

UNCLASSIFIED

AD NUMBER

AD867295

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AUTHORITY

AGO D/A ltr, 29 Apr 1980

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

IN REPLY REFER TO

AD 867295

AGDA (M) (18 Mar 70)

FOR OT UT 694148

25 March 1970

SUBJECT: Operational Report - Lessons Learned, Headquarters, Phu Lam  
Signal Battalion, Period Ending 31 October 1969

SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation in accordance with paragraph 4b, AR 525-15. Evaluations and corrective actions should be reported to ACSFOR OT UT, Operational Reports Branch, within 90 days of receipt of covering letter.
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  
Major General, USA  
The Adjutant General

1 Incl  
as

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UNCLASSIFIED REPORT

DISTRIBUTION NO FOREIGN WITHOUT APPROVAL OF  
ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT  
(ARMY) ATTN FOR OT UT. WASHINGTON, D.C. 20310

DEPARTMENT OF THE ARMY  
HQ, PHU LAM SIGNAL BATTALION (USASTRATCOM) (PROVISIONAL)  
APO San Francisco 96243

RGPLMB-S3

10 November 1969

SUBJECT: Operational Report of the Phu Lam Signal Battalion for Period  
Ending 31 October 1969. RCS CSFOR-65 (R2)

TO: See Distribution

1. Section 1 Operations: Significant Activities.

a. AUTODIN reject rates continue to decline and are clearly indicative of the professionalism which exists at the Phu Lam ASC and its tributaries. The average reject rate percentages for the first three quarters of 1969 are:

<u>QUARTER</u>	<u>MODE I</u>	<u>MODE V</u>
1st	8.7	10.6
2nd	5.2	6.1
3rd	3.4	4.5

b. Forty-eight (48) personnel, representing fifteen (15) organizations attended the fifth AUTODIN SEMINAR which was held at Phu Lam on 25-26 August. The seminar, one of the Phu Lam ASC's most effective programs in providing subscriber assistance, is designed to cover all areas of the ASC in regards to procedures, operations and maintenance.

c. The Phu Lam Signal Battalion Ba Queo Sattelite Communications Terminal has surpassed the previous world record for continuous operation of an AN/MS-46 Sattelite Terminal by compiling a total of one thousand eight hundred ninty-six hours (1,896) and fifty minutes (50) availability before experiencing an equipment failure. This is a significant achievement because there are almost no redundant components in the AN/MS-46. A failure of any component means terminal down time.

d. The Saigon AN/FTC-31 Special Data Quality Dial Exchange provided Special Data Quality Communications within the Saigon area and

FOR OT UT

694148

Inclosure

RGPLMB-S3

SUBJECT: Operational Report of the Phu Lam Signal Battalion for Period Ending 31 October 1969.

the Network Coordinating Station provided network control for the entire Special Data Quality System - Republic of Vietnam.

e. On 30 September 1969 the ROKA HF Transmitter was logged out to negative contact. The transmitter was checked for malfunctions. It was determined that the transmitter, antenna and associated feeder equipment were functional. On 8 October 1969, the transmission line was checked and found defective at the first junction. Arcing within the cable caused a high resistance short. Replacing the cable through normal supply channels met with negative results. It was determined that relocating the remaining good portion of cable and its associated equipment to the Northeast side of the transmitter building would leave a sufficient length of good cable to reach the antenna. This plan was implemented and the ROKA HF Transmitter was tested with the distant end. At 0200Z 15 October 1969, the ROKA HF System went back to traffic.

f. During the quarter ending 31 October 1969, the Phu Lam Primary Relay Station was in the process of being deactivated. On 1 August 1969 there were twenty (20) circuits over which the PRS received and transmitted traffic. As of 31 October 1969, there remained only six (6) active teletype circuits. PAFCO Major Relay at Tan Son Nhut accounted for four (4) of these circuits; the Phu Lam ASC and the American Embassy in Saigon each had one (1) circuit with the Phu Lam Major Relay. It is estimated that these six (6) circuits will be deactivated on or about 3 November 1969. These circuit deactivations resulted in 26.5% decrease in teletype traffic. During August 1969 280,074 messages were processed through the Phu Lam PRS while in the month of October 1969 206,147 were handled.

2. Section 2 Lesson Learned: Commanders Observation, Evaluation and Recommendation.

a. Personnel: None

b. Intelligence: None

c. Operations:

(1) Implementation of Telecommunications Service Order (TSO) Requirements.

(a) Observation: The Phu Lam ASC has been hindered in its effort to affect actions required by TSO authority concerning circuit activations, deactivations, and changes to existing circuits.

(b) Evaluation: The TSO is the official source and authority for circuit start, change, and discontinue actions to be implemented by the Phu Lam ASC. For new circuit activations, the

RGPLMB-S3

SUBJECT: Operational Report of the Phu Lam Signal Battalion for Period Ending 31 October 1969.

TSO is also the authority for requisitioning MATSYM's for COMSEC operations. The TSO's received by the ASC are incomplete, in that paragraph six (6) of the TSO which should delineate channel parameter information, is often either omitted or is itself incomplete. The TSO is not received in sufficient time to allow for proper planning and programming of the requirement, or to allow for requisitioning of MATSYM's, which requires thirty (30) to fortyfive (45) days for requisition fulfillment.

(c) Recommendations: That command interest be given to the problem of incomplete and untimely TSO's. The Telecommunications Service Request (TSR) could be established as an authority for requisitioning of MATSYM's or that the Phu Lam ASC be authorized to maintain sufficient MATSYM's in each security level as "projected requirement" spares.

## (2) Channel Parameters

(a) Observation: There is a necessity for a comprehensive consolidation of data pertaining to our operational and projected circuits.

(b) Evaluation: An off line program, Channel Parameter and Termination Data (CPATD) was developed to consolidate pertinent information in six different layouts: By Routing Indicator (RI), Communications Control Service Designator (CCSD), Line Number, Identification Number (ID), and Line Traffic Coordinator (LTC). This report, when kept up to date, has proven to be a valuable in-house tool for timely circuit activations.

(c) Recommendation: That other ASC's adopt a similar procedure for maintaining listing of channel parameters. Copies of the off line program developed by the Phu Lam ASC may be obtained from the OIC of the Phu Lam ASC.

## (3) Altrouting of AUTODIN Message Traffic

(a) Observation: While messages are being altrouted it is possible for security violation to occur if the security of a line is higher than any of its destinations.

(b) Evaluation: One way to protect against such a condition is to insure that all line securities are no higher than any of the line destinations. The program should be designed to protect against possible human errors in this very important area. DCS 205 has been developed for this reason. DCS 205 will merely block the

RGPLMB-S3

SUBJECT: Operational Report of the Phu Lam Signal Battalion for Period Ending 31 October 1969.

queue on the original channel if the channel is out of service. This, in effect, stops the altrouting for the circuit that is out of service. If the channel is in service the message will be transmitted to the original destination through its security altroute. PRN 186 has been developed to delete all security altrouting and authomatically scrub messages with a security mismatch.

(c) Recommendation: That DCS 205 be implemented in conjunction with PRN 186. The result should be that any altrouted messages not meeting the standards of the real line and destination security will be scrubbed on output for security mismatch.

#### (4) Security Clearances

(a) Observation: It has been observed that a majority of personnel assigned to Phu Lam ASC from other PCS stations whether overseas or the States do not have Top Secret clearances as required by operations in AUTODIN system.

(b) Evaluation: Since these personnel do not have the proper security clearances a significant amount of operational time is lost until these personnel can be cleared (It takes approximately four (4) months to upgrade a Secret clearance to a Top Secret clearance).

(c) Recommendation: Since one third of a tour can otherwise be lost, personnel should be granted the proper security clearance prior to coming to Viet Nam.

#### (5) Single Frequency Signaling Units

(a) Observation: The most widely used method of signaling on truck circuits is E & M signaling. The M lead trasmits battery or ground signals, while incoming signals are received on the E lead as either a ground or an open condition. In most communications networks the Single Frequency Signaling Units are located in the ICS technical control facility and the E & M leads are extended by cable to a switching center or terminal.

(b) Evaluation: When E & M leads are extended by cable from the ICS facility to a facility using a different ground source, the transmission of battery from the M lead may be contaminated by unwanted AC on the cable line if there is a slight difference in ground potential between the two interconnecting facilities. When the cable sheath continuity has been destroyed by faulty bonding, this condition can cause a sudden complete or static loss in signal transmission through the signaling unit.

RGPLMB-S3

SUBJECT: Operational Report of the Phu Lam Signal Battalion for Period Ending 31 October 1969.

(c) Recommendation: When loss of signal transmission occurs due to a difference in ground potential between two interconnecting facilities, an interim solution is to install pulse link repeaters in the cable path until proper grounds are re-established either along the cable path or at the facilities. If red/black criteria and distance permit a quick solution can be obtained by running a heavy duty ground strap between the two station grounds.

(6) NBST Single Frequency Signaling Units

(a) Observation: The single frequency signaling unit associated with narrowband subscriber terminals is made up of a chassis that accommodates eight plug-in type modules. The modules are plugged into the jacks located in the rear of the chassis and are secured to the jacks by individual spring clips located in the top rear of the chassis.

(b) Evaluation: Insertion of a module frequently causes the spring clips to expand far enough to make contact with the terminal pins on the chassis thereby shorting these pins to the chassis. This condition may cause component failures within the module.

(c) Recommendation: Before inserting the modules, bend all terminal pins located in the inside upper rear of the chassis away from each individual spring clip to prevent direct contact between the spring clips and the terminal pins.

(7) Second Select-Sub/Trk Toggle Switch

(a) Observation: A SECORD is a Secure Voice Patch Panel that enables the interconnection between both local wide band and narrowband subscribers and between these subscribers and narrowband trunks. When a request for service is received at the patch panel from either a subscriber or a narrowband trunk, the operator responds by setting the select toggle switch to the proper position; TRK position for NB trunk indication and SUB position for NB/WB subscriber indication.

(b) Evaluation: The quality of a call can be degraded if the SECORD Select-SUB/TRK Toggle Switch is not making proper contact which will inadvertently lead maintenance personnel to believe the problem is in conversion equipment or path.

(c) Recommendation: When calls randomly come in weak, the operator should carefully move the Select Switch to various intermediate positions to determine if the quality of the call improves at

RGPLMB-S3

SUBJECT: Operation Report of the Phu Lam Signal Battalion for Period Ending 31 October 1969.

any position. If the quality of the call improves in any manner, the switch is defective and should immediately be replaced.

(C) RG-234 Coaxial Cable RF Transmission Lines

(a) Observation: RG-234 coaxial cable can be defective and still present a load to a High Frequency Transmitter.

(b) Evaluation: Negative contact with distant station can be caused by a defective transmission line. Transmission checks with local stations may have positive results, but may be misleading because local stations may be receiving groundwave propagation from the load.

(c) Recommendation: That transmitting stations utilizing coaxial cables as transmission lines should be aware of this type of problem and have the proper equipment on hand to measure cables of this type.

(9) Processing all Traffic over the AMARS equipment.

(a) Observation: The AMARS is presently being utilized to process all the traffic in the Primary Relay Station.

(b) Evaluation: This procedure has produced the following results:

(1) A reduction in the UNIVAC 1004 ASC reject rate. The AMARS checks format lines one through four and the end of message functions to insure that they are correct before the message is passed to the UNIVAC 1004 for transmission into AUTODIN.

(2) The handling time of message traffic has decreased. Traffic can be expedited faster by utilizing the AMARS than by Comm Center Operators. Expediting all traffic through the AMARS has eliminated the requirement to have two (2) message expeditors per shift.

(3) A complete record of every message being handled by the station is now obtained. The AMARS printer records the first four (4) format lines of every message passing through it, the time it was processed, and the reperforation position to which it was sent for transmission.

(c) Recommendation: That all Stations utilizing AMARS equipment evaluate the above procedures to determine if they are



RGPLMB-S3

SUBJECT: Operational Report of the Phu Lam Signal Battalion  
for Period Ending 31 October 1969.

applicable to their operation.

d. Organization: None

e. Training: During the quarter ending 31 October,  
the Phu Lam Signal Battalion engaged in training and operations  
a total of ninety-two (92) days.


f. Logistics: None

g. Communications: None

h. Material: None

i. Other: None

1 Incl  
Organizational Structure

  
WILLIAM B. LEWIS  
LTC, SigC  
Commanding

DISTRIBUTION:

RCG - 9  
CG, 1st Sig Bde, ATTN: SCCPV-OP - 1  
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CINCUSAPAC, ATTN: GPOP-DT - 2

SCCPV-RC-1.0 (10 Nov 69) 1st Ind  
SUBJECT: Operational Report of the Phu Lam Signal Battalion for Period  
Ending 31 October 1969, RCS CSFOR-65 (R2)

30 November 1969

Headquarters, USASTRATCOM Regional Communications Group (Vietnam), APO 96243

TO: Assistant Chief of Staff for Force Development, Department of the Army  
Washington D.C. 20310  
Commanding General, 1st Sig Bde (USASTRATCOM), ATTN: SCCPV-PO-CR,  
APO 96384

1. Subject report is forwarded in accordance with 1st Sig Bde Reg 1-19.
2. This headquarters has reviewed the report and basically concurs with it.
3. Following are corrections and/or comments concerning referenced paragraphs:

a. Reporting subject is incorrect. It should be read as "Operational Report - Lessons Learned (Unit name) Period Ending (day, month, year) RCS CSFOR-65 (R2)".

b. Paragraph 2c (2)(b), Page 3. The word "is" should be "in".

c. Paragraph 2c (3)(b), Page 4. The word "authomatically" should be "automatically".

d. Paragraph 2c (9)(b)(3), Page 6. The word "postion" should be "position".

e. Comments on Section 2, Lessons Learned, Page 2:

(1) Para 2 (c)(1), Page 2. Implementation of TSC requirements:  
Concur. Should be brought to the attention of DCA-SAM.

(2) Para 2 (c)(2), Page 3. Channel Parameters: Concur. The Nha Trang ASC has already developed a similar program to the CPATD for maintaining accurate and up-to-date channel parameter listings.

(3) Para 2 (c)(3), Page 3. Rtrouting of AUTODIN Message Traffic  
Concur. The addition of PkN-186 to the existing OCS-205 program all but eliminates the possibility of a line security compromise.

(4) Para 2 (c)(5), Page 4. Single Frequency Signaling Units:  
Concur. A message has been sent to the sites instructing them to wire in a pulse link repeater to a spare jack. This was done to give the sites experience in using the PLR and to aid in the immediate restoral of circuits affected by AC on the "M" lead.

SCCPV-RG-MO (10 Nov 69) 1st Ind

SUBJECT: Operational Report of the Phu Lam Signal Battalion for Period  
Ending 31 October 1969, ACS CSFOR-65 (i2)

(5) Para 2 (c) (6), Page 5. NBST Single Frequency Signaling Units:  
Concur. The maintenance techniques of both para: 6 and 7 have been  
disseminated to the RECORDS and reported to higher headquarters by means  
of a subscriber newsletter published by NECOS-SAM for October 1969.

(6) Para 2 (c) (7), Page 5. SECORD Select Sub/Trk Toggle Switch:  
Concur.

(7) Para 2 (c) (8), Page 6. RG-234 Coaxial Cable RF Transmission  
Line:

(a) Concur with observation, evaluation and recommendation.  
Transmitting stations utilizing coaxial cables as transmission lines should  
be aware of this type of problem and have the proper equipment on hand to  
measure cables of this type.

(b) Two pieces of test equipment are necessary to test cable  
condition: 1. A standing wave ratio meter (SWR Meter) and 2. Test Set --  
Ohm Meter, ZM-21a/U, Winslow Electronic Corp. When a station experiences  
negative contact at the distant end of a transmission and positive contact  
with local stations, the SWR Meter, in conjunction with the Ohm Meter Test  
Set, will point out any existing defects in the coaxial cable.

*Edward B. Howard*  
EDWARD B. HOWARD  
LTC, SigC  
Acting Commander

SCCPY-OP-AD (10 Nov 69) 2d Ind  
SUBJECT: Operational Report - Lessons Learned, Headquarters, Phu Lam  
Signal Battalion for Period Ending 31 October 1969, RCS  
CSFOR-65 (R2)

DA, HQ, 1st Signal Brigade (USASTRATCOM) APO 96384 12 December 1969

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

1. Subject report is forwarded in accordance with AR 525-15.

2. The following comments are made:

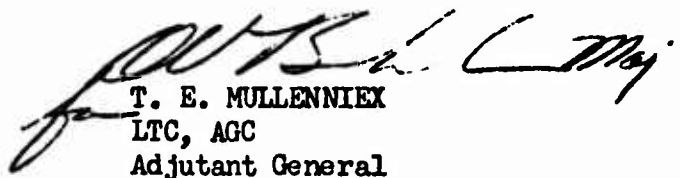
a. Reference item "Implementation of Telecommunications Service Orders (TSO) Requirements", Para 2 c (1), Page 2: Concur. Some incomplete and untimely TSO's with errors have been issued. DCA-SAM V500 has agreed to furnish Regional Communications Group networks with advance TSO's for coordination.

b. Reference item "Channel Parameters", Para 2 c (2), Page 3: This is a valid observation and provides useful information, however, the program for PIM was designed for a 360/20 system and the other ASC utilizes a 100u.

c. Reference item "Altrouting of AUTODIN message traffic", Para 2 c (3), Page 3: Security classification of altroute circuits is being given careful attention in the implementation of the new AUTODIN/Teletype Network. Care is being taken to insure designated altroutes have required security classification.

d. Reference item "Security Clearance", Para 2 c (4), Page 4: The burden for obtaining properly cleared personnel lies with the unit. Personnel requisitions must indicate required clearance as an additional requirement on the feeder personnel requisition submitted by the requesting unit.

FOR THE COMMANDER:

  
T. E. MULLENNIEX  
LTC, AGC  
Adjutant General

CF:  
Commanding General, United States Army Strategic Communications  
Command, ATTN: SCC-OPS-RT, Fort Huachuca, Arizona 85613  
Commanding Officer, Regional Communications Group, APO 96243  
Commanding Officer, Phu Lam Signal Battalion, APO 96243

AVHGC-DST (30 Nov 69) 3d Ind

SUBJECT: Operational Report of the Phu Lam Signal Battalion for Period  
Ending 31 October 1969, RCS CSFOR-65

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 10 JAN 1970

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

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,  
APO 96558

This headquarters has reviewed the Operational Report-Lessons Learned  
for the quarterly period ending 31 October 1969 from Headquarters, Phu  
Lam Signal Battalion and concurs with the report as indorsed.

FOR THE COMMANDER:

*Norman D. Selby, LTC*  
B. A. GOODWIN  
MAJ. MG  
Assistant Adjutant General

Cy furn:  
Phu Lam Sig Bn  
1st Sig Bde

SCCP-OP3 (10 Nov 69) 4th Ind  
SUBJECT: Operational Report of the Phu Lam Signal Battalion for Period  
Ending 31 October 1969. RCS CSFOR-65 (R2)

Headquarters, U. S. Army Strategic Communications Command - Pacific,  
APO San Francisco 96557  
25 FEB 1970

TO: Commander in Chief, United States Army Pacific, ATTN: GPOP-DT,  
APO 96558

1. Subject report is forwarded in accordance with AR 525-15.
2. This headquarters has reviewed subject report and offers the following comments:

a. Reference paragraph 2c(1), pages 2-3, basic report. This is a problem which can be attributed in part to incomplete and untimely submissions of Telecommunications Service Requests (TSR). As an example, the USARPAC/USASTRATCOM Supplement 1 to AR 105-21 provides guidance that new requests for AUTODIN be submitted 160 days in advance; however, TSR's are frequently submitted with short lead times and are not as complete as they should be. The need for complete and timely TSR's from subordinate commands is being re-emphasized by this headquarters. The TSO should continue to be the basis for requisitioning of MATSYM.

b. Reference paragraph 2c(3), pages 3-4, basic report. Program revision DCS 205 was implemented on 19 January 1970 by PRN B-035-69256-033. This accomplishes the action recommended in this item.

c. Reference paragraph 2c(4), page 4, basic report. This clearance problem has been eliminated due to the new procedures contained in paragraph 2-2b(2)(b), AR 604-5, dated 29 December 1969. INTERIM TOP SECRET clearance can now be granted to military personnel who are U. S. citizens and have either a completed National Agency Check (NAC) or Entrance National Agency Check (ENTNAC).

d. Concur with the remainder of the report as indorsed.

FOR THE COMMANDER:

*Frank C. Mahin*  
FRANK C. MAHIN  
COL, GS  
Chief of Staff

CF: w/o Incl

Commanding General, United States Army, Vietnam, APO 96375  
Commanding General, 1st Signal Brigade (USASTRATCOM), APO 96384  
Commanding Officer, Regional Communications Group (USASTRATCOM), APO 96243  
Commanding Officer, Phu Lam Signal Battalion (USASTRATCOM), APO 96243

GPOP-DT (10 Nov 69) 5th Ind

SUBJECT: Operational Report of HQ, Phu Lam Signal Battalion for Period  
Ending 31 October 1969, RCS CSFOR-65 (R2)

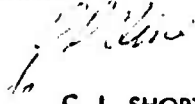
HQ, US Army, Pacific, APO San Francisco 96558

2 MAR 70

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:



C. L. SHORTT  
CPT, AGC  
Asst AG

CF:

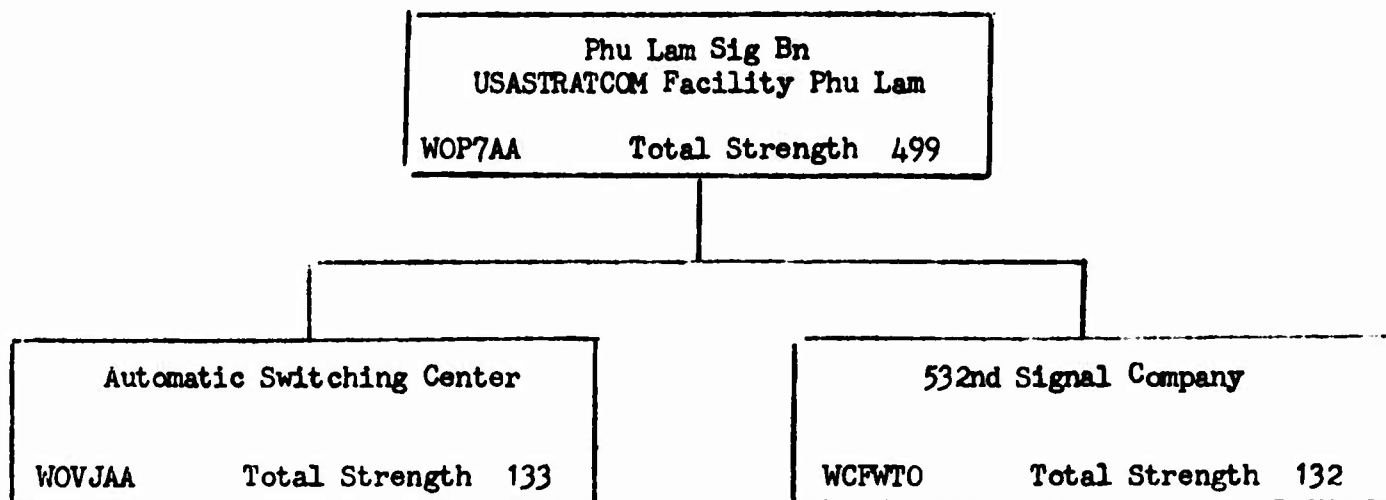
DA, ACSFOR

CG, USASTRATCOM-PAC

RGPLMB-S3

SUBJECT: Operational Report of the Phu Lam Signal Battalion for Period  
Ending 31 October 1969.

Organizational Structure





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CO, Phu Lam Signal Battalion			
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