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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO

AGDA (M) (18 Jun 70)

FOR OT UT 701242

26 June 1970

SUBJECT: Operational Report - Lessons Learned, Headquarters, 54th Signal Battalion, Period Ending 31 January 1970 (U)

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2. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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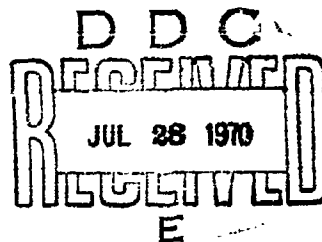
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54th Signal Battalion

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DEPARTMENT OF THE ARMY
Headquarters, 54th Signal Battalion (Corps)
APO San Francisco 96350

AVFA-SB-S3

15 February 1970

SUBJECT: Operational Report - Lessons Learned, 54th Signal Battalion (Corps),
Period Ending 31 January 1970, RCS-CSPOR-65 (K2)

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(C) Section 1. Significant Organization Activities

a. General:

During the reporting period the 54th Signal Battalion (Corps) and its attached units continued to support combat operations within the II Corps Tactical Zone by providing command and control communications between Headquarters I Field Force Vietnam and units under its operational control. These communications included high frequency radio teltype, single sideband voice radio, multi-channel radio, tropospheric scatter multi-channel radio, FM radio wire integration, photographic services, air and ground messenger service, a Military Affiliate Radio Station, and an AM/FM broadcast station which broadcasts taped music and the correct time for the IIR Trang area.

b. Intelligence: None.

c. Operations and Training Activities:

(1) Plans: Plans are being initiated to move the AM/TRC-97B terminal of the T-43 system at Hon Cong Mountain (An Khe) to Vung Chua Mountain (Qui Nhon). The T-43 system will be deactivated and the proposed system will be designated T-44. The T-43 has constantly been a marginal system due to over extension of the equipment capabilities and poor profile. The proposed T-44 system will not have to cope with these same problems and should provide a more reliable communications path. To extend these circuits an additional 12 channel system is proposed between Vung Chua Mountain and An Khe. There are some difficulties which will have to be overcome to implement this plan. They include the removal of the AM/TRC-97B van and antennas from Hon Cong Mountain at An Khe. These cannot be reached by a crane and must be manually removed from the present bunkered position. The 167th Signal Company will assist Company B when the move is undertaken. The actual move from An Khe to Qui Nhon of the van, antennas and generators, a total package of 10,000 pounds, is planned via Air Force aircraft. If this is not possible, it will be moved by 167th Signal Company vehicles to Vung Chua Mountain.

(2) Operations: Communications Detachments are shown in Inclosure #1.

(a) Communications support for the 173rd Airborne Brigade: The Battalion continued support of the 173rd Airborne Brigade by providing a communications

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center, high frequency radio teletype, single sideband voice and five 12-channel Very High Frequency systems; V-11 and V-12 (LZ English to An Khe), V-23 (LZ English to North English), V-24 (LZ English to LZ Uplift), and V-25 (LZ North English to Tam Quan).

(b) Communications Support for the 4th Infantry Division: The 167th Signal Company (Radio Relay) continued to support the 4th Infantry Division with multi-channel radio communications between Pleiku and An Khe and between these locations and Headquarters, I Field Force Vietnam at Nha Trang. These systems are as depicted in Inclosure #2.

(c) Communications Support for Task Force South (TFS): The Battalion continued to support Task Force South with high frequency secure radio teletype, non-secure single sideband voice radio, common user secure teletype and dedicated secure teletype between Headquarters, I Field Force Vietnam, its Tactical Operations Center and Task Force South at Phan Thiet. Radio teletype (AN/VSC-2) communications were continued between Headquarters, Task Force South and MACV Advisory Team #33 to the 53rd Regiment of the 23rd Division of the Army of the Republic of Vietnam at Di Linh. Three very high frequency multi-channel radio systems were operated by Company B, 54th Signal Battalion (Corps) in the Task Force South area of operation. They linked Phan Thiet, Thien Gao, and Song Mao together and provided communications between Headquarters, Task Force South, its operational units and other units as listed below. In addition to multi-channel communications, Company A, 54th Signal Battalion (Corps) provided communications center service at Phan Thiet and Song Mao. The systems are as depicted in Inclosure #2. The supported units are:

- 1 Headquarters, Task Force South (Phan Thiet)
- 2 Binh Thuan Province Senior Advisor (MACV Advisory Team #37 at Phan Thiet)
- 3 1st Battalion, 50th Infantry (Mechanized) (US) (Thien Gao)
- 4 Song Mao District Senior Advisor (MACV Advisory Team #37 at Song Mao)
- 5 MACV Advisory Team #33 to the 44th Regiment, 23rd Division, Army of the Republic of Vietnam (Song Mao)
- 6 2nd Squadron of the 1st Armored Cavalry (US) (Song Mao)
- 7 5th Battalion of the 27th Artillery (US) (Song Mao)

(d) Communications Support for the 3rd Battalion, 506th Infantry, 101st Division (Airborne) (US): Support for the 3/506th Infantry at their forward Command Post at Chu Kuk (ic BQ 226167) near Ban Me Thuot was provided by Company B, 54th Signal Battalion (Corps) operating a AN/PRC-112 system. Circuits were extended to Task Force South, Forward Mobile Staff, I Field Force Vietnam and to Ban Me Thuot Switchboard. Communication support of the 3/506th Infantry was transferred to the 124th Signal Battalion when the 3/506th came under the operational control of the 1st Brigade, 4th Infantry Division.

(e) Communications Support for Company B, 5th Special Forces Group (Airborne): The Battalion operated the secure common user teletype terminal at Company B, 5th

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Special Forces Group (Airborne) at Pleiku until 14 January 1970. On that date the operation of this terminal was assumed by Company B. This circuit provides direct access to the I Field Force Vietnam Communications Center.

(f) Command and Control South, Detachment B-50, 5th Special Forces Group (Airborne): The Battalion continued to operate the secure common user teletype circuit for Command and Control South located at Ban Me Thuot. This circuit provides direct access to the I Field Force Vietnam Communications Center.

(g) Communications Support for I Field Force Vietnam U.S. Liaison Officers: The Battalion continued to provide secure high frequency radio teletype and non-secure single sideband radio voice communications to the I Field Force U.S. Liaison Officers at 9th Republic of Korea Infantry Division at Ninh Hoa and the Capital Republic of Korea Division at Qui Nhon.

(h) Communications Support for the Deputy Senior Advisor to II Corps: The Battalion continued to provide the Deputy Senior Advisor to II Corps at Pleiku with the following communication services:

- 1 Secure high frequency radio teletype
- 2 Non-secure single sideband radio, voice
- 3 A dedicated secure teletype circuit to I Field Force Vietnam Tactical Operations Center (TOC).

(i) Communications Support for the 70th and 864th Engineer Battalions: With the redeployment of the 70th Engineer Battalion on 17 November 1969 the V-01 system between their headquarters and Ban Me Thuot was deactivated. A new Task Force 21 composed of 6 units of the 864th Engineer Battalion was formed and headquartered at Camp Swampy (vic BQ 196134). A very high frequency multi-channel radio system was established between Ban Me Thuot and Camp Swampy with a relay at Buon Ea Yang (vic BQ 092033). This provides Task Force 21 with telephone communications with Ban Me Thuot and Typhoon (Nha Trang) Switchboards and direct voice communications to Headquarters 864th Engineer Battalion at Nha Trang.

(j) Communications Support for 1st Battalion, 92nd Artillery (US): The 167th Signal Company (Radio Relay) continued to provide a very high frequency multi-channel radio system in support of the 1st Battalion, 92nd Artillery at Tan Canh (vic ZB 602227).

(k) MARS: During the past quarter the 54th Signal Battalion (Corps) Military Affiliate Radio Station (MARS) has passed 1,470 calls from personnel in the Nha Trang area to individuals in the Continental United States. The station has been subjected to very tight frequency restriction and bad propagation during the latter half of this quarter. Consequently fewer calls were passed this quarter.

(l) Technical Assistance to Project Quick Comm: The 54th Signal Battalion (Corps) continues to provide installation, operational training, and maintenance assistance of tactical radios to the U.S. Advisors at the 12 Provinces and 54

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Districts making up the II Corps Tactical Zone. This technical assistance is in support of "Quick Comm", the system by which these Districts can pass immediate reports via radio wire integration at the Provinces direct to the I Field Force Vietnam Tactical Operation Center. Two technical assistance teams continued to provide scheduled and demand maintenance at the Districts and Provinces during the past quarter. These teams are presently each composed of a highly skilled radio operator, radio repairman and a wireman. As a result of this technical assistance, the RMI equipment continues to operate at the twelve Provinces, and 44 of the 54 Districts talk directly to the I Field Force Vietnam Tactical Operation Center. Efforts are being undertaken to enable the remaining 10 Districts to have direct radio contact with their Provinces. They presently must relay their traffic due to natural obstacles and to distance between radio stations.

(m) Continuing Battalion Projects: The Battalion continues toward professional development through emphasis in the following areas:

- 1 Improvement of site facilities, listed by location as Inclosure #1.
- 2 Improvement of communications center operations.
- 3 Enhancing the reliability of communications to units under the operational control of I Field Force Vietnam.
- 4 Quality control of multichannel communication systems.
- 5 Improvement of switchboard operation through cross-training of personnel.

(n) New Projects and Significant Changes:

- 1 The 54th Signal Battalion (Corps) provided communications support for the I Field Force Vietnam Forward Mobile Staff. The Forward Mobile Staff is a staff composed of representatives from the sections of the Headquarters I Field Force Vietnam. The purpose is to move the staff closer to the area of enemy activity and to gain rapid knowledge of the situation so that information can be disseminated to the I First Field Force Vietnam Commanding General. The 54th Signal Battalion (Corps) initially sent twenty-five enlisted men and one officer to Ban Me Thuot in support of this operation. They provided Frequency Modulated radio, secure radio teletype, very high frequency multichannel radio, single sideband voice, switchboard service, and entry into the Corps area common user telephone system. As the tactical operations increased the communications contingent was augmented with additional men and equipment, including single sideband radios which were located at the Bu Prang (vic YU 512592) Camp of the Civilian Irregular Defense Group (CIDG) near the Cambodian border. This area was the scene of intense fighting and enemy bombardment extending from late October to early December. The undaunted tenacity of the 54th Signal Battalion (Corps) team in this area accomplished the mission of providing voice communications from the Bu Prang Camp to the Tactical Operations Center of the 23rd Division, Army of the Republic of Vietnam at Ban Me Thuot, the 23rd Division Light Command Post (ARVN) at Gia Nghia, the Forward Mobile Staff at Ban Me Thuot and Headquarters I Field Force Vietnam at Nha Trang. The mission of the Forward Mobile Staff was termed a success by LTC Corcoran, Commanding General, I Field Force Vietnam. The 54th Signal Battalion (Corps) was a key element in this success by providing effective communications.

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2 The 167th Signal Company (Radio Relay) moved from Pleiku to Camp Radcliffe, An Khe on 17 November 1969. The move was necessary to maintain effective control over its widely dispersed communications sites. Due to the poor conditions and lack of facilities at the new area, the advance party from the 2nd Platoon moved to An Khe two weeks prior to the company move. They joined the 3rd Platoon, which was already at An Khe, preparing the area. The fourth platoon remained behind at Pleiku to assume control of the three western sites of Dragon Mountain, Pleiku (Engineer Hill), and Tan Canh. The largest concern of the company, following the move, was establishment of effective security. Five guard towers were quickly constructed and a triple row of concertina wire was placed surrounding the area. These measures were followed by constructing five fighting personnel bunkers and clearing fields of fire. In addition, revetments were built around all billets. The company spent 17 days in all phases of the move from preparation to improvement of the new area.

3 The Battalion established and initially operated AN/MRC-112, 4 channel radio terminal for Headquarters I Field Force Vietnam Artillery at Fire Base Mike Smith, Ban Me Thuot, Gia Nghia and Nhon Co. Once the terminals were operational, the 54th Signal Battalion (Corps) trained designated artillery personnel in the operation of the equipment.

4 The Battalion has replaced all the old AN/GRC-26D high frequency radio teletypewriter sets with the new AN/GRC-122 and AN/GRC-142 radios. These radios were replaced at units supported by the Battalion. The net control station located at High Frequency Radio Park in Nha Trang, across from Headquarters, I Field Force Vietnam, underwent a complete renovation to enclose 3 AN/GRC-142's and 1 AN/GRC-122 radio set under one roof. To accomplish this without removing the equipment from the vans and to take advantage of internal air conditioning, a unique, completely insulated building was constructed around the sets. This has proven to be highly effective in increasing the efficiency of the operation.

5 During this period the Battalion initiated a program to secure the Battalion Frequency Modulated Command Voice net with NESTOR equipment. After several demonstrations and briefings for Battalion personnel, the program was started with the installation of KY-8's with the AN/VRC-12 series radios. In the future, the remaining Frequency Modulated radios in the Battalion Command net, including aircraft radios, will be equipped with NESTOR equipment.

6 The I Field Force Vietnam Communications Center operated by the 54th Signal Battalion (Corps) was renovated and reconfigured for more efficient operation during the past quarter. This entailed: the construction of the wooden consoles on which tactical teletypewriter equipment could be mounted and operated in a fixed station mode; the reconfiguration of cryptographic on line cipher devices (KW 7) to allow more space in the cryptographic room; and the construction of a multiple address position for simultaneous reproduction of individual tape messages. The new construction and configuration provides for much easier operation and has increased the efficiency of the Communications Center.

7 With the culmination of the U.S. operations at the Long Van area of the Nha Trang Air Base, the 54th Signal Battalion (Corps) Aviation Section was moved from there to the U.S. Air Force side of the field. The new facilities include permanent buildings for troop billets, offices and maintenance areas. This has greatly improved the maintenance capabilities of the aviation section.

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(c) Training: Battalion training, to include mandatory and replacement training, has undergone a complete revision during the last quarter with the objectives of upgrading the quality of training and adding certain subjects required by USARV Training programs. This revision will assure a high level of individual proficiency in mandatory and special subjects. Areas of revision are as follows:

1 Battalion training record listing new subjects required by USARV Reg 350-1.

2 Replacement training program, adding more subjects of an important nature such as convey procedures, telephone security, foot health, Malaria prevention, and immediate action drills.

3 Non-Battalion formal training conducted during past quarter:

<u>COURSE</u>	<u>LENGTH</u>	<u># ATTENDED</u>	<u>TOTAL HOURS</u>
AN/TRC-97B Operator	80 hrs	2	160
AN/TRC-24	112 hrs	2	224

4 Chemical: None.

5 PSYWAR: A 2 hour class was attended by the officers as required by USARV Reg 350-1.

d. Logistics:

(1) All pulse code modulation equipment authorized under the 54th Signal Battalion (Corps) MTCE 11-15G and the 167th Signal Company (Radio Relay) MTCE 11-377G has been requisitioned and is programmed to be available as noted below.

(a) 54th Signal Battalion (Corps):

<u>EQUIPMENT</u>	<u>AUTH</u>	<u>O/H</u>	<u>ON REQ</u>	<u>AVAILABILITY DATES</u>
Radio Repeater Set AN/TRC-110	4	0	6	Feb/Mar 1970
Radio Terminal Set AN/TRC-121	4	0	4	Feb/Mar 1970
Radio Terminal Set AN/TRC-112	10	0	10	Feb/Mar 1970
Radio Terminal Set AN/TRC-111	16	0	16	Feb/Mar 1970
Telephone Terminal AN/TCC-61	4	0	4	Sep 1970
Telephone Terminal AN/TCC-69	9	0	9	Feb/Mar 1970
Telegraph Terminal AN/TCC-29	4	0	4	No Avail Date

(b) 167th Signal Company (Radio Relay):

Radio Repeater Set AN/TRC-110	15	0	15	Feb/Mar 1970
Radio Terminal Set AN/TRC-117	30	0	30	Feb/Mar 1970
Telephone Terminal AN/TCC-67	18	0	18	Feb/Mar 1970

(2) Present multichannel communications equipment:

The 54th Signal Battalion (Corps) has been waiting since late 1966 to receive the above new Army Area Communication System (AACOMS) family of radio equipment. As of this date, the equipment is due to arrive at this organization

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in the third quarter FY 1970. The tropospheric scatter equipment is due to arrive in country the last quarter of FY 1972. These dates are tentative and further slippage is probable. Meanwhile the Battalion will continue to utilize the old MRC (VHF/FDM) series equipment. The electronic equipment and the vans in which it is housed are rapidly deteriorating and must frequently be turned in to the local maintenance facilities for repair. As the maintenance facilities in this area are not capable of repairing the vans, they must be evacuated to a higher echelon. Once it is evacuated for higher maintenance, the property book officer receives credit for turn-in. Since the items turned in are not authorized under the new MTOE, it is impossible to requisition like items to replace those turned in.

(3) Transportation: Operational commitments required extensive use of air transportation during the quarter. The total amounts of cargo transported, in pounds, by the Air Force to and from detachments operated by this unit are as follows:

<u>Location</u>	<u>Pounds</u>
Fleiku	5,040
Di Linh	9,705
Phan Thiet	13,340
Gia Nghia	25,110
Ban Me Thuot	49,267
Song Mao	1,600
TOTAL	114,062

(4) Battalion Motor Maintenance Section: During the past quarter the Battalion Motor Pool's consolidated tire shop continued to operate successfully. It was established to increase the quality of tire repair and to insure that large backlogs of flat tires do not accumulate. As the average soldier detests changing and repairing a tire, he will take them to a Vietnamese tire shop and pay for the service. Approximately 321 tires have been repaired during the quarter. Considering the average local tire repair cost to be \$3.00, this new innovation reduced local Vietnamese economy expenditures by approximately \$963.00, thus helping to reduce inflation.

e. Civil Affairs:

(1) Members of the 54th Signal Battalion (Comms) voluntarily engaged in civic actions during their free time. Included among their contributions was a total of 58 man hours.

(2) The sum of the voluntary monetary contributions from the battalion was 427,035\$ VN.

(3) There were two special projects which were successfully completed in the last quarter:

(a) A well was dug, and an appropriate structure for it was provided for the Mau Tan Orphanage.

(b) A kitchen was built for the Trinh Vuong Orphanage.

(4) The Battalion's support was divided among four different orphanages.

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These orphanages are Ave Maria, Mau Tam, Trinh Vuong, and Trung Vam.

(5) A breakdown of the goods and services and their values is as follows:

(a) Lumber - 75 board feet	\$75.00
(b) Food - 5,920 pounds	592.00
(c) Clothing - 880 pounds	90.00
(d) Health Items - 40 pounds	65.00
	\$822.00

(6) HHC, Companies A and B gave the children of the orphanages Christmas parties which were highlighted by the children opening Christmas "Goodie Bags". The smiles and laughter of the children indicated that the parties were highly successful.

f. Personnel:

(1) Religious Activities:

(a) During the past quarter, Protestant and Roman Catholic services were held in the Battalion chapel each Sunday. Jewish personnel have been informed by the Battalion chaplain concerning the local Jewish program and their names have been given to the I FFORCEV Jewish Chaplain. Schedules of regular and special denominational services have been posted on company bulletin boards and in the barracks in the battalion area. Protestant, Catholic and Jewish religious literature was made available in the Battalion day room and at each of the remote sites. Extensive renovation of the Battalion chapel has been completed.

(b) Chaplain site visitations were maintained on a regular basis with a goal of one visit to each site each month, the availability of aviation transportation permitting. Religious worship coverage at the sites was provided by the resident chaplain in the area. The chaplain has coordinated with the Command Sergeant Major to insure that Sundry Packs designated for specific sites reached their destinations on a scheduled basis.

(c) Character guidance instruction was given on a regular basis to all companies of the Battalion. Character guidance briefs were distributed to the outlying sites.

(d) The Battalion Chaplain continued his History of Religion class for all interested personnel. He also holds discussion Wednesday evenings at 2000 hours. In addition, communion services are now being held on the first Sunday of each month and on special occasions.

(2) S-1:

(a) Rest and Relaxation: During the last quarter, the Battalion received 237 R&R allocations and utilized 155. No additional allocations were borrowed from area units.

(b) Courts and Boards:

1 The Battalion Commander acts as Special Courts-Martial Convening Authority

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for the 54th Signal Battalion (Corps) and the following units: HHC, I FFORCEV; HQ Battery, I FFORCEV Arty; 297th Trans Co (Car); 13th Military History Det; 272nd MP Co, MACV Advisory Teams 25, 26, 28, 30, 31, 32, 36, 37, 38, 41, 42, 45, and 46; 55th MI Det; 11th PI Det; 64th Engineer Det; 41st CA Co; and 5th PI Det.

2. Additionally, the Battalion Commanding Officer acts as Field Grade Officer for Article 15 actions and appeals to Article 15 actions for the above units with the exceptions of HQ Battery, I FFORCEV Artillery and the 13 MACV Advisory Teams.

3. Non-Judicial Punishment: A total of 106 Article 15's were administered. Twenty-six of those were Field Grade Article 15's. There were seven appeals to Article 15 actions.

4. Summary Courts-Martial: Five Summary Courts-Martial were assembled during the quarter. There are five Summary Courts-Martial pending.

5. Special Courts-Martial: Seven Special Courts-Martial were assembled during the quarter. There are nine Special Courts Martial pending.

6. Three General Courts-Martial were referred to the Commanding General, I Field Force Vietnam during the quarter.

(c) Emergency Leaves: Ten emergency leaves were granted during the quarter.

(d) Promotions:

	<u>E4</u>	<u>E5</u>	<u>E6</u>	<u>E7</u>	<u>E8</u>	<u>E9</u>
November	15	42	3	1	0	0
December	18	33	28	1	0	0
January	18	22	0	1	0	0

(3) The following is a breakdown of the Battalion's enlisted personnel utilization as of 25 January 1970:

	<u>HHC</u>	<u>CoA</u>	<u>CoB</u>	<u>167th</u>	<u>209th Sig Det</u> <u>(Photo)</u>
AUTHORIZED:	165	305	216	294	4
TOTAL ASSIGNED:	207	318	240	278	4
AWOL	0	0	0	0	0
TDY and Leave	9	9	9	16	0
Stockade	0	2	1	0	0
Motor Pool	27	48	12	15	0
Personnel on Sites	4	44	80	122	0
RWI	0	7	0	0	0
Guards	7	10	17	21	0
HF Park	0	17	0	0	0
Typhoon	0	36	0	0	0
Aviation	31	0	0	0	0
Comm Center	0	80	0	0	0
Photographers	20	0	0	0	4
Electronic Maintenance	30	3	0	4	0
Miscellaneous*	<u>79</u>	<u>62</u>	<u>121</u>	<u>100</u>	<u>0</u>
TOTAL	207	318	240	278	4

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* The following duties fall into this category: Cooks, orderly room, operations, supply, KP, Telephone trouble teams, Tech Control, Battalion Headquarters details, chapel details, S-1, S-2/3, S-4, club managers and MARS Station Personnel.

(4) A list of key personnel is attached as Inclosure #3.

g. Artillery: None.

h. Other:

(1) Communications Statistics:

(a) Average daily number of messages (sent and received) at I Field Force Vietnam Communications Center:

	<u>November</u>	<u>December</u>	<u>January</u>
Landline	646	622	627
Radio Teletype	59	44	37

(b) Average handling time (in minutes) for all originating and terminating messages by precedence:

	<u>November</u>	<u>December</u>	<u>January</u>
Flash	21.70	22.53	25.09
Immediate	90.36	120.85	117.53
Priority	108.18	147.40	193.41
Routine	171.26	216.59	235.33
Monthly Mean	97.87	125.59	142.84

(c) Precedence of total transmissions in percentages:

Flash	22.55	14.10	16.79
Immediate	37.04	40.34	44.25
Priority	24.67	29.43	22.72
Routine	15.74	16.13	16.24

(d) Switchboard Operations (Typhoon, Typhoon TOC):

Total Typhoon Subscribers	308	315	315
Total Typhoon Trunks	76	75	75
Total Typhoon TOC Subscribers	35	35	35
Total Typhoon TOC Trunks	24	24	24
Average Daily Peg Count	2,070	1,920	1,831

(e) MARS Operations:

Phone Patches Attempted	820	579	703
Phone Patches Completed	544	410	516
MARS-Grams	8 Transmitted and 32 Received		

(2) Photographic Operations: The following figures represent the photographic production of the combined Battalion Pictorial Section and the 209th Signal Detachment (Photo) during the quarter.

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	NOVEMBER	DECEMBER	JANUARY	TOTAL
Number of negatives exposed	9,796	6,443	9,103	25,342
Number of prints made	16,104	12,690	8,022	36,816
Feet of Motion Picture film exposed	3,600	2,000	3,200	8,800
Number of color slides made	3,300	660	1,020	4,980
Photo Missions (Still)	403	371	352	1,126

(3) Aviation Activities:

(a) The period covered in this report was characterized by rendering air messenger support to IFFV Headquarters, and administrative and aerial resupply to the 54th Signal Battalion (Corps). During the period a total of seven aircraft were assigned; 1 UH-1D, 5 UH-1H's and 1 OH-6A.

(b) The following table reflects the aircraft status and flying hours for the past quarter. Entries in "days assigned" column reflect the period each aircraft was assigned.

AIRCRAFT STATUS AND FLYING HOURS

TYPE A/C	SERIAL #	HOURS FLOWN	OM	PM	EDP	AVAILABILITY	DAYS ASSIGNED
OH-6A	67-16499	60	83	593	290	56%	QTR
UH-1D	66-1033	119	302	277	120	68%	QTR
UH-1H	66-16764	106	739	0	0	66%	*
UH-1H	66-17136	126	131	960	9	50%	QTR
UH-1H	68-15528	159	398	306	42	66%	QTR
UH-1H	68-15574	215	328	0	292	76%	QTR
UH-1H	68-15662	183	267	267	450	66%	QTR
TOTAL		968	2248	2403	1203		

* Assigned 14 Nov 69

(c) The total tonnage transported for the quarter was 227 and there were 3009 passengers carried.

(d) The aviation section experienced a forced landing near Pleiku on 9 January 1969. The transmission fifth mount retaining bolt and a malfunction of the engine oil cooler caused a severe vibration in flight.

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

a. Personnel:

(1) Observation: Problems have been encountered in verification of the AG-53 report (Personnel Roster Enlisted).

(2) Discussion: This report is a machine prepared roster of the Battalion personnel and their supplemental personal data which is listed by company in alphabetical sequence. It is prepared bi-monthly by the USARV Data Service Center and is based on morning reports (DA Forms 1) and Personnel Data Change Reports (DA Form 1-1) submitted through channels to the Data Service Center. The delay in transmitting morning reports from Nha Trang to Long Binh produces a grossly incomplete AG-53 report when received back by this headquarters. The time consumed in updating this roster to reflect subsequent gains and losses, together with the rapid turnover of personnel within short tour areas, makes maintenance of the roster wholly unfeasible. As an example, the AG-53 report as of 31 October 1969 reflected the following changes:

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	<u>Last MR Date</u>	<u>Gains</u>	<u>Losses</u>	<u>Approx Changes</u>
HHC, 54th Sig Bn	20 Oct 69	15	26	123
Co A, 54th Sig Bn	21 Oct 69	21	2	178

(3) Recommendation: That the AG-53 report be prepared and submitted on a more timely basis (e.g. once a month) so that the number of changes will not be as great and that it will more accurately reflect personal supplemental data of individuals assigned to this command.

b. Intelligence: None.

c. Operations:

(1) Frequency bands on MARS Stations.

(a) Observation: During the last quarter, AFGUSA, the control station of the 54th Signal Battalion (Corps) MARS Station, restricted the bands of frequencies available for use by the 54th Signal Battalion (Corps).

(b) Evaluation: When frequencies are drastically limited, as they are now, a significant decrease occurs in the number of successful patches made.

(c) Recommendation: All of the MARS Stations working in Vietnam should be given a better group of working frequency bands. If such steps were taken, the capability of the stations would be greatly enhanced, and they could provide a much improved system of phone patching with the United States.

(2) AN/GRA-50 Doublet Antenna

(a) Observation: The doublet antenna is extremely susceptible to damage during combat operations.

(b) Evaluation: In Bu Prang the single sideband radios had significant down time because shrapnel from hostile fire often destroyed the antenna wire of the doublet antenna. This hazard increased when enemy fire became most intense, exactly the time when constant communications are a vital necessity.

(c) Recommendation: That the doublet antenna wire be produced with plastic insulation so that when necessary it could be operated while buried to preclude its destruction. This method has been successfully used by the Special Forces.

(3) Frequency Interference and Blockage

(a) Observation: VHF systems with line of sight paths which intersect parallel or cut through other systems can induce significant frequency interference and blockage.

(b) Evaluation: Temporary VHF Systems in the Ban Ma Thuot area during the period of Nov-Dec 1969 frequently caused significant interference with the primary VHF System (V-13) into this area. The line of sight paths of these systems cut across or closely paralleled the path of the V-13 System. Several frequency

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changes were required, utilizing various polarizations and different bands. Similar interference and blockage has also been observed on the three VLF systems between Hotel Site at Nha Trang and Hon Tre Island.

(c) Recommendations: That VLF systems whose line of sight paths intersect or closely parallel each other be assigned frequencies which are separated by more than 100 channels, utilizing various combinations of polarization.

d. Organization: None.

e. Training: None.

f. Logistics: None.

g. Communications: None.

h. Material:

(1) Use of Purple Spirit Hecto reproduction teletypewriter paper in Communications Center operation:

(a) Observation: That the Purple Spirit Hecto reproduction teletypewriter paper does not consistently produce sharp easy to read copies.

(b) Evaluation: On the average three out of every twelve rolls of Hecto paper are not usable due to damage incurred in transit or through climatic conditions while in storage. The inked portion of the paper becomes too hard to allow a good transfer of the reprintable image. To counteract this the teletypewriter set TT-4 must be adjusted beyond its normal capability to strike the paper harder.

(c) Recommendations: Purple Spirit Hecto Paper be stored in climatically controlled areas and care taken in its transportation. That the Hecto paper be used with teletypewriter sets such as AN/FGC-20 or TT-98. These machines will adjust to the striking force which is sometimes necessary in the use of Hecto Paper.

(2) Variable base waterproof photographic print paper:

(a) Observation: Variable base waterproof photographic print paper (which has a plastic type base) sticks to the drum of the print dryer and can ruin the entire aluminum drum. A dryer belonging to the photo section had to be salvaged for this reason.

(b) Evaluation: Variable base waterproof photographic print paper is a hazard to print dryers. It has proved to be unsatisfactory in use in the photographic laboratory.

(c) Recommendations: That the use of this type photographic print paper be discontinued. Present inventories should be returned to supply channels to preclude damage to the expensive print dryers.

(3) The discriminator tube 6AL5, of the AN/TRC-24 radio terminal set:

(a) The discriminator tube 6AL5, used in both the AN/TRC-24 transmitter and receiver frequently burns out.

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(b) Evaluation: One major contributing factor is the undetected failure of the automatic frequency control (AFC) circuit. The AFC is constructed in such a way that failure is sometimes not noticed. This failure can cause a short in the tube, thus causing it to burn out.

(c) Recommendations: An audible alarm should be installed to alert the operators when there is a failure in the AFC.

Robert E. Visscher

ROBERT E. VISSCHER
LTC, SigC
Commanding

6 Incl

- ~~1 - List of Detachments~~
- 2 - 54th Sig Bn (C) Communications System Map
- ~~3 - Key Personnel~~
- 4 - Organizational Chart
- ~~5 - 54th Sig Bn (C) and Attached Units MTCB~~
- ~~6 - Chronology~~

Incl 1, 3, 5 and 6 wd HQ, DA

DISTRIBUTION:

- 4 - CG, I FFORCEV, ATTN: AVFA-GC-OT, APO 96350
- 2 - CINCUSARPAC, ATTN: GPOF-DT, APO 96558
- 3 - DCG, USARV, ATTN: AVHGC-DST, APO 96375
- 2 - CG, I FFORCEV, ATTN: AVFA-SC, APO 96350
- 1 - CMDT, USACGB, (for Archives)
- 1 - CG, USASCS, ATTN: DIR OD
- 1 - CG, USASESS, ATTN: DIR OD
- 1 - Bn Historian
- 1 - CO, HHC
- 1 - CO, Co A
- 1 - CO, Co B
- 1 - CO, 167th Sig Co (RR)
- 3 - S-1
- 2 - S-2/3
- 1 - S-4
- 1 - Avn Sec
- 5 - 13th Mil Hist Det, APO 96350

AVFA-GC-HIST (10 Feb 70) 1st Ind
SUBJECT: Operational Report-Lessons Learned, 54th Signal Battalion
(Corps) for Period Ending 31 January 1970, RCS, CSFOR-65 (R2)
(U)

DA, Headquarters, I Field Force Vietnam, APO 96350

7 MAR 1970

TO: Commanding General, United States Army, Vietnam, ATTN: AVHRC-DST,
APO 96375

1. This headquarters has reviewed and evaluated subject Operational Report-Lessons Learned and concurs, except as indicated below.
2. Reference variable base water proof photographic print paper, paragraph 2.h(2), nonconcur. This type paper stock was designed for field use and it is not intended to be dried on a conventional drum dryer at high temperatures. The proper drying method for water proof paper is to air dry or place between blotters. The recommendation to discontinue the use of this paper can not be considered valid on an Army-wide basis, since photographic laboratories do have requirements for water proof photographic paper.

FOR THE COMMANDER:

[Signature] 1LT ABC
MAJ. B. ECKELAERE
1LT, AGC
ASST AG

CF:
2 - ACSFOR, DA
1 - CO, 54th SIG BN

AMHOC-DET (15 Feb 70) 2d Ind

SUBJECT: Operational Report - Lessons Learned, 54th Signal Battalion (Corps),
Period Ending 31 January 1970, RCS, CSFOR-65 (R2)

Headquarters, United States Army, Vietnam, APO San Francisco 96375 09 APR 1970

~~THRU: Commanding General, United States Army Strategic Communications~~
~~Command-Pacific, APO 96557..~~

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOB-DT,
APO 96553

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 January 1970 from Headquarters, 54th Signal Battalion (Corps) and concurs with the comments of indorsing headquarters.

2. Comments follow:

a. Reference item concerning "Problems Encountered in the Verification of the AG 53 Report", page 11, paragraph 2a(1): concur. AR 600-18 prescribes that the rosters be prepared on a monthly basis. However, preparation of the rosters more frequently than every other month is precluded by the lack of priority in the distribution and return of the rosters. If rosters are to be produced on a monthly basis they must be delivered, worked and returned within a 10 day time frame. Only 30% of the rosters were returned in February within a 14 day suspense period. Three weeks later 12% of the rosters were still outstanding. New rosters cannot be prepared until the information gathered from the previous rosters is processed against the personnel master file at USARV DSC.

(1) Regardless of whether rosters are produced monthly the data contained on the file will be only as accurate and timely as the morning report and the DA Forms 1-1. The 54th Signal Battalion does not submit reports on a daily basis but rather batches 3 or 4 days reports. The average morning report lag is about seven days for the unit. In addition, approximately 50% of the entries on the morning report are delayed entries. All of these combine to make the personnel master file and the reports produced untimely and inaccurate.

(2) USARV has stressed the need for prompt and accurate morning reports. A suspense of 5 days was placed on the 54th Signal Battalion in an attempt to obtain more emphasis on timely submission of morning reports. Each AG 53 report is transmitted with a cover letter establishing a suspense date plus stressing the importance of prompt review and return to the USARV DSC. Increased emphasis on prompt and accurate morning report processing and transmission and return of the AG 53 will continue to be made by this headquarters. No action by USARPAC or DA is recommended.

AVHGC-DST (15 Feb 70) 2d Ind

SUBJECT: Operational Report - Lessons Learned, 54th Signal Battalion (Corps),
Period Ending 31 January 1970, RCS, CSFOR-65 (R2)

b. Reference item concerning "Frequency Bands on MARS Stations", page 12, paragraph c(1): concur. Frequencies used in the USARV MARS Program are allocated according to National and International Agreements with the respective governments involved. Accordingly, the frequencies are not always the best for the prevailing propagation conditions. The seven MARS nets have comparable bands of frequencies assigned for each net operation. The 54th SIG Bn operates in Net IV and has as many operating frequencies as the other nets. In February 1970, additional frequencies in the 10 to 11 megahertz band were requested, and will be allocated to the different nets when authorization is received. A new record for phone patches was set in February 1970 when the USARV stations established 34,877 completed calls.

c. Reference item concerning "AI/CRA-50 Antenna", page 12, paragraph c(2): nonconcur. In order for a buried antenna to radiate, the electric field must extend into the surrounding soil and insulating the wire will have no effect. The conductivity of the soil places a load shunting the 50 ohm radiation resistance of the antenna. Successful performance of the buried antenna then depends on having soil of sufficiently high resistivity. Soil resistivity is a complex function of the type of soil, the moisture content, and the frequency; hence, the performance of a buried antenna can best be determined by actual experiment. It is important to realize that the soil will also markedly effect the antenna length for a given frequency. This effect can not be accurately predicted but the formulas below should permit an approximate calculation for a 3d harmonic doublet antenna:

Dry, sandy, or rocky soil	$l = 250/f$
Average soil	$l = 220/f$
Agricultural land or wet, marshy soil	$l = 210/f$

l = length in feet of one element of the doublet (total antenna length = $2l$)

f = Frequency in Hz

(1) It will be necessary to shorten or lengthen the antenna until proper transmitter loading is achieved. Performance is also possible with an antenna length that is one-third of the above figure, but proper loading will be more difficult.

(2) Rather than burying the antenna in a trench, a preferred method of construction would be to place above ground a single layer of sandbags that are filled with clean sand (not sea sand), place the antenna on top of this layer, and cover the antenna with a second layer of sandbags. This will help to decrease variations in antenna performance due to rain and soil moisture content.

AVHGC-DST (15 Feb 70) 2d Ind

SUBJECT: Operational Report - Lessons Learned, 54th Signal Battalion (Corps),
Period Ending 31 January 1970, RCS, CSFOR-65 (R2)

(3) At best, the buried antenna will not give as much range as an elevated doublet. An alternate solution which would give some protection against shrapnel or small arms fire would be to add a second conductor parallel to the element of the GRA-50 and separated from it by about 3 inches. The added conductor must be electrically connected to the antenna at the IL-5/GRI-4 insulator and should be tried at regular intervals with spacers. The spacers may be either insulating or conducting. Hopefully, a hit from shrapnel will break one, but not both wires. The bandwidth of the antenna will increase slightly and will require that the antenna length be decreased by approximately one-half of a percent. This is best accomplished by shortening the antenna assembly a few inches at a time until satisfactory transmitter loading is achieved.

d. Reference item concerning "Frequency Interference and Blockage", page 12, paragraph c(3): concur. VLF frequencies are allocated to the field forces and the 1st Sig Bde by the USARV Frequency Control Officer. Frequency planning is then the responsibility of the field forces and the 1st Sig Bde. Many systems have been developed for the effective assignment of VLF frequencies. Some of these systems are the ABM method and the Four Block method. These methods are not completely without fault but they do work. Careful planning of frequency assignment and coordination with other users at the planned location will prevent frequency interference and blockage by temporary VLF systems. Reference FM 24-2, dated Oct 66.

FOR THE COMMANDER:


L. D. MURRAY

CPI, ACC
Assistant Adjutant General

Cy furn:
HQ, I FFORCEV
54th Sig Bn (Corps)

GPOF-DT (15 Feb 70) 3d Ind (U)
SUBJECT: Operational Report of HQ, 54th Signal Battalion (Corps) for
Period Ending 31 January 1970, RCS CSFOR-65 (R2)

HQ, US Army, Pacific, APO San Francisco 96358 22 APR 1970

THRU: Commanding General, US Army Strategic Communications Command,
Fort Huachuca, Arizona 85613

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

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:


L.W. OZAKI
CPT, AGC
Asst AG

CF:
DA, ACSFOR
CG, USASTRATCOM-PAC

SCC-PO (15 Feb 70) 4th Ind (U)
SUBJECT: Operational Report of HQ, 54th Signal Battalion (Corps) for
Period Ending 31 January 1970, RCS CSFOR-65 (R2)

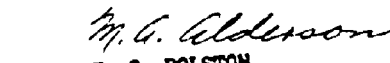
28 APR 1970

HQ, US Army Strategic Communications Command, Ft Huachuca, AZ 85613

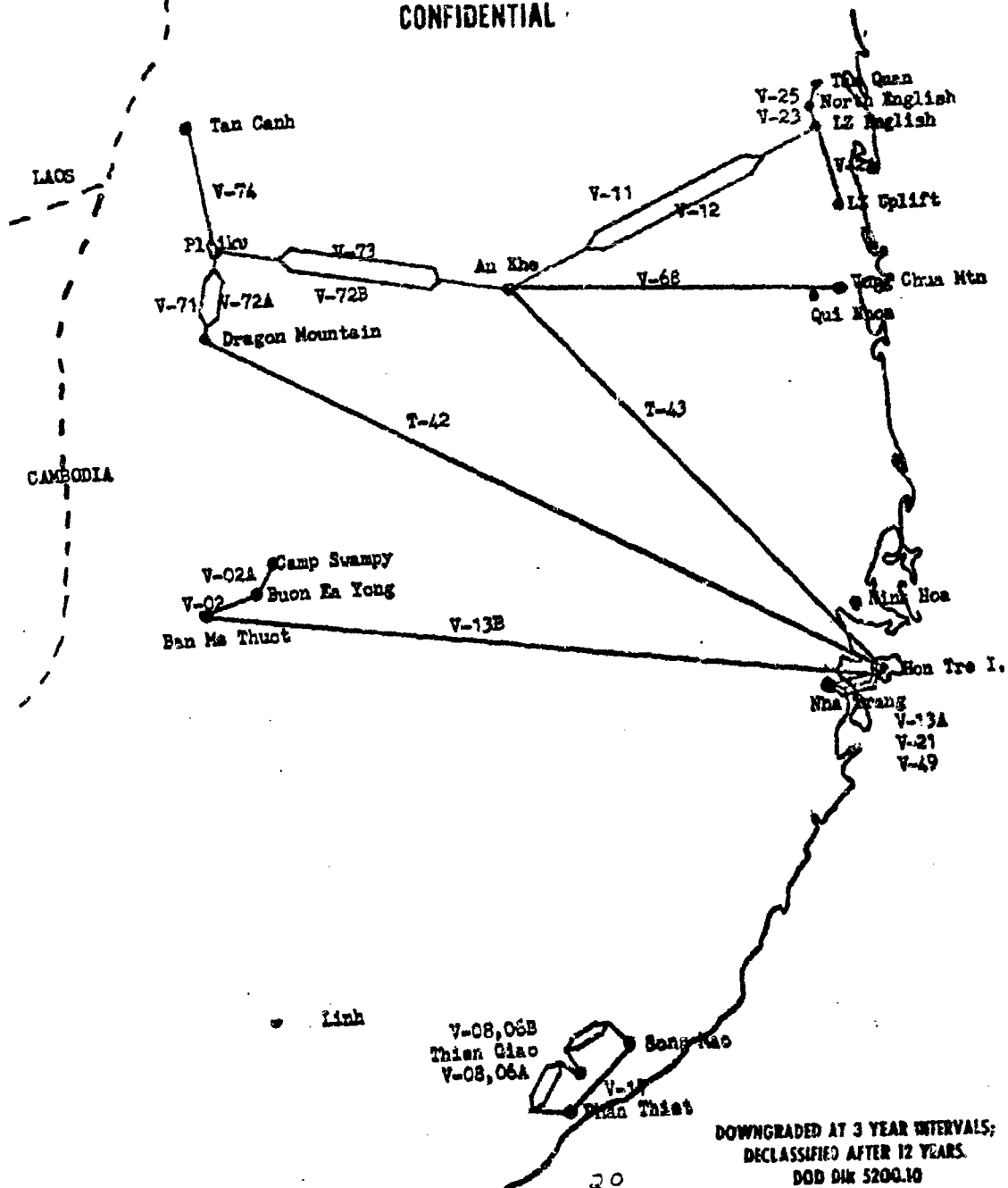
TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER:


W. O. POLSTON
Major, AGC
Asst Adj Gen

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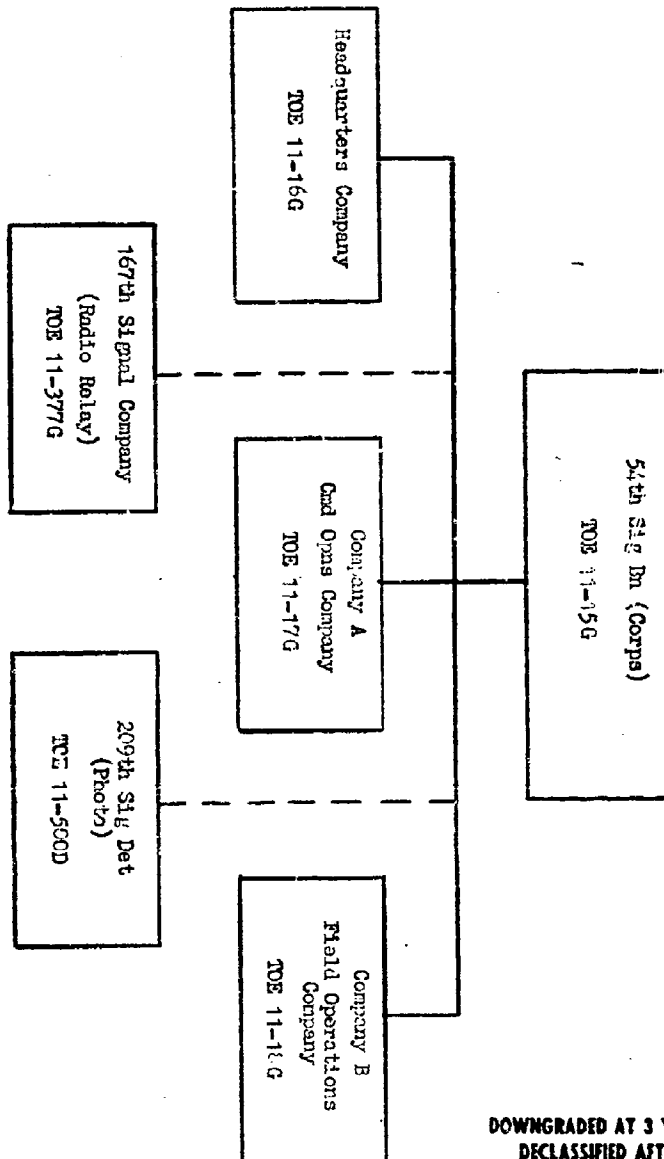
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54th Signal Battalion (Corps)
ORGANIZATIONAL CHART



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LEGEND

Attached

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(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

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