KRENZER	ROBERT	E-4
KUONTA	RICHARD J.	E-4
LAYMAN	FRENCH	E-3
LAVXE	GARY W.	E-3
LEDUCH	GALE R.	E-3
LINDLEY	BROCK E.	E-4
LOPEZ	LUIS A.	E-3
LOVE	JOEL	E-3
LUCK	GARY L.	E-5
MALONEY	WILLIAM R.	E-3
MARION	JOSEPH M.	E-2
MARTINEZ	AUREANA	E-4
MATTY	WILLIAM J.	E-4
MAYO	BENJAMIN E.	E-4
MC DONALD	ROBERT	E-5
MC KELVERY	LARRY D.	E-3
MC SWAIN	MALCOLN	E-3
MC NEIL	MARIN JR.	E-4
MELTON	GLENN	E-4
MINZEY	JOHNNY D.	E-4
MONTGOMERY	RANDAL	E-4
MONTGOMERY	DONALD	E-4
WOOD	DENNIS E.	E-4
MOORE	ROBERT K. JR.	E-5
MOUSER	WILIE D.	E-3
OHARA	CHARLES M.	E-4
OAK	JOHN W.	E-4
OSTRAND	JOHN W.	E-4
OWELLETTE	ROBERT	E-4
OWENS	ELLERY	E-5
PAYNE	MICHAEL L.	E-4
PEARSON	GARY W.	E-4
PEREZ	MANUEL	E-5
PERRY	HARRY C.	E-4

PORTER	ROBERT W	E-4
REID	ANDREW D.	E-5
REVES	RICHARD R.	E-4
RICE	ROBERT C.	E-4
ROBLEBO	JOE	E-4
RODRIQUEZ	JUANITO	E-3
ROMERO	HECTOR A.	E-3
RUDELL	DAVID R.	E-4
RUTHERFORD	ELMER M.	E-4
SAUCIER	REYNOLD	E-4
SCHMIDT	DAVID D.	E-3
SCHOFIELD	WAYNE D.	E-4
SCHROEDER	ROBERT	E-5
SMATEK	LESTER	E-5
SIMPSON	GEORGE M.	E-5
SMITH	JEFFREY G	E-4
SMITH	GEORGE M.	E-4
SMITH	DOYLE	E-8
		1SG
SNOW	CHARLES D.	E-4
SOMERSET	HARRY N.	E-5
SPONIUBLE	TERRY A.	E-4
STANFORD	DOUGLAS E.	E-4
STEHR	DONALD P.	E-5
SMOPE	RICKY	E-3
TABE	JOHN	E-4
TAGGART	JERRY R.	E-3
TEMPLAN	WILLIAM C.	E-4
THOMPSON	GEORGE E.	E-7
TOGUCHI	KIYOSHI	E-7
TRAPP	RUSSELL P.	E-4
TREBUS	DENNIS W.	E-4
TURNER	WESLEY	E-3
VALENZUELA	FILE_E	E-4
WALLACE	ROBERT D	E-4
WARD	GARY C.	E-4
WILDE	WILLIAM C.	E-6
WILHELM	JIMMY P.	E-5
WILLIAMSON	MICHAEL	E-4
WILLIAMS	GIL S.	E-3
WILIAMS	FRANK	E-3
WRIGHT	RANDALL	E-4
YERYAR	DONALD F.	E-6
YOUNG	WAYNE L.	E-3

Morning Report strength: 1E-5E-3 enlisted and E-5 officers. Personnel records were verified by Warren E. Davis, CWE-2, USA, Personnel Officer.

Source: National Personnel Records Center
(Military Personnel Records)
9700 Page Avenue, St. Louis,
Missouri
63132-5100

OTHER 169TH ENGINEER BATTALION & HHQ PERSONNEL

Battalion Commanders	LTCs Robert McGarry, Nick J. Andre, Connelly Sanders, Jerry Smith
BN Executive Officer	Major William J. Huff, Major Leroy A. Schmidt
Personnel Officer	CW2 Thomas Hawkins
BN S-1 (Administration)	1LT Lewis "Dave" Shows, 1LT Edward Hopkins, 1LT David M. Houston
BN S-2 (Intelligence)	1LT Richard Reiley, former D Company Platoon Leader
BN S-3 (Operations)	Major Martin Walsh
BN S-4 (Logistics)	CW2 Bill Watson
3rd Shop (Maintenance)	CWO Reed
A Company Commander	CPT Robert A. Dorn, CPT Stetson
B Company Commander	CPT Terry Farber
C Company Commander	CPT Fritz Ernst
Battalion Surveyor	1LT Hank Landau

Higher Headquarters Visitors

159th Engineer Group CO	COL James E. Devine, COL Joseph K. Bratton, COL Levi A. Brown
20th Engineer Brigade CO	BG H. R. Parfitt, Colonel O'Donnell
18th Engr Bde CO	Colonel John W. Morris
USAECAV (P)	BG Robert Tarbox, CG, United States Army Engineer Construction Agency Vietnam (Provisional)
CG, Engineer Troops, VN	MG D. S. Parker, BG John Dillard
Chief of Engineers	LTG Clarke
34th Engr Group CO	Colonel Nichols

Note: The following engineer groups were operational: 159, 79, 34, 45, 937, and 35.

SLANG AND ABBREVIATIONS

SLANG

boo coo.....	very much
charlie.....	the viet cong
di wee.....	captain
didi mau.....	leave quickly
dinky dau.....	crazy
Freedom Bird.....	airplane taking you home. Recognized by its high whining sound.
GI boom boom.....	phrase used to solicit you for a prostitute
jeep.....	1/4 ton, 4x4, truck. Jeep was the manufacturer during W.W. II.
klick(s).....	kilometer(s)
numbah ten.....	the worst
short time girl.....	prostitute
short timer.....	someone with 30 days or less in country
tee tee.....	very little
two digit midget.....	less than 100 days in country
Xin loi.....	sorry about that

ABBREVIATIONS

Aggregate	Crushed rock used with cement to form concrete.
Backhoe	An excavating machine in which a bucket is rigidly attached to a hinged boom and it drawn toward the machine in digging.
Bailey Panel Bridge	Semiportable tactical bridge of W.W.II. Having its structural members above the roadway, the Bailey is a continuous truss bridge joined beneath by flat panel transoms.
Compacted	Soil compressed by rolling to reduce surface volume in preparation for construction.
CONUS	Continental United States
CTZ	Corps Tactical Zone. American military divisions of Vietnam in four areas.
DMZ	Demilitarized Zone. A six mile strip which roughly parallels the Song Ben Hoi separating North and South Vietnam.
Huey	UH-1D helicopter.
Horizontal	Roads, canals, etc. as opposed to vertical construction-dwellings, construction sheds, etc.
Laterite	A red ferruginous soil containing iron and alumina.
LOC	Lines of Communications.
MACV	Military Assistance Command, Vietnam. Established in February 1962 at Saigon from the former Military Assistance Advisory Group.
MCA	Military Construction, Army funds
OMA	Operations and Maintenance, Army funds. Appropriations for repair and maintenance of existing facilities.
Potable	Suitable, safe, or ready for drinking.
RMK-BRJ	Contracting combine of Raymond, Morrison-Knudson, Brown and Root, and J. A. Jones.
USARV	U.S. Army, Vietnam. A headquarters primarily responsible for logistics, administration, and support for MACV.

Source: Most of the abbreviations are from Vietnam Studies Base Development 1965-1970 by LTG Dunn, 1972, pages 149 - 155

PA&E Pacific Architects and Engineers (R&U)



OPERATIONS REPORTS -LESSONS LEARNED & FIELD NOTES

159TH ENGR GROUP ORLL ENDING 31 JULY 1966 DATED 12 AUG 66

2. Movements

2b. Company D/169th Engr Bn (Const) arrived in-country from Okinawa on 6 May and was operational by 8 May 1966.

2c. The 169th Engr Bn (Const) minus D Company arrived in-country from Okinawa during the period 12-13 May and became fully operational on 10 June.

159TH ENGR GROUP ORLL ENDING 31 OCTOBER 1966

Operations conducted on a 10 hour shift, 7 days a week. 142 Vietnamese labors utilized daily except Sunday.

From 30 Sept 67 - 20 Nov 67, D Company did road paving on Long Binh.

HQ, 169th Engineer Battalion, Subject: Recommendation for the Itschner Award, dated 17 February 1969.

Commanding Officer
159th Engineer Group
ATTN: EGB-1
APO 96491

1. Company D, 169th Engineer Battalion is recommended for the Itschner Award for their outstanding contributions to the war effort in the Republic of Vietnam from 1 January 1968 to 31 December 1968. Their excellent construction skill and untiring dedication to duty have left a memorable impact on various United States and Vietnamese units and the Vietnamese people.

2. Company D has been in the Republic of Vietnam as an organic, TO&E unit of the 169th Engineer Battalion from the latter's arrival in May 1966 until the present, February 1969. A history of the unit is attached as Inclosure 1. During the past year, Company D had two AWOL, Five Special Court Martials and two Summary Court Martials.

3. Throughout 1968, Company D was involved in many highly complex construction projects-projects which would have taxed the skills of most other units. The projects ranged from massive reinforced concrete structures to the rehabilitation of key roads throughout the III Corps area. Often times the tasks seemed to have insurmountable roadblocks thrown up to thwart their expeditious completion. Most of these projects had to be accomplished within extremely tight time frames due to the tactical situation. Personnel shortages, particularly critical MOS shortages, plagued the company's supervisory capabilities. At times shortages existed in critical material stocks. However, Company D was never deterred from their basic purpose-the accomplishment of the mission. They met the challenges posed with originality, professionalism and just plain hard work by everyone, down to the last cook in the mess hall.

4. To supplement their construction program, Company D developed a truly outstanding maintenance program. All operators and drivers, closely supervised by the officers and non-commissioned officers devoted a 100% effort to maintenance at all times. This was particularly evident toward the latter part of the year when D Company's weekly deadline rate on several occasions was zero percent. In addition, Company D had the distinction of being the only construction company in the 159th Engineer Group that passed the 20th Brigade CMMI inspection during the entire year. The gung-ho spirit that all personnel of Company D had and the fine maintenance record they achieved was undoubtedly a major factor in their successful construction program. For more detailed information on specific construction projects see Inclosure 2. Also, Inclosure 3 lists pertinent information concerning Company D's maintenance statistics.

5. Like all other organizations, D Company is made up of people. The men of Company D, not only have collectively done an outstanding job, but also have excelled as individuals. During 1968, twelve individuals received Bronze Star Medals and seventeen men received the Army Commendation Medal.. Letters of Appreciation and Commendation for individuals and the unit are attached in Inclosure 4. Inclosure 5 depicts pictorially some of the work accomplished by Company D. The 169th Engineer Battalion received the meritorious Unit Commendation for the period 1 Nov 67 to 30 Apr 68. Company D made significant contributions toward the achievement of the award.

6. Overall, Company D has been an extremely versatile, well organized, and highly motivated unit. They have continually exhibited superior engineering competence and professionalism in all their task. The morale and esprit of the unit has been exceptionally high, attesting to the fine quality of leadership amongst the officers and non-commissioned officers. Company D, 169th Engineer Battalion has always been ready to respond to any mission assigned in a reliable and resourceful manner and by their meritorious achievements have reflected great credit to the Corps of Engineers.

CLIFFORD T. FLANIGAN
LTC, CE
Commanding

Incl 1-Unit History
Incl 2-Project Summaries
Incl 3-Equipment Deadline Rate
Incl 4-Letters of Appreciation and Commendation
Incl 5-Other Pertinent Information

Note: Inclosures not found in the Archives

SUBJECT: Operational Report of the Company D, 169th Engineer Battalion APO 96491 for the Period Ending 30 April 1969

DEPARTMENT OF THE ARMY
COMPANY D, 169TH ENGINEER BATTALION
APO 96491

ECBE-3

7 May 69

Commanding Officer
169th Engr Bn
ATTN: Lt Cote
APO 96491

Section I Operations: Significant Activities

1. Command:

a. Unit Employment: D Company is headquartered with the 169th Engineer Battalion at Long Binh Post and presently also maintains a base camp on QL-20 at the La Nga River.

b. Mission: The mission of D Company is to perform US Army engineer construction and provide combat support as directed by the 169th Engineer Battalion.

c. Attachments and Detachments: On 15 March 69, an Earthmoving Platoon from D Company, 92nd Engineer Battalion was attached to include administration, quarters and rations, and maintenance support for the purpose assisting in the LOC construction along QL-20. On 15 March 69 and on 2 Apr 69 D Company had men attached from A Company, 169th to advise and support the rock crushing operations at Dinh Quan.

d. Movements: D Company continues to maintain a Base Camp on QL-20, with one vertical platoon and one horizontal platoon plus the attached platoon from the 92nd Engineer Battalion.

2. Personnel, Administration, Morale, and Discipline

a. The personnel strength of D Company for the Period 1 February 69 to 30 April 69 are as follows:

February 1969

	OFF	WO	EM	TOTAL
Authorized	5	1	141	147
Assigned	5	1	167	173

March 1969

	OFF	WO	EM	TOTAL
Authorized	5	1	141	147
Assigned	5	1	166	172

April 1969

	OFF	WO	EM	TOTAL
Authorized	5	1	141	147
Assigned	6	1	166	172

b. The implementation of the new TO&E on 23 December 1968 resulted in the company being overstrength. Excess personnel are utilized as vehicle drivers (not called for in new TO&E), and for security on QL-20. Despite the company being 17% overstrength, EM platoon remains below strength.

c. Morale has been high. There are sufficient R&R allocations. This company could use more in-country R&R allocations.

d. Awards: During the reporting period the company accumulated two (2) Bronze Stars, five (5) Army Commendation Medals, one (1) Purple Heart, and three (3) Battalion Certificates of Achievement.

3. Training: Training has been by battalion training schedule to include interior guard and counter-sapper training. Also, in conjunction with operations on QL-20 extensive training has been conducted on infantry weapons, mines, and demolitions.

4. Construction Projects:

a. Projects completed during reporting period:

(1). Combat and Operational Support:

OSD 68-159-163, USARV Data Service Center Revetment Construction, Long Binh, Co D. This project consisted of the assembly of 765 linear feet of nine foot high revetments filled with laterite. M8A1 matting was used for the revetment sides and a 3" cap of concrete was placed on top. The project was begun on 29 Oct 68 and completed on 10 Feb 69.

USMH	6,840
VNMH	4,816
Equipment hours	850

(2). LOC: None

(3). MER: MR 159-68-023, MER for 54th Artillery Group, 59th Arty Co. D. This project required 8 pairs of laterite-filled revetments, each single section measuring 3.5'W X 40" L x 4'H. Kaiser Steel Corporations "K-Walls" were utilized with a 3" concrete cap placed on top. This project was begun on 28 Jan 69 and completed on 24 Mar 69.

USMH	2,930
VNMH	552
Equipment hours	800

(4). Base Construction:

CD 73-223-01-T-7S, 493 man Cantonment , Saigon, Co. D. This project includes the construction of nine 2-story tropical wood constructed buildings for the 92nd MP Bn. Six of the buildings were used entirely for troop billeting; three were used for both troop billeting and administration. Concrete floors were poured for all buildings which measured 108' by 20'.

USMH	5,914
SHMH	24,159
Equipment hours	100
VNMH	000

b. Active Projects:

(1). Combat and Operational Support:

a. GD 159-378, Protective Walls for ADP Facilities, Co D. This project calls for the construction of revetments around Bldg 4571 and Bldg 5704. Bldg 4571 requires 641 linear feet of reveting and Bldg 5704 requires 325 feet. Project is proceeding according to schedule and is 42.3% complete at the end of reporting period. EDC is 6 Jun 69.

b. GD 243-5414-3-23, Long Binh Post Defense, Co D. This is a blanket directive designed to authorize improvements to LBP perimeter. During this reporting period, RPG protective wire fencing has been installed in front of each bunker, trip flares have been placed in the concertina rows, all claymores have been cemented in place and two latrines have been constructed.

(2). LOC: QL-20, CD 98-240-159-LOC Restoration QL-200. Active construction of QL-20 between the La Nga River and the Long Khanh Province Boundary is underway with 46% complete. The first 10 KM of roadway have been completed with 20' asphalt paving. The two kilometers of roadway in Dinh Quan are being patched with hot mix. Clearing and grubbing, excavation, drainage work, and base course preparation are in process north of Dinh Quan.

(3). MER: None

(4). Base Construction:

a. 07-240-01-T-7S, Water Supply Facilities, Bien Hoa, Co D. Project consists of 2 water storage tanks w/steel towers and water treatment facility. The well has been drilled, both towers are nearly complete, and one tank has been assembled. Work has been delayed due to work on higher priority projects. Project is 45% complete. EDC is 30 June 69.

b. 07-241-01-T-7S, Water Supply Facilities, Bien Hoa, Co D. Project consists of two wells w/3 water storage tanks w/steel towers. Bien Hoa PA&E has constructed one water tank.. Our forces will soon complete the other two. Project is 95% complete at end of reporting period. EDC is 30 June 69.

(5). Continuous Projects: None

(6). Projects which are assigned but not worked on during the period:

a. CD 43-280-01-T-7S (B) Recreation Facilities

b. CD 43-280-01-T-7S (D) Recreation Facilities

c. CD 43-331-15-T-7S Long Binh Post Paving

Section II: Significant Lessons Learned

1. Shoulders on QL-20:

a. Observation: That most failures on asphaltic concrete occur at the edge of the pavement as a result of water standing on the shoulder or in some manner seeping under the paving causing soft spots.

b. Evaluation: That besides ensuring that the roadway was properly crowned or for drainage, that some additional measures must be taken to protect the shoulders and therefore the road surface.

c. Recommendation: It was found that shooting the shoulders with MC 70 followed by RC 800 provided a water-proof surface that is sure to lengthen the life of the road. This also results in a pleasing road appearance and aids in holding down dust.

2. Convoy Security (QL-20):

a. Observation: That this unit would eventually have to provide its own convoy security.

b. Evaluation: That thorough preparations would have to be made.

c. Recommendation: This unit started early by ensuring that all personal field gear as on hand and in serviceable condition. Weapons familiarizations was conducted on a bi-weekly, than weekly, basis to include M-60 and 50 caliber machine guns. Classes on convoying and counter-ambush procedures were given. Emphasis was given on maintaining an alert attitude. As a result, there have been no major incidents to date.

3. Jobsite Security:

a. Observation: That ensuring jobsite security for road construction elements in a hostile area is a potential problem area.

b. Evaluation: The differing types of Vietnamese military units, i.e. RF, PF, ARVN, and their differing missions and concept of operations require that construction units fully understand these units in order to successfully coordinate and effect the security necessary on the extended job locations.

c. Recommendation: Utilization of RF and PF units for opening the road each morning and providing general security while ARVN units provide localized security and reaction forces worked satisfactorily. Shortcomings in security were made up by selected and specially trained engineer troops thus holding to a minimum the working time lost.

4. Utilization of a Grid Roller in Base Preparation:

a. Observation: In ripping the old French stone base course in preparation for final base work for paving on QL-20, numerous problems arose in obtaining the finished surface. Large stones were appearing on the surface which tended to ravel or required pans to bring in additional binder material to cap the surface.

b. Evaluation: That after ripping and scarifying, graders working to shape the crown and shoulders, in moving material back and forth across the road were losing all the fines, with the larger rock remaining on the surface.

c. Recommendation: Utilization of the Grid Roller in conjunction with water and the grader resulted in breaking the larger stone or driving it down into the base. With no outside material being added to the rock, more water could be added without the base turning soft. With the additional moisture to retain fines plus the larger stone driven down, no additional binder material was required. This provided a durable base course for paving.

5. Crusher Operations:

a. Observation: The mud-filled rock due to rain severely hampers crusher operations.

b. Evaluation: That if some washing method can be found, then effective operations can continue.

c. Recommendation: A 1,000 gallon water distributor with hose was used to periodically clean the shaker box and waste chute. The mud did require the divider screen below the shaker box to be removed resulting in a small loss of fines. However, the material off the waste conveyor proved to be excellent fill material and was utilized as such.

ROBERT E. MATTHEWS
CPT, CE

The following document is a battalion summation for the year, but contains some of D Company projects.

HISTORY OF THE 169TH ENGINEER BATTALION (CONSTRUCTION) FROM SEPTEMBER 1969 TO OCTOBER 1970

The 169th Engineer Battalion set up, operated, and maintained a rock Quarry, crushing complex, hot mix asphaltic cement plant, and a concrete batching plant. The Quarry greatly aided the construction of National Highway QL-20, the battalion's main project.

On 15 September 1969, the 169th Engineer Battalion moved its Bravo Company north up QL-20, a mile south of Phu Lam. As National Highway construction work was completed and continued north, the need for a base camp became essential.

On 14 November 1969, the 544th Engineer Company (CS) was assigned to the 169th Engineer Battalion. The 544th will be located some twenty three miles northwest of Battalion headquarters, and will operate various road producing complexes.

In need of greater quality and Quantity of rock for its major project, QL-20, the 169th Engineer Battalion constructed, operated, and maintained a rock Quarry, crushing complex and a hot mix asphaltic cement plant in December 1969. Included in the project of operational equipment was one 410 TPH jaw crusher, one 880 universal crusher, one 4' standard cone, and one 54 roller. A KA-60 model asphaltic plant was used for maximum output. Over 11,140 man hours were exhausted on the site. The 544th Engineer Company (CS) moved from base camp at Nui Da Dinh, to operate the project.

Charlie Company was responsible for a 'quick job' at Xuan-Loc this past year. In a project plagued by continuous rains, untimely shortages in supplies, and typical mud problems of monsoon season building, C Company constructed 14 aircraft revetments, 2 fuel storage revetments and three guard towers.

D Company, working at Long Binh, installed two elevated type water storage tanks this past January. The tanks were fitted on forty foot steel towers, set in concrete bases. Two filling points were set up, one for each tank, which will handle 10,500 gallons of water. Some 5,300 man hours were expended on the project.

Three 282 feet parallel culverts were installed in January by Company D. The site of the mammoth complex, with preassembled culvert sections each 60 inches in diameter and 40 feet long, was located 3 miles west of the La Nga River along National Highway QL-20.

Units of the 169th Engineer Battalion removed thick vegetation growing between Providence Village and Long Binh Army Post in February in an effort to deny the enemy a natural hiding place. The clearing was accomplished with defoliants, fire and finally, land clearing equipment.

Sanford Heliport also received some work from C Company, 169th Engineer Battalion this past year. The Long Binh located port needed non-skid paint on its landing surface to provide traction for taxing and towing of helicopters. In all, 288,000 square feet of M8A1 matting was applied.

Civic Activities

Charlie Company built a kilometer of peripheral road and repaired over two kilometers of road for villages in Gia Kiem.

In March the Chaplain contributed over thirty gallons of canned food to the Gia Kiem orphanage and a load of food and clothing from the States was donated to the Dominican Sisters Orphanage in Honai.

Chaplain Ballard and volunteers from headquarters Company and Company A loaded a jeep and a 2 & 1/2 ton truck with excess food from various messhalls and boxes of clothing sent from the U.S. and visited Protestant and Catholic communities of Dong Xuan, 23 miles northeast of the 169th Engineer Battalion base camp in Long Binh, this past June.

In October, Chaplain Ballard once again made a visit, this time to the newly formed refugee village outside of C Company. Boxes of clothing from the States, as well as food from Battalion messhalls were passed out.

Changes in Command

LTC R. S. McGarry --- 18 Jun 69 to 4 Jan 70
LTC N. J. Andre----- 4 Jan 70 to 1 Aug 70
LTC C. Sanders----- 1 Aug 70 to 12 Sep 70
LTC J. E. Smith -----12 Sep 70 to present

Listing of Units

Units Assigned

169th Engineer Battalion

HHC Administration
A Co Maintenance
B Co Construction
C Co Construction
D Co Construction

Units Attached

43d DT Co Hauling operations
544th En Co Asphalt and Quarry Operation

Source: United States Army, 169th Engineer Battalion, "HISTORY OF THE 169TH ENGINEER BATTALION (CONSTRUCTION) FROM SEPTEMBER 1969 TO OCTOBER 1970". Retyped from the original in 169th Engineer Battalion, RG 472, Stack 270, Row 34, Compartment 34-, Shelf 7-, Box 1-Organizational History 1954-1972, National Archives II.

FIELD NOTES submitted 18 July 69 by CPT Robert Matthews.

ITEM: Waterproofing Bunkers

Numerous problems have been encountered with defensive bunkers located on the Long Binh Perimeter. Serious leaking occurred in the roofs which consisted of 4 x 4 beams with 2 by material used as planking, a tar paper covering and 3 to 4 layers of sandbags. The weight of the laterite caused a slight bowing of the roof which prevented rain water from draining. Once the laterite became soaked deterioration occurred in the tar paper and the bunkers suffered numerous slow leaks.

The problem was solved by placing a framework of 2 x 8's and 2 x 4's over the existing roof and leaving approximately 8" of laterite on the top. Corrugated steel was then added using rubber insulating grommets with each nail. Finally, two layers of sandbags were placed on the steel and the entire roof was coated with asphaltic binder.

ITEM: Replacing Bunkers

Several defensive bunkers were recently replaced on the Long Binh Perimeter. The previous construction had incorporated 1 by material on the floor on a framework made of 2 x 4's. As the ground under and around the bunker settled, the bunker also settled and the 1" flooring buckled in several places.

New bunkers were completely constructed at the location. With the help of a crane, the old bunker was removed and the new one was set in place. The addition of lateral bracing, firing steps, wooden bunks and other interior work before the bunker is placed will help keep the bunker intact during the operation and will limit the replacement operation to less than 6 hours.

OPERATIONS

Prior to all the companies moving from Long Binh to positions along highway QL-20, the 169th was responsible for drilling wells, setting up water supply towers and roads for different units around Long Binh, building revetments for aircraft and buildings, operating a rock crusher and asphalt plants, training ARVN personnel on equipment operations and helping maintain the security perimeter around part of Long Binh Post.

159th ENGINEER GROUP OPERATIONAL REPORTS--LESSONS LEARNED (ORLL) EXCERPTS REGARDING D COMPANY

NOTE: The following excerpts are from the Quarterly Operational Report - Lessons Learned, Headquarters, 159th Engineer Group for the periods indicated below. They were obtained from the Army Center of Military History, Washington, D.C. Originals are in the National Archives at College Park, Maryland.

ORLL COMMON ITEMS

The 169th Engineer Battalion arrived in Vietnam on 30 May 1966 and was operational on 10 June 1966. Other 159th units were: 34, 46, 92, 168 battalions; 41PC, 43DT, 100FB, 103CS, 497 PC, 544 CS companies; and 22WD, 38WD, 143 CMP, 156WD, 551WD, 714PD, 917WD, 702PD detachments.

159th Mission: The mission of the 159th Engineer Group is to accomplish engineer construction as directed, to provide combat support as required and to defend approximately three miles of the Long Binh Post perimeter.

Source: ORLL, 14 Nov. 69, Page 1

159th AOR: The 159th Engineer Group AOR includes the main political and tactical districts of Saigon, Bien Hoa, Long Binh, Bearcat, Vung Tau, Long Thanh, Xuan Loc, Blackhorse, Phu Loi and all major lines of communication within its borders. The AOR is defined as being all that area bounded by the South China Sea and the following trace from the Song Nha Be (XS 9276) west along the Gia Dinh Province border to the Kinh Xang canal (XS 6389) then north to the Gia Dinh Province border intersection with QL-1 (XT 7107) and west to the Song Saigon (XT 8108); from there along the Song Saigon and Song Thi Tinh north to XT 7723, west to QL-13 (XT 7823) and north along QL-13 to Ben Cat (XT 7433). The trace follows small stream beds northwest of Ben Cat to LTL-1A (XT 9244), then west and south along the Song Be and Song Dong Nai to the Long Khanh province border to the coast (YS 7489).

Source: ORLL, 14 Nov. 69, Page 2

159th Assignment: The 159th Engineer Group has been assigned to the 20th Engineer Brigade since 5 August 1967. Prior to 5 August 1967, the 159th Engineer Group was assigned directly to the US Army Engineer Command Vietnam (Provisional), USAECAV(P). The group headquarters is located at Long Binh, RVN.

Source: ORLL, 14 Nov. 69, Page 2

159TH ENGR GP ORLL ENDING JULY 1969

1. A prefabricated concrete fighting bunker was designed to be used in place of wooden bunkers. The design utilized single prefab concrete components for the roof and walls, installed upon a concrete floor. The design can be modified so that the bunker can be installed partially underground. *Source:* Page 27
2. The Group remains responsible for the defense of one of the four defensive sectors of Long Binh Post. The sector of responsibility lies on the southern perimeter of the post, consisting of 38 primary bunkers and three 60' observation towers. Five critical facilities are within the sector. *Source:* Page 6
3. Two water storage tanks with truck fill stands and access roads were constructed for 101st Abn Div. Completed 21 July 1969. *Source:* Page 17
4. Restoration (upgrade) of QL-20, from QL-1 to Trai Lam Cay. Portions of MACV standard highway and an all weather highway were completed.
5. LOC maintenance and repair of QL-20 during the present rainy season. Continuous.
Source: Page 21

159TH ENGR GP ORLL ENDING OCTOBER 1969

1. Minimum Essential Requirements for D Company, 169th Engr Bn, QL-20 Construction for Base Camp: Constructed 40' x 100' mess hall slab. Completed 21 September 1969. *Source:* Page 13
2. Restoration of QL-20, from QL-1 to Trai Lam Cay. 169th BN constructing 9.5 kilometer of MACV standard highway and 48.5 kilometers of all weather highway to include drainage structures. Project is 94% complete. (Project terminated 1 November 1969.) *Source:* Page 19

3. Semi-trailers, low-bed 25T, remain a problem due to frame cracks at the gooseneck and over the front trunion. The present method and configuration of repair by welding has not proved entirely satisfactory. Additional research by TACOM representatives is being conducted. *Source: Page 27*
4. The 159th group had stories published in the Castle Courier, Army Reporter, MACV Observer, Stars and Stripes and the KYSU Magazine. This period, 1,010 Home Town News Releases have been forwarded for publication. *Source: Page 28*
5. During the past three months the 169th Engineer Battalion has been developing a quarry at Nui Soc Lou, near Gia Kiem. Banana trees were cut down in the process, and the local Vietnamese became angry. In an attempt to ameliorate a potentially tense situation until the Vietnamese received compensation, the 169th Engineer Battalion organized a banana run. The empty trucks returning from the Quarry haul bananas to market points that they pass on their normal trips up and down QL-20. *Source: Page 30*

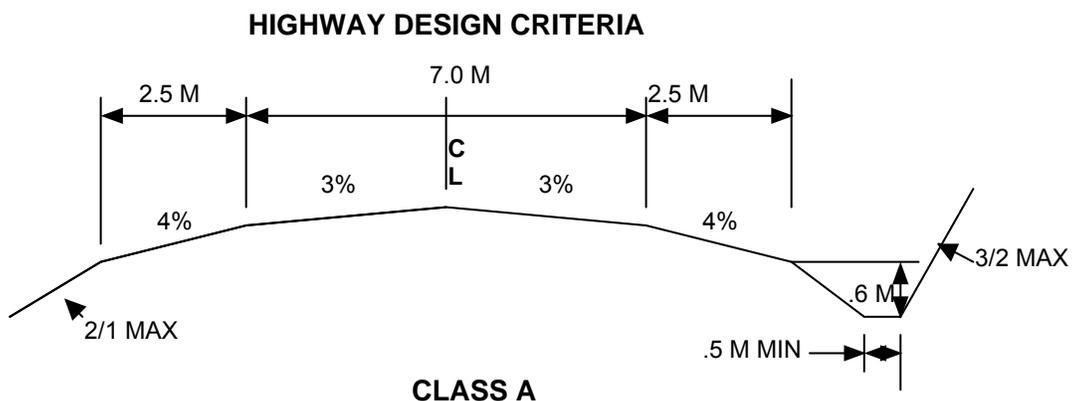
159TH ENGR GP ORLL ENDING 31 JANUARY 1970

1. Map Coordinates of places: Intersection of QL-1 and QL-20 (YT 3410), Gia Ray (YT 3416 or 4308 or 6313), Banana Quarry (YT 3516)
2. Visitors: BG Tarbox, COL O'Donnell, BG Dillard, LTG Clarke, COL Devine, COL Fuller *Source: Page 3 and 4*
3. Dozer Support to FSB Nancy. Constructed firing positions and berm. Project completed 16 January 1970. ✓ *Source: Page 8*
4. Living Fighting Bunker Construction for Company D, 169th Engr BN: Constructed 6 living fighting bunkers. Project completed 4 January 1970. *Source: Page 11*
5. Restoration of QL-20, from QL-1 to Trai Lam Cay: Constructed 9.5 kilometers of MACV Standard A highway and 48.5 kilometers of all weather highway. Project terminated on 1 November 1969. *Source: Page 14*
6. QL-20, LOC FY 70 Program, Restoration of QL-20 from QL-1 to II/III Corp border, 169th Engr Bn: Laid second lift of asphalt from QL-1 to Gia Kiem to complete 9.5 kilometers. 114 kilometers of base course and 12.9 kilometers of first lift asphalt placed. Project is 23% complete. *Source: Page 19*
7. Road construction of the FY 70 LOC program was initiated on 14 November 1969. The final design drawings being prepared by an architect-engineer firm were not available. Fifty percent drawings including horizontal and vertical curves were available. The engineering section designed typical cross-sections for each class roadway to permit initial planning estimates of earth haul, required rock and asphalt production, and equipment allocation. *Source: Page 22*
8. The 169th Engineer Battalion continued to pick up, process, and issue the remaining MCA-LOC equipment purchased last year for all 20th Engineer Brigade units. *Source: Page 26*
9. TOE equipment problems: cracks in the steering arms of 10 ton tractors; alternators on the Allis Chalmers model 645 M Scoop loaders; tires and tubes for 5 ton dump trucks; frames on 5 ton dump trucks have cracked; steering clutches on Barber Greene asphalt pavers; 25 ton semi-trailer cracked goose necks; and wheeled tractors (Clark model 290M's) torque converter problems. *Source: Page 27*

10. Lessons Learned: The accepted method of clearing brush and grass from defensive wire is burning. Beside the danger from munitions such as trip flares or claymore mines not being removed, the heat destroys the effectiveness of the wire. Concertina and barbed wire becomes brittle. Large sections of perimeter wire must be replaced to remain effective. *Source: Page 34*
11. The start of the construction season in III CTZ is 1 November when rains have abated. Banana Quarry, the key to the FY 70 LOC program in the 159th Engineer Group did not become fully operational until late January, three months into the eight month construction season. This late start significantly affected the required production and construction rates required to complete the FY 70 program this dry season. *Source: Page 35*

159TH ENGR GP ORLL ENDING APRIL 1970

1. Dozer Support, D Co, 169th Engineer Battalion: Constructed berms and gun pits FSB Dan, project completed 3 March 1970. *Source: Page 7*
2. Move Trestle Grease Rack, D Co, 169th Engineer Battalion: Relocated trestle grease rack from LOC area to 43rd Engineer Company motor pool. Project completed 23 February 1970. *Source: Page 15*
3. Maintenance of Base Camp Perimeter, D Co, 169th Engineer Battalion: Repair bunkers and install concertina wire and trip flares. Project is continuous. *Source: Page 20*
4. Restoration of QL-20: Construction of 65.4 km of MACV standard class A highway. Thus far 903,732 cubic yards of embankment/subbase 133,956 cubic yards of base rock and 89,658 tons of asphalt have been placed during construction of the highway. The paving effort consists of 33.4 kilometers of 24 foot first lift and 20.0 kilometers of second lift. Project is 64% complete. *Source: Page 22*
5. Perform R&U maintenance and repair for D Co, 169th Engineer Battalion base camp, QL-20. Project is continuous. *Source: Page 24*
6. Materials shortages of plywood, bituminous products - AP-3 and MC-70, 60" and 72" corrugated metal pipe. Dependence on RMK-BRJ supplied mineral products has decreased. *Source: Page 30*



159TH ENGR GP ORLL ENDING 31 JULY 1970

1. Maintenance of Base Camp Perimeter, D Co.: Repaired bunkers and installed concertina and trip flares. Started 2 July 1969, completed 9 June 1970. *Source: Page 15*
2. QL-20, FY 70 Program, Restoration of QL-20 from Gia Kiem to II/III Corps Border, 169th Engineer Battalion: Constructing 65.4 kilometers of MACV standard class A highway. 1,230,495 SY of clearing and grubbing, placed 1,445,634 CY of subbase, placed 159,000 CY of base course rock, paved 52.75 kilometers of 1st lift and 28.09 kilometers of 2nd lift using 1239,000 tons of asphaltic concrete, placed 489 LF 24" culvert, 1389 LF 30" culvert, 2814 LF 36" culvert, 2861 LF 48" culvert, 1869 LF 60" culvert, 216 LF 108" culvert, constructed 107 headwalls using 1584 CY concrete. Project started 15 Sept. 1969, estimated completion date 15 Dec. 1970. The project is 80.9% complete. *Source: Page 25*

A Company was in Long Binh.

B Company was located near the village of Phoung Lam.

C Company was located near the village of Xa Binh Hoa.

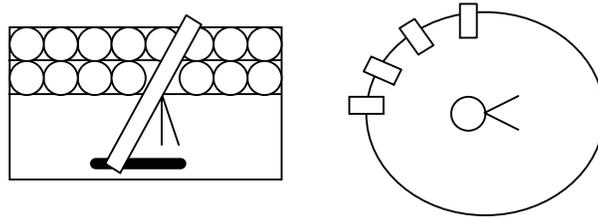
D Company was located at the intersection of QL-20 and the LaNga River.

544th was located at Nui Soc Lu on highway QL-20.

ENGINEER FIELD NOTES submitted on 16 August 1969 by CPT Robert Matthews.

ITEM: Mortar Pit

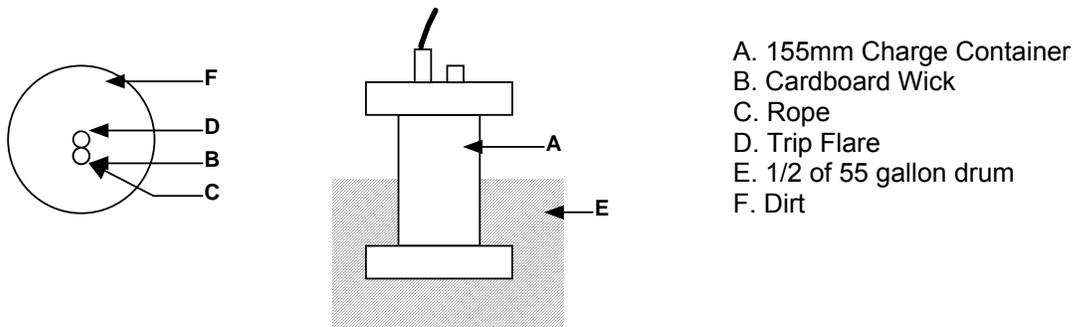
With the coming of the monsoons, the Mortar Men of Delta Company, 169th Engineers were experiencing a larger and larger number of dud illumination rounds. They discovered this was due to the constantly high humidity. To get around this, a quick-open and water-tight container had to be found. The container for the HE rounds is quick-open and water-tight but it is too small. A container, found in large supply at the base camp, was the perfect solution. The container was the powder container for the 155mm howitzer. These containers were placed on top of the pit in a circle around the mortar. This allows the crew to have 30 to 40 pre-set rounds for quick use in case of attack.



ITEM: Flare Pit

At the Delta Company's base camp a need was discovered to have some sort of air-ground indicator in the event air support was ever needed. Possibilities were discussed and research was conducted. The final product was found tow weeks ago.

The powder container for a 155mm howitzer was found to be a strong, large container and in great supply at the base camp. A large wick was made by rolling cardboard around a piece of rope. Then this wick is placed into the 155mm container. Around the wick, gravel is placed to the top of the container. Then a trip flare is attached to the wick. The container is then filled with diesel fuel. To give the pot stability, it is placed in a half-55 gallon drum and this is filled with earth. All that remains to be done is pull the cord on the trip flare. This flare pot will burn for two hours plus.



ITEM: Monsoons vs. Horizontal Construction

Due to the unusually large amount of precipitation encountered during this season and in the region surrounding Dinh Quan, modifications to many of the normal working procedures are required.

Such has been the case in our upgrading project on QL-20 in III Corps. During the dry season the procedure used for the upgrading project was to rip up and re-compact an eaten away old road base.

This gave a new smooth, reformed base to be paved later. However, due to 100% soil saturation during the monsoons, a new method was devised for the continuing of the upgrade project.

The method now being used is working very well and seems to provide the answer on how to keep the project moving along.

The larger wash out holes are filled with 3"-rock, then graded level, and last, compacted by a normal 24 hour period of traffic. The next step is to bind this rock and seal the surface, which is accomplished by shooting hot (180o) RC 800 over this new base rock. The remainder of the roadway is then graded and swept clean. Now the entire roadway is shot with MC 70 and is prepared for paving.

The paving is accomplished by dumping loads of hot asphalt in the center of the prepared roadway then grading it evenly across the surface. To roll this asphalt, a nine wheel SP rubber tired roller is used. After five to six passes of this roller, normal traffic is permitted again over the upgraded roadway.

This method leaves the old road intact and adds a new smooth surface.

ENGINEER FIELD NOTES submitted on 17 September 1969 by CPT Bill Harvey.

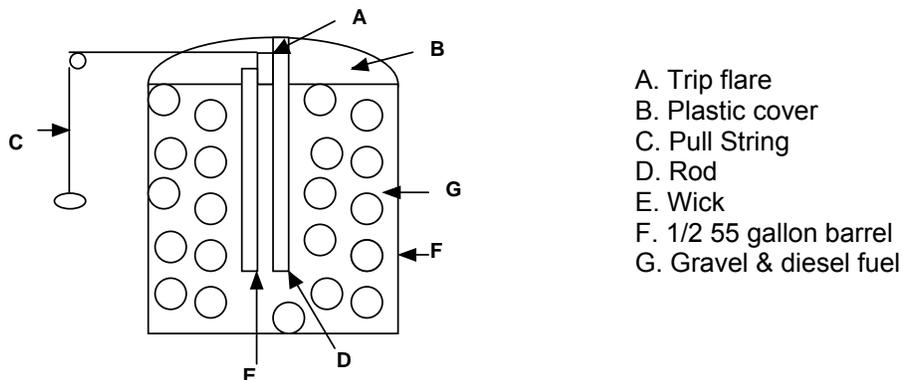
ITEM: Marking Bunker Positions

A need was discovered at our base camp to provide accurate marking of the bunkers in case an air strike had to be called in at night.

It was decided to use 55 gallon barrels cut in half. The half barrels were filled with gravel to give stability and then filled with diesel. A test showed that some type of wick would be necessary. After several trials, we found that corrugated cardboard paper wrapped around hemp rope provided the longest burning wick.

A trip flare provided an excellent flame for an ignition system. A pull device was used with the trip flare. A plastic shrouding kept the system isolated from the elements.

Testing has shown that the marker flame will burn for 4-5 hours even in heavy rain.



MORALE AUG 70

Each of the four isolated companies operate approved Other Sundry Funds for the purpose of serving beer, soft drinks and snacks.

The isolated companies are served by the 169th Engr Bn Post Exchange. A mobile truck operated by HHC visits the base camp once a week to sell items not available through Sundry packs and impress funds.

Late 1970:

D Company did land clearing and dozer support to fire bases for firing positions and berm.

Excerpt from Operational Report-Lessons Learned, Headquarters, 159th Engineer Group (Construction) Period Ending 31 Oct 71, RCS CSFOR-65 (R3).

Construction Operations:

LOC:

LOC (Lines of Communication) again played the most important role in the overall group effort during the reporting period. At the beginning of the period there was a total of 94.4 kilometers of road construction on QL-20 to be completed under the original restoration plan begun by the 169th Engineer Battalion in December of 1969. By the end of the previous reporting period, the 169th Engineer Battalion had turned over 43.0 kilometers. In June the last section of the original 75.2 kilometer stretch was turned over. Final inspection and turn over of another section 10.7 kilometers in length from the II/III CTZ Border to Bridge 4 has been set for 17 November 1971. Completion of this section will mark the final stand down operations for the 169th Engineer Battalion.

(Construction) Period Ending 31 Oct 71, RCS CSFOR-65 (R3).

The Vietnam Regional Exchange warehouse project became the primary responsibility of the 92nd Engineer Battalion on 21 June 1971. Earthwork for the project was started in December 1970 by the 46th Engineer Battalion. The scope of the project called for the effort of the entire 92nd Battalion plus D Company, 169th Engineer Battalion and the 714th Power Detachment. The project includes 192,000 square feet of covered warehouse, constructed from eight connected 120 x 200 foot preengineered Pascoe buildings. D/169th and C/92nd were tasked with this phase of the project. Project is scheduled for completion on 1 December 1971.

D COMPANY COMMANDER'S COMMENTS ON 2 APRIL 1971

During the construction of QL-20 within the Co D AOR, the following observation was made.

1. A large number of failures have occurred due to higher than design axle loads on Vietnamese civilian trucks. Some type of control must be exercised to insure long life of the new road.
2. Mistake was made by this element, in to construction some of the more difficult section of the road before the advent of the monsoon season which started earlier than normal this years. Thus over three weeks of construction time lost in helping Vietnamese traffic to move on a muddy pass by and in reworking the Dinh Quan Hill area because of rain and traffic.
3. The used base course rock with sand substituted for rock fines it at best marginal because it is gap graded. The sand-rock mixture holds water and eventually causes a subbase failure. These failures are especially common if the compacted base course is not properly sealed with nonporous asphalt.