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Commanding Generals

US Army Weapons Command
101st Airborne Division (-)
25th Infantry Division
11th Infantry Brigade (Sep)

Commanding Officers

5th Battalion, 46th Infantry
5th Battalion, 12th Infantry
6th Battalion, 31st Infantry
31st Engineer Battalion (Cbt)
5th Battalion, 42d Artillery (155mm-T)

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3
DEPARTMENT OF THE ARMY
HEADQUARTERS 25TH INFANTRY DIVISION
APO San Francisco 96225

AVDCDH

19 August 1967

SUBJECT: Operational Report for Quarterly Period Ending 31 July 1967
(RCS CSFOR-65) (EC)

TO: SEE DISTRIBUTION

Operational Report for Quarterly Period (RCS CSFOR-65)
Location: Vicinity, CU CHI, CU CHI Base Camp (XT647153), RVN
Reporting Officer: Major General John C. F. Tillson III
Prepared by: Captain Howard C. Hanning, CO, 18th Military
History Detachment

1. (C) Significant Organizational Activities.

a. Operations.

(1) General. There were 11 major (Bn or higher) operations and 1405 small unit actions conducted by the 25th Infantry Division (-) during this quarter. All major and 109 small unit actions resulted in enemy contact.

(2) FORT NISQUALLY (28 Nov 66 - 14 May 1967). The mission of the operation was to conduct operations to secure the area adjacent to the base camp of the 3rd Bde, 4th Inf Div at DAU TIENG and to eliminate VC influence in the unit's Tactical Area of Responsibility (TAOR). Operations from 1 - 14 May 1967 primarily consisted of daylight reconnaissance and night ambush patrols within 3000 meters of the DAU TIENG base camp. There was no significant contact.

Results of Operation FORT NISQUALLY were as follows: 28 VC Killed in Action (KIA), verified by Body Count (BC), 23 VC KIA possible (poss), 26 VC Prisoners (PW), 58 detainees. Captured and evacuated were: 23 individual weapons, 2 LMG, 1 claymore mine, 1 CHICOM RPG-2, 1695 rds ammo, 100 expended .30 cal links, 1 bayonet, 3 grenades, 30 punji stakes, 36 tons of rice, 105 lbs pork, 325 lbs sugar, 41 lbs tea, 20 lbs shrimp, 6 kg assorted food; 10 bicycles, 5 new bicycle frames, 3 bags bicycle parts; 1 pair jungle boots, 1 roll black material, 100 lbs assorted clothing; 300 ft electric wire, 2 FM radios, 4 batteries; 1 US gas mask, 1 large roll mosquito netting, 111 lbs documents, 11 rolls corrugated tin,

FOR OT EO FILE
670624

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20 gal kerosene, 30,000 Piasters, 150 lbs assorted medical supplies, 21 lbs epsom salts. Destroyed were: 10 AT mines, 32 AP mines, 29 hand grenades, 3 105mm casings, 3 155mm projectiles, 1 105mm projectile, 3 82mm rds, 1 M-79 rd, 3 rds CHI COM RPG-2, 33 CBU bomblets, 4 200 lb bombs, 1 750 lb bomb; 39½ tons rice, 1000 lbs beans, 1700 lbs peas, 3 lbs sugar, 1 gal grease, 2 canteens whiskey, 1600 lbs mullett; 7 sampans, 6 bicycles; 1 Bn size hospital, 11 VC base camp, 309 bunkers, 3 buildings, 115 foxholes, 32 huts; 310 ft electric wire, 5 rolls barbed wire, 250 sheets tin, 1 grinding mill.

(3) ALA MOAMA (1 Dec 66 - 14 May 1967). This operation was conducted in HAU NGHIA and BINH DUONG Provinces to destroy to destroy VC forces, supplies and base camps near the division base camp at CU CHI, and in the FILHOL Plantation, and to provide security for the CU CHI base camp and surrounding area. First and 2nd Brigades, 25th Infantry Division continued participation in Operation ALA MOAMA employing local security operations, without significant contact until the termination of the operation on 14 May 1967. Results of Operation ALA MOAMA were as follows: 381 VC KIA (BC), 558 VC KIA (poss), 25 VC PW, 652 detainees. Enemy equipment losses were: 94 small arms weapons, 5 crew served weapons, 56 artillery shells, 133 mines, 406 grenades, 7 mortar rounds, 12 bombs, 21,499 rounds of small arms ammunition, 181 booby traps, 87 cluster bomb units (CBU), 188 blasting caps, 17 anti-tank weapon rds, 289 sampans, 4 outboard (sampan) motors, 55 lbs medical supplies, 14 bicycles, 162 lbs documents, 2 oxcarts, 15 sticks TNT, 4 lbs clothing and 57 lbs explosives; 5 punji pits, 2,395 meters of trenches and 57 foxholes; 120,092 tons of rice, 2 tons of salt and 5 tons of food stuffs other than rice.

(4) JUNCTION CITY (22 Feb - 16 May 1967). This operation concluded using the Mobile Brigade Concept to continue offensive operations in War Zone "C" begun by the forces of the entire division. Operations from 1 May through 16 May were conducted by the 1st Brigade, 9th Infantry Division, which had been placed under operational control (OPCON) of the 25th Infantry Division. Significant contact occurred on 13 May when Fire Support Base (FSB) 11 at XT305495 was attacked by an unknown size VC unit and received over 100 rounds of 82mm and 100mm mortar fire with small arms (SA) and automatic weapons (AW) fire, resulting in one tank and one M151 ½ ton truck being destroyed, 8 U.S. Killed by Hostile Action (KHA) and 30 more US Wounded in Hostile Action (WHA). The operation concluded on 16 May without further significant contact. Results of Operation JUNCTION CITY were as follows: 947 VC KIA (BC), 423 VC KIA (poss), 163 HOI BINH (rallier under the CHIEU HOI Program), 18 VC PW, and 61 detainees, of whom 35 were civil defendants and 26 were innocent civilians. Enemy equipment losses were. There were 314 small arms weapons, 30 crew served weapons, 1,193 artillery shells, 156 mortar rds, 60 anti-tank weapon rounds, 331 mines, 559 grenades and booby traps, 41,432 rds of small arms ammunition, 120 bicycles, 25 sampans, 5,098 lbs of clothing, 1,058 lbs medical supplies, 8 radios, 4 telephones

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2,500 feet of communication wire, 50 batteries, 1 head set, 1 morse key, 1 mulimeter, 2 tape recorders, 7 audio tapes, 1 antenna, 9 ox-carts, 2 printing presses, 10 generators, 12,643 gallons of fuel and 1,495 lbs of documents. Enemy facility losses were as follows: 3,471 fortifications, 1,060 structures, 25 tunnels, 250 foxholes and 249 trenches. Enemy Food Losses were as follows: 528 tons of rice, 15 tons of other foodstuffs (except rice), and 460 lbs of salt.

... continuation of the cordon while 7th ARVN Regiment controlled the execution of the search and clearing of the village interior. Intelligence prior to the operation indicated the presence of elements of the 1st Bn, Military Region IV (MR IV), the 7th Bn, CU CHI District and the 2nd En, GO MON District in the area. The strength of each battalion was 200 - 300 men. In addition a VC local force platoon of 25 men was known to operate in the area. Considerable VC activity in the adjacent FILHOL Plantation and HO EO Woods was known to be influential in the activities in the village and surrounding areas. VC fortifications, installations, booby traps and mines were found throughout the operation. Contact with VC forces was light for the first days of the operation, consisting of sporadic sniper fire from groups of 2 or 3 VC. Then on 13 July contact increased markedly. At 130148 hours, Co B, 4th Bn (mech), 23d Inf received 10 rds of RPG-2 fire vic XT686216, damaging 2 armored Personnel Carriers (APC), and resulting in 1 US KHA, 8 US WHA, 3 VC KIA (BC), 2 VC KIA (poss) and the capture of 1 RPG-2 launcher with two rounds. At 130142 hours a four man listening Post (LP) ...

(8) SABER THRUST (22 - 20 April, 22 May - 2 June, 5 - 8 June, 2 - 10 July 1967). This operation was conducted by the 3rd Squadron, 4th Cavalry as an intermittent security operation. SABER THRUST was begun on 7 April and conducted in five phases as separate security and patrolling operations in the vicinity of the CU CHI base camp, and along the Main Supply Route (MSR). During this reporting period it was expanded to include engineer security, night ambushes, Long Range Reconnaissance Patrols and employment of a base camp reaction force. Operation SABER THRUST VI was conducted from 22 May through 2 June throughout the CU CHI and TRANG BANG Districts of HAU NGHIA Province, to include the FILHOL Plantation and the HO EO Woods. SABER THRUST VII was conducted from 5 - 8 June in an AO centered on XT2839 northwest of GO DAU HA. SABER THRUST VII was conducted from 2 - 10 July 1967 again throughout the CU CHI and TRANG BANG Districts of HAU NGHIA Province. For the extent of enemy contact see paragraph 1e, Intelligence. Results of the three phases of Operation SABER THRUST were: 17 VC KIA (BC), 28 VC KIA (poss), 1 VC WHA, and 9 VC PW. Enemy equipment captured was: 10 SA weapons, 10½ lbs of documents, 800 lbs fish, \$200 in SVN currency, 1 - .50 cal mount, 1 - 4.2mm mortar tube, 1 carbine, 1 grenade. Enemy equipment and foodstuffs destroyed were: 22,400 lbs rice, 500 lbs fish, 51 fortifications, 34 tunnels, 27 structures, 1 sampan, 15 BT's, 2 AP mines, 19 grenades, 2500 rounds of assorted SA ammo, 5 road blocks.

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(9) AKUMU (08 July 67 - 26 July 67). Purpose of the operation was to conduct a cordon and search and pacification operation in PHU HOA DONG Village (XT715195), BINH DUONG Province. This village is located five kilometers to the northeast of the division's base camp at CU CHI, and at the eastern edge of the FILHOL Plantation. The cordon and search and pacification operations were conducted jointly with the 7th ARVN Regiment, located in PHU HOA DONG. First Brigade, 25th Infantry Division, with 3rd Squadron, 4th Cavalry (-) under its operational control (OPCON), was the control headquarters for the execution and continuation of the cordon while 7th ARVN Regiment controlled the execution of the search and clearing of the village interior. Intelligence prior to the operation indicated the presence of elements of the 1st Bn, Military Region IV (MR IV), the 7th Bn, CU CHI District and the 2nd En, GO MON District in the area. The strength of each battalion was 200 - 300 men. In addition a VC local force platoon of 25 men was known to operate in the area. Considerable VC activity in the adjacent FILHOL Plantation and HO HO Woods was known to be influential in the activities in the village and surrounding areas. VC fortifications, installations, booby traps and mines were found throughout the operation. Contact with VC forces was light for the first days of the operation, consisting of sporadic sniper fire from groups of 2 or 3 VC. Then on 13 July contact increased markedly. At 130148 hours, Co B, 4th Bn (mech), 23d Inf received 10 rds of RPG-2 fire vic XT686216, damaging 2 Armored Personnel Carriers (APC), and resulting in 1 US KIA, 8 US WIA, 3 VC KIA (BC), 2 VC KIA (poss) and the capture of 1 RPG-2 launcher with two rounds. At 130142 hours a four man Listening Post (LP) from Co B, 4th En (Mech), 23d Inf engaged 3 VC at XT687212, resulting in 3 US WIA and unknown VC losses. Finally at 130225 hours, Co A, 4th Bn (Mech), 23d Inf received sniper fire at XT702208, resulting in 1 US WIA. At 131440 hours Companies B and C engaged an unknown VC force at XT664218 resulting in 2 US WIA. There was light contact until 18 July when Co B, 4th En (Mech), 23d Inf received 23 RPG-2 rounds and 82mm mortar rounds at XT669198. Fire was returned resulting in 3 VC KIA (BC), 1 VC WIA (poss), 1 US KIA and 15 US WIA. Contact was believed to be with 2nd Co, 1st Bn, MR IV.

There was no further significant contact until 22 July, when 2nd En, 14th Inf Recon Platoon engaged 2 VC at XT749159 after they were spotted by a Forward Air Controller (FAC). Two VC were KIA (BC) and an AK-47 rifle and a caliber .45 pistol captured. Further contact was again negligible until the termination of the operation.

At the start of the operation a hamlet festival was conducted by Civil Affairs team which explained the purpose of the US presence in the village to over 19,000 persons. MEDCAPS and Catholic services (in the village church) were held throughout the operation. Operation AKUMU challenged the VC in a formerly secure stronghold, and greatly diminished VC influence "at the back door" of Camp CU CHI. In addition VC

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Plantation, the LAC GIANG area, and the River. Effectively.

f. Logistics.

(1) Class I Supply - (25th Supply and Transport Battalion)

(a) Status.

	<u>"A" RATIONS</u>	<u>"C" RATIONS</u>
(1) Stockage objectives (days)	5	10
(2) On hand (days)	3	10

(b) Fresh fruits and vegetables were received from Class I point, SAIGON.

(c) Ice Cream:

Overall: VC activities have been at a low level incidents directed toward delaying security operations in the area of Revolutionary Development; and acts of terrorism aimed toward intimidating the civilian population to resist pacification and the upcoming elections. No significant contacts with NVA units have occurred since the withdrawal of Division elements from War Zone "C".

(b) VC Tactics.

(1) The VC have chosen to separate into smaller groups and conduct harrassing attacks against RF, PF and RD activities rather than concentrating large forces; however, they may concentrate forces if the likelihood of a quick victory exists. An example was an attack on PHUOC HIEP by elements of the 1st and 7th Bn's MR IV on the night of 18 July. A force of approximately Bn (-) size launched a coordinated ground and mortar attack on PHUOC HIEP (vic XT563167) with a blocking force in the vicinity of TRUNG LAP (XT5921). Reaction by US artillery and air power suppressed the mortars and broke up the attackers before they had an opportunity to exploit their initial momentum. Another attack occurred on the morning of 15 July when a platoon of the 2nd Bn, 22d Inf was attacked in conjunction with a coordinated attack on PHUOC HOA (RF) outpost. Mortars and recoilless rifles were fired on the outpost immediately prior to an assault by approximately two companies. The VC overran the outpost resulting in 16 ARVN KIA, 30 ARVN WIA and 30 ARVN MIA, as well as capturing a 60mm mortar and many small arms. Known VC losses were 2 KIA (BC). During their withdrawal the VC engaged the 1st platoon, A Co, 2nd Bn, 22d Inf (H). On making contact, the VC engaged the platoon with mortars, recoilless rifles, RPG-2s and small arms. Results: 2 US KIA and 16 US WIA. VC losses from this contact are unknown.

(2) Frequent incidents of assassination, kidnapping, mining and psychological warfare directed toward the civilian population were noted during the period. The effort appears to be directed toward intimidation rather than for political or geographical gains.

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Plantation, the LOC GIANG area, and the River. Effectively.

f. Logistics.

(1) Class I Supply - (25th Supply and Transport Battalion)

(a) Status.

	<u>"A"</u> RATIONS	<u>"C"</u> RATIONS
(1) Stockage objectives (days)	5	10
(2) On hand (days)	3	10

(b) Fresh fruits and vegetables were received from Class I point, SAIGON.

(c) Ice Cream:

(1) Cycle of Issue 3 times per week.
(2) Cans - 1000

(4) During friendly operations the VC avoided contact of conducted delaying actions. An example occurred on 12 July when the 1st Bn, 27th Inf and 2nd Bn, 27th Inf made contact with an unknown size force vic XT405145 during heliborne assault operations. The VC conducted a strong defense against the assaulting force from dug in and covered positions causing moderate casualties among the US troops and damaging five helicopters during the first day. Under cover of darkness, the VC exfiltrated and escaped.

(2) Conclusions.

(a) The VC continue to be forced from base camps and supply areas by friendly operations resulting in an increase in the amounts of supplies denied the enemy. Because of continued military pressure a greater number of the VC have chosen to rally under the CHIEU HOI PROGRAM. This has been particularly true in HAU NGHIA Province where 556 HOI CHANHs were received during May, June and July. An analysis of this trend shows that, by far, the greatest portion of these HOI CHANHs were local guerrillas. Under the present operation plans, continued pressure will be applied in the local area and may result in additional HOI CHANHs and additional destruction of base areas.

(b) The presence of US Forces in the Division TACR will continue to give the population confidence in GVN's ability to protect them. Additional construction, improvement, and repair of LOC's will allow a greater number of civilians access to areas under government control. Conversely, areas under VC control are more readily accessible to allied troops and supporting forces.

(c) Enemy losses in manpower, facilities and equipment are expected to reduce the effectiveness of VC units in the FILHOL

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5 Plantation, the MOC GLANG area, and the River.

f. Logistics.

(1) Class I Supply - (25th Supply and Transport Battalion)

(a) Status.

	<u>"A" RATIONS</u>	<u>"C" RATIONS</u>
(1) Stockage objectives (days)	5	10
(2) On hand (days)	3	10

(b) Fresh fruits and vegetables were received from Class I point, SAIGON.

(c) Ice Cream:

- (1) Cycle of Issue 3 times per week.
- (2) Gallons per week from SAIGON - 1,200
- (3) Gallons per week from CU CHI - 1,100

(d) Average amount of ice issued daily:

- (1) Potable - 131,920
- (2) Non-Potable - None

(2) Class II & IV (25th Supply and Transportation Bn)

- (a) Additions to ASL during quarter - 159
- (b) Total lines on ALS - 949

(3) Class III (25th S & T En)

(a) Consumption rate.

	<u>DAILY</u>	<u>QUARTERLY</u>
(1) Mogas	15,000	1,365,465
(2) Diesel	17,000	1,576,456
(3) JP4	19,000	1,735,765
(4) Avgas	1,300	120,370

(b) In the Class III Yard a covered storage area for packaged products has been completed. Work is scheduled to begin soon on conversion of two square berms to rectangular to accomodate two new JP4s.

(c) Class III Supply remained fairly constant during the quarter. Average daily issue increased from 11,794 gallons to 15,000 gallons for Mogas from 14,347 to 19,000 gallons for JP4. Daily decreases in issue was noted for diesel and Avgas from 23,504 to 17000

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and from 1,505 to 1,300 gallons respectively.

(4) Services (25th S & T Bn)

(a) Contract Laundry - 9,505 bundles

(b) QM Bath unit: Extensive support was given to the 1st Battalion, 5th Infantry (Mech) and to the 4th Battalion, 9th Infantry during field operations during the quarter.

(1) Total showers for quarter - 44,513

(2) Average number of showers daily - 1,464

(c) Graves Registration:

(1) Deceased US personnel processed during the quarter - 150. (2) Deceased RVN personnel processed during the quarter - 32.

(5) Transportation (25th S & T Bn)

(a) Mileage driven:

(1) Total - 221,604

(2) Average Daily - 2,462

(b) Tonnage moved:

(1) Total - 8,906

(2) Average Daily - 98.6

(c) Troops moved by convoy:

(1) Total - 308

(2) Average daily - 3.4

(d) Personnel moved locally by bus:

(1) Total - 5,188

(2) Average daily - 56.2

(e) Troops hauled (Pass Truck)

(1) Total - 3,368

(2) Average daily - 56.2

(6) Maintenance (725th Maintenance Battalion)

(a) The following maintenance requests were completed by this battalion during the reporting period:

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<u>ITEM</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>TOTAL</u>
Wheel Vehicles	174	325	392	891
Track Vehicles	115	184	114	413
Small Arms	2622	561	628	3811
Artillery	118	159	248	525
Chemical	24	18	16	48
Refrigeration	40	85	49	174
Engineer	279	314	259	842
Signal	1970	2484	2418	6872
Fire control	229	331	342	902
Office machines	146	213	197	556
Aircraft	146	139	146	431

(b) During this reporting period, the maintenance and supply mission of this battalion has been influenced by the following factors:

- (1) Repair parts availability.
- (2) Geographical location (to include weather and terrain characteristics).
- (3) Introduction of new equipment and obsolescence of others.
- (4) Facilities.

(7) Medical Support. (25th Medical Battalion)

This unit supported Division and divisional units with medical service and supplies.

(a) Medical totals:

- (1) Patients seen - 10,543
 - a Disease - 5,723
 - b Non-battle injuries - 1,781
 - c IRHA - 437
 - d Other (ARVN, VC, VN, Transfers - 2,602)
- (2) Lab tests - 3,723
- (3) Immunizations - 5,567
- (4) Prescriptions filled - 9,936

(b) Dental patients seen - 2,430

- (1) Dental Examinations - 1,764
- (2) Other (extractions, etc.) - 666

(c) Supply and Service.

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(1) Line items issued - 5,027
Short tonnage total - 11

(2) MEDCAF line items issued - 2,176
Short tonnage total - 4.6

(3) Bulk pharmacy items issued - 9,072
(4) Prescriptions filled (to 30 June, after this
date all prescriptions were filled by A & D) - 6,575

(5) Eyeglasses ordered (pairs) - 622
(6) Maintenance work orders received - 84

a Work orders completed - 78
b Work orders at 32 Medical Depot - 3
c Work orders awaiting parts - 2
d Work orders not completed - 1

(8) Transportation Office (25th DISCCM)

(a) Highway continues to be the primary mode of transportation for the resupply of CU CHI, TAY NINH and DAU TIENG base camps. Following is a breakout of regular resupply convoys operated in the division area:

(1) CU CHI - SAIGON convoys.

a Total convoys - 202
b Number of convoys per day - 2
c Total vehicles - 8,176
d Number of vehicles involved in unit
distribution - 2,224

(2) On 1 May Route 1 between SAIGON and CU CHI was reclassified GREEN. During the reporting period 20,827 vehicles moved over the MSR south individually or in groups smaller than convoy size.

(3) Convoys from SAIGON/CU CHI to TAY NINH.

a Total convoys - 176
b Number of convoys per day - 2
c Total vehicles - 22,975
d Vehicles by unit:

1 1st Log Command - 12,296
2 25th Div & attached units - 6,908
3 1st Inf Div - 57
4 4th Inf Div - 1,226
5 9th Inf Div - 244
6 PHILCAG - 910
7 Other - 4

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(4) During the reporting period 2,893 vehicles from the 25th Inf Div moved over the MSR to TRANG BANG and GO DAU HA in support of operations north of CU CHI.

(5) TAY NINH and DAU TIENG convoys:

a Total convoys - 176
b Number of convoys per day - 2
c Total vehicles - 7,931

(b) Special airlift dates for the quarter is as follows:

<u>MISSION</u>	<u>ACFT</u>	<u>PRIORITY</u>	<u>SORTIES</u>	<u>PASSENGERS</u>	<u>CARGO (lbs)</u>
1	C-7A	1	7	130	10,000
2	C-7A/C-123	1	4	153	-
3	C-123	CE	16	420	18,000
4	C-123/C-130	1	5	336	-
5	C-130	CE	2	-	30,000
6	C-130	CE	17	535	126,400
7	C-130	CE	2	162	-
8	C-130	1	2	210	-
9	C-130	1	1	-	28,000
10	C-130	2	7	-	195,000
TOTALS:			63	1946	407,400

(c) The volume of business in the Division Baggage Section decreased this quarter due to a reduction in the number of personnel rotating. The section served 922 customers and shipped 1,435 pieces of personnel baggage, weighting a total of 112,590 pounds.

(9) Ammunition Office (25th DISCOM)

(a) Stockage objectives:

(1) Status at end of quarter - 80%

(2) On hand - 1068 Tons

(b) Issues:

<u>PERIOD</u>	<u>AMOUNT (Tons/Day)</u>
16 Apr - 15 May	65.58
16 May - 15 Jun	62.59
16 Jun - 15 Jul	45.32

(c) Average for quarter (Tons/Day) 57.83

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g. Administration.

(1) Personnel. During the past quarter the personnel posture of the division has been excellent. Assigned strength (approximately 104%) exceeded the authorized strength. This average has been maintained in an attempt to keep the present for duty strength above 100%. There continues to be a shortage of approximately 50% of the authorized Infantry NCOs in grades E-5 and E-6. There are also shortages of MOSs 05C40, 11B40, 11C40 (E-5), 11F40 and 91B10 (E-5). These shortages have occurred primarily as a result of a lack of fill action against requisitions or in some cases personnel in lower grades have been used to fill requisitions in NCOs.

(2) Key Losses/Gains.

(a) 1 May 67 - Col Kenneth E. Buell assumed command of 3rd Brigade, 4th Infantry Division. Col Marshall B Garth departed.

(b) 4 May 67 - LTC George E. Webb Jr. departed.

(c) 8 May 67 - LTC Alan M. R. Dean assigned as 25th Infantry Division Fire Support Coordinator.

(d) 11 May 67 - LTC Jose R. Salcedo departed.

(e) 13 May 67 - LTC James V. Ladd assumed command of the 2nd Battalion, 14th Infantry.

(f) 16 May 67 - LTC Felix Salvador departed.

(g) 19 May 67 - LTC Charles A. Gillis departed. LTC Chandler Goodnow assumed command of the 1st Battalion, 5th Infantry.

(h) 23 May 67 - Col Francis Conaty Jr. departed.

(i) 28 May 67 - LTC Murt F. Kelty assumed command of the TAY NINH base camp.

(j) 31 May 67 - LTC John M. Shea assumed command of 3rd Squadron, 4th Cavalry. Col Doniphan Carter assumed command of the 1st Bde, 35th Inf Div.

(k) 16 Jun 67 - LTC Thomas A. Ware Jr. assumed command of the 4th Battalion, 23d Infantry.

(l) 28 Jun 67 - LTC David R. Hughes assumed command of the 1st Battalion, 27th Infantry.

(m) 1 July 67 - LTC John M. Henchman assigned as Executive Officer, 1st Brigade, 25th Infantry Division.

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(n) 3 July 67 - Col Marvin D. Fuller departed.

(o) 3 July 67 - Col Leonard R. Daems Jr. assumed command of DISCOM.

(p) 6 July 67 - LTC Harvey H. Perritt Jr. departed.

(q) 14 July 67 - LTC Raphael D. Tice assigned as Deputy Brigade Commander of the 3d Brigade, 4th Infantry Division.

(r) 16 July 67 - BG Robert C. Shaw departed.

(s) 20 July 67 - LTC Allen T. Lindholm assigned as 25th Infantry Division Artillery Fire Support Coordinator.

(t) 22 July 67 - LTC Louis S. Jennings departed.

(u) 24 July 67 - LTC John M. Holko Jr. departed

(v) 26 July 67 - LTC Walter Adams assigned as Special Assistant to the Chief of Staff.

(w) 31 July 67 - LTC Joseph H. Devins Jr. departed.

(3) The division PX remains in operation with 8,000 square feet of floor space and 7,700 feet of storage space. Total sales for the Division Exchange was \$2,764,076.28 for the quarter ending 31 July 1967.

(4) Strengths: Division (-) as of 31 July 1967.

	<u>Off</u>	<u>WO</u>	<u>EM</u>	<u>AGE</u>
Auth	734	114	10,724	11,592
Asgd	757	115	11,063	11,935
PPD	708	113	10,781	11,602

(5) Losses (1 May - 31 Jul 67).

	<u>Off</u>	<u>WO</u>	<u>EM</u>	<u>AGE</u>
KIA	4	0	119	123
WIA	90	5	1,236	1,331
MIA	0	0	0	0
DOW	3	0	12	15
NED	1	1	6	8
NBI	4	0	89	93

(6) Gains (1 May - 31 Jul 67).

	<u>Off</u>	<u>WO</u>	<u>EM</u>	<u>AGE</u>
	187	34	1,803	2,024

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(7) Provost Marshall Activities: 22

(a) Eight Military Policemen were attached to the 1st Bde, 25th Inf Div for military police support of Operation MANHATTAN and Operation KAWELA. The 1st Bde utilized the MP's from 28 Apr 67 until 8 Jun 67 in support of Operation MANHATTAN and upon its completion went directly into Operation KAWELA which was completed on 16 June. The military police responsibilities were considered successful. Normal police support was provided by the eight MPs.

(b) On 8 July 1967 a platoon of Military Police from the 25th MP Company provided Military Police support and acted in an advisory capacity to the VN national police, ARVN and Popular Forces, during Operation AKUMA. The platoon had the responsibility for screening civilians for identification and family birth papers within the village of PHU HOA DONG. The commitment ended on 13 July 67. During the operation 4,197 Vietnamese were screened.

(c) From 30 July to 2 Aug 67, the 25th MP Company provided nine Military Policemen for support to the 1st Inf Div during Operation CORONADO II. Normal Military Police support was provided.

h. Revolutionary Development Support.

(1) An increased number of liaison visits were made during the reporting period because of changes in personnel in the Office of the ACofS, G5 and also because of the formation of the Civil Operations for Revolutionary Development Support throughout the Division TAOI. Regular visits were made to the Provinces of HAU NGHIA, BINH DUONG and TAY NINH as well as to each District Headquarters.

(2) The new CORSS office at Province Headquarters will improve the division's support of Revolutionary Development by reducing the number of representatives requiring coordination in Civic Action.

(3) The MACV Hamlet Evaluation Summary (HES) continued to be a valuable tool. The report has been modified to show a more accurate status of the hamlets.

(4) There were no changes in the locations of Revolutionary Development Cadre Teams. Teams fluctuated in strength throughout the period causing the GVN to replace missing members with personnel initially programmed to form new teams. This has resulted in fewer teams being formed and current teams have remained at their present locations longer than planned.

(5) Village and Hamlet elections are held during this period. Little VC interference was noted. The election in TAN AN HOI was cancelled on 28 May because candidates had not filed properly. Election was held the following week.

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(6) On 2 June the division moved 221 VN Nationals from unauthorized areas in the vicinity of the MICHELIN Rubber Plantation to the refugee center at DAU TIENG XT4946.

(7) The latest change in the HES showing the Security Status of hamlets is an improvement and is of value to a tactical unit.

1. Civic Action.

(1) There are presently 5 AA Platoons from the 2nd Civil Affairs Company attached to the 25th Infantry Division. During this reporting period an additional AA Platoon was attached to the division. This platoon, designated the 15th AA Platoon, is further attached to the 1st Brigade and is performing civic action missions in PHU HOA DONG.

(2) Statistical Summary:

	<u>MAY - JULY</u>	<u>SINCE 1 FEB 67</u>
Helping Hand Recipients	48,053	76,620
MEDCAP Patients	47,552	69,080
MEDCAPS	333	546
Construction Projects	246	441
Education and Training	10	180
Community Relations	21	838

(3) MEDCAPS during this period showed a sharp increase from 237 to 333 conducted. The number of patients more than doubled from 21,528 to 47,552. Additional projects of training GVN medical personnel and conducting maternity clinics continued with approximately 58 people receiving On-Job-Training (OJT).

(4) The Helping Hand program provided additional tents and commodities to the Refugee Center in DAU TIENG in addition to clothing and such necessities as carpenter kits, mason kits, family and individual refugee kits and midwife kits. Approximately 325 refugees from in and around the DIAMOND HEAD Operation are effected. The following is a summary of Helping Hand issues during the quarter:

<u>ITEM</u>	<u>QUANTITY</u>
Books	1290 each
Candy	4 boxes
Solatium Boxes	60 each
Clothing	10.2 tons
Canned Foods	30.5 tons
Family Refugee kits	30 each
Ind Refugee kits	25 each
Midwife Kits	6 each

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Mushroom Soup	23 cases
Paint	167 gal
School kits	4,560 each
Sewing machine	4 each
Soap	39,309 bars
Shoe Tongs	32 sets
Towels	41 each
Toys	64 each
Toothpaste	2,336 each
Toothbrushes	14,811 each
Keen Mix	3 cases
Saws	4 each
Pick axes	3 each
Shovels	3 each
Tin	183 sheets
Cooking Oil	2084 gal
Baby foods	500 jars
Corn meal	14,000 lbs
Lumber (scrap)	35,350 board feet (est)
Carpenter kits	1 each
Blacksmith kits	1 each
Brick machines	2 each
Friendship kits	72 each
Instructor kits	5 each
Maternity kits	101 each
Textile kit	110 each
Television sets	1 each
Goodwill boxes	65 each

(5) Construction:

- a Roads repaired 12 (39 km)
- b Bridges constructed 3
- c Fences 6 (2.3 km)
- d Play grounds 5
- e Classrooms 30
- f Latrines 6
- g Wells 1
- h Dispensaries 4
- i Miscellaneous:
 - (1) Culverts - 5 (61 meters)
 - (2) Dwelling - 10
 - (3) Irrigation ditches - 2 (4 km)

(6) Participation in civic action effort by local RF/FF has been enthusiastic. Self help projects have a 95% participation by Vietnamese and 5% by US personnel. Projects undertaken by RF/FF and civilians on a self help basis has reached the point where such projects are willingly assumed. Emphasis has been placed on short term high impact

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projects. Self Help projects have been stressed except when it is impossible or impractical to utilize RF/FF units or in instances where the local officials and populations have not been previously introduced to FWAF Civic Action.

(7) During the reporting period numerous Friendship Councils were held throughout the Division TAOI. Problems have been brought to light and the majority resolved. These meetings have been and will continue to be a yardstick in measuring where we stand and where more assistance can be stressed.

(8) This reporting period observed Operation MANHATTAN ending and the MONSOON CAMPAIGN get into full swing. The MONSOON CAMPAIGN has pushed Civic Action to a new high throughout the Division TAOI.

(9) The willingness of the Vietnamese people to participate and encourage self help projects throughout the Division Area has greatly increased the assistance given.

j. Psychological Operations (PSYOPS).

(1) PSYOP activities were directed primarily in support of operations conducted in HAU NGHIA, TAY NINH and BINH DUONG Provinces.

(2) A total of 21,213,184 leaflets were airdropped and hand disseminated throughout the division TAOI. Thirty leaflets were originated by G5 PSYOPS and produced by the 216th PSYOP Co to exploit PSYOP opportunities.

(3) Aerial loudspeaker broadcasts conducted during the quarter totaled 75 hours 35 minutes broadcast time. Ground loudspeaker time totaled 55 hours. An aerial loudspeaker set has been developed to be mounted on a UH1D. This has greatly improved our loudspeaker capability for standard broadcasts and decreased our reaction time for exploiting PSYOP incidents.

(4) During the quarter, the G5 PSYOP section supported the following division operations:

- a Operation BARKING SANDS
- b Operation KOLEKOLE
- c Operation DIAMOND HEAD
- d Operation AKUMU
- e Operation SABER THRUST
- f Operation MANHATTAN
- g Operation KAWELA
- h Operation JUNCTION CITY
- i Operation ALA MOANA
- j Operation FORT NISQUALLY

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(5) During the month of June the ARVN PSYOP teams attached to 1st Brigade and C5 were ordered back to the 30th POLWAR Bn due to a reorganization. This loss has severely hampered our PSYOP program. The ARVN PSYOP teams are the most effective means available for disseminating credible propaganda.

(6) A PSYOP campaign along the major LOCs within the 25th Inf Div TAOI has resulted in an increasing number of civilians providing information on VC mines and other activities.

(7) Requisitions for PSYOP equipment have been filled in some cases.

(a) Items received so far are:

1 Megaphones
2 Polaroid Cameras

(b) Items still outstanding are:

1 Multilith presses w/components
2 Loudspeaker sets.

(8) A combination of increased military activity and corresponding increase in PSYOPs has shown definite results in the CHIEU HOI Program, particularly in HAU NGHIA Province. CHIEU HOI totals for this province in February, March and April were 313. In May, June and July, they increased to 556.

(9) Availability of U-10 aircraft has greatly improved our PSYOP capability. We receive an average of 9 missions per week thereby allowing us to cover more targets with greater frequency.

(10) Two HOI CHANH's have been assigned to the C5 for the purpose of evaluating our present leaflets and for developing new leaflets. They have, so far, proved to be a definite benefit to the PSYOPS Program.

(11) The increased number of leaflets dropped and loudspeaker time continues to increase. One indicator of the effectiveness of the PSYOP Program is the increasing number of HOI CHANH. The 246th PSYOP Co has filled all our leaflet requirements on a timely basis, thereby giving us a large number of standard and special leaflets to exploit PSYOP opportunities.

k. Medical.

(1) Personnel and Supporting Medical Units.

(a) At the end of the reporting period, the division was

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short four medical officers and three medical service corps officers. Replacements have been requested and are programmed for early August.

(b) Primary medical support to the division still remains more than adequate and of the highest caliber. Specialized treatment for all injuries is immediately available or within twenty minutes flying distance of the 25th Medical Battalion and the 12th Evacuation Hospital.

(c) Primary medical care at TAY NINH is provided by the 45th MUST. DAU TIENG obtains primary medical support from "D" Co, 4th Medical Battalion. All specialty treatment is readily available or within twenty minutes flying time of each primary medical facility mentioned.

(2) Training.

(a) Cross training in the preparation of medical records and reports has been given emphasis because of the anticipated turn over in these particular clerical specialties.

(b) Two 25th Division Regulations 40-19 MEDCAP (MEDCAP II) and 40-10, MEDICAL REPORTS were revised. Circular 40-4 Light Duty Status was instituted after staffing.

(c) Field sanitation classes were conducted at DAU TIENG for one day.

(3) The health of the command has been good. The malaria rate remains constant; the venereal disease rate has dropped. Infectious Hepatitis is on the increase and is being reckoned with accordingly.

(4) Environmental Situation.

(a) Water Supply. A new water point W.P. VI, was opened for amplifying the quantity of potable water at Camp CU CHI.

(b) The drainage problem remains the same because of the lay of the land, the increased rains of the monsoon season, the level of the water table, and the nature of the soil.

(c) The problem of illegal use of non-potable ice has been reckoned with through command channels due to the increase of infectious hepatitis traced probably to this source.

(5) Conclusion. Medical support, even with the influx of new personnel and the annual turn-over of medical personnel, remains adequate in quantity and excellent in quality. Each medical problem has quickly been resolved with consideration of eliminating the cause of each through active command and control measures.

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1. Signal. See separate ORLL from 125th Signal Battalion,
Attached.
2. Training.

(1) During the period of May, June and July 1967 the following number of personnel attended the division schools listed below:

Small Arms Inspection - 40	Mess Management - 46
Generator Operator - 75	Company Aidman - 37
Projectionist - 35	Mines and Booby Traps - 1,943
Explosives and Demolitions - 402	Tunnel Destruction - 40

(2) In addition, the following number of personnel attended courses given in May and June 1967:

Combat Leaders - 30	NCO Academy - 26
Replacement Training - 1,322	Ambush Academy - 194

(3) On 1 July 1967, the NCO Academy and Ambush Academy courses were discontinued and a new combined course for Lightning Combat Leaders offered in their place. Courses held in July 1967 were:

Lightning Combat Leaders - 160 Replacement Training Course - 617
(For all incoming E-1 through E-7, Warrant Officers, and Lieutenants)

(4) Instruction was also given at non-divisional schools during the reporting period to the following personnel:

<u>COURSE</u>	<u>INSTRUCTOR</u>	<u>NUMBER ATTENDED</u>
Jungle Survival	Fleet Airborne Electronic Training Unit, Pacific (US Navy)	2
JUSPAO/USAID Orientation	Military Assistance Command, Vietnam	9
Aviation Avionics Maintenance Tng Program (AAMTAP)	34th General Support Group, USARV	18
Cable Splicing	40th Signal Bn, USARV	5
XM-21 Armanent	34th General Support Group, USARV	2
Eiffel Bridge Classification and repair	ARVNAF Engr Sch	4

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Leaflet Dissemination	50th Political Warfare Bn, MACV	4
ARC-131 FM Radio	198th Sig Detachment, USARV	3
AN/FRC-74, AN/FRR- 9 and AN/FRT-4	198th Sig Detachment, USARV 79th Maintenance Bn, Saigon Support Command	24
AN/GRC-106	Mr. George H. Schmeer, General Dynamics Corp eration (on TDY to CU CHI base camp from CONUS)	25

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2. (C) Commanders Observations and Recommendations

a. Observations (Lessons Learned)

(1) Personnel.

ITEM: The continued lack of NCOs particularly in the grade of E-6.

OBSERVATION: The 25th Infantry Division Leaders School for junior enlisted leaders should be continued and increase its capability to instruct a larger number.

(2) Operations.

ITEM: Increases hazards of mines during monsoon season.

DISCUSSION: Because of heavy rains trafficability of the terrain has become extremely difficult and as a result existing trails and roads must be used. The VC have increased their employment of mines along roads and trails. In many instances they have employed mines behind passing vehicles especially in areas where they feel that the same routes will be used by US Forces when they withdraw from an area.

OBSERVATION: Units should when possible avoid using the same road or trail to leave an area they have entered. When this is not possible units should employ mine detectors to sweep ahead of column. A continuous training program for newly assigned personnel on identification and detection of mines must be conducted.

ITEM: Determination of terrain trafficability for tracked vehicles during the rainy season.

DISCUSSION: The recent advent of the rainy season in this area has limited tank travel to hard surface roads. Cross-country mobility has been very poor to impossible in the Division TACN. Aerial reconnaissance of an area can usually determine whether the terrain is trafficable for track vehicles by closely observing bomb craters, shell holes or large wells. If the water level in these holes is no higher than one foot from the ground level, tank traffic is generally possible with extreme caution. No sudden or sharp turns and no tracking is permissible, under these conditions. In addition, care must be exercised to avoid crossing obstacles such as rice paddy dikes where at some time during the crossing the majority of the weight of the tank is concentrated on a small surface area (such as three road wheels). When observing water levels in holes personnel must be cautioned to determine the distance between water levels and true ground level, not the hole's edge. Bomb and shell craters give a false measure of distance. Determination of trafficability based on dryness of ground surface is not valid due to the high water table and intense heat at the surface caused by the sun.

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OBSERVATION: Aerial observation can assist in determining trafficability of an area but, due to misleading conditions, only a ground reconnaissance of some detail can provide accurate information.

ITEM: Need for additional personnel for Cavalry operations in dense terrain and during rainy season.

DISCUSSION: When operating in dense foliage it has become essential to employ dismounted personnel to the front and flank of the armored vehicles. The loss of tanks, due to wet terrain, has drastically cut the speed by which this type unit can move through dense foliage. Any sudden maneuvering of personnel carriers in such terrain generally results in a thrown track, thereby disabling the vehicle for a period of time and causing additional security requirements. Constant movement through heavy woods and jungle places strain upon the power train and suspension system of the personnel carriers which will result in a higher deadline rate and increased down time. The tactical considerations involved in the movement of armored vehicles in dense foliage are as follows:

- a. Loss of tanks (due to terrain) slows movement.
- b. Attempts at maneuver results in down vehicles as a result of thrown or broken tracks.
- c. Recon by fire has negligible effects.
- d. Observation and fields of fire are limited.
- e. VC are able to make and break contact at will due to greater maneuverability and speed of dismounted personnel.
- f. Personnel carriers provide protections against small arms fire but little protection again high arcing grenades or RPG-2s. The TOE for an Armored Cavalry unit provides for a dismounted capability of one infantry squad within each platoon. This squad is not capable of providing the necessary protection to 7 personnel carriers. Internal augmentation of this force can be accomplished by dismounting all but a minimum crew from the remaining vehicles. This would provide an additional 12 men, however, there is no provision for additional communications equipment. The addition of twelve men to the dismount capability of the platoon would provide sufficient security provided the unit is stationary. This force however, is not sufficient for tactical movement through dense foliage.

OBSE~~VATION~~: When an Armored Cavalry unit must be employed in dense vegetation, additional dismounted troops and communications equipment must be attached for successful employment.

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ITEM: Use of MAD System (61 Mortar Air Delivery System). 32

DISCUSSION: This system was tried on several occasions and proved to be highly unsatisfactory. The round will not detonate in water. Secondly, for a pin point type target there are too many factors to consider in order to hit a target i.e., airspeed, altitude, moving targets. In most cases artillery can cover any target discovered, and once the initial adjustment has been made Fuze VT can be employed and give devastating target coverage. The target initially must be pinned down by use of helicopter-borne machine guns and the area covered by door gunners.

OBSERVATION: That the use of the MAD was ineffective in our areas of operation and that the use of such system should be discontinued in future operations.

ITEM: Use of the AT-912 as an elevated antenna.

DISCUSSION: Due to the limited number of RC-292 antennas authorized a unit, it is necessary to employ field expedients in order to provide additional elevated antennas.

OBSERVATION: Experience has shown that the AT-912, when elevated, is at least as effective as the RC-292. The only problem involved is causing the matching unit to properly match the frequency in as much as matching unit power cables are not available in sufficient lengths. For situations where frequencies will be relatively static, the matching unit can be pretuned with the MX-6707/VRC. The antenna must first be attached to the radio using the short matching unit power cable, the radio turned on and the proper frequency set. The antenna matching unit can be disconnected and the antenna elevated.

ITEM: Use of AN/GRA 39, remote control unit for read back during fire missions.

DISCUSSION: The continuous requirement for accurate transmission and receipt of firing data necessitates a number of checks in the gunnery chain in a minimum amount of time. A good communications system is therefore an important factor in firing.

OBSERVATION: The remote control component of the AN/GRA 39 radio set control group is used in place of field telephones at each howitzer position and in the Fire Direction Center (FDC). Wire lines are laid from each howitzer to the MX155 switching kit and through the exec post telephone to the FDC. This procedure ~~accomplishes the following~~

- a. All personnel in each firing section hear all commands from the exec post.
- b. All personnel in the FDC hear all commands sent from the exec post to the firing sections and all readbacks data from guns to exec post.
- c. Maximum number of firing battery personnel are able to monitor commands and readback providing more efficient gunnery performance and accuracy of firing data.

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ITEM: Use of CS Gas to expose the enemy.

DISCUSSION: The use of CS gas has proven successful on many operations. Once a VC unit, personnel, or a suspected hiding site has been spotted one gun ship saturates the area with CS gas. Once the VC move out of the area the other gunships rolls in on the target.

OBSERVATION: All gun ships and C&C helicopters are now carrying CS gas to employ against targets or opportunity.

ITEM: Joint operations with US Air Force Forward Air Controllers (FAC) and Gun Team to stop and destroy the VC.

DISCUSSION: On several occasions one gun team has worked with FAC in spotting enemy activity. The FAC aircraft usually orbits above 6000 feet and by the use of binoculars, and an observer, detect enemy movement or activity. The gun team, orbiting a predesignated area out of the area of operation and on call, are directed in low level by the FAC on to the target. If the enemy takes evasive action, CS gas is used in an attempt to drive the VC out of hiding.

OFSERVATION: These joint operations have proven highly successful and on several occasions have caught the VC off guard. It has further proven that joint operations between services can be accomplished in an excellent and efficient manner.

ITEM: Firing charts with 6400 mils capability.

DISCUSSION: It has been found that in setting out deflection indices for a 6400 mil firing chart, a five to ten mil arc was left over in one quadrant thus leaving one quadrant's deflection indices that much in error.

OBSERVATION: Firing charts are constructed with the primary direction of lay 6400 mils at deflection 2800. An exact 6400, 1600, 3200, and 4800 azimuth index is established for each battery on the firing chart. Placing the arm of the RDP on the 6400 mil index and, working in a clockwise direction, a deflection index is placed at scribe mark number 3 on the RDP. Number it 2 and label it with the appropriate battery designation. Next, place the arm of the RDP on the 1600 mil index and place a deflection index out at the scribe mark numbered 2. Number this index 1 and label it with the appropriate battery designation. Place another index out from number 1 at 1000 mils using the arm of the RDP. Number it 0 and label it with the appropriate battery designation. The index at 3200 and 4800 will be numbered 3 and labeled with the appropriate battery designation.

Repeat the above procedures beginning at the 3200 index.

By modifying the Artillery School's recommended method, the error is taken up throughout the firing chart. Inaccuracies in the deflection indices are no more than one or two mils.

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ITEM: Daylight H&I's

DISCUSSION: H&I's are normally scheduled during the hours of darkness. Past experience and intelligence reports indicate that the VC often move during daylight when aircraft are out of the area of movement.

OBSERVATION: H&I's are planned in areas of known VC activity making use of past experience and current intelligence. These H&I's are fired from early morning until dusk, at which time the normal H&I program is initiated. Volume of fire is dependent upon whether harassment or interdiction of a particular terrain feature is the objective.

ITEM: Preplanned Blocking Fires.

DISCUSSION: After a preparation has been fired on an LZ, routes of withdrawal often permit the VC to escape. These routes are normally canals or trails in the general area of operations.

OBSERVATION: Preplanned on call groups of targets are assigned to likely avenues of escape or withdrawal routes to insure rapid response by artillery elements in providing blocking fires.

ITEM: Preparation of Landing Zone.

DISCUSSION: It has been found that scheduled preparation, planned from picto and photo maps, have sometimes left a critical area, hedgerow, or bunker relatively uncovered by artillery fires. Moreover, with several batteries firing a given preparation, it is difficult for an air observer to adjust additional fires into the critical area from a target included in the scheduled preparation fires.

OBSERVATION: It has proved useful to predesignate a target, not a part of the regular scheduled preparation, in the landing zone. This target is used as an adjusting point by the air observer for adjusting additional coverage of an LZ, when necessary.

ITEM: Shifting Fires.

DISCUSSION: It has been a general practice to prepare landing zones per a given schedule of fires and to terminate firing on schedule just prior to arrival of armed or troop aircraft at the LZ.

OBSERVATION: When shifted according to a schedule of fires, artillery fires can effectively block routes of VC withdrawal from a prepared LZ. Close coordination must be effected between artillery firing units, artillery LNO's with command and control ships, armed helicopter pilots, and troop aircraft pilots. Elements of information to be coordinated are:

a. Areas into which fires are to be shifted.

b. Colored smoke or other signal to indicate termination of preparation of LZ.

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- c. Orientation of gun-target lines,
- d. Other preplanned control measures.

ITEM: Computing of firing data for air observer missions.

DISCUSSION: Battery Fire Direction Centers have experienced difficulty in controlling the subsequent adjustments of multiple missions with the TOE equipment and personnel available.

OBSERVATION: When aerial observers adjust, using the gun-target line, the initial chart data is computed and checked, subsequent corrections are then computed using 100/R for deflection and the C factor for quadrants, using two computers for independent checks. This system has proved to be more rapid and as accurate as the chart procedures.

ITEM: FADAC metro message.

DISCUSSION: In order for the Field Artillery Digital Automatic Computer (FADAC) to be used as effectively as possible, accurate data must be programmed into the computer as rapidly as possible upon receipt of the data. In programming weather data, the fastest way is to prepare a teletype tape of the data and feed it into the machine automatically.

OBSERVATION: It was found that the teletype operator could prepare a tape and transmit it faster if it was given to him in the exact format that the computer would accept. The metro and radio sections prepared a form which showed exactly how the tape should be prepared. The metro section puts the data on the form, showing where a space or carriage return (symbol) should be. The computer will accept only 16 numbers to a line. It will accept a corrected mistake, if the correct number is covered by the letters character (symbol #). It will not accept a random key or a line feed. Using this form, the teletype operators were able to punch a tape much faster and consequently transmit it to the units much faster.

ITEM: Striking Targets acquired by the Manpacked Personnel Detector E63 (People Sniffer).

DISCUSSION: The "People Sniffer" device mounted on a UH-1 helicopter has been very effective in acquiring targets. The device has been employed with a LFT, to provide cover for the "Sniffer Helicopter" and to strike targets. Most sensings have occurred over jungles or dense foliage. This type terrain limits the effectiveness of aerial fire power delivered by the LFT. Targets acquired by the "People Sniffer" could be more effectively engaged by TAC AIR or artillery fire.

OBSERVATION: Heavy volume artillery fire or large ordnance deliveries by TAC AIR provides more effective engagement of acquired targets.

ITEM: Supplementing Firefly Missions with the "People Sniffer".

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surprise the enemy who is listening for the sound of APCs.

ITEM: Use of 81mm Mortar Aiming Stake Lights.

DISCUSSION: The aiming stake lights when turned on during the hours of darkness present a very marked target and is easily seen from a great distance at certain location from outside of the perimeter. When under attack, or prior to attack the VC are able to sight in on the aiming stake lights. The lights cannot be turned off unless personnel go to each stake and flip the switch. During a heavy ground attack this is not always possible.

OBSERVATION: Aiming lights should be rigged with WD-1 commo wire and dry cell batteries with the control switch near the mortar for control by the gun crew, thus enabling the crew to turn the lights on and off at will.

ITEM: Tents, Lean-to Shelters, etc.

DISCUSSION: On a bright night the starlight and moonlight cause a very bright reflection from personnel shelters that are damp or wet from dew or rain. This glow or shimmering effect of the wet water proof lean-to's is easily seen from a great distance and are perfect targets during night attacks on the perimeter.

OBSERVATION: Personnel shelters should not be erected lean-to or tent fashion in forward areas. Those shelters that must be erected should be well camouflaged to prevent "shine". Individuals should rely on a poncho pulled over and laying on the individual rather than a tent.

ITEM: Distinctive Outline of Tracked Vehicles during the Hours of Darkness.

DISCUSSION: Tracked vehicles have a very distinctive outline and are easily "sky lighted" from the ground by the square shape of the vehicle, the cupola and guard inside the supola, and the large .50 caliber machine gun sticking out.

OBSERVATION: The outline can be broken up by strategic emplacement of vines, brush and trees. If possible the armored personnel carrier should be parked in or near scrub growth and additional brush placed near all four corners and behind the machine gunner. Caution should be exercised so as not to block the observation of the guard in the cupola.

ITEM: Radio Call Lights and Dash Oil Lights Illuminating Inside the Track.

DISCUSSION: On the large radio sets each time a transmission is incoming the radio call light illuminates the inside of a vehicle. The dash lights (oil light, master switchlight, etc.,) are on continually and presents a good target from across the perimeter.

OBSERVATION: Radio call lights should be turned off in forward areas, or taped so as to allow only a pin point of light to shine directly to the front of the radio. Dash lights should be completely covered with sand bags.

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A poncho should be draped over the rear of the track to block all possible illumination (in lieu of the track ramp being closed).

ITEM: Smoking inside of Tracks and in Cupola while on Guard.

DISCUSSION: Cigarettes, lighters and flame producing devices when used inside of tracks and in cupolas provide the VC with excellent targets.

OBSERVATION: No smoking should be permitted anywhere except in a covered hole or a closed Armored Personnel Carrier. There should be no smoking in a cupola of an Armored Personnel Carrier.

ITEM: Situation Report through the Rifle Company chain of Command.

DISCUSSION: Experience proves that a situation report must be given more often than once per hour at unit level to insure that personnel are fully awake and alert on the machine gun while on guard.

OBSERVATION: Situation reports should be given from each track to the platoon leader's track every 15 minutes. Platoon Leaders should make situation reports to company every 30 minutes, during the hours of darkness.

ITEM: Return of Fire and Fire Control.

DISCUSSION: Training of the people and force of habit prevents the personnel on guard from firing on movement, trip flares that have been illuminated etc., by the VC. In most cases fire control is held at too high a level in the chain of command. By the time the guard receives permission to fire the attack has been launched by the VC.

OBSERVATION: Fire Control should be at the lowest level practical. All personnel should be fully aware of locations of friendly elements, types of fire than can be returned initially, (i.e., small arms only on squad leaders orders, .50 caliber or larger on Company Commander's order only), and location of LP's and ambush patrols. Certain types of probing fires should be returned with certain and selected weapons from the perimeter. Pre-mature firing of heavy weapons discloses their location pre-maturely.

ITEM: Depressions, Holes and Berms outside the protective wire used to launc' assaults.

DISCUSSION: Any depression or hole near the outside of the perimeter wire, if used, is a perfect covered position from which to launch an RPG attack.

OBSERVATION: Each hole or depression should be booby trapped, illuminated and have punji stakes emplaced in them. Trip flares in holes, claymore mines emplaced in the walls of holes with detonating wire buried and aiming and elevation stakes on the perimeter to place accurate M79 fire in the hole should be employed.

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ITEM: Battlefield illumination usage so as to illuminate the VC and outside the perimeter without illuminating the friendly elements.

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DISCUSSION: Illumination over head, not only illuminates the VC but also the friendly forces. A technique is needed to illuminate only that portion of the battle field occupied by the VC.

OBSERVATION: One in every four 81mm defensive concentrations should be white phosphorous. 81mm "defcons" should be within 15-20 meters of the protective wire. 81mm illumination rounds should be fired so as to burn on the ground at a distance of 200-300 meters from the protective wire depending on the terrain. This sky lights the attacking VC without completely illuminating the friendly position. Consideration should be given to trip flares with pull wires running back to the perimeter. Flood lights may also be emplaced 50-100 meters from the perimeter and placed to shine across the front of the platoon position. The spot light should be booby trapped to prevent removal. Lights so employed must be controlled from the platoon leaders vehicle.

ITEM: Maximum effect from grazing fire with ground mounted weapons.

DISCUSSION: More grazing fire is required at ground level to repel the attack and prevent VC from crawling into the wire where he can do more damage.

OBSERVATION: All M60 machine guns should be mounted on tripods with T&E mechanism for effective grazing fire. The M60 mounted on a tripod during the hours of darkness tend to be fired too high or into the ground in front of the gun. The tripod insures accurate grazing fire. Additional fire power can be brought to bear by placing additional .50 caliber machine guns in ground mounted positions. These may be obtained from destroyed tracks or from some other source other than removing them from the track vehicles. If necessary some .50 cal MGs can be dismounted at night, from H, and Mortar APCs.

ITEM: Routine of placing command post tracks in the center of a circular perimeter for forward rifle companies.

DISCUSSION: RON perimeters should be frequently changed as to design, shape and location (open field or in woodline).

OBSERVATION: The VC are well aware of the mechanized concept of the Headquarters group being in the center of the circular perimeter. Different techniques should be employed, i.e., command group vehicles may be placed away from the center and behind the line platoon tracks. The unit perimeter may be emplaced in the edge of a woodline allowing a helipad for aerial resupply etc., or within a finger of trees extending into an open field.

ITEM: Injuries to personnel sleeping in open, unprotected areas, or inside of tracked vehicles.

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DISCUSSION: Most casualties come from personnel in or near tracked vehicles or sleeping exposed above ground.

OBSERVATION: No more than two men per ground position, and no one should be allowed to sleep in tracks. everyone not sleeping in a hole or gun positions should be lying flat on the ground, (no cots) and the sleeping area should be sand bagged above the line of the body.

ITEM: Effect of River Tides upon Search Operations.

DISCUSSION: Numerous VC caches have been discovered along rivers and their tributaries. In most cases the caches were discovered at low tide. Apparently the VC bury their equipment/ammunition in the river bank at low tide, thus obtaining additional concealment during periods of high tide. Caches concealed in this manner are easier to detect at low tide. Accurate tidal information has not been available, consequently search operations frequently have not been fully effective in tidal areas.

OBSERVATION: Accurate information concerning tides should be developed for all areas affected by tide changes.

ITEM: Light Machine Gun Mounted on OH-23 Aircraft.

DISCUSSION: The use of OH-23 Aircraft for C&C during mechanized operations has been effective in detecting VC movement ahead of the mechanized forces. In some cases VC have escaped before maneuver elements/or light fire teams could reach the objective area due to lack of organic fire power on the OH-23 aircraft.

OBSERVATION: A light machine gun mounted on the OH-23 could engage the VC and restrict his movement until maneuver elements or light fire teams reach the scene.

ITEM: Use of Hand Grenades during Search Operations along Canals and Rivers.

DISCUSSION: VC hide under water when US Forces approach a canal or river line. Single grenades tossed along the water frequently are not effective due to insufficient area coverage.

OBSERVATION: An effective technique is to line several men along the canal/river bank and have these men throw grenades on command. This procedure saturates the area and will normally force the VC to the surface.

ITEM: Increased Boobytrapping of Ambush Patrol Exits.

DISCUSSION: Due to the increased number of VC mines and boobytraps employed in and near the tactical wire, departing ambush patrols have incurred several casualties.

OBSERVATION: To counteract boobytraps the exit gates were relocated and minesweeps employed prior to the departure of the patrols.

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ITEM: Return Route.

DISCUSSION: On a recent combat ambush patrol, a member of the patrol was wounded when he detonated an enemy boobytrap. The individual was returning to his position after replacing his claymore mine but did not return the same way he had departed.

OBSERVATION: The patrol member could have lessened his chances of becoming a casualty by returning to his position via the same route he had departed.

ITEM: Overhead Tripwires.

DISCUSSION: The Viet Cong are constantly changing their methods of employing boobytrap tripwires. Tripwires have been encountered which are several feet above the eye level. These wires are tripped by the unsuspecting RTO who walks under them carrying his PRC-25 and long antennae.

OBSERVATION: The unit commander must remind their subordinates to be constantly alert for new methods of VC boobytraps and tripwire employment.

ITEM: Chicom Grenade Boobytraps in Open Terrain.

DISCUSSION: Many Chicom grenades boobytraps have been encountered recently in grassy open terrain, away from hedgerows. These grenades are generally painted green and tied or wired to stakes approximately 6" off the ground, with pins removed. As a soldier knocks the stake, the grenade handle falls to the ground and the grenade explodes instantly.

OBSERVATION: Care should be used in moving through open grassy areas, personnel should move widely separated from each other and leaders should choose routes with low grass rather than high grass when possible.

ITEM: VC Sniper Teams.

DISCUSSION: Recently VC sniper teams working in pairs have been encountered probing night defense perimeters. Two or three snipers open fire from one side of the perimeter, after friendly attention is concentrated on this initial fire, a second sniper team open up from the opposite side of the perimeter.

OBSERVATION: Use indirect fire as primary means of countering snipers harassing a defensive perimeter and do not move defenders to other positions to counter sniper fire.

ITEM: Searching Hedgerows.

DISCUSSION: Thick vegetation and the danger of boobytraps make it impractical for an entire squad or platoon to search hedgerows.

OBSERVATION: Two or three men should remove all gear and check the hedgerow

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while the rest of the element secures the area. Men unencumbered by gear can make a more thorough search in thick vegetation, and the danger of loose gear detonating boobytraps by hanging up in bamboo is reduced.

ITEM: Jungle Clearing 1.

DISCUSSION: During Operation JUNCTION CITY and MANHATTAN, the Engineer Battalion was involved in jungle clearing operations. To accomplish this mission, Rome Plows were employed. These plows are mounted on standard bulldozers with specially constructed blades and operator cabs attached. The blade has a knife edge and is set on an angle. During Operation JUNCTION CITY, the clearing consisted of making 100 meter wide rights-of-way along roads in the operational area. To accomplish this, Rome Plow-Bulldozer teams were created utilizing two Rome Plows with each bulldozer. The plows would knock down the brush and trees followed by the bulldozers wind-rowing the fallen vegetation. In War Zone C, the operational area for JUNCTION CITY, the jungle is extremely heavy and the trees range from 100-200 feet in height. In many cases it was necessary to use demolition to remove the larger trees.

During Operation MANHATTAN, Rome Plows were used to clear road right-of-ways and large scale jungle clearing. With as many as eight plows working at a single time it was necessary to devise a system whereby all the plows could be operated in an area restricted by the availability of security. This operation was conducted in the Lower BOI LOI Woods area. During clearing, Rome Plows were employed separately from the bulldozers with the bulldozers used only to wind-row relatively small areas for helicopter landing pads. This was done because the dozers could not wind-row at the same rate as the plows. In order to provide security for the dozers it was necessary to work them in a small area.

OBSERVATION: As a result of these two clearing operations, many techniques have been evolved for jungle clearing. The most significant being that the productivity of each plow is dependent upon the number of plows operating. It was found during Operation MANHATTAN that by placing the plows in an echelon left formation, with the jungle to be cleared on the left, that five plows operating for 8 hours could clear 100 acres of jungle in one day. By keeping the jungle on the left, the angled blade of the plow pushes the overflow to the right and out of the way of the plow and the following plows. Mechanized infantry moved with the plows to provide security.

Maintenance played a large role in the success of the operation. Without continued maintenance support these plows could not keep running. In the vicinity of each clearing area, a maintenance point was established with an air compressor and two contact maintenance teams. Once every 4 hours a plow would stop to be checked, refueled, and have branches and leaves blown out of the engine compartment. It also gave the operators a chance to take a 15 minute break.

Another problem encountered was the control and guidance of the leading plow when cutting through a new section of jungle. This was alleviated

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ed by painting large numbers on the top of the cabs and providing a M-25 Radio to the assistant operator. A light observation helicopter, in direct contact with the lead plow, provided necessary control and guidance for initial cutting.

ITEM: Jungle Clearing II.

DISCUSSION: A new concept in land clearing has been put to the test near CU CHI, Vietnam by Co C, 65th Engr Bn. The operation consists of dragging a large anchor chain behind two vehicles, spaced so that the vegetation which passes between them will come into contact with the chain. The links of the chain are 9 inches wide and 12 inches long. Each link weighs approximately 28 pounds.

The very nature of the equipment employed in the operation dictates the type of clearing that can be accomplished. Basically, the weight of the chain and the pulling force of the vehicle are the principle clearing factors. It is easily understood, then, that vegetation which can withstand a swift blow from a heavy object is not effectively cleared by this operation. This is especially found to be true in areas of undergrowth, where the diameters of the trees and shrubs are appreciably smaller than four inches. The chain passes over vegetation of this size, after which the vegetation springs up. Somewhat different and much more gratifying and useful results are obtained when the chain is used to clear trees with diameters greater than four inches. The chain has been used to clear rubber trees up to three feet in the base diameter. The chain catches around the base of the tree, rides up on the trunk, causes the tree to lean, and eventually weighs it down; uprooting it and laying it on the ground.

The chain was found to be most effective in clearing rubber trees rather than any other type of vegetation. In the plantation, it was possible to drive the vehicle down the paths between the trees, since the trees are planted in straight rows, and side by side. Trees in the Filhol Plantation, where the cutting was done, are planted in rows running generally Northwest to Southwest. The rows are approximately 8 meters apart, and the trees are approximately 6 meters apart within the rows.

The selection of direction in which to clear is a relatively simple matter. The important factor to remember is that the most effective cuts are long and straight. The width of the cut will depend on the size of the trees. It was found that the trees in the Filhol, which averaged about twenty inches in diameter, were most effectively cleared in cuts of two rows each. The length of the chain is a factor here also, since the strain on the vehicle varies directly with the angle between the chain. The chain is made of 90 foot sections which can be joined or separated. Through experiment, a length of 3, 330 feet, or 4 sections, was found to be optimum, since this length of chain was sufficient to reduce strain on the vehicles when clearing two rows of trees; and at the same time was not so lengthy as to greatly impede maneuverability.

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Carful briefing of both vehicle operators and vehicle commanders is a must before beginning the operation. It should be emphasized that staying in the clear paths is important. Also drivers should try to coordinate with one another during the operation. The vehicles should "glide" during instants of little resistance, and then accelerate as soon as the chain catches on the trees. This prevents damage to pintles, stalling, and in general, makes for a smoother operation. In addition, one vehicle should remain slightly ahead of the other, so that if one hits a mine, personnel on the other vehicle are not likely to be affected.

Reversing direction when clearing can be a very tricky operation. If at all possible, cuts should be made between two open areas, to facilitate turning. The turns should be very deliberate, especially when there are obstacles present. One method is to make a half circle with both vehicles. Another method is for one vehicle to make a very tight neutral steer while the other makes a somewhat broader turn. Still another method is for both vehicles to back over the chain, make a tight turn, and head in the reverse direction for another cut. Many variations are possible. The vehicle drivers should not hesitate to drive over the chain if it is necessary to do so, and must only be careful not to get so far apart as to be pulling against each other. In most cases, the condition of soil will dictate the type of turn. This is because the maneuverability of the vehicles with the chain is quite hampered in boggy or even damp terrain. Also, it is important to cut in such a manner that the fallen trees will not be in the path of the vehicles on future cuts. A minimum of planning is required to accomplish this, since the chains pulls the trees inward and stacks them in very neat piles.

Once the operation begins, it is necessary to assert aggressive control. The control element must direct the entire operation and be constantly alert. It must react quickly to obstacles and be quick in formulating a plan for reversing for direction after each cut. The controller should be on one of the two vehicles pulling the chain, and should have radio contact with all elements of the operation so that the operation will run as smoothly as possible, free and of bogging down, due to some unforeseen situations.

The mechanical considerations in an operation of this type are many, and play an important role. The weak areas soon present themselves as a matter of course during operations. There are some areas in which preventive maintenance can save time and enhance the operation in general. The weakest part of the usual installation is the pintles to which the chain is attached. It is found that the constant strain again the pintles soon wear the threads on the four bolts which hold them in place. It is not uncommon for these bolts to fail. One solution to this problem is to carry extra bolts for quick repairs. An even better solution is to reinforce with 1" or 1 1/2" wire cable. The cable is threaded through the two hook brackets to form a complete loop through the third link from the end of the chain. This reinforcement takes a great deal of strain off the pintles and reduces pintle failure by about 90%.

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The transmission of the vehicles suffer since low-gear only must be used during the actual clearing. Sometimes it becomes necessary to stop for cooling off periods of 30 to 40 minutes. A loss of power is also a common phenomenon. This is attributed to the over-working of the transmission. It is necessary to check the oil frequently and to have an ample supply of oil on hand at all times. If there are any oil leaks in the vehicle or if a leak develops, the vehicle should not be used for this operation until such time that the leak has been repaired completely. The nature of the strain is such that even a tiny oil leak will soon become a serious maintenance problem.

Another problem area is the final drive of the vehicles. Pulling the chain causes considerable strain on this assembly. A vehicle with faulty final drive should not be used in this operation. Particular attention should be paid to the final drive during operations so that serious damage can be avoided.

The probability of throwing a track on an operation of this type is much greater than other operations. The extra burden of pulling the chain makes even the slightest obstacle such as a log or small trench harbingers of nearly certain track failure. Tight track and very selective driving are a necessity if the operation is to run unhampered. Clearly, maintenance considerations play an important role in this operation, as in all clearing operations.

The tactical considerations of the anchor chain clearing operation merit special attention. The types of security and employment thereof should be an integral part of the planning phase. The optimum security is a force of five personnel carriers, two preceding the chain pullers, two following and one on the flank which is exposed to the uncut woodline. This all-around mobile security makes up for the inherently vulnerable cumbersome chain set-up. The security elements should be close enough to provide adequate support, yet far enough away to allow the cutting to run smoothly. Tanks also can be used to provide security for the operation. An added benefit of using tanks would be that they can pull the chain if something went wrong with one of the prime movers.

The most important tactical concept to keep in mind is alertness. The fact that the operation covers so much area places a tremendous responsibility on all concerned to be especially watchful. To effect unity of command, the control element must direct not only the clearing but concurrently, the security.

A comparison of performance of three types of prime movers was made on two different days. On 10 July 1967, M48A3 tanks were compared to D-7 Dozers. On 14 July 1967, M-88 recovery vehicles were tested. All three types of vehicles were employed in the same manner: Clearing two rows of trees in the Filhol Plantation. The dozers had the slowest clearing rate of 5.28 acres/hour. The M-88s, were most effective, with 28.9 acres/hour. The tanks had the second fastest rate of 15.1 acres/hour. Thus, with an

effectiveness of 1 for dozers, the tanks would be rated at $15.1/5.28=2.86$, and the M-88s would be rated at $28.9/5.28=5.49$.

The greatest differences in performances, other than in clearing rates, were the amounts of time the vehicles were down for repairs. The dozers, even though they worked slower, did not have to make even one stop for maintenance. The tanks and M-88s, however, were frequently stopping to repair pintles, check the oil, cool off transmission, or replace tracks.

The greatest single stopping factor was pintle failure. As mentioned above, this problem has been solved by using a reinforcing cable. The other maintenance drawbacks of M-88s and M-40s, although numerous, are not sufficient to warrant choice of D-7s for pulling the chain in lieu of M-88s or M48A3s.

If the choice is between M-88s and M48A3s, the greater horsepower and weight, and hence momentum, of the M-88s make them the logical selection. When properly employed and maintained, the M-88s can clear nearly twice as effectively as M48A3s. The extra power makes them more maneuverable than the tanks. Also, the M-88 transmission is designed to pull heavier loads, and there is less tendency to run the M-88s to stall out when the chain comes in contact with unusually large trees. In areas of smaller trees, it is possible to run the M-88s in second gear, speeding up the operation, and reducing transmission strain.

If necessary, a tank and an M-88, may be employed in the same operation. The rate of clearing, however, would be governed by the tank, since it would be the weaker of the two.

During the 15 days of operations with the chain, C Company was able to clear approximately 1500 acres of the Filhol Plantation. The operation, now reduced from guess work to a science, has been placed in the hands of a sister company in the 65th Engr En. A second, somewhat smaller chain has been acquired, and the operations are continuing with M-88s as prime movers. The smaller chain links are 5" wide and 9" long. They weigh approximately 60% as much as the larger links. This chain was doubled and attached to one section of the larger chain.

Before the original chain was acquired, a 1 1/8" cable, weighted by a cap steel, was tested to determine effectiveness in clearing. The cable has a tendency to slip over small vegetation, and was relatively ineffective. If the cable was used to clear large trees, the strain encountered would make it necessary to replace the cable often, making the operation logistically and economically unfeasible. The operation was considered unfruitful and no data concerning effectiveness was collected or analyzed.

On 10 July 1967, two D-7 Dozers were used to wind-row the rubber trees which had been cleared by the anchor chain. It was found that the dozers averaged wind-rowing 1.1 acres/hour/dozer. At this rate it would take $28.9/1.1$ or at least 26, D-7 Dozers wind-rowing in support of two M-88s clearing rubber trees. This is clearly not feasible, obviously the gains

of wind-rowing are not equivalent to the required equipment density.

On 10 July 1967, napalm disbursed from flyve tracks was used in an attempt to burn rubber trees which had been cut down for a period of six months. Briefly, the timber would not ignite. The fallen timber in the rubber plantation is spread out so that the spaces between rows form natural fire barriers. As mentioned above, windrowing is not feasible. The conclusion is that it is not feasible to dispose of the fallen timber by fire.

OBSERVATIONS:

1. The following are observation and recommendation on anchor chain clearing operations. Some are taken from the preceding text and serve as a summary thereof, others are merely hints emanating from observation.

- a. That M-88s be used in lieu of M-48A3s for this operation.
- b. That the pintles on the M-88s be reinforced with wire cable prior to each day's operation.
- c. That two 30 minutes maintenance stops be made each normal working day.
- d. That clevises, pintles, and reinforcing cables be checked often for wear and tear.
- e. That the day's clearing be carefully pre-planned, in that track commanders and drivers be thoroughly briefed prior to starting the operation. This should include a fly over when possible.
- f. That extra lengths of reinforcement cable be taken each day to replace any that may wear out.
- g. That a "quick-release" device for the reinforcing cable be employed. This consists of two clevises attached through the tow-hook brackets.
- h. That the clearing be done between two unobstructed areas whenever possible.

In conclusion, the anchor chain, when properly employed, is highly effective in clearing rubber plantation. As any other type of clearing operation, this one denies concealment and cover to the enemy. The large scale nature of the operation suggests that it merits special attention and that it should be given careful consideration.

ITEM: Rafting Operation.

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DISCUSSION: On 10 June 1967, Co E, 65th Engr Bn, was tasked to provide bridging in support of Operation BARKING SANDS, in the vicinity of XT564325. The mission called for the use of the 15 men assault boats, an aluminum foot bridge, LTR, and a Class 60 M4T6 raft. The crossing site was relatively inaccessible to wheel vehicles and engineer equipment, other than dozers, due to the absence of roads and steep bank approaches. It was decided therefore, that all bridging equipment be airtransported to the crossing site with the exception of the assault boats and foot bridge. They were transported by vehicles as close to the site as possible and then hand-carried the rest of the way. This done in order to achieve the element of surprise and secure a crossing site. Airtransporting (by CH-47) the LTR, the 27' bridge erection boats, and preassembled M4T6 floats was a novel method of transporting this equipment for the 65th Engr Bn within the 25th Inf Div Operational area. The equipment was a great success with minimum of time and without any difficulties. The operation was a great success and it provided valuable information and experience for similar future operations.

CONCLUSION: As a result of this operation the following techniques were adopted:

- a. Bridging and rafting support can be provided to any crossing site required by tactical units by transporting equipment with CH-47s. Rafting support can be provided and extracted with a matter of a few hours. This is highly important where the tactical situation calls for a quick crossing or emergency extraction.
- b. The M4T6 Float Bridge can be airtransported in preassembled packages. This is particularly important since it eliminates the need for bridge trucks and cranes at the crossing site. It releases this equipment for other missions.
- c. The aluminum corduroy treadway was utilized for the first time and it proved to be a very valuable piece of equipment. It was used on the shore approach which was marshy and muddy. This treadway provided enough stability to cross tanks and even an A113. Without it, extensive fill and equipment work would have been required.
- d. Due to the tremendous rotor downwash created by the CH-47, it was found necessary to secure all pontoons and floats in order to prevent capsizing or drifting of this equipment. One LTR half pontoon was capsized and sunk as a result of rotor.
- e. This operation also pointed out the importance of prearranging and briefing of personnel employing the equipment and the pilots transporting it. It is recommended that in future operation liaison visits be made by engineer units and aviation personnel to make sure that the best procedures are used and any problems areas straightened out prior to the operation.

ITEM: Phu Cuong River Crossing.

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DISCUSSION: The mission at the Thu Cwang River Crossing called for two each five float reinforced rafts, two each LTRs, seven 27' bridge erection boats, and a complete 38' dry span. All the equipment and personnel required to accomplish the mission were airtransported in forty three CH-47 (Chinook) sorties. The whole operation was completed within eight hours and the construction of the rafts completed within the same day.

OBSEERVATIONS: The following are some of the problems areas and lessons learned during the operation:

a. One of the M4T6 floats was capsized as it was set down by the Chinook. Several bridge components were lost as a result. This can be avoided in future operations by instructing the pilots to hover over the landing zone for a short period of time in order to decrease the oscillation of the float and then gently place it in the water. Also, all component parts placed in the float should be adequately secured to the float during transportation.

b. The far shore pier was not adequate nor sufficiently strong to accommodate high class vehicles or wide loads. To overcome this problem, a 38' 4" dry span was constructed on top of the existing and all efforts were made to locate the load bearing stiffeners over the structurally sound piles. A tapered balk ramp was also used to connect the pier to the shore. This arrangement proved very satisfactory and all vehicles were crossed without any difficulty.

c. Another problem area noted during the operation was that the pontons had a tendency to shift off center from the saddle panels. After a closer inspection and observation, it was determined that this was caused during airlifting. This problem was solved by tightening the straps from the pontons to the center beam as tight as possible before airlifting. Also, retainer lugs to the saddle adapters should be checked to make sure that they are secured in place and safety pinned.

d. One of the major problems during the operation occurred when an M4T6 float was dropped during airlift back to CU CHI. Upon recovery, the float was found to be beyond repair. During investigation, it was found that the retainer lugs had failed in bending thus causing the float to drop. This can be attributed to the fact that the total load of the float and the rotor downwash of the aircraft were supported by the retainer lugs. This problem has been eliminated by slinging the floats differently. The slings will be placed on the knotted portion of the center beam where it connects with the beam extension. This will eliminate the stress concentration on the retainer lugs.

e. It has been proven by this operation that small river crossing operations can be totally supported by "D" Company, thus, releasing line companies to perform other missions.

f. This type of an operation increases the capability of the bridge

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company and adds to the support of the Division. It can be used in relatively inaccessible areas and it eliminates the need for engineer equipment to emplace the rafts.

ITEM: Two Fixed Spans (38' 4") Supported by a Trestle at Midspan.

DISCUSSION: The mission called for two complete 38' 4" dry spans and a 50 ton trestle for midspan support. This was an emergency mission and had to be completed within the shortest period in order to open the MSR to SOUT DA. All required personnel and equipment were airlifted to the site. Dry spans and trestle were emplaced by Chinook with very few problems.

OBSERVATION: When the bridge was assembled it was possible to span a larger span than is possible to span with standard spans. The classification of the bridge, however, was reduced to Class 30. Classification can be increased by providing additional trestles and diagonal cross bracing. This technique provides emergency support for MSR repairs and can be accomplished within a short period of time.

ITEM: Employment of $\frac{1}{4}$ Ton Truck-Mounted Searchlights.

DISCUSSION: The employment of searchlights in support of perimeter defense is new to many artillery units.

OBSERVATION: Searchlights should be accurately located and laid for direction. To illuminate a given area an azimuth should be given to the searchlight. When the searchlight detects a target the azimuth and estimated range can be reported. Searchlights should be collocated or have direct communications with the automatic weapons on the perimeter so that rapid fire can be brought to bear on the target. Lights should have alternate position and be repositioned nightly.

(3) Training and Organization.

ITEM: Search Techniques: There is a definite lack of knowledge in conducting a search of villages.

OBSERVATION: Each infantry squad should be organized so that each member has a particular job to perform when searching a house.

DISCUSSION: Instruction is required to point out possible and likely hiding places when conducting searches. Use of an VN RF/FF instructor would be ideal because of their first hand knowledge of Vietnamese village life. The ideal training area would be a vacated house in a pacified or secured area.

ITEM: Weapons Familiarization.

DISCUSSION: It was found that newly arriving personnel were in most cases unfamiliar with the various weapons organic to an Armored Cavalry Troop,

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